

FINAL

**REVISED ENVIRONMENTAL ASSESSMENT (EA)
FOR
PERSONNEL RECOVERY (PR) CAMPUS AT
MOODY AIR FORCE BASE, GEORGIA**



PREPARED FOR:

Department of the Air Force

June 2016

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
347 RQG	347th Rescue Group
ACAM	Air Conformity Applicability Model
ACC	Air Combat Command
ADP	Area Development Plan
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFI	Air Force Instruction
AFLOA	Air Force Legal Operations Agency
AFMAN	Air Force Manual
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AGE	aerospace ground equipment
AICUZ	Air Installation Compatible Use Zone
APE	Area of Potential Effects
AT/FP	antiterrorism/force protection
BGEPA	Bald and Golden Eagle Protection Act
BMPs	best management practices
C&D	construction and demolition
CAA	Clean Air Act
CDC	Child Development Center
CEQ	Council on Environmental Quality
C.F.R.	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CWA	Clean Water Act
dB	decibels
dBA	decibels measured on the A-weighted scale
DNL	day-night average sound level
DNR	Department of Natural Resources
DO	dissolved oxygen
DoD	Department of Defense
DoDI	DoD Instruction
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act of 1973
FICON	Federal Interagency Commission on Noise
FICUN	Federal Interagency Commission on Urban Noise
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
GBBL	Grand Bay-Banks Lake
GEPD	Georgia Department of Natural Resources, Environmental Protection Division
GHG	greenhouse gas
GPMS	General Purpose Maintenance Shop
GWP	global warming potential

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HAP	hazardous air pollutant
HAZMART	Hazardous Materials Pharmacy
HMU	Helicopter Maintenance Unit
HP	horsepower
HPD	Georgia Department of Natural Resources, Historic Preservation Division
IDP	Installation Development Plan
INRMP	Integrated Natural Resources Management Plan
kV	kilovolt
lb	pounds
LBP	lead-based paint
L _{dn}	day-night average sound level
LF	linear feet
L _{max}	maximum sound level
MBTA	Migratory Bird Treaty Act
MGD	million gallons per day
MOU	Memorandum of Understanding
MSA	Munitions Storage Area
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NETC	Northeast Training Complex
NFA	no further action
NHP	Natural Heritage Program
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
Ops	Operations
OSHA	Occupational Safety and Health Administration
PM ₁₀	particulate matter with an aerodynamic diameter of less than or equal to 10 microns
PM _{2.5}	particulate matter with an aerodynamic diameter of less than or equal to 2.5 microns
PR	Personnel Recovery
Q-D	quantity-distance
RCRA	Resource Conservation and Recovery Act
RNM	Rotorcraft Noise Model
ROI	region of influence
SF	square feet
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	sulfur dioxide
TCP	traditional cultural property
TDS	total dissolved solids
TMDL	Total Maximum Daily Load
UDATL	Undersecretary of Defense for Acquisition Technology and Logistics
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency

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USFWS U.S. Fish and Wildlife Service
USGS U.S. Geological Survey
VOC volatile organic compound

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Purpose of and Need for Action

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

The 347th Rescue Group (347 RQG) at Moody Air Force Base (AFB) Georgia, and Headquarters Air Combat Command (ACC) have identified the need for consolidation of 347 RQG facilities at Moody AFB and propose to implement consolidation by 2019 through development of a Personnel Recovery (PR) Campus. This Environmental Assessment (EA) was prepared to evaluate the potential environmental impacts of this proposed project in compliance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [U.S.C.] §§ 4331 et seq.), the regulations of the President's Council on Environmental Quality (CEQ) that implement NEPA procedures (40 Code of Federal Regulations [C.F.R.] §§ 1500–1508), the U.S. Air Force's Environmental Impact Assessment Process Regulations at 32 C.F.R. Part 989, and Air Force Instruction (AFI) 32-7061 (2003).

Moody AFB is located approximately 9 miles northeast of Valdosta, in Lowndes and Lanier Counties in southern Georgia (Figure 1.1-1). The installation encompasses approximately 11,371 acres and is administratively controlled by the ACC. Moody AFB is home to the 23d Wing (U.S. Air Force, 2010a). The 23d Wing's mission is to train, organize, and employ combat-ready aircraft and pararescuemen. The 347 RQG is an active-duty Operations Group dedicated to rescue. The Group executes rescue missions in national security and humanitarian interests and supports the National Command Authority tasking worldwide. Aircraft assigned to Moody AFB include the HC-130J, A-10C Thunderbolt II, and the HH-60G. The 347 RQG uses the HC-130J and HH-60G. The A-10C Thunderbolt II is used by the 23d Fighter Group. In addition to the units already mentioned, the 23d Wing commands the 563d Rescue Group, with associated squadrons stationed at Davis-Monthan AFB in Tucson, Arizona, and Nellis AFB in North Las Vegas, Nevada (U.S. Air Force, 2010a). The 81st Fighter Squadron and the assigned A-29 Super Tucano aircraft (under the command of the 14th Flying Training Wing at Columbus Air Force Base, Mississippi) is also located at Moody AFB, along with the 820th Base Defense Group (under the command of the 93d Air Ground Operations Wing).

The intent of the Proposed Action at Moody AFB is to provide infrastructure improvements necessary to support the mission of the 347 RQG. The project considered in this EA was identified in the *Moody AFB PR Campus Area Development Plan* (ADP) (Moody AFB, 2015a). This plan identifies requirements for the improvement of the physical infrastructure and functionality of Moody AFB for the rescue mission, including current and future mission and facility requirements, development constraints and opportunities, and land use relationships. Within the context of this document, the Proposed Action is discussed in general terms, while each proposed alternative for implementing the Proposed Action is discussed in detail.

In 2011 an EA was begun to assess the potential environmental consequences resulting from a proposal to construct a PR Campus on the northwest portion of Moody AFB. During the course of the EA, several major revisions were required to minimize environmental impacts sufficient to reach a Finding of No Significant Impact (FONSI). In 2014 the Air Force Civil Engineer Center (AFCEC), in coordination with the Air Force Legal Operations Agency (AFLOA), determined that the previous PR Campus plan would not be able to reach a FONSI without significant re-planning. During September 2014, re-planning commenced, with the proponents reaching a consensus on a viable site layout in February 2015 through a new ADP. This EA reflects the revised Proposed Action based on the new proposed site layout(s).

The Proposed Action does not involve any new aircraft, additional personnel, or changes in mission or flight operations. The Proposed Action is simply a consolidation of existing functional areas that are currently dispersed along the flightline into one area on the installation.

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Purpose of and Need for Action

Figure 1.1-1: Location of Moody AFB



Purpose of and Need for Action

The information presented in this document will serve as the basis for deciding whether implementing the Proposed Action via the identified alternatives would result in a significant impact to the human environment, requiring the preparation of an environmental impact statement (EIS), or whether no significant impacts would occur, in which case a FONSI would be appropriate. If the execution of any of the alternatives would unavoidably occur in a wetland or floodplain, a Finding of No Practicable Alternative (FONPA) would be prepared in conjunction with the FONSI, pursuant to the requirements of Executive Order (EO) 11990, *Protection of Wetlands*, EO 11988, *Floodplain Management*, and EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*.

1.2 Purpose of Proposed Action

The purpose for this Proposed Action is to consolidate and improve facility support for the 347 RQG at Moody AFB through consolidation of all rescue aviation and maintenance functions; upgrade outdated facilities; reduce and/or eliminate existing Unified Facilities Criteria (UFC) violations; and improve operational, ergonomic, and energy efficiencies.

1.3 Need for Proposed Action

The Proposed Action is needed because the Moody AFB PR program is experiencing numerous facility shortfalls that currently impair mission effectiveness. There is a shortage of space and overcrowding causing inadequate work space for training, mission planning, and briefing, as well as insufficient facilities for storage, parking aircraft, and shop space.

The existing flight and aircraft maintenance operations for the 347 RQG are divided into two physical areas, the HC-130 operational area and the HH-60 operational area (U.S. Air Force, 2010a). The HC-130 operational area contains a parking apron for HC-130 aircraft, maintenance facilities, squadron operations, and storage facilities. The HH-60 operational area is located on the eastern edge of the main cantonment area and has facilities for helicopter maintenance, squadron operations, and storage. The function of the Helicopter Maintenance Unit (HMU) is spread out among four different facilities: a helicopter flightline hangar, a support section building, a helicopter phase hangar, and a helicopter parking apron. Current facilities do not meet facility and design requirements established in Air Force Manual (AFMAN), AFI, and UFC guidance for safe operations, requiring altered operations/work-arounds to meet mission needs. Table 1.3-1 identifies the current issues, the need that supports issue rectification, and the associated justification drivers for the respective need.

Table 1.3-1: Proposed Action Needs and Requirements

Issue	Current Situation	Need	Justification
Lack of sufficient overall space for Squadron Operations (41st Rescue Squadron)	~26,000 square feet (SF)	33,000 SF	AFMAN 32-1084, Facility Requirements, para 2.4.14
Out of date facilities	Buildings 658 & 609 are currently more than 40 years old. Expected economic life for these facilities is 40 years.	Updated facilities	AFMAN 32-1089, Figure 2.12
Inadequate clearance between hangar/parking apron and nearest runway center line	The current hangar/parking apron was constructed under less stringent criteria and facilities are about 800 feet from center line; criteria have since changed and require at least 1,000 feet from the centerline of the	Adequate distance between hangar/parking apron and runway centerline that meets Unified Facilities Criteria (UFC) requirements	UFC 3-260-01, Section 3-4.3; Item 12 of Table 3-2 and Item 1 of Table 3-7

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Purpose of and Need for Action

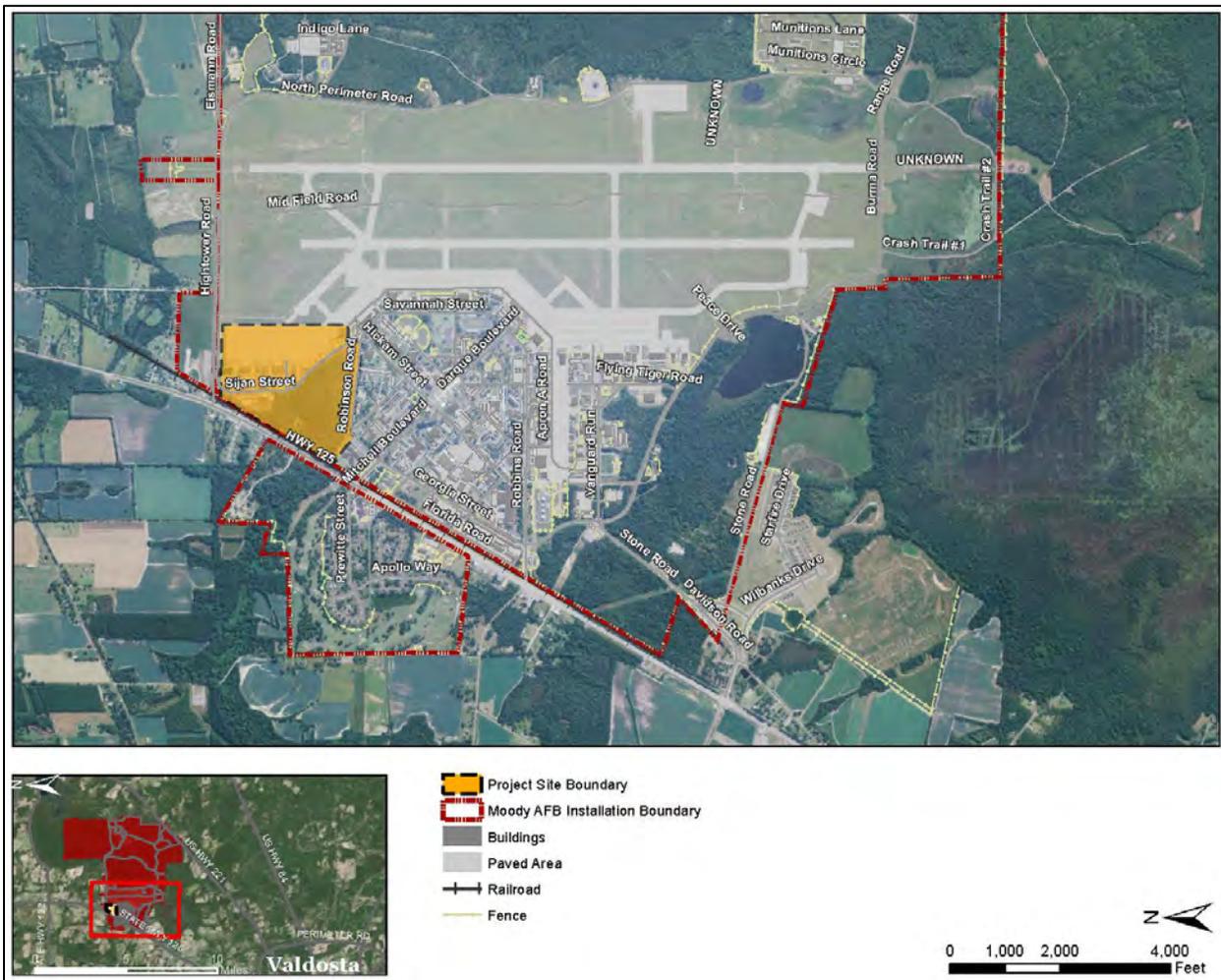
Table 1.3-1: Proposed Action Needs and Requirements, Continued

Issue	Current Situation	Need	Justification
	nearest runway.	(minimum of 1,000 feet)	
Inadequate interior hangar aircraft clearance	There is not adequate clearance between the crane supports and the helicopter rotortip to meet the clearance requirement.	Adequate interior clearance that meets UFC requirements.	UFC 3-260-01, Table 8-2, Tail - Vertical/Roof Framing, note 2.

Although not necessarily supported by specific documented requirements, inherent to the Proposed Action are needs for adequate infrastructure such as roads, sidewalks, utilities, and other components to support the overall PR Campus. Security for the aircraft apron is also needed in the form of a fence, which is required under AFI 31-101, *Integrated Defense* (08 October 2009), paragraph 6.5.2.

Figure 1.3-1 shows the location of the area where Moody AFB proposes to develop the new PR Campus in order to meet the above-noted needs.

Figure 1.3-1: Proposed Project Location on Moody AFB



Purpose of and Need for Action

1.4 Issues Not Carried Forward for Detailed Analyses

Based on the scope of the Proposed Action, issues with minimal or no impacts were identified through a preliminary screening process. The following describes those issues not carried forward for a detailed analysis, along with the rationale for their elimination.

Airspace Management and Use: Under the Proposed Action there would be no change to current aircraft operations within Moody AFB airspace; there would be no increased or new operations or new or additional aircraft. With the exception of additional taxi-way areas for HH-60G aircraft that would “air taxi” from the proposed apron and taxiway to the existing designated takeoff/land location on Foxtrot taxiway, aircraft activity on/near the airfield would remain the same as existing conditions. Therefore, this resource area was not carried forward for detailed analysis.

Socioeconomics/Environmental Justice: The scope of the Proposed Action is limited to Moody AFB, and areas off-base affected by noise levels of 65 dB L_{dn} or greater, which under any of the alternatives would not change from baseline conditions. Based on other resource area analyses, the Proposed Action would not result in off-base impacts to low-income or minority populations and environmental justice. Construction activities and expenditures associated with the Proposed Action would create direct, indirect, and induced employment and earnings in the local area surrounding Moody AFB. However, these beneficial impacts would be insignificant considering the overall scope of the Proposed Action as compared to normal economic activity within the region. Therefore, this issue area was not carried forward for further impact analysis.

1.5 Interagency/Intergovernmental Coordination and Consultations

1.5.1 Interagency Coordination and Consultations

Scoping is an early and open process for developing the breadth of issues to be addressed in the EA and for identifying significant concerns related to a proposed action. Per the requirements of *Intergovernmental Cooperation Act of 1968* (42 U.S.C. 4231[a]) and EO 12372 (*Intergovernmental Review of Federal Programs*), Federal, state, and local agencies with jurisdiction that could be affected by the proposed actions were notified during the development of this EA. Appendix A contains the list of agencies consulted during this analysis and copies of correspondence.

1.5.2 Government to Government Consultations

EO 13175, *Consultation and Coordination with Indian Tribal Governments* (6 November 2000), directs Federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on Federally administered lands. Consistent with that executive order, Department of Defense (DoD) Instruction (DoDI) 4710.02 (*DoD Interactions with Federally-Recognized Tribes*), and AFI 90-2002 (*Air Force Interactions with Federally-Recognized Tribes*), Federally recognized tribes that are historically affiliated with the Moody AFB geographic region will be invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the interagency coordination process and requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of other consultations. The Moody AFB point-of-contact for Native American tribes is the installation Commander.

The Native American tribal governments that were previously coordinated or consulted with regarding the previous Draft EA are listed in Appendix A; these tribal governments did not express any concerns regarding the proposed project at that time. On February 25, 2016, the tribal governments with interests

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Purpose of and Need for Action

in the area were notified of the revised Proposed Action in this EA; none of the contacted tribes identified any concerns with the proposed project. Correspondence in this regard is included in Appendix A.

1.5.3 Other Agency Consultations

Per the requirements of 54 U.S.C. 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA), and implementing regulations (36 C.F.R. Part 800) and Section 7 of the Endangered Species Act of 1973 (ESA) and implementing regulations, in November 2013 consultations for findings of no effect to archaeological and historic properties and not likely to adversely affect sensitive species, respectively, for the previous Draft EA were transmitted to the Georgia State Historic Preservation Officer (SHPO) and the U.S. Fish and Wildlife Service (USFWS). Both the SHPO and USFWS concurred on these findings.

On February 9, 2016, the USFWS provided concurrence on a finding of “not likely to adversely affect” Federally protected species for the Proposed Action, thus completing Section 7 ESA consultation requirements for this EA. On April 10, 2016, the Air Force completed consultation with the Georgia SHPO regarding potential impacts to archaeological and historic building resources under the NHPA; the SHPO concurred with a finding of no adverse effect to cultural resources.

Correspondence regarding the consultations for both the previous Draft EA and this revised EA is included in Appendix A.

1.6 Public and Agency Review of EA

On September 4, 2015, the Air Force published early notice in the *Valdosta Daily Times* (Valdosta, Georgia) that the Proposed Action would occur in wetlands. The notice identified state and Federal regulatory agencies with special expertise that had been contacted, and solicited public comment on the Proposed Action and any practicable alternatives. The comment period for public and agency input on these projects ended on October 4, 2015; no comments were received. The notice is provided in Appendix A.

A Notice of Availability (NOA) announcing the availability of the Revised Draft EA and FONSI/FONPA for public and agency review was published in the *Valdosta Daily Times* on March 25, 2016. The NOA invited the public to review and comment on the Revised Draft EA. The public and agency review period ended on April 25, 2016. Copies of the Revised Draft EA and FONSI/FONPA were also made available for review at the South Georgia Regional Library in Valdosta, Georgia, online at <http://www.moody.af.mil/Home/EnvironmentalInitiative.aspx>, and via request to Moody AFB. No comments from the public were received; however, the following agencies provided correspondence: the Georgia Wildlife Resources Division (recommending sensitive species surveys and erosion control methods discussed in Chapters 4 and 6) and the Georgia Department of Natural Resources Watershed Protection Branch (confirming that the project area is not within a floodplain). All correspondence is included in Appendix A.

1.7 Decision to Be Made

The EA evaluates whether the Proposed Action would result in significant impacts on the human environment. If significant impacts are identified, Moody AFB would undertake mitigation to reduce impacts to below the level of significance, undertake the preparation of an EIS addressing the proposed action, or abandon the Proposed Action. This EA is a planning and decision-making tool that will be used to guide Moody AFB in implementing the Proposed Action in a manner consistent with Air Force standards for environmental stewardship.

Description of Proposed Action and Alternatives

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The Proposed Action is to provide a consolidated PR Campus that meets the needs of the 347 RQG as identified in Table 1.3-1. This involves providing the 41st Rescue Squadron (RQS) a Squadron Operations (Squad Ops) facility that meets their size requirements, providing updated hangar and parts storage facilities due to current facility age, providing adequate exterior aircraft-to-apron clearances, and providing adequate interior aircraft clearance for the maintenance hangar. Consolidation of these facilities into a Campus environment would require all necessary supporting infrastructure (roads, utilities, etc.).

2.2 Selection Standards

NEPA and CEQ regulations mandate the consideration of reasonable alternatives to a proposed action. “Reasonable alternatives” are those that also could be utilized to meet the purpose of and need for a proposed action. Per the requirements of 32 C.F.R. § 989 (the Air Force Environmental Impact Analysis Process regulations), selection standards are used to identify alternatives for meeting the purpose and need for an Air Force action. In addition, selection standards may be used to narrow the range of alternatives to focus analyses, to meet the directive that environmental analyses be analytic rather than encyclopedic.

As previously discussed in Section 1.1, the location of the proposed PR Campus (in the northwest area of Moody AFB) was identified through the NEPA process during development of a Draft EA in 2011–2014. Alternative siting standards for a PR Campus location were identified in that EA and several locations were considered but not carried forward. The current location was the only one that met the overall purpose and need for a consolidated PR Campus. The several PR Campus layout alternatives that were carried forward in 2011–2014 were analyzed and the potential for significant impacts was identified; as a result, re-planning of the PR Campus layout was required because a FONSI could not be reached.

Given the above, within the context of this EA, the alternatives are focused on potential new layouts for the PR Campus that were developed utilizing the following alternative development/selection standards:

- (1) **Consolidate Operations and Maintenance functions of the 347 RQG:** Currently, operations and maintenance functions are dispersed throughout the flightline area, resulting in operational inefficiencies. Therefore, PR Campus layout alternatives must consolidate operations to improve operational efficiency and coordination between these two functions.
- (2) **Minimize distance between aircraft and work centers for operations and maintenance personnel:** Similar to #1 above, aircraft parking and hangars are positioned such that operations and maintenance personnel have to traverse distances between aircraft and work centers within the hangars that are not optimal for carrying equipment or in inclement weather. As a result, PR Campus layout alternatives must be planned such that distances between these areas are minimized.
- (3) **Maximize use/repurposing of existing facilities that meet facility standards:** PR Campus alternatives should utilize, to the extent practicable, existing facilities in order to minimize impacts.
- (4) **Upgrade/replace obsolete facilities and reduce facility waivers:** Currently, some operations and maintenance facilities are beyond their functional lifespan, or in some cases require waivers because they were built prior to current requirements. PR Campus alternatives should, to the

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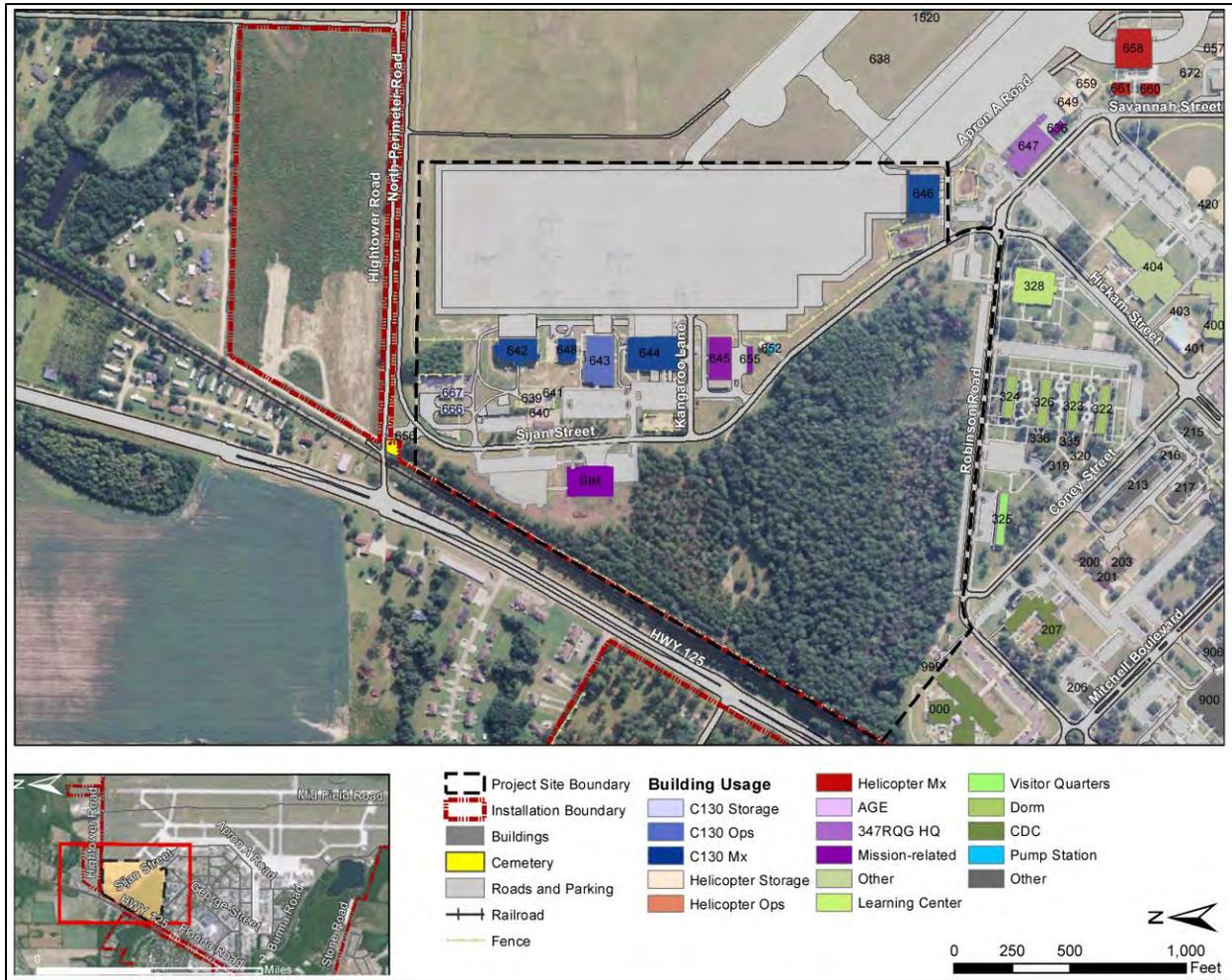
Description of Proposed Action and Alternatives

extent possible, result in upgraded or new facilities to replace those beyond their functional lifespan, and reduce or eliminate the need for waivers.

- (5) **Be located within a compatible land use area:** This follows from the previous EA in 2011–2014, wherein potentially significant impacts were identified that could not be mitigated. As a result, new PR Campus alternatives must consider land use.

Figure 2.2-1 shows the current configuration of the PR Campus facilities.

Figure 2.2-1: Proposed PR Campus Location on Moody AFB (Current Facilities)



2.3 Screening of Alternatives

The Proposed Action is, in general, to develop a PR Campus on Moody AFB that meets the purpose and need as described previously. The NEPA and the CEQ regulations mandate the consideration of reasonable alternatives to the proposed action(s). “Reasonable alternatives” are those that also could be utilized to meet the purpose of and need for each proposed action. The NEPA process is intended to support flexible, informed decision-making; the analysis provided by this EA and feedback from the public and other agencies will inform decisions made about whether, when, and how to execute each alternative.

Description of Proposed Action and Alternatives

This section presents reasonable and practicable alternatives for implementing the Proposed Action. As part of the revised Moody PR Campus ADP (2015) alternative development process, these alternatives were derived based on the requirements identified in Section 1.3 and the selection standards as described in Section 2.2. There were no alternatives derived during the revised ADP process that were not considered reasonable and/or not retained for consideration in this EA. In effect, all three alternatives are similar in that they all comprise the same components; the overall development footprint is the same across all alternatives. The differences between alternatives consist of the proposed layout of the PR Campus within the project area. Alternatives not carried forward in this EA that were addressed in the 2011 EA are discussed in Section 2.4.

The following Table 2.3-1 shows to what degree each alternative meets selection criteria 1 through 5, identified in Section 2.2.

Table 2.3-1: Alternative Screening

Selection Standards	PR Campus Alternatives			
	Alternative 1 (Preferred Alternative)	Alternative 2	Alternative 3	No Action
(1) Consolidates Operations & Maintenance	+	+	+	-
(2) Minimizes distance between aircraft and work centers	+	/	-	-
(3) Maximizes use/repurposes existing facilities	/	/	/	/
(4) Upgrades/replaces obsolete facilities and reduces facility waivers	+	+	+	-
(5) Located within a compatible land use area	+	+	+	/

+ = Fully meets criteria
 / = Partially meets criteria
 - = Does not meet criteria

Given the requirements identified in Section 1.3 and the selection standards as described in Section 2.2, there are no practicable alternatives to impacting the wetland areas (per EO 11990, *Protection of Wetlands*); the size and configuration requirements for the hangar and parking ramp preclude any other options in this area. The east ramp expansion cannot go any farther because of UFC clear zone requirements, and facilities that were recently built would have to be demolished and rebuilt elsewhere to accommodate a different layout.

2.3.1 Alternative 1 (Preferred Alternative)

Alternative 1 (identified as West Expansion Alternative 2B in the 2014 PR Campus ADP) involves several components, including demolition activities, construction of facilities, and construction of supporting infrastructure.

Alternative 1 creates six additional HH-60 parking spaces and an extended parking apron that would connect to the hangar and Squad Ops building. The Squad Ops would be in the same building as the hangar, with the HMU as a separate building attached to the southern end of the hangar. The location of these facilities is nearest to the aircraft and would be in the current location of buildings 645/655. The parts storage building (645) would be relocated outside of the fenceline and have truck delivery access; this facility would be located next to a consolidated privately owned vehicle lot. The parking lot would

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be sited over the closed landfill (LF-02). Existing facilities would need to be demolished prior to new construction (facilities requiring demolition are identified in Table 2.3-2).

Separate aerospace ground equipment (AGE) yards are also planned for the C-130 and the HH-60. Each AGE yard is located in proximity to the associated parked aircraft. All development is sited to create a consolidated campus. Consolidated development limits disturbance of natural resources and creates a secure campus. The new fenceline would encompass the parking apron, connect to the parts storage building, connect to the hangar, and then connect eastward to the current fenceline.

To accommodate the new apron and facility layout, part of Sijan Street would be closed. However, a portion of the road to the south of the apron would remain open for flightline emergency access. To the north of the apron, from Kangaroo Lane to North Perimeter Road, Sijan Street would remain open for access to shared parking lots, the flight simulator, and other existing buildings. Kangaroo Lane would be realigned to make room for the four-bay hangar and Squad Ops building. This would maintain access to the flightline. Primary access to the PR Campus would be realigned west of the project site as an extension of Coney Street. Under Alternative 1, the Coney Street intersection with Robbins Road would be realigned and Coney Street would be extended to the north along the installation fenceline. The Coney Street extension would reconnect with Sijan Street and North Perimeter Road to the north of the PR Campus area. A new secondary road would be located between the proposed parking lots and flight simulator to provide adequate access to the PR Campus.

The main utility corridor would be rerouted from Sijan Street to the Coney Street extension to the west of the PR Campus. Existing infrastructure would be maintained in the interior of the site where surface disturbance is not occurring. Existing utilities that cross the new aircraft parking ramp and hangar would need to be demolished. The new utility lines would connect to existing tie-in points wherever possible and will serve the proposed and existing buildings.

Table 2.3-2 lists the project components associated with Alternative 1, while Figure 2.3-1 through Figure 2.3-3 provide illustrative plans for the proposed layout of Alternative 1 facilities. A narrative description of each component follows

Table 2.3-2: Project Components Associated with Alternative 1

Component	Size	# Occupants*
Demolition Activities		
Site Preparation (includes clearing/grading, etc.)	1,300,000 SF**	N/A
Building 645/655	16,620 SF	
Building 609	23,500 SF	
Roadway / Pavement Demolition	40,000 SF	
Utility Demolition	7,096 LF	
Facility Construction		
Maintenance Hangar	78,738 SF	Up to 459
Squadron Operations	33,904 SF	Up to 100
Parts Storage	18,400 SF	Up to 15
Infrastructure Construction		
AGE Yards	47,000 SF**	N/A
Vehicle Parking	184,986 SF	
Aircraft Apron / Taxi	374,760 SF	
Road Construction / Expansion		
Sijan Street Closure/Reroute	229,150 SF**	
Kangaroo Lane Expansion		
Parking Access Road		
Coney Street Expansion		

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Description of Proposed Action and Alternatives

Table 2.3-2: Project Components Associated with Alternative 1, Continued

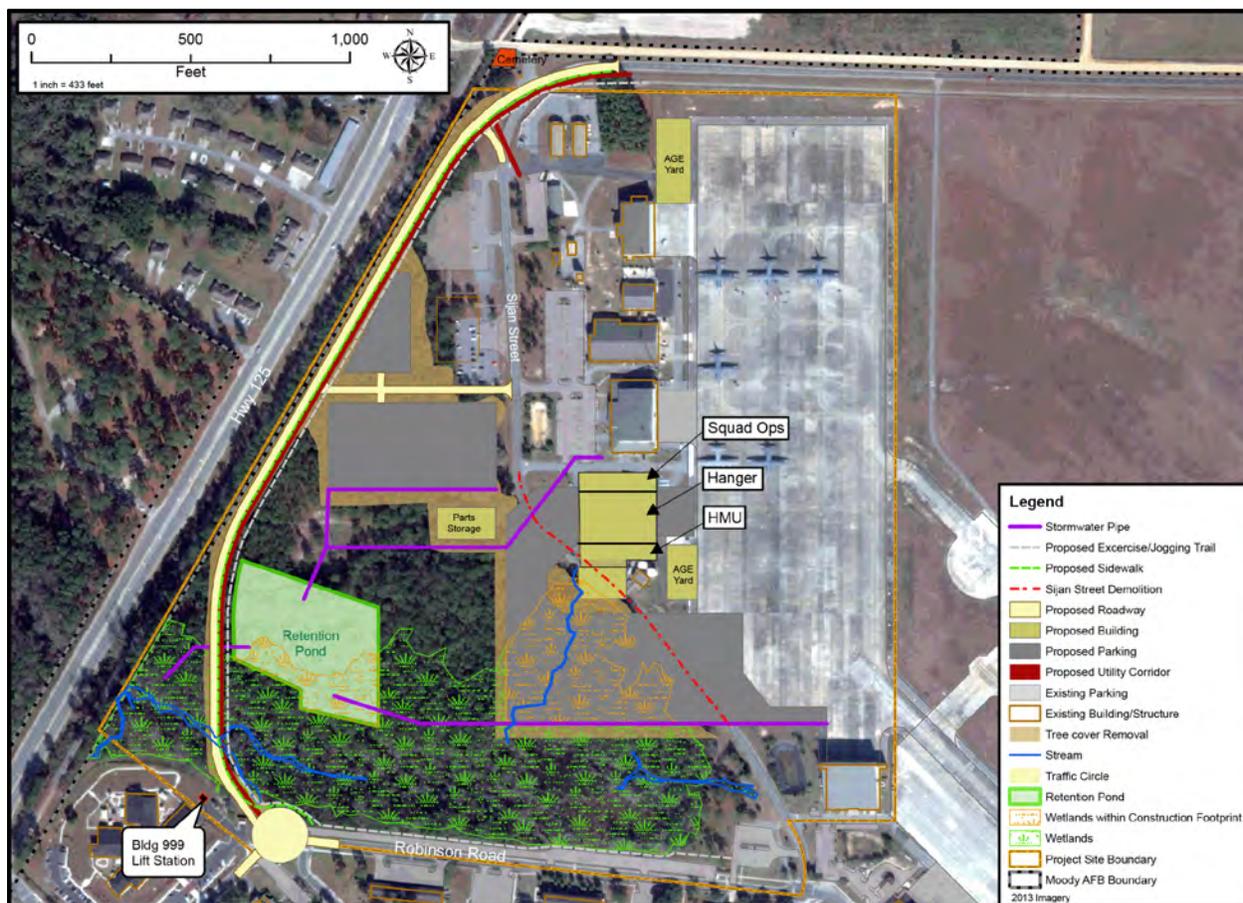
Component	Size	# Occupants*
Traffic Circle		
Fencing	2,072 LF	
Miscellaneous Pavements (e.g., sidewalks, gutters, etc.)	285,000 SF**	
Stormwater System		
Stormwater Conveyance	3,760 LF	
Stormwater Basin	2.5 acres	
Utility Corridor	3 acres**	
Water Lines	2,353 LF	
Sanitary Sewer Lines	2,183 LF	
Electrical Lines	7,731 LF	
Natural Gas Lines	2,566 LF	
Communications Lines	7,000 LF**	

LF = linear feet; SF = square feet

* The Proposed Action does not involve any new or additional personnel; occupants would simply move from existing facilities to new facilities. The mission population is anticipated to stay relatively stable after Fiscal Year 2016.

** Estimated

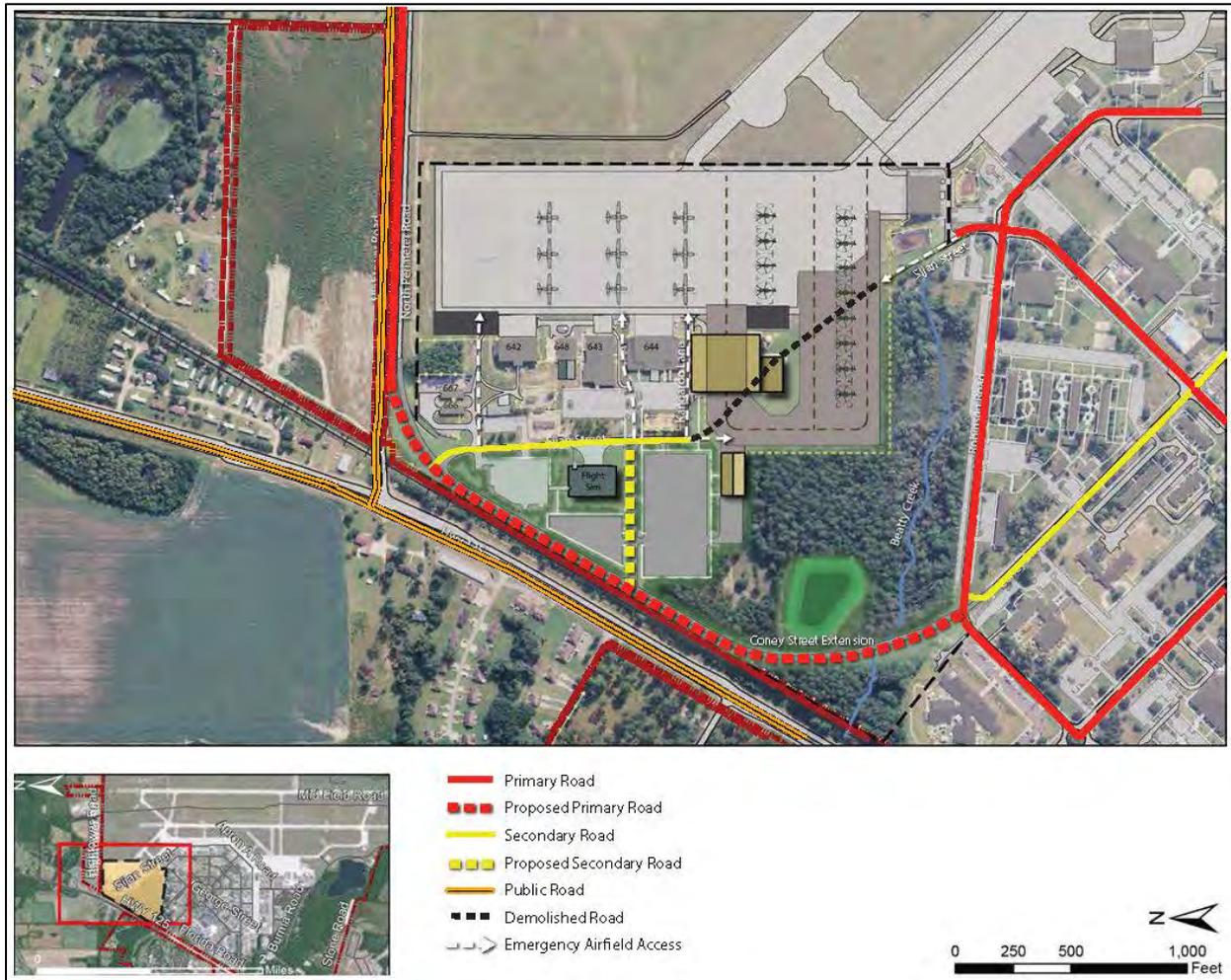
Figure 2.3-1: Proposed Alternative 1 (Preferred Alternative) Facility Layout



FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

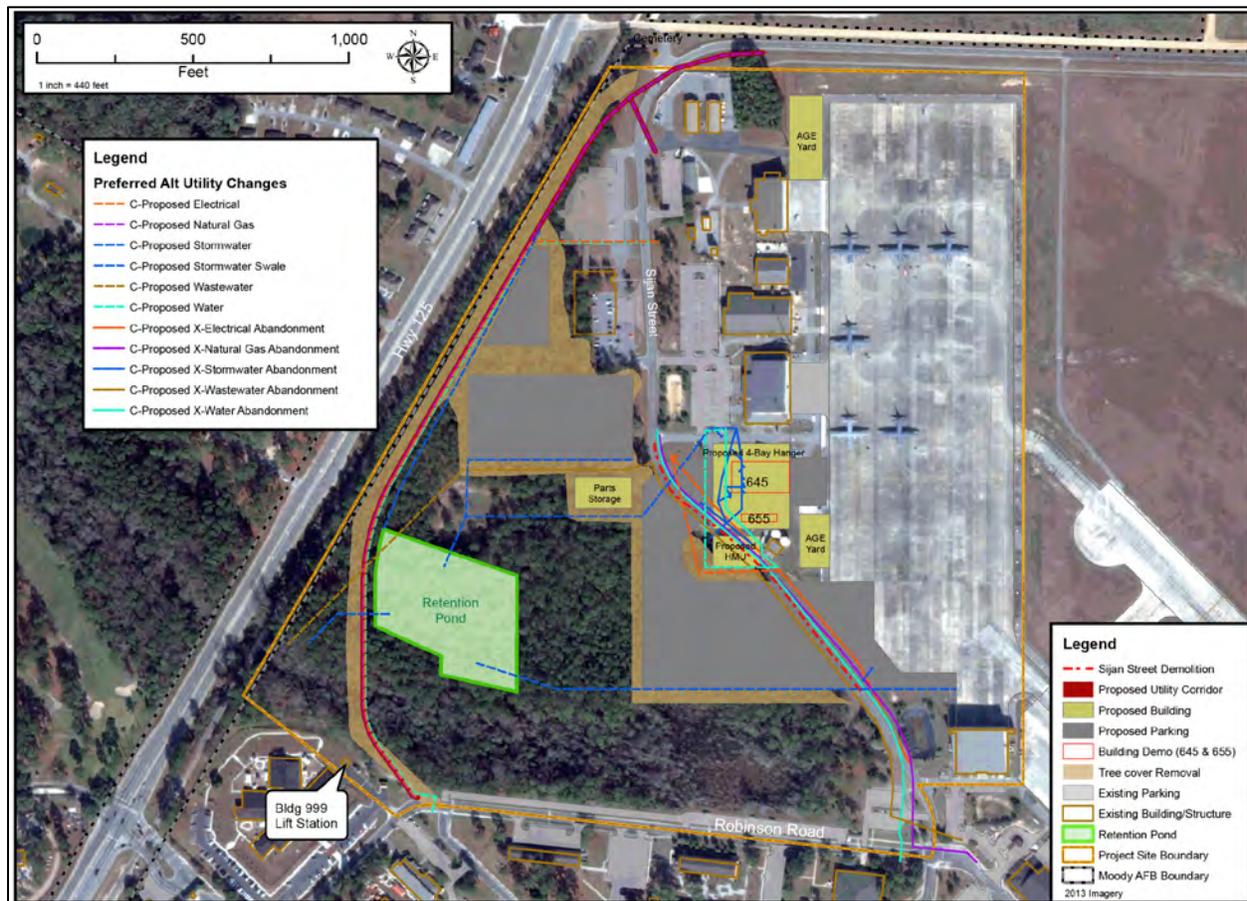
Description of Proposed Action and Alternatives

Figure 2.3-2: Proposed Alternative 1 (Preferred Alternative) Transportation Layout



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Figure 2.3-3: Proposed Alternative 1 (Preferred Alternative) Utility Layout



Demolition Activities

Site Preparation: Site preparation would be required to allow for new construction. Overall approximately 1.3 million square feet (SF) of area would be prepared. This would include approximately 18 acres of tree removal, 5 acres of wetland fill, 0.6 acre of soil dewatering, and grading of the construction sites.

Facility/Infrastructure Demolition: Alternative 1 includes the following facility/infrastructure demolition/removal activities:

- **Buildings 645/655** – Buildings 645/655 would be demolished to accommodate the new hangar and Squad Ops building. Buildings 645/655 total 16,620 SF and are currently used for parts storage and warehousing. The parts storage/warehouse functions would be moved to the new parts storage facility.
- **Roadway/Pavement Demolition** – Portions of existing roadways and pavements would need to be demolished in order to accommodate new facilities, roadways, and pavements. The amount of roadway/pavement demolition would be approximately 40,000 SF.
- **Utility Demolition** – Portions of existing utility lines would need to be demolished in order to accommodate new facilities and rerouting of new utilities and roadways. The amount of utility demolition would be approximately 7,100 linear feet (LF).

Description of Proposed Action and Alternatives

Facility Construction

Maintenance Hangar: The proposed maintenance hangar, which also includes the HMU and General Purpose Maintenance Shop (GPMS), would be a four-bay, side-loaded hangar with hangar bays in the middle and shop and office space located in the wings along the north and south sides of the building (U.S. Air Force, 2010b). The facility would be approximately 78,738 SF and may have up to 459 personnel throughput on a daily basis. Combining all maintenance functions into one facility would greatly improve operational efficiency. Under Alternative 1, the hangar would be located adjacent to the existing HH-60 parking apron, where buildings 645/655 are currently located (buildings 645/655 would be demolished to accommodate the hangar). The four-bay hangar and HMU/GPMS would contain space for multiple organizations and functions.

Squadron Operations Building: The helicopter squadron operations building would provide administrative support for the squadron. It would be approximately 34,000 SF and accommodate up to 100 personnel on an average daily basis. The following organizations and functions would be housed in the helicopter squadron operations building (U.S. Air Force, 2010b):

- Squadron Commander and associated administrative functions
- Office space for flight crews and support functions
- Life support, including flight equipment storage and maintenance
- Secured vault (Sensitive Compartmented Information Facility-rated) for Mission Planning and Briefing, Weapons, Intelligence, and Library functions
- Locker rooms
- Fitness and heritage room areas
- Associated building support functions such as mechanical, electrical, and communications

Parts Storage: The parts storage building would provide logistical support for the squadron and would house parts and other components necessary for aircraft maintenance. It would be approximately 18,400 SF and accommodate up to 15 personnel on an average daily basis.

Infrastructure Construction

AGE Yards: Two paved AGE yards would be constructed to allow for storage of AGE when not in use. An AGE yard for the C-130 aircraft would be located at the northwest corner of the existing C-130 parking apron, while an HH-60 AGE yard would be constructed adjacent to the HH-60 parking apron between the new hangar and the existing HH-60 parking apron. Together, the AGE yards would be approximately 47,000 SF.

Vehicle Parking: Approximately 349 vehicle parking spaces are required to accommodate personnel for the maintenance hangar, squadron operations building, and parts storage facility. Approximately 185,000 SF of parking pavement is required to accommodate 349 parking spaces. The proposed location is sited over a closed Environmental Restoration Program (ERP) site landfill (LF-02). It was determined with Moody AFB stakeholders that a surface lot is the most appropriate use for the landfill since it will require minimal surface disturbance. With regard to potential landfill disturbance, properly trained personnel will be on-site during the construction project to identify anything that may require additional sampling and disposal. Excavated soils and waste going for disposal will be sampled at an adequate frequency to make a hazardous waste determination in accordance with Section 262.11 of the *Georgia Rules for Hazardous Waste Management*.

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Aircraft Apron/Taxi: The proposed apron and taxiway would be located adjacent to the maintenance hangar and would connect to the existing HH-60 parking apron, traversing east/west through the maintenance hangar and connecting to the aircraft parking apron to the east and along the western PR Campus boundary south to the HH-60 parking area. The taxiway would be of a size sufficient to accommodate a taxiing HC-130J, with a minimum 30-foot asphalt shoulder. It would be approximately 375,000 SF and located at least 25 feet from any fixed or mobile obstacles to provide the minimum level of horizontal clearance from the wingtip of a taxiing HC-130J per UFC 3-260-01 (U.S. Air Force, 2010b).

Road Construction/Expansion: Overall, approximately 229,000 SF of roadway would be constructed.

- *Sijan Street Closure/Reroute* – The main portion of Sijan Street would be closed to allow for expansion of the parking apron. Part of Sijan Street will remain open to the east to provide emergency access to the apron. The northern part of Sijan Street will remain open for access to parking.
- *Kangaroo Lane Expansion* – Kangaroo Lane would need to be expanded due to the proposed location of the maintenance hangar.
- *Parking Access Road* – A parking access road would be constructed running east/west from the Coney Street extension to Sijan Street.
- *Coney Street Extension* – Coney Street would be extended north/northeast along the installation boundary to allow for traffic to flow around the campus. The proposed extension would begin on the south at the intersection of Coney Street and Robinson Road near the Child Development Center and end where Sijan Street and North Perimeter Road converge. This component would also require relocation and/or closure of existing ERP Site LF-02 monitoring wells and construction of a vehicle “bridge” (i.e., culvert) over Beatty Creek in the southwest corner of the project area.
- *Traffic Circle* – A traffic circle would be required to accommodate adequate traffic flow at the intersection of Coney Street and Robinson Road.

Fencing: A new fenceline would encompass the parking apron, connect to the parts storage building, connect to the hangar, and then connect eastward to the current fenceline. The fencing would consist of approximately 2,000 linear feet of 7-foot chain link fence.

Miscellaneous Pavements (e.g., sidewalks, gutters): Miscellaneous pavements include sidewalks and gutters. The existing jogging trail that currently runs northwest along Sijan Street from the intersection of Robinson Road, turns west near the intersection of Kangaroo Lane and Sijan Street, and then runs north along the perimeter fence adjacent to Bemiss Road until it once again intersects at North Perimeter Road and Sijan Street would be rerouted to run west along Robinson Road and then parallel to the Coney Street extension. The total estimated square footage of additional pavements is approximately 285,000 SF.

Stormwater System:

- *Stormwater Conveyance* – Stormwater would be directed to the proposed catchment basin in the southwest of the project site via three proposed stormwater lines and one stormwater swale (i.e., ditch along the east side of the Coney Street extension). The catchment basin would collect and store rain water from the PR Campus before releasing it via a fourth stormwater line into Beatty Creek. Because Beatty Creek is the stormwater outflow area for a significant portion of the cantonment, maintaining this separate stormwater system in the PR Campus will minimize peak flow impacts to Beatty Creek. Piping would consist of reinforced concrete pipes in diameters of 18, 24, 26, and 48 inches placed underground running from the parking area and hangar, flightline, and parts storage buildings to the catch basin. The amount of piping would be approximately 3,760 LF.

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- *Stormwater Basin* – A stormwater catch basin would be constructed in the southwestern corner of the project area. In February 2015 the U.S. Army Corps of Engineers conducted a hydrologic study of Beatty Creek and surrounding areas, and determined through utilizing “Low Impact Development” that a minimum runoff retention volume of 1.353 acre-feet is required to comply with Energy Independence and Security Act (EISA) § 438. The stormwater basin as planned in this EA would provide runoff retention volume of 2.5 acre-feet to allow for future expansion if needed.
- *Utility Corridor*: The main utility corridor will be rerouted from Sijan Street to the Coney Street extension to the west of the PR Campus. Existing infrastructure would be maintained in the interior of the site where surface disturbance is not occurring. Existing utilities that cross the new aircraft parking ramp and hangar would need to be demolished. The new utility lines would connect to existing tie-in points wherever possible and would serve the proposed and existing buildings. Utility lines would consist of water, sanitary sewer, electrical, natural gas, and communications. Approximate linear footages of each line are provided in Table 2.3-2, while the total area covered by the utility corridor would be approximately 3 acres.

Disposition of Existing Facilities

Aside from the building demolition identified in Table 2.3-2, several buildings currently occupied by the 41 RQS would be repurposed. Repurposed uses have not yet been identified; however, buildings and potential uses include:

- Buildings 658, 661, and 660: Likely repurposed to augment/supplement/provide a more robust deployment processing capability for the wing.
- Building 657: Likely repurposed for 38 RQS storage requirements.
- Building 663: The portion currently occupied by the 41 RQS will likely be used by the 38 RQS to address space shortages with their expanded manning.

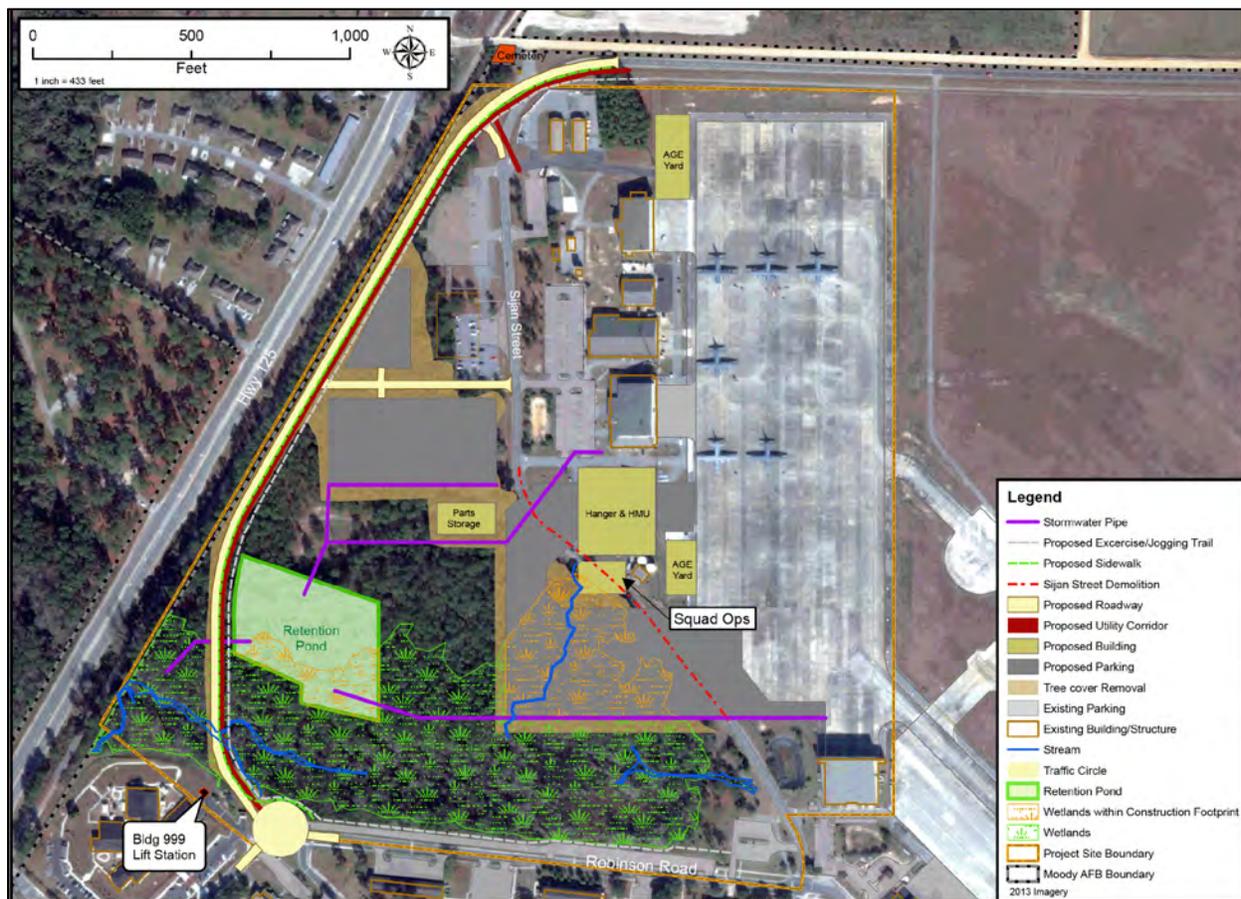
2.3.2 Alternative 2

Alternative 2 (identified as Western Alternative 2A in the 2014 PR Campus ADP) is similar to Alternative 1, with the exception being that the HMU would be co-located with the hangar and the Squad Ops building would be sited separately and to the south of the hangar where building 655 currently exists, rather than co-located with the hangar as in Alternative 1. All other project components under Alternative 2, to include facilities, infrastructure, and associated square footage, would be the same as those described in Table 2.3-2. Transportation components and utilities with respect to the items identified in Table 2.3-2 would be similar to Alternative 1 layouts as shown in Figure 2.3-2 and Figure 2.3-3, respectively.

Figure 2.3-4 provides an illustrative plan for the proposed layout of Alternative 2 facilities.

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Figure 2.3-4: Proposed Alternative 2 Layout



2.3.3 Alternative 3

Alternative 3 (identified as Western Alternative 2C in the 2014 PR Campus ADP) is similar to Alternative 2, with the exception being that the Squad Ops building would be sited separately and to the west of the hangar near the proposed privately owned vehicle parking lot rather than located south of the hangar. Additionally, the location of the parts storage building would be shifted west to accommodate the Squad Ops building. All other project components under Alternative 3, to include facilities, infrastructure, and associated square footage, would be the same as those described in Table 2.3-2. Transportation components and utilities with respect to the items identified in Table 2.3-2 would be similar to Alternative 1 layouts as shown in Figure 2.3-2 and Figure 2.3-3, respectively.

Figure 2.3-5 provides an illustrative plan for the proposed layout of Alternative 3 facilities.

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Figure 2.3-5: Proposed Alternative 3 Layout



2.3.4 No Action Alternative

Under the No Action Alternative, the proposed PR Campus plan would not be implemented. No new facilities would be constructed and personnel would continue to utilize existing facilities and infrastructure.

2.4 Alternatives Considered But Not Carried Forward

As discussed previously, an EA was begun in 2011 to assess the potential environmental consequences resulting from a proposal to construct a personnel recovery campus on the northwest portion of Moody AFB. During the course of the 2011 EA, several major revisions were required to minimize environmental impacts sufficient to reach a FONSI. In 2014 AFCEC, in coordination with AFLOA, determined that the previous PR Campus plan would not be able to reach a FONSI without significant re-planning. During September 2014, re-planning commenced as part of a revised PR Campus ADP with the proponents reaching a consensus on a viable site layout in February 2015.

Below is a list of alternatives that were considered as part of the previous 2011 NEPA action referenced above; these alternatives were not carried forward in this 2015 EA because previous analyses determined that these alternatives could not be implemented without potentially significant impacts associated with socioeconomics/ environmental justice and noise (thus requiring planning revisions as described

Description of Proposed Action and Alternatives

previously). Additionally, the previous alternatives from the 2011 EA do not meet the revised purpose and need of the Proposed Action as described in Sections 1.2 and 1.3 of this document.

2011 EA Preferred Alternative

Under the preferred alternative identified in the previous 2011 PR Campus EA the Air Force proposed to construct the PR Campus at Moody AFB by expanding the boundary of the installation to the north of the current installation boundary to provide a buffer along the north side of the installation. The expansion of the installation to the north would have required the closure of an approximately 1-mile segment of Hightower Road located adjacent to the northern boundary of the installation. The closure of Hightower Road would not have included the western portion of the road in front of the Hightower Cemetery and access to Yate Lane. The closure of Hightower Road would not have eliminated access to Runway Lane and the residences north of Runway Lane from State Highway 125 (Bemiss Road) via Hightower Road. The Hightower Cemetery and residential homes north of Runway Lane would have still been accessible from Bemiss Road.

2011 EA Plan E Alternative

The Plan E Alternative was similar to the previous preferred alternative and included the same facilities and layout with the exception of the addition of a helicopter landing lane and expanding the existing parking apron to the north (HC-130 parking area) and west to construct the new parking apron for 18 helicopters. The HC-130 engine testing area was to be relocated north of its current location. Construction of the helicopter landing lane and expansion of the HC-130 parking area would have required the expansion of the installation to the north and would have required the closure of an approximately 1-mile segment of Hightower Road located adjacent to the northern boundary of the installation. The closure of Hightower Road would not have included the western portion of the road in front of the Hightower Cemetery and access to Yate Lane. The closure of Hightower Road would not have eliminated access to Runway Lane and the residences north of Runway Lane from State Highway 125 (Bemiss Road) via Hightower Road. The Hightower Cemetery and residential homes north of Runway Lane would have still been accessible from Bemiss Road.

2011 EA Plan F Alternative

The Plan F Alternative was similar to the Plan E Alternative and included the same facilities; however, the layout of the proposed facilities differed from Plan E. The installation would have been expanded to the north to accommodate the construction of the helicopter landing lane and the aircraft parking apron would have been expanded to the north to provide helicopter parking. Parking for HC-130 aircraft would have been relocated to the southern portion of the apron, and the apron would have been expanded to the east. To accommodate the proposed helicopter support facilities, the HC-130 aircraft maintenance unit and HC-130 squadron operations building would have been relocated to the southern portion of the proposed PR Campus. The HC-130 engine testing area would have also been relocated to the southern portion of the PR Campus, closer to parked HC-130s. A blast fence would have been constructed south of the proposed engine testing area to deflect air flow from aircraft engines.

Alternatives Considered but Not Carried Forward in 2011 EA

During the 2011 EA three locations (options) on Moody AFB were evaluated for the siting of the PR Campus. Option 1 consisted of the area addressed in the 2011 EA where the previously noted 2011 EA Preferred Alternative, Plan E Alternative, and Plan F Alternatives were sited. The other two were Option 2 (current HH-60 operational area, located immediately west of the flightline) and Option 3 (located east of the flightline near the control tower); neither of these optional locations for the PR Campus were carried forward as viable alternatives for PR Campus location.

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2011 EA Option 2 – Although HH-60 operations and maintenance would have been consolidated at the existing HH-60 operational area under Option 2, new construction would still have been required, as the existing facilities could not be sufficiently modified to accommodate a larger airframe (U.S. Air Force, 2010a). The Air Force would have incurred additional costs for the demolition of existing facilities and construction of the new facilities, increasing the total costs beyond that required under the 2011 EA Preferred Alternative. The aviation functions of the Rescue Group would not have been consolidated under Option 2, as they would have under the 2011 EA Preferred Alternative. Under Option 2, aircraft parking would have been separated from maintenance facilities. Maintenance personnel would incur downtime, traveling between the aircraft and maintenance facilities during maintenance operations. Noise abatement issues would have also occurred under Option 2. Consolidation of the Rescue Group operations and maintenance at the existing Personnel Recovery Area would have increased noise levels within the administrative areas. Noise abatement measures would have been needed to maintain noise levels to an acceptable level within the administrative area. Noise abatement costs would have been incurred under Option 2.

Option 2 would have also required the demolition of existing recreational facilities on Moody AFB. Implementation of Option 2 would have eliminated the existing athletic track, two baseball fields, and a walking area located directly west of the existing HH-60 operational area. These facilities would have needed to be relocated and constructed elsewhere on Moody AFB, or these functions would have been lost on the installation. Construction of these facilities elsewhere on Moody AFB would have required additional costs and would have created additional natural resources impacts compared to the 2011 EA Preferred Alternative. Option 2 was eliminated from consideration based on the lack of improvement of operational and energy efficiencies, not meeting the purpose and need of consolidating squadron operations, increased noise levels, and the loss of existing recreational facilities on Moody AFB.

2011 EA Option 3 – Under Option 3, the Rescue Group operations and maintenance facilities would have been consolidated and located east of the flightline; however, the back shop maintenance area would have remained west of the flightline in the HC-130 operational area. Maintenance personnel would have had to transport parts from the east side of the flightline to the west side of the flightline for back shop maintenance functions. Considerable downtime resulting from the transport of parts and equipment would have been expected under this option. Locating the Rescue Group operations and maintenance facilities east of the flightline would have separated the facility from the existing fuel cell located west of the flightline. Fuel would then need to be transported from west of the flightline to the east side of the flightline. The transportation of fuels across the flightline would have hindered flight operations and logistics and would increase the risk of fuel spills. It also would have required additional time and expense and offered no improvement to operational and energy efficiencies.

Construction of the Rescue Group operations and maintenance facilities may have required the relocation of the ground-to-air transmit-and-receive communication system at Moody AFB. Relocation of the communication system would have added a major expense under Option 3 and, compared to the 2011 EA Preferred Alternative, project costs could have been greater.

The siting of the PR Campus at Option 3 could have potentially impacted A-10 Grand Bay operations, because it would locate a major flight operation next to a range. The east runway is the primary runway at Moody AFB. Helicopter departures and A-10 Grand Bay operations could then not occur simultaneously. Option 3 would have separated PR personnel from installation operating support facilities (e.g., dining hall and gym) that are located west of the flightline. Personnel would have had to travel from the east side of the flightline to the west side of the flightline to use troop support facilities. Option 3 would have also increased traffic on the installation and inconvenience personnel seeking to use installation operating support facilities during the workday.

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Siting at Option 3 could have potentially impacted gopher tortoise, requiring relocation of the affected individuals. The State of Georgia lists the gopher tortoise as a threatened species. No impact on protected species would have occurred under either the Preferred Alternative or Option 2. Relocation of gopher tortoises would have also represented an additional cost to the proposed project.

Option 3 was eliminated from consideration based on a decrease in operating and energy inefficiencies, not meeting the purpose and need of consolidating squadron operations, inconvenience to personnel, adverse effects on the flightline and A-10 Grand Bay operations, increased traffic on the east side of Moody AFB, and potential impacts on a protected species.

2.5 Identification of the Preferred Alternative

Alternative 1 is the Air Force's Preferred Alternative because it provides the most ergonomically efficient layout for the proposed facilities and minimizes operational inefficiencies.

2.6 Impact Summary

Table 2.6-1 summarizes the impacts associated with the alternatives, including the No Action Alternative.

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Table 2.6-1: Alternative Impact Summary and Comparison

Resource/ Issue Area	Alternative 1 (Preferred Alternative)	Alternative 2	Alternative 3	No Action
Air Quality	No adverse impacts identified. Impacts from Alternative 1 would amount to less than 3 percent of each of the criteria pollutants and GHG emissions would be less than 25,000 metric tons (27,558 tons) for the ROI. Further, emissions associated with site preparation/demolition and facility/infrastructure construction would be temporary.	Emissions associated with Alternative 2 would be the same as those under Alternative 1. Though the configuration of the building construction would vary slightly from Alternative 1, the size and scope of the construction and demolition efforts would be the same.	Emissions associated with Alternative 3 would be the same as those under Alternative 1. Though the configuration of the building construction would vary slightly from Alternative 1, the size and scope of the construction and demolition efforts would be the same.	The No Action Alternative would not result in any additional impacts to air quality beyond the scope of normal conditions and influences within the ROI.
Acoustic Environment	No significant adverse impacts identified. Time-averaged aircraft noise levels (L_{dn}) would shift from the baseline and increase in the vicinity of the new HH-60 parking apron/taxiway. No structures in the ROI would be affected by noise levels exceeding 80 dBA L_{dn} . Time averaged noise levels at one dormitory (building 324) and the Education Center/Library (building 328) would increase from below 65 dBA L_{dn} to just above 65 dBA L_{dn} . Based on the heavy construction of these two on-base structures, it is expected that they provide sufficient outdoor-to-indoor noise level reduction to be considered compatible with 65–70 dBA L_{dn} in accordance with the DoD guidelines. Furthermore, the library is not used during the late-night when many of the HH-60 operations occur, reducing the likelihood of potential noise disturbances. No new off-base areas (including noise-sensitive locations) would be affected by noise greater than 65 dBA L_{dn} . Demolition and construction noise would result in temporary localized increases in noise levels, which could be disruptive and annoying, but would not be expected to be perceived as significant.	Aircraft operations noise impacts would be the same as those described for Alternative 1. Alternative 2 differs from Alternative 1 in that the HMU would be co-located with the hangar and the Squad Ops building would be sited separately and to the south of the hangar where building 655 currently exists. These different construction locations would have minimal effects on demolition and construction noise levels experienced at noise-sensitive locations on- and off-base.	Aircraft operations noise impacts would be the same as those described for Alternative 1. Alternative 3 would differ from Alternative 1 in that the Squad Ops building would be sited separately and to the west of the hangar near the proposed privately owned vehicle parking lot. These different construction locations would have minimal effects on demolition and construction noise levels experienced at noise-sensitive locations on- and off-base.	Under the No Action Alternative, the PR Campus would not be constructed and aircraft operations would remain in their current locations. Implementation of the No Action Alternative would not result in any changes to the acoustic environment, and there would no noise impacts.
Safety	No significant adverse impacts were identified. Trained personnel, applicable safety or exclusion	There would be no impacts to safety under Alternative 2 that	There would be no impacts to safety under Alternative 3	Under the No Action Alternative, the PR Campus

Description of Proposed Action and Alternatives

Table 2.6-1: Alternative Impact Summary and Comparison, Continued

Resource/ Issue Area	Alternative 1 (Preferred Alternative)	Alternative 2	Alternative 3	No Action
	areas, and established safety procedures would minimize the potential for adverse safety impacts during demolition and construction activities. Proposed building and infrastructure construction would not result in a change to existing Q-D arcs at the MSA, nor would any proposed facility be located within the existing Q-D arcs.	were not previously discussed under Alternative 1.	that were not previously discussed under Alternative 1.	plan would not be implemented. Current safety incompatibilities and inadequate AT/FP compliance would continue to exist. Therefore, adverse safety impacts would result from implementation of the No Action Alternative.
Land Use	No adverse impacts were identified. Existing land uses in the affected area would remain essentially unchanged. No land use incompatibility issues related to noise were identified for on- or off-base.	Alternative 2 differs from Alternative 1 only in the location of proposed structures. There are no land use impacts under Alternative 2 that were not previously discussed under Alternative 1.	Alternative 3 differs from Alternative 1 only in the location of proposed structures. There are no land use impacts under Alternative 2 that were not previously discussed under Alternative 1. However, the proposed location of the new Squad Ops building would convert an additional 9.13 acres of open space to be used for aircraft operations and maintenance.	The No Action Alternative would not result in any land use impacts beyond the scope of normal conditions and influences within the ROI.
Cultural Resources	No effects are anticipated to cultural resources. No cultural resources or TCPs are associated with the PR Campus project area. Moody AFB has completed consultation with the SHPO and followed up with concerned Federally recognized Native American tribes regarding cultural resources and TCPs. A synopsis of consultations is provided in Section 1.5 and all correspondence with the SHPO associated with NHPA Section 106 consultation and Native American tribes are provided in Appendix A. The SHPO concurred on a no effect finding.	Alternative 2 shares the same APE as Alternative 1 and contains no NRHP-eligible resources, sacred sites, or TCPs. As a result, no effect to cultural resources is anticipated from implementation of this alternative.	Alternative 3 shares the same APE as Alternative 1 and 2 and contains no NRHP-eligible resources, sacred sites, or TCPs. As a result, no effect to cultural resources is anticipated from implementation of this alternative.	No effect to cultural resources is anticipated under the No Action Alternative.

Description of Proposed Action and Alternatives

Table 2.6-1: Alternative Impact Summary and Comparison, Continued

Resource/ Issue Area	Alternative 1 (Preferred Alternative)	Alternative 2	Alternative 3	No Action
Biological Resources	No significant adverse impacts were identified. Vegetation and wildlife could be impacted from demolition/construction activities associated with habitat alteration and removal, although the area affected is negligible when compared to the overall undeveloped land area associated with Moody AFB. Moody AFB completed an Endangered Species Act Section 7 consultation with the USFWS on a determination of “not likely to adversely affect” listed species for the project (included in Appendix A). Some individual wildlife species would experience impacts such as disturbance, injury, or mortality, although quantification is difficult; no adverse impacts to threatened or endangered species have been identified. With implementation of management actions, Alternative 1 is not expected to jeopardize the continued existence of a species or to result in an overall decrease in population diversity, abundance, or fitness.	Alternative 2 would differ from Alternative 1 only in minor changes to building configurations. There would be no material difference in the quantity, type, or location of the habitats and species affected. Therefore, potential impacts to biological resources would be the same as those described under Alternative 1.	Alternative 3 would differ from Alternative 1 only in minor changes to building configurations. There would be no material difference in the quantity, type, or location of the habitats and species affected. Therefore, potential impacts to biological resources would be the same as those described under Alternative 1.	Under the No Action Alternative, the PR Campus would not be established. There would be no associated land clearing or wetland fill (habitat loss), disturbance, or potential for physical impacts to wildlife, including sensitive species. There would be no significant effects to biological resources under the No Action Alternative.
Water Resources	No significant adverse impacts were identified. Site preparation/demolition activities could temporarily increase runoff and sedimentation but potential impacts would be minimized by the use of appropriate erosion best management practices under the requirements of a NPDES permit. New impervious surfaces would increase stormwater runoff. To meet EISA Section 438 requirements, stormwater would be directed to a new catchment basin in the southwest of the project site via proposed stormwater lines and swale. Outflow from the catchment basin would be directed to Beatty Creek. Approximately 5 acres of wetlands impacted by the expansion of the parking apron would need to be mitigated through coordination	Alternative 2 would differ from Alternative 1 only in minor changes to building configurations. There would be no material difference in stormwater management, or in the acreage or location of impacted wetlands. Therefore, potential impacts to water resources would be the same as those described for Alternative 1.	Alternative 3 would differ from Alternative 1 only in minor changes to building configurations. There would be no material difference in stormwater management, or in the acreage or location of impacted wetlands. Therefore, potential impacts to water resources would be the same as those described for Alternative 1.	Under the No Action Alternative, none of the proposed activities would occur, and there would be no new impacts to water resources in the area proposed for the PR Campus. Existing water resources would be maintained in their current state, and no special mitigation measures would be required.

Description of Proposed Action and Alternatives

Table 2.6-1: Alternative Impact Summary and Comparison, Continued

Resource/ Issue Area	Alternative 1 (Preferred Alternative)	Alternative 2	Alternative 3	No Action
	with the U.S. Army Corps of Engineers Section 404 wetland permit. The PR Campus project area is not located within the 100-year floodplain.			
Earth Resources	No significant adverse impacts were identified. There may be a temporary increase in the potential for soil erosion during construction activities. An NPDES permit is required for construction activities. Adherence to NPDES permit and associated BMP requirements for soil erosion would minimize the extent of any adverse impacts.	With implementation of NPDES permit-related BMPs, potential impacts under Alternative 2 would be similar to those described for Alternative 1.	With implementation of NPDES permit-related BMPs, potential impacts under Alternative 3 would be similar to those described for Alternative 1.	The No Action Alternative would not result in any impacts to earth resources beyond the scope of normal conditions and influences within the ROI.
Infrastructure	No significant adverse impacts were identified. Existing utility capacity is sufficient to support the Proposed Action with minimal upgrades and installation of new utility infrastructure. Adverse impacts to transportation would be limited to the existing transportation network in the project area. Some use of public roadways would be needed to transport equipment and materials during the construction period, but they would be minimal and temporary. Road demolition and construction activities would primarily occur along Sijan Street, Kangaroo Lane, Coney Street, and Robinson Road resulting in intermittent traffic delays, detours, and temporary road closures in the immediate vicinity of the facility and infrastructure project sites. Traffic delays would be temporary in nature, ending once construction activities have ceased.	Alternative 2 would differ from Alternative 1 only in minor changes to building configurations. There would be no difference in the proposed utility and transportation layouts. Therefore, potential infrastructure impacts would be the same as those described for Alternative 1.	Alternative 3 would differ from Alternative 1 only in minor changes to building configurations. There would be no difference in the proposed utility and transportation layouts. Therefore, potential infrastructure impacts would be the same as those described for Alternative 1.	The No Action Alternative would not result in any impacts to infrastructure beyond the scope of normal conditions and influences within the ROI.

Description of Proposed Action and Alternatives

Table 2.6-1: Alternative Impact Summary and Comparison, Continued

Resource/ Issue Area	Alternative 1 (Preferred Alternative)	Alternative 2	Alternative 3	No Action
Solid/Hazardous Materials and Waste	No significant adverse impacts have been identified. Sufficient landfill capacity exists to accommodate solid waste generated as a result of proposed demolition and construction activities. Waste recycling and reuse would further reduce the quantity of debris generated. Hazardous materials management procedures would help prevent and limit accidental spills. Construction of a new parking area over the existing inactive landfill (LF-02) was deemed to be an appropriate use for the area since it would require minimal surface disturbance.	There are no impacts related to hazardous materials, hazardous wastes, asbestos, lead-based paint, ERP sites, and solid waste under Alternative 2 that were not previously discussed under Alternative 1.	There are no impacts related to hazardous materials, hazardous wastes, asbestos, lead-based paint, ERP sites, and solid waste under Alternative 3 that were not previously discussed under Alternative 1.	Under the No Action Alternative, there would be no increase in solid waste generation or expendables use, resulting in a slight positive effect on this resource area.

AFB = Air Force Base; APE = Area of Potential Effects; AT/FP = Anti-terrorism/Force Protection; BMPs = best management practices; dBA = decibels measured on the A-weighted scale; DoD = Department of Defense; EISA = Energy Independence and Security Act; GHG = greenhouse gas; HMU = Helicopter Maintenance Unit; MSA = Munitions Storage Area; NHPA = National Historic Preservation Act; NPDES = National Pollutant Discharge Elimination System; NRHP = National Register of Historic Places; PR = Personnel Recovery; Q-D = Quantity-Distance; ROI = region of influence; SHPO = State Historic Preservation Officer; Squad Ops = Squadron Operations; TCPs = traditional cultural properties; USFWS = U.S. Fish and Wildlife Service

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3.0 AFFECTED ENVIRONMENT

3.1 Air Quality

3.1.1 Definition of the Resource

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The levels of pollutants are generally expressed on a concentration basis in units of parts per million or micrograms per cubic meter.

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) and state air quality standards established under the Clean Air Act (CAA) (42 U.S.C. 7401 et seq.). These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare. The NAAQS provide both short- and long-term standards for the following criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter equal to or less than 10 and 2.5 micrometers, ozone, and lead.

Under the CAA it is the responsibility of the individual states to achieve and maintain the NAAQS. To accomplish this, states that exceed the NAAQS use the U.S. Environmental Protection Agency (USEPA)-required State Implementation Plan (SIP). A SIP identifies goals, strategies, schedules, and enforcement actions designed to reduce the level of pollutants in the air and bring the state into compliance with the NAAQS.

All areas of the U.S. are designated as having air quality better than the NAAQS (attainment) or worse than the NAAQS (nonattainment). Areas where there are insufficient air quality data for the USEPA to form a basis for attainment status are unclassifiable. Thus, such areas are treated as attainment areas until proven otherwise. "Maintenance areas" are those that were previously classified as nonattainment but where air pollution concentrations have been successfully reduced to levels below the standard. Maintenance areas are subject to special maintenance plans to ensure compliance with the NAAQS.

Hazardous air pollutants (HAPs) are chemicals that are known or suspected of causing cancer or other serious health effects. Unlike the criteria pollutants, HAPs currently do not have national ambient standards. Some volatile organic compounds (VOCs) are classified as HAPs. VOCs are also ozone precursors and include any organic compound involved in atmospheric photochemical reactions, except those designated by a USEPA administrator as having negligible photochemical reactivity. HAPs are not covered by the NAAQS but may present a threat of adverse human health or environmental effects under certain conditions.

3.1.2 Existing Conditions

Climate

Moody AFB is located within the interior climate region of Georgia, which is characterized as being humid subtropical. During the summer months, the area experiences long spells of warm and humid weather. The average high temperature ranges from the upper 80s degrees Fahrenheit (°F) to the low 90s °F. July is the warmest month of the year with an average maximum temperature of 92°F. Winters are cool with average temperatures in the 50s °F. January is the coldest month of the year (50.0°F monthly average). Temperature variations between night and day tend to be moderate during summer and winter; differences can reach 22°F and 25°F, respectively. Precipitation is fairly evenly distributed throughout the year, with an average of 53.06 inches per year primarily in the form of rain (Idcide, 2015). Winds typically come from the north in the fall and winter and south in the summer, averaging between 3 and 6 miles per hour (National Climatic Data Center, 1998).

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Air Quality

Moody AFB is located in Lowndes and Lanier Counties; therefore, the two-county area is the region of influence (ROI) used for air quality analysis. According to USEPA, both counties are in attainment for all criteria pollutants (USEPA, 2015a), and a conformity determination would not be required.

Emissions that would be generated were compared with Lowndes and Lanier County emissions obtained from USEPA’s 2011 National Emissions Inventory (NEI), Version 2 (released 4 March 2015). NEI data are the latest available; these are presented in Table 3.1-1. The county data include emissions amounts from point sources, area sources, and mobile sources. *Point sources* are stationary sources that can be identified by name and location. *Area sources* are multiple point sources from which emissions are too low to track individually, such as a home or small office building, or a diffuse stationary source, such as wildfires or agricultural tilling. *Mobile sources* are any kind of vehicle or equipment with a gasoline, diesel, or other combustible fuel engine, an airplane, or a ship. Two types of mobile sources are considered: on-road and nonroad. On-road sources consist of vehicles such as cars, light trucks, heavy trucks, buses, engines, and motorcycles. Nonroad sources are aircraft, locomotives, diesel and gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural and construction equipment, and recreational vehicles (USEPA, 2015b).

Table 3.1-1: Baseline Criteria Pollutant Emissions Inventory for Lowndes and Lanier Counties, Georgia

Criteria Pollutant (tons/year)						
County	CO	NO_x	PM₁₀	PM_{2.5}	SO₂	VOCs
Lowndes	33,591	6,475	16,457	3,814	784	25,765
Lanier	5,931	482	4,271	1,068	22	13,558
Total	39,522	6,957	20,728	4,882	806	39,323

Source: USEPA, 2015b

CO = carbon monoxide; NO_x = nitrogen oxides; PM₁₀ and PM_{2.5} = particulate matter with an aerodynamic diameter of less than or equal to 10 microns and 2.5 microns, respectively; SO₂ = sulfur dioxide; VOC = volatile organic compound

GHG Emissions/Baseline

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere; the accumulation of these gases in the atmosphere has been attributed to the regulation of Earth’s temperature. Human activity in the past century is “very likely” (90 percent chance) the cause of the observed increase in GHG concentrations (Intergovernmental Panel on Climate Change, 2007). Thus, regulations to inventory and decrease emissions of GHGs have been promulgated. On October 30, 2009, the USEPA published a rule for the mandatory reporting of GHGs from sources that, in general, emit 25,000 metric tons or more of carbon dioxide equivalent per year in the United States. The USEPA also recently promulgated the Prevention of Significant Deterioration and Title V GHG Tailoring Rule, which will impose GHG permitting requirements on existing major sources with major modifications and certain new major sources. At this time, a threshold of significance has not been established for the emissions of GHGs.

The six primary GHGs, defined in Section 19(m) of Executive Order 13693 are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. Each GHG has an estimated global warming potential (GWP), which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the Earth’s surface. The GWP allows GHGs to be compared with each other by converting the GHG quantity into the common unit “carbon dioxide equivalent” (CO₂e). CO₂e is a term for describing different GHGs using a common unit. For any quantity and type of GHG, CO₂e signifies the amount of carbon dioxide (CO₂) that would have the equivalent global warming impact based on its GWP. Baseline GHG emissions for Lowndes and Lanier Counties, obtained from USEPA’s 2015 NEI, are summarized in Table 3.1-2.

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Table 3.1-2: Baseline Greenhouse Gas Emissions Inventory for Lowndes and Lanier Counties, Georgia

Greenhouse Gases (tons/year)				
County	CO₂	N₂O	CH₄	CO₂e
Lowndes	967,520	34	97	980,077
Lanier	57,610	3	4	58,604
Total	1,025,130	37	101	1,038,681

Source: USEPA, 2015b

CH₄ = methane; CO₂ = carbon dioxide; CO₂e = carbon dioxide equivalent; N₂O = nitrous oxide

3.2 Acoustic Environment

3.2.1 Definition of the Resource

The acoustic environment is the combination of useful or wanted sounds and noise. Sound is a physical phenomenon in which pressure variations within a medium (e.g., air or water) propagate energy away from a source. Noise is unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment.

Sound intensity varies widely (from a soft whisper to a jet engine), and it is measured on a logarithmic scale to accommodate this wide range. The logarithm, and its use, is nothing more than a mathematical tool that simplifies dealing with very large and very small numbers. For example, the logarithm of the number 1,000,000 is 6, and the logarithm of the number 0.000001 is -6. Because the decibel scale is logarithmic, two sound sources operating together do not generate a noise level that is equal to the sum of the two noise levels. In general, adding two equal noise sources will result in a 3-dB increase. Adding a sound level that is more than 10 decibels (dB) less than another sound source will result in almost no increase in overall sound level.

The frequency (or pitch) of sound is measured in cycles per second, or hertz. This measurement reflects the number of times per second the air vibrates from the acoustic energy. Low-frequency sounds are heard as rumbles or roars, and high-frequency sounds are heard as screeches. Airborne sounds are commonly referenced to human hearing using a method that weights sound frequencies according to measures of human perception, de-emphasizing very low and very high frequencies, which are not perceived well by humans. This is called A-weighting, which is noted by the symbol “dBA”. Examples of typical A-weighted sound levels of common sounds are shown in Figure 3.2-1.

The word “metric” is used to describe a standard of measurement. As used in environmental noise analysis, there are many different types of noise metrics. Each metric has a different physical meaning, or interpretation, and each metric was developed by researchers attempting to represent the effects of environmental noise. The metrics supporting the assessment of noise from aircraft operations and other activities evaluated in this document are the maximum sound level (L_{max}) and the day-night average sound level (L_{dn}).

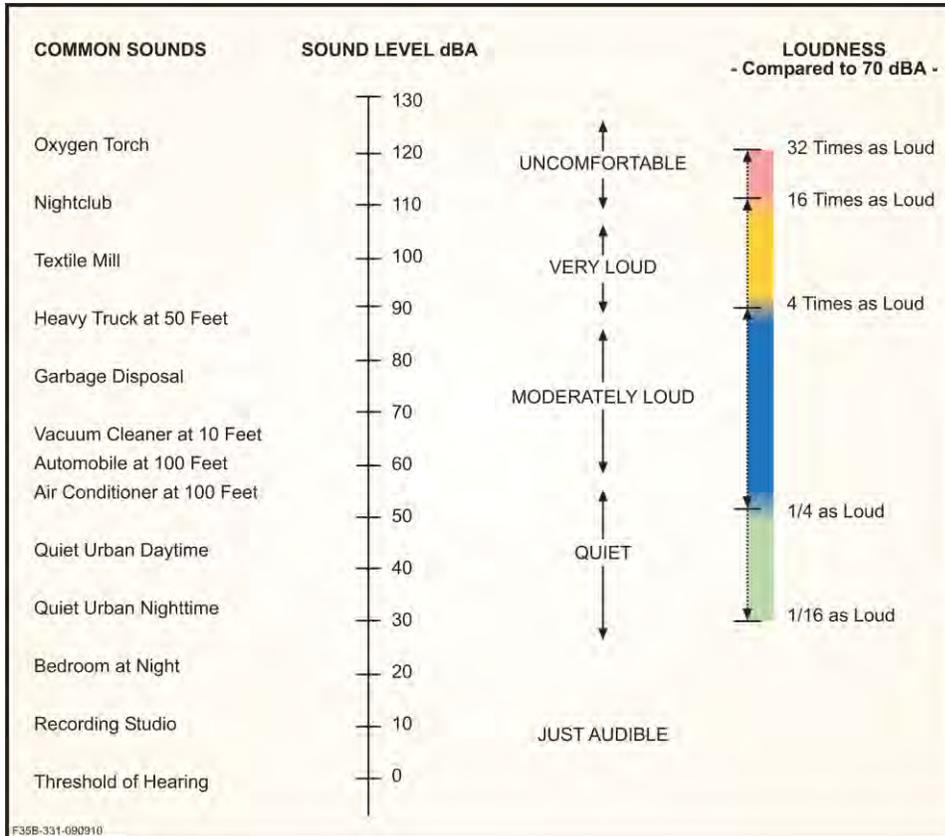
Maximum Sound Level (L_{max}). The L_{max} is the highest sound level measured during a noise event. In many situations, noise levels vary over time for one reason or another. In the case of an aircraft overflight, the noise level varies as the aircraft moves closer to or farther away from the observer on the ground. L_{max} is a useful metric for judging a noise event’s interference with conversation and other common activities.

Day-Night Average Sound Level (L_{dn}). The L_{dn} metric is the average noise level in decibels over a 24-hour period. Thus, it is a composite metric that considers the maximum noise levels, the duration of the events, the number of events that occur, and the time of day during which they occur. This metric adds 10 dB to those events that occur between 10:00 PM and 7:00 AM to account for the increased

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intrusiveness of noise events that occur at night when ambient noise levels are normally lower than during the day time.

Figure 3.2-1: Typical A-Weighted Levels of Common Sounds



Ignoring the nighttime penalty, L_{dn} may be thought of as the continuous or cumulative A-weighted sound level that would be present if all of the variations in sound level over the given time period were smoothed out so as to contain the same total sound energy. It is fully recognized that the L_{dn} metric does not provide specific information on the number of noise events or the specific individual sound levels that occur. For example, an L_{dn} of 65 dB measured on the A-weighted scale (dBA) could result from a very few noisy events combined with a large number of quieter events.

Although it does not represent the sound level heard at any one particular time, L_{dn} does accurately represent the total sound exposure at a location. Social surveys have found the L_{dn} metric to be the best predictor of community annoyance resulting from transportation noise. Its use is endorsed by the scientific community and several governmental agencies (USEPA, 1974; Federal Interagency Commission on Urban Noise [FICUN], 1980; Federal Interagency Commission on Noise [FICON], 1992).

3.2.2 Existing Conditions

The ROI for the acoustic environment includes the areas on and near the proposed PR Campus. The ROI experiences noises common to developed areas including regular ground vehicle traffic noise and occasional noise generated by construction activities. However, the defining characteristic of noise in the ROI is the loud and frequent noise generated by aircraft on the adjacent runways and aircraft parking apron. Noise levels associated with aircraft based at Moody AFB are listed in Table 3.2-1.

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Table 3.2-1: Single-Event Maximum Noise Levels (L_{max}) at Various Distances

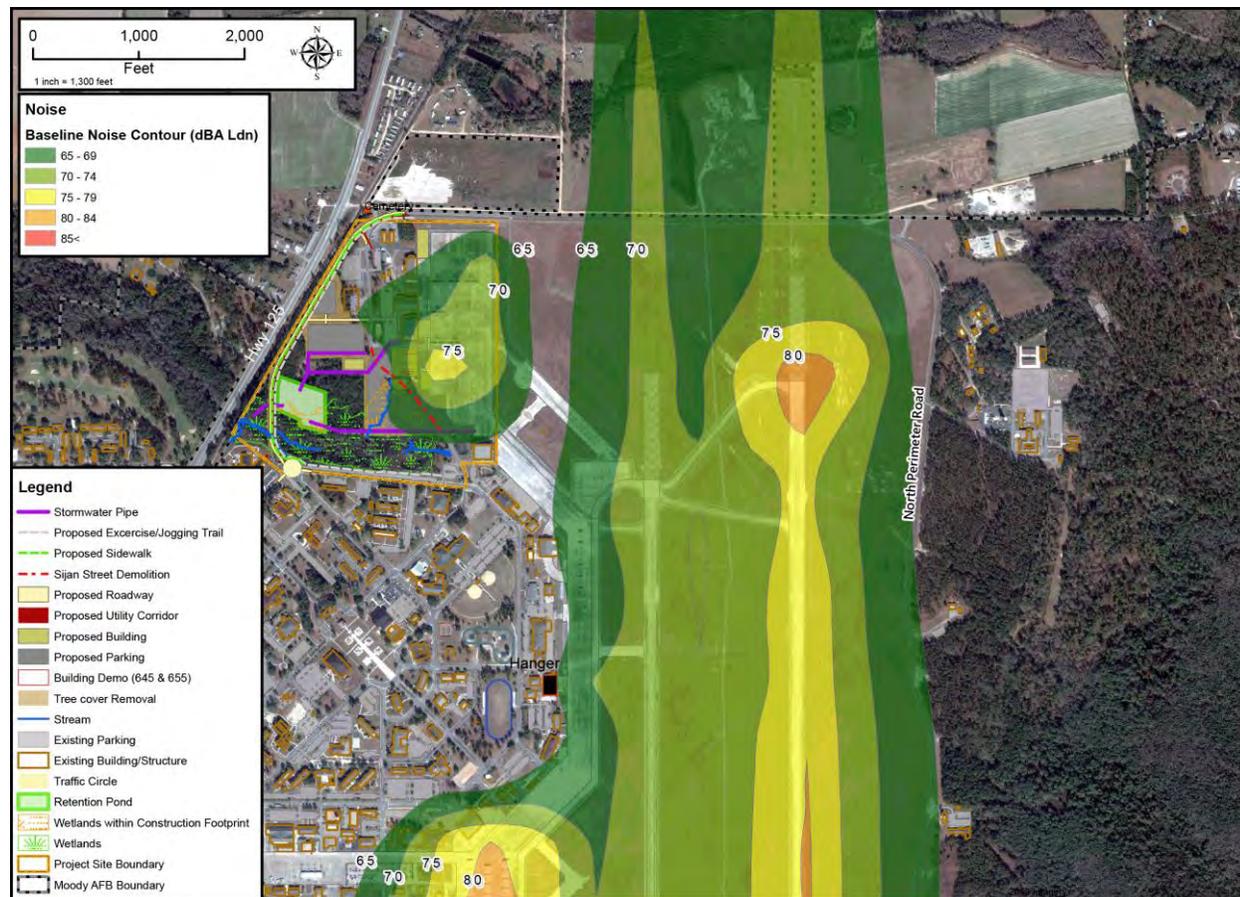
Aircraft	Flight Configuration	L_{max} (dBA) at Distance (feet)				
		100	300	500	900	1,200
A-10 ¹	5325 NF	114	103	98	91	87
A-29 ^{1,2}	100% torque	103	93	88	82	79
C-130J ¹	2500 HP	106	96	91	85	82
HH-60G ³	80 knots	90	82	76	72	69

L_{max} = maximum sound level; HP = horsepower

1. SELCALC; used median monthly average acoustic propagation conditions (67° F and 69% relative humidity).
2. A-29 modeled as T-6 (PT6A-68 engine) + 3dB as per the *Final EA for A-29 Light (LAS) Training Beddown* (U.S. Air Force, 2014).
3. Rotorcraft Noise Model; used median monthly average acoustic propagation conditions (67° F and 69% relative humidity); used SH-60B reference acoustic data.

Baseline time-averaged noise levels shown in Figure 3.2-2 reflect several changes to Moody AFB operations that have occurred in recent years. Over the past several years, the C-130 fleet at Moody AFB has converted from C-130P aircraft to C-130J aircraft. C-130J aircraft generate noise levels similar to those generated by C-130P aircraft, but have improved engine performance. The conversion to C-130J aircraft was reflected in L_{dn} noise contours shown in the *2015 Air Installation Compatibility Use Zone (AICUZ) Report* (Moody AFB, 2014a). Subsequent to completion of the AICUZ noise analysis, A-29 aircraft were beddown at Moody AFB. The beddown of A-29 aircraft substantially increased the number of aircraft operations flown at the airfield but, in the context of ongoing A-10 and C-130 operations, operations of the single-engine, propeller-driven A-29 aircraft have had little effect on overall time-averaged noise levels (U.S. Air Force, 2014).

Figure 3.2-2: Baseline L_{dn} in the ROI



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DoD policy for assessing hearing loss risk pursuant to NEPA is to use the 80 dBA L_{dn} noise contour to identify populations at the most risk of potential hearing loss (UDATL, 2009). No structures in the ROI are exposed to noise levels equal to or exceeding 80 dBA L_{dn} under existing conditions. As shown in Figure 3.2-2, elevated noise levels occur along the runway centerline and on the aircraft parking apron. Under baseline conditions, 2,197 acres on-base and 670 acres off-base are exposed to noise levels exceeding 65 dBA L_{dn} . Areas off-base affected by noise louder than 65 dBA L_{dn} are not located in the immediate vicinity of the PR Campus. Areas on-base that are near the PR Campus and affected by noise levels exceeding 65 dBA L_{dn} include areas along the flightline, which are not noise-sensitive. C-130J aircraft conduct engine runs as part of maintenance procedures about 0.4 times per average annual day on the parking apron west of buildings 642, 648, 643, and 644. About one-third of these runs are conducted during the late-night period between 10:00 PM and 7:00 AM. HH-60G engine runs conducted in connection with aircraft maintenance are conducted on existing parking apron about 1,500 feet southwest of the proposed PR Campus.

The closest noise-sensitive locations to the proposed PR Campus are the Child Development Center (CDC), several dormitories, and the Education Center/Library (see numbered locations in Figure 3.2-2). The Education Center/Library is located about 750 feet from the proposed PR Campus parking apron and about 500 feet from the transient aircraft parking apron. Of the sensitive locations shown in Figure 3.2-2, the CDC is located farthest from the parking aprons at a distance of about 1,800 feet. As shown in Table 3.2-2, noise levels at all of these structures under baseline conditions are below 65 dBA L_{dn} . All structures in the ROI are considered compatible land uses according to DoD guidelines contained in DoDI 4165.57.

Table 3.2-2: Noise Levels at Points of Interest Under Baseline Conditions

ID	Location Description	L_{dn} , dBA
1	Child Development Center (CDC), building 210	55
2	CDC, building 207	57
3	Dormitory and Lodging, building 325	58
4	Dormitory and Lodging, building 324	60
5	Education Center and Library, building 328	61

L_{dn} = day-night average sound level; dBA = A-weighted decibels

3.3 Safety

3.3.1 Definition of the Resource

The safety resource area considers issues related to construction safety, explosives safety, and AT/FP considerations. A variety of Air Force regulations address and govern day-to-day safety at military installations, including AFI 91-202, Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Standards. Under the 29 C.F.R. 1960 series, Occupational Safety and Health Administration (OSHA) standards do not apply to military-unique workplaces, operations, equipment, and systems. However, according to DoD instruction, they apply insofar as is possible, practicable, and consistent with military requirements. AFOSH standards apply unless specifically exempted by variance or determined to be an acceptable deviation.

Air Force Manual 91-201, Explosives Safety Standards, defines distances to be maintained between explosive storage areas and other types of facilities. These distances, which can be represented on a map as quantity-distance (Q-D) arcs, are determined by the type and quantity of explosive materials that are stored or handled. Certain types of development are prohibited within the areas of the Q-D arcs to

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maintain personnel safety and to minimize the potential for damage to other facilities in the event of an accident. In addition, explosive materials storage facilities must be located in areas where security can be maintained.

AT/FP guidelines address a range of considerations that include access to the base, access to facilities on the base, facility siting, standoff distances, exterior design, interior infrastructure design, and landscaping. The intent of this siting and design guidance is to improve security, minimize fatalities, and limit damage to facilities in the event of a terrorist attack. All new facilities must adhere to DoD Minimum Antiterrorism Standards for Buildings, as presented in UFC 4-010-01.

3.3.2 Existing Conditions

The ROI for safety includes the areas on and near the proposed PR Campus, including all buildings and other project sites for which construction and renovation activities are proposed.

Construction Safety

Day-to-day operations at Moody AFB are conducted in accordance with applicable Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by AFOSH requirements. Contractors working on the base must prepare appropriate job site safety plans explaining how job safety will occur throughout the life of the project. Contractors must also follow applicable OSHA requirements.

Explosives Safety

HC-130 and HH-60 missions require storage and maintenance of weapons systems and associated munitions. The existing munitions storage is located to the southeast of the cantonment area, across the runway. The base has established Q-D arcs around the Munitions Storage Area (MSA) that limit the types of development allowed to maintain personnel safety and minimize the potential for damage to other facilities. Smaller Q-D arcs may also be established around individual, armed aircraft in designated parking areas. The Q-D arcs around the existing MSA do not encroach on any part of the proposed location for the PR Campus.

AT/FP Considerations

Moody AFB has implemented AT/FP considerations in facility designs to assist in the protection of its assets. In previous versions of UFC 4-010-01, conventional construction standoff distances applied to all construction and only varied based on the applicable level of protection and explosive weight. In the February 9, 2012, update to the UFC, standard standoff distances vary based on the specific construction of the walls, on whether the walls are load bearing or non-load bearing, by level of protection, and by explosive weight. Moody AFB was established before AT/FP considerations became a critical concern. Thus, under current conditions, many of the facilities at the base cannot comply with all AT/FP standards.

3.4 Land Use

3.4.1 Definition of the Resource

Land use generally refers to the management and use of land by people. The attributes of land use include general land use patterns, land ownership, land management plans, and special use areas. General land use patterns characterize the types of uses within a particular area. Specific uses of land typically include residential, commercial, industrial, agricultural, military, and recreational. Land use also includes areas set aside for preservation or protection of natural resources, wildlife habitat, vegetation, or unique features. Management plans, policies, ordinances, and regulations determine the types of uses that protect specially designated or environmentally sensitive uses.

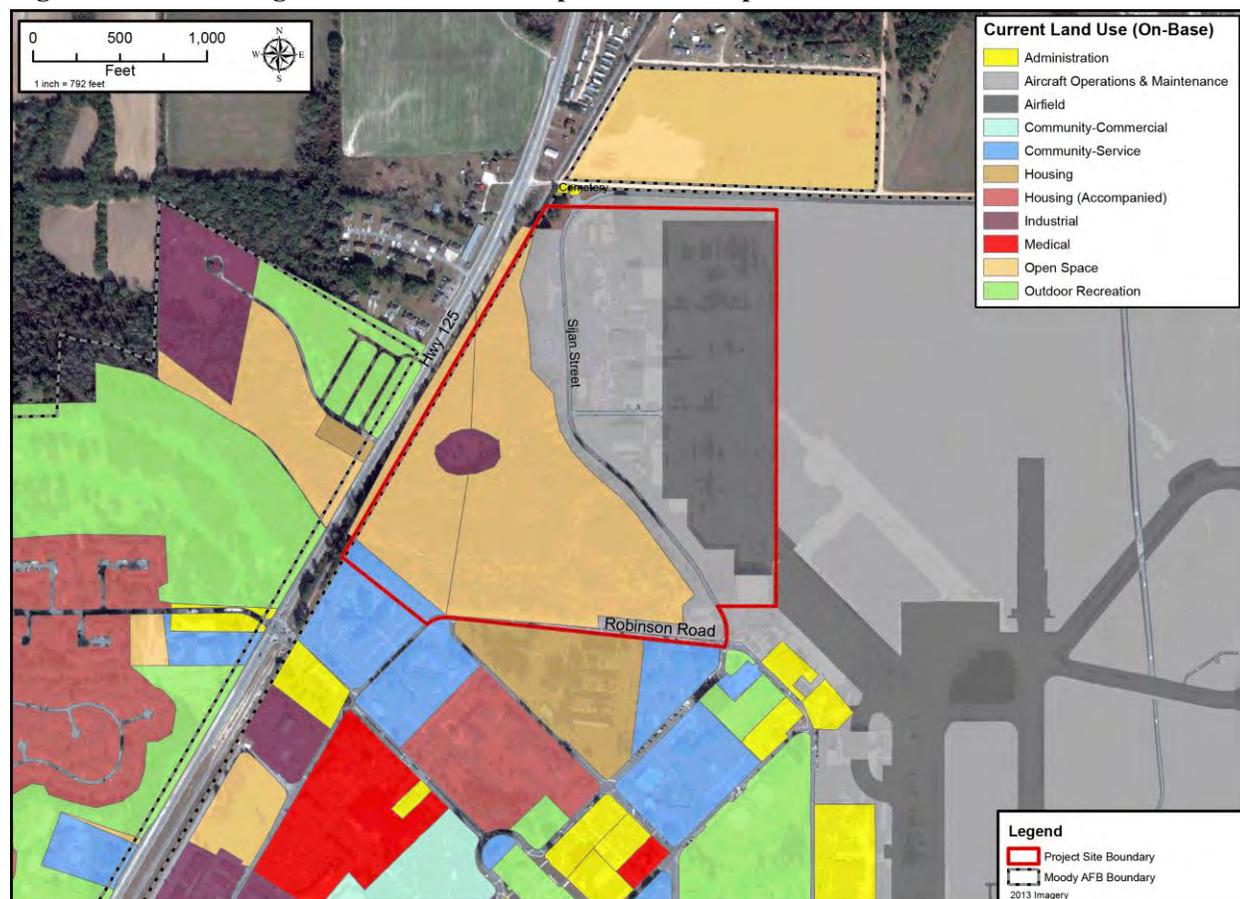
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Noise from aircraft operations is one of the major factors in determining appropriate land uses, since elevated noise levels are especially incompatible with sensitive noise receptors (e.g., residences, public buildings, schools, churches, hospitals, and certain recreational uses).

3.4.2 Existing Conditions

Moody AFB and off-base areas in Lowndes County near the proposed PR Campus encompass the ROI used for land use analysis. Land use at Moody AFB is divided into 12 existing categories (U.S. Air Force, 2010a). The land use categories are: airfield, aircraft operations and maintenance, administration, community-commercial, community-service, industrial, housing (accompanied), housing (unaccompanied), medical, open space, outdoor recreation, and water. Land uses within the proposed PR Campus include airfield, aircraft operations and maintenance, and open space (Figure 3.4-1). Adjacent land uses to the south include administration, community-service, housing (unaccompanied), and outdoor recreation. Land use in the base property on the west side of State Route 125 (Bemiss Road) is primarily housing (unaccompanied) and outdoor recreation. Additional open space is also located in the 25-acre parcel north of Hightower Road. Nearby off-base property is primarily open space, agricultural, and low-density residential.

Figure 3.4-1: Existing Land Use for the Proposed PR Campus Area



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3.5 Cultural Resources

3.5.1 Definition of the Resource

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and any other physical evidence of human activity considered important to a culture or community for scientific, traditional, religious, or other reasons. They include archaeological resources (both prehistoric and historic), historic architectural resources, and American Indian sacred sites and traditional cultural properties (TCPs). Historic properties (as defined in 36 C.F.R. 60.4) are considered for potential adverse impacts from an action. Historic properties are significant archaeological, architectural, or traditional resources that are either eligible for listing or listed in the National Register of Historic Places (NRHP). Moody AFB is required to consider the effects of its undertakings on historic properties listed or eligible for listing in the NRHP.

Moody AFB coordinates NEPA compliance with their NHPA responsibilities to ensure that historic properties are given adequate consideration during the preparation of environmental documents such as this EA. As per AFI 32-7065 Sections 3.3.1 and 3.3.2 and 36 C.F.R. 800.8, Moody AFB incorporates 54 U.S.C. 306108, commonly known as Section 106 of the NHPA (hereafter referred to as Section 106) review into the NEPA process or substitutes the NEPA process for a separate NHPA Section 106 review of alternatives. In a previous iteration of this project, the Air Force consulted with the SHPO and requested a determination of “no effect” to cultural resources. In a response letter, the Georgia SHPO concurred that the PR Campus would have no effect on cultural resources. In the interim, the project boundaries were redefined, and three structures within the redefined APE were evaluated for historic significance. The Air Force completed consultation with the Georgia SHPO regarding this project and the evaluation of these structures in April 2016. The SHPO concurred that the proposed project would have no effect to cultural resources (see Appendix A).

3.5.2 Existing Conditions

The Area of Potential Effects (APE) outlines the region affected by proposed activities for cultural resources under Alternatives 1, 2, and 3. For the proposed range of alternatives, the APE is defined by the outer boundaries of the proposed PR Campus area, adjacent transportation layout area, and buildings impacted by repurposing or demolition. The proposed PR Campus area (Figure 3.5-1) contains no archaeological sites eligible for listing in the NRHP, historic districts, sacred sites, or TCPs, or other tribal resources (U.S. Air Force, 2012; see also SHPO and tribal correspondence in Appendix A).

Moody AFB has conducted historical building NRHP-eligibility determinations for the majority of facilities on the installation. Building and structures less than 50 years of age at the time of assessment were evaluated for Cold War-era significance per Air Force directives. The APE for the Proposed Action includes three buildings that were previously evaluated solely for Cold War-era significance (buildings 325, 328, and 658). Building 658 is currently over 50 years of age, and buildings 325 and 328 will be 50 years of age prior to project implementation. Therefore, Moody AFB completed an additional NRHP Section 110 eligibility determination for these three facilities within the APE, as well as five other facilities outside the APE. The SHPO concurred that none of these structures would be considered eligible for listing in the NRHP.

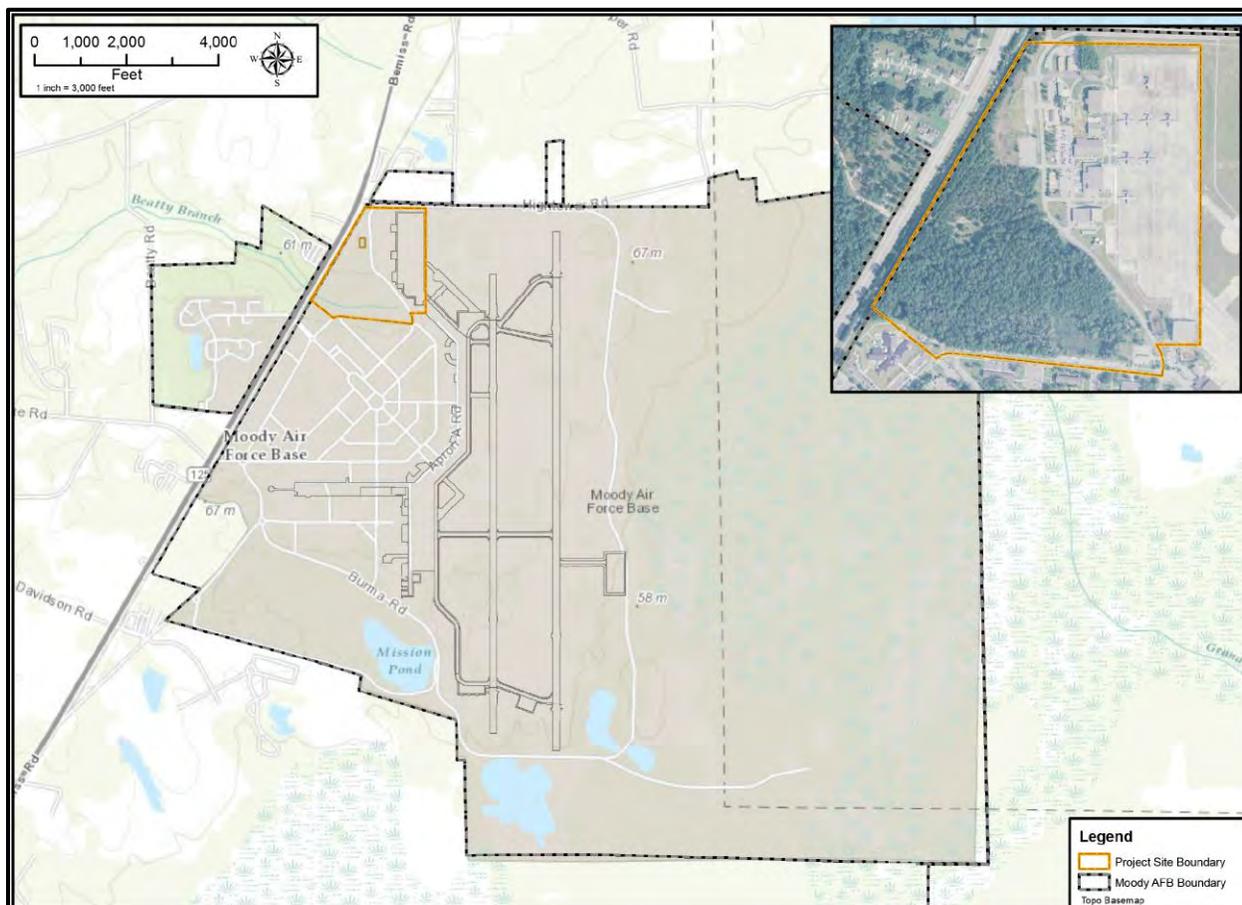
Building 658 was originally constructed in 1954 as an aircraft maintenance shop and is currently utilized as a maintenance hangar. Building 328 was originally constructed in 1970 and was previously used as a base personnel office. It is presently used as the Education Center/Library. Building 325 was originally constructed in 1968 as a dormitory for visiting soldiers and is currently utilized as visiting officer’s quarters. These structures would be repurposed as part of the Proposed Action. In addition, buildings 609, 645, and 655 would be demolished as part of the planned project activities. Although building 609 was constructed in 1941, the Georgia SHPO determined the structure was not considered eligible for

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listing in the NRHP. Buildings 645 and 655 are post-Cold War era buildings and are not considered eligible for listing in the NRHP (U.S. Air Force, 2012; Appendix A).

Because Moody AFB typically plans and funds future projects years in advance to accommodate a lengthy design and construction process, Section 110 surveys may occur on structures that are 45 years of age or older to assess NRHP eligibility, in advance of future proposed actions. The intent of this process is to further integrate cultural resource considerations in project planning and to prevent costly and time-consuming delays in the design/build process.

Figure 3.5-1: Area of Potential Effects (Proposed PR Campus Limits)



The nearest known NRHP-eligible structure is the Water Tower (Facility No. 618) on-base, which dates to the World War II Era, and is located approximately 0.5 mile from the project area. The closest NRHP-listed resources are located several miles away from the project area in Valdosta, Georgia.

3.6 Biological Resources

3.6.1 Definition of the Resource

Biological resources include plant and animal species occurring within and near the proposed project area and the habitats in which they occur. The ROI for biological resources consists of the specific project sites at Moody AFB, as well as off-base areas in the vicinity that could potentially be affected by the Proposed Action. This section describes plant and animal species and natural community types that are typical of the ROI and also identifies biological resources that are protected by Federal or state law or statute. Species with regulatory protection or those otherwise considered rare or vulnerable to human

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disturbance are defined as sensitive species in this document. Sensitive species are protected by and/or listed under the ESA, the Migratory Bird Treaty Act (MBTA), EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds), the Bald and Golden Eagle Protection Act (BGEPA), the Georgia Department of Natural Resources (DNR), and the Georgia Natural Heritage Program (NHP).

The ESA prohibits the unauthorized take of threatened or endangered species, where “take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. An endangered species is defined as any species in danger of extinction throughout all or a significant portion of its range, while a threatened species is defined as any species likely to become an endangered species in the foreseeable future. The ESA also requires critical habitat to be identified for listed species. Critical habitat is defined as the physical and biological features essential for a species’ conservation. In addition to endangered and threatened designations, the USFWS has identified an additional status category of “candidate species.” Candidate species are species for which sufficient information is available to propose them as endangered or threatened under the ESA but for which development of a proposed regulation is precluded by other, higher-priority listing activities.

The Georgia DNR provides lists of protected plants and animals, which may be designated as endangered, threatened, rare, or unusual. The definitions of endangered and threatened are the same as those provided under the Federal ESA. Rare species are considered those species that are not listed as endangered or threatened but that should be protected because of their scarcity. Unusual species are defined as species deserving of special consideration and, in the case of plants, subject to commercial exploitation.

Georgia’s NHP also lists species for which conservation is considered desirable based on their association with relatively undisturbed habitats, as well as their recreational, aesthetic, or cultural value. A number of global and state NHP designations are available, including:

- G1: critically imperiled globally
- G2: imperiled globally
- G3: rare and local throughout range or in a special habitat, or narrowly endemic
- G4: apparently secure
- G5: demonstrably secure globally
- S1: critically imperiled in Georgia
- S2: imperiled in Georgia
- S3: rare and uncommon throughout the state or in a special habitat, or narrowly endemic
- S4: apparently secure
- S5: demonstrably secure in state

The MBTA provides for the conservation of migratory birds, which are generally defined as any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. Unless permitted, the MBTA prohibits the pursuit, hunting, taking, capturing, killing, or possession of migratory birds. In 2014, the DoD and USFWS entered into a Memorandum of Understanding (MOU) regarding migratory bird conservation during activities other than military readiness and airfield operations (including construction, demolition, and facility renovation) (DoD and USFWS, 2014). In general, the MOU identifies discretionary actions a DoD proponent may undertake, to the extent practicable and consistent with the military mission, for projects that are likely to have a measurable negative effect on migratory bird populations. Such actions include avoiding or minimizing exposure of birds and their habitats to avian stressors (alterations of the environment that affects birds or their resources) that may result in take.

Migratory birds are further addressed in EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, which requires Federal agencies to evaluate the effects of their actions on migratory birds (with an emphasis on species of concern). Species of concern are (1) those identified in the USFWS

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report *Migratory Nongame Birds of Management Concern in the United States* (USFWS, 2011), (2) priority species identified by established plans such as those prepared by Partners In Flight, or (3) listed species in 50 C.F.R. § 17.11, Endangered and Threatened Wildlife.

The BGEPA prohibits, without a permit issued by the USFWS, the taking of bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*). “Take” is defined as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. “Disturb” is defined as actions that result in or are likely to result in injury, decreased productivity, or nest abandonment.

3.6.2 Existing Conditions

Moody AFB and the area within and surrounding the proposed PR Campus location encompass the ROI for biological resource impact analyses.

Vegetation and Habitats

Detailed descriptions of the various vegetation and community associations of Moody AFB and the surrounding region are provided in the base’s *Integrated Natural Resources Management Plan* (INRMP) (Moody AFB, 2013a).

Vegetation communities within the proposed PR Campus area consist primarily of wetlands and loblolly pine plantation, with a small area of open grass field (Figure 3.6-1). Wetlands, scattered pines, and mixed hardwood habitats occur off-base immediately adjacent to the project area. Wetland vegetation composition was identified during a recent wetland investigation at the proposed site (Cardno, 2015). A total of about 22 acres of potentially jurisdictional waters of the U.S. were identified, including about 20 acres of palustrine forested wetland, 1 acre of scrub/shrub wetland, and 1.9 miles of intermittent and ephemeral stream channels. Of this total, about 5 acres of wetland are within the proposed construction footprint. Most of the project site, including some wetland areas, were historically bedded and planted with loblolly pine (*Pinus taeda*), and large relict pines occur throughout the wetland system. Pines dominate the canopy of the site and also occupy large hummocks within deeper areas. Other vegetation identified in the palustrine wetlands during the 2015 survey includes swamp tupelo (*Nyssa sylvatica* var. *biflora*), red maple (*Acer rubrum*), tulip poplar (*Liriodendron tulipifera*), sweet bay magnolia (*Magnolia virginiana*), sweet gum (*Liquidambar styraciflua*), fetterbush (*Lyonia lucida*), gallberry (*Ilex glabra*), sweet pepperbush (*Clethra alnifolia*), and various ferns. A similar vegetation composition is present in the scrub/shrub wetland area, with the exception that canopy and subcanopy tree species are absent, which suggests long-term water inundation.

Upland areas of the project site are dominated by loblolly pine plantation and also contain some bottomland hardwood and an open grass field. The bottomland hardwood area is dominated by red maple (*Acer rubrum*), sweet bay magnolia, and water oak (*Quercus nigra*) in the tree stratum. Dominant understory species include Japanese honeysuckle (*Lonicera japonica*), cinnamon fern (*Osmunda cinnamomea*), southern dewberry (*Rubus trivialis*), American buckwheat vine (*Brunnichia ovata*), and lanceleaf greenbrier (*Smilax smallii*). The grass field is composed of various grass and forb species. The project area is located adjacent to developed portions of the base and has been previously disturbed.

Wildlife

The habitats on Moody AFB support numerous wildlife species. Species considered representative of wetland and upland pine and mixed pine/hardwood forest habitats on and near the base are listed in Table 3.6-1. In addition to the mammals listed, seven bat species have been documented in forested and/or wetland habitats on the base (BHE Environmental, 2001). The table does not present an exhaustive list of wildlife on Moody AFB, and not all the species listed necessarily occur in the proposed PR Campus project area. However, these species are typical of wildlife found on the installation and that have potential to occur at undeveloped portions of the proposed PR Campus area. Compared with other natural habitats, wildlife occurrence may be limited in pine plantation due to the dense canopy and

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understory that often develops. Wildlife occurrence is likely limited in the currently developed portions of the project area, consisting of species generally found in urban areas and tolerant of human presence and activity (e.g., rodents and other small mammals, some bird species).

Figure 3.6-1: PR Campus Project Area Vegetation Communities

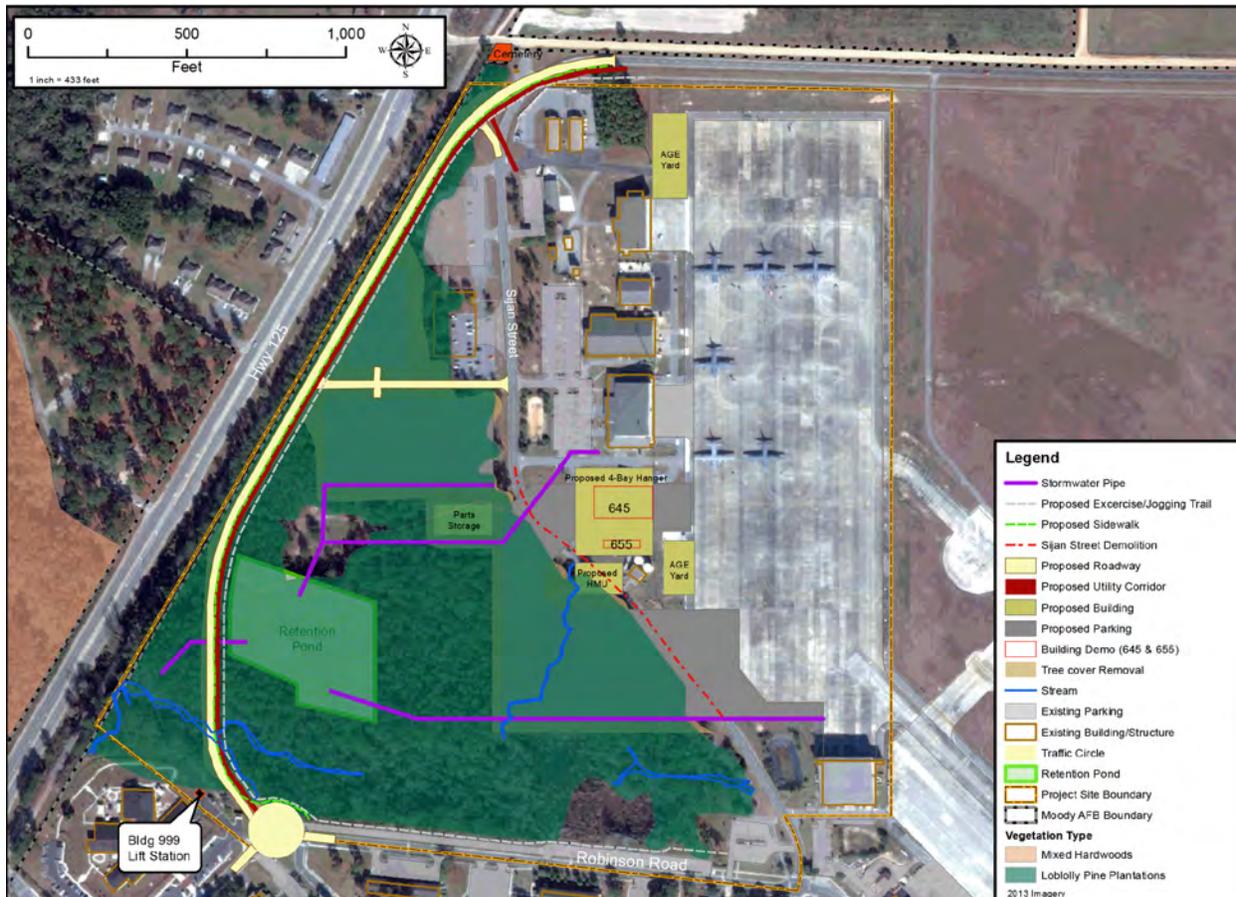


Table 3.6-1: Representative Wildlife Species in Wetland and Forest Habitats on Moody AFB

Common Name	Scientific Name	Potential Occurrence	
		Wetlands	Pine/Hardwood Forest
Mammals			
Opossum	<i>Didelphis virginiana</i>	•	•
Raccoon	<i>Procyon lotor</i>	•	•
Striped skunk	<i>Mephitis mephitis</i>		•
Gray fox	<i>Urocyon cinereoargenteus</i>	•	•
Fox squirrel	<i>Sciurus niger</i>		•
Gray squirrel	<i>Sciurus carolinensis</i>	•	•
Eastern cottontail rabbit	<i>Sylvilagus floridanus</i>	•	•
White-tailed deer	<i>Odocoileus virginianus</i>	•	•
North American beaver	<i>Castor canadensis</i>	•	
Birds			
Red-shouldered hawk	<i>Buteo lineatus</i>	•	•
Northern bobwhite quail	<i>Colinus virginianus</i>		•
Pileated woodpecker	<i>Dryocopus pileatus</i>	•	•
Downy woodpecker	<i>Picoides pubescens</i>	•	•
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	•	•

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Table 3.6-1: Representative Wildlife Species in Wetland and Forest Habitats on Moody AFB, Continued

Common Name	Scientific Name	Potential Occurrence	
		Wetlands	Pine/Hardwood Forest
Northern flicker	<i>Colaptes auratus</i>	•	•
Yellow-billed cuckoo	<i>Coccyzus americanus</i>		•
Ruby-throated hummingbird	<i>Archilochus colubris</i>		•
American crow	<i>Corvus brachyrhynchos</i>		•
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	•	•
Carolina chickadee	<i>Poecile carolinensis</i>	•	•
Tufted titmouse	<i>Baeolophus bicolor</i>	•	•
Brown-headed nuthatch	<i>Sitta pusilla</i>		•
Carolina wren	<i>Thryothorus ludovicianus</i>	•	•
Blue-gray gnatcatcher	<i>Poliophtila caerulea</i>	•	•
Great crested flycatcher	<i>Myiarchus crinitus</i>	•	•
Ruby-crowned kinglet	<i>Regulus calendula</i>	•	•
Wild turkey	<i>Meleagris gallopavo</i>		•
Eastern kingbird	<i>Tyrannus tyrannus</i>	•	
White-eyed vireo	<i>Vireo griseus</i>	•	•
Red-eyed vireo	<i>Vireo olivaceus</i>	•	•
Northern parula	<i>Setophaga americana</i>	•	•
Common grackle	<i>Quiscalus quiscula</i>	•	•
Summer tanager	<i>Piranga rubra</i>		•
Eastern towhee	<i>Pipilo erythrophthalmus</i>		•
White-throated sparrow	<i>Zonotrichia albicollis</i>		•
Blue jay	<i>Cyanocitta cristata</i>	•	
Brown thrasher	<i>Toxostoma rufum</i>	•	•
Gray catbird	<i>Dumetella carolinensis</i>	•	
Northern cardinal	<i>Cardinalis cardinalis</i>	•	•
Hooded warbler	<i>Setophaga citrina</i>	•	•
Prothonotary warbler	<i>Protonotaria citrea</i>	•	
Wood duck	<i>Aix sponsa</i>	•	
Great blue heron	<i>Ardea herodias</i>	•	
Great egret	<i>Ardea alba</i>	•	
Belted kingfisher	<i>Megaceryle alcyon</i>	•	
Reptiles			
Eastern box turtle	<i>Terrapene carolina carolina</i>	•	•
Common snapping turtle	<i>Chelydra serpentina</i>	•	
Eastern cottonmouth	<i>Agkistrodon piscivorus</i>	•	•
Southern water snake	<i>Nerodia fasciata</i>	•	
Eastern mud snake	<i>Farancia abacura abacura</i>	•	
Five-lined skink	<i>Eumeces inexpectatus</i>		•
Timber rattlesnake	<i>Crotalus horridus</i>		•
Black racer	<i>Coluber constrictor</i>		•
Amphibians			
Spotted salamander	<i>Ambystoma maculatum</i>	•	
Tiger salamander	<i>Ambystoma tigrinum</i>	•	
Green tree frog	<i>Hyla cinerea</i>	•	
Eastern spadefoot toad	<i>Scaphiopus holbrookii</i>	•	
Southern toad	<i>Bufo terrestris</i>	•	
Little grass frog	<i>Pseudacris ocularis</i>		•

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Table 3.6-1: Representative Wildlife Species in Wetland and Forest Habitats on Moody AFB, Continued

Common Name	Scientific Name	Potential Occurrence	
		Wetlands	Pine/Hardwood Forest
Squirrel tree frog	<i>Hyla squirella</i>		•
Eastern spadefoot toad	<i>Scaphiopus holbrookii</i>		•

Source: Moody AFB, 2013a

Sensitive Species

Sensitive species with known or potential occurrence on or near Moody AFB are listed in Table 3.6-2. Of these species, seven are protected by Federal laws (ESA, BGEPA, and MBTA). The frosted flatwoods salamander (*Ambystoma cingulatum*), wood stork (*Mycteria americana*) (U.S. breeding population), American alligator (*Alligator mississippiensis*), and eastern indigo snake (*Drymarchon corais couperi*) are listed as threatened under the ESA, while the striped newt (*Notophthalmus perstriatus*) and gopher tortoise (*Gopherus polyphemus*) are candidate species. The bald eagle is protected under the BGEPA, as well as the MBTA. The frosted flatwoods salamander and striped newt occur in the geographic region of the installation but have not been observed on the base, and habitat conditions for these species are generally considered marginal (Palis, 2005). Gopher tortoises are prevalent at some areas of the base, but the nearest known tortoise burrows are located east of the runway. No burrows are known in the project area and, therefore, occurrence is considered unlikely.

Table 3.6-2: Sensitive Species with Known or Potential Occurrence on or near Moody AFB

Common Name	Scientific Name	Federal Status	State Status	NHP Status
Amphibians				
Frosted flatwoods salamander	<i>Ambystoma cingulatum</i>	T	T	G2/S2
Striped newt	<i>Notophthalmus perstriatus</i>	Candidate	T	G2G3/S2
Broad-striped dwarf siren ¹	<i>Pseudobranchius striatus striatus</i>	None	None	G5/S3
Birds				
Bachman's sparrow ¹	<i>Aimophila aestivalis</i>	None	R	G3/S3
American bittern ¹	<i>Botaurus lentiginosus</i>	None	None	G4/S3?
Little blue heron ¹	<i>Egretta caerulea</i>	None	None	G5/S3?
Yellow-crowned night heron	<i>Nyctanassa violacea</i>	None	None	G5/S3S4
Black-crowned night heron	<i>Nycticorax nycticorax</i>	None	None	G5/S4
Southeastern American kestrel ¹	<i>Falco sparverius paulus</i>	None	None	G5/S3
Florida sandhill crane ¹	<i>Grus canadensis pratensis</i>	None	None	G5/S1
Greater sandhill crane ¹	<i>Grus canadensis tabida</i>	None	None	G5/S2
Wood stork ¹	<i>Mycteria americana</i>	T	E	G4/S2
Southern bald eagle ¹	<i>Haliaeetus l. leucocephalus</i>	BGEPA	E	G4/S2
Loggerhead shrike ¹	<i>Lanius ludovicianus migrans</i>	None	None	G5/S?
Mammals				
Florida black bear	<i>Ursus americanus floridanus</i>	None	None	G5T2/S2
Northern yellow bat ¹	<i>Lasiurus intermedius</i>	None	None	G4G5/S2S3
Southeastern myotis ¹	<i>Myotis austroriparius</i>	None	None	G3G4/S3
Round-tailed muskrat ¹	<i>Neofiber alleni</i>	None	T	G3/S3
Reptiles				
American alligator ¹	<i>Alligator mississippiensis</i>	T (S/A)	None	G5/S4
Eastern indigo snake ¹	<i>Drymarchon corais couperi</i>	T	T	G4/S3
Striped crayfish snake	<i>Regina alleni</i>	None	None	G5/S2
Southern hognose snake ¹	<i>Heterodon simus</i>	None	None	G2/S2
Eastern coral snake ¹	<i>Micrurus fulvius</i>	None	None	G5/S3

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Table 3.6-2: Sensitive Species with Known or Potential Occurrence on or near Moody AFB, Continued

Common Name	Scientific Name	Federal Status	State Status	NHP Status
Gopher tortoise ¹	<i>Gopherus polyphemus</i>	Candidate	T	G3/S3
Striped mud turtle ¹	<i>Kinosternon baurii</i>	None	None	G5/S3
Alligator snapping turtle ¹	<i>Macrochelys temminckii</i>	None	T	G3G4/S3
Spotted turtle	<i>Clemmys guttata</i>	None	U	G5/S3
Plants				
Blue maidencane	<i>Amphicarpum muehlenbergianum</i>	None	None	G4/S3?
Green-fly orchid ¹	<i>Epidendrum conopseum</i>	None	U	G4/S3
Climbing heath	<i>Pieris phillyreifolia</i>	None	None	G3/S3
Needle palm	<i>Rhapidophyllum hystrix</i>	None	None	G4/S3S2
Hooded pitcher plant	<i>Sarracenia minor</i>	None	U	G4/S4
Yellow flytrap	<i>Sarracenia flava</i>	None	U	G5?/S3S4
Three-birds orchid	<i>Triphora trianthophora</i>	None	None	G3G4/S2?
Savanna cowbane	<i>Oxypolis ternata</i>	None	None	G3/S2
Bluff white oak	<i>Quercus austrina</i>	None	None	G4?/S3?

Source: Moody AFB, 2013a; Moody AFB, 2008; Georgia DNR, 2013

BGEPA = Bald and Golden Eagle Protection Act; E = endangered; NHP = Natural Heritage Program; R = rare; S/A = similarity of appearance; T = threatened; U = unusual; ? = questionable rank, best guess provided

1. Species identified on Moody AFB.

Thirteen of the species are listed as endangered, threatened, rare, or unusual by the State of Georgia. Six of these state-listed species are also Federally protected and are identified above. Of the remaining seven species, four have been identified on the base: round-tailed muskrat (*Neofiber alleni*) (threatened), alligator snapping turtle (*Macrochelys temminckii*) (threatened), Bachman’s sparrow (*Aimophila aestivalis*) (rare), and green-fly orchid (*Epidendrum conopseum*) (unusual). The alligator snapping turtle typically occurs in large streams and rivers and though occurrence in the project area is possible, it is considered unlikely. Bachman’s sparrow occurs in the Grand Bay-Banks Lake (GBBL) system, but this species prefers mature pine forest and probably does not occur regularly in the affected habitats of the project area. The green-fly orchid is known from only a few locations east of the main base in Grand Bay Weapons Range (Moody AFB, 2013a).

The PR Campus project area was most recently surveyed by the installation’s certified wildlife biologist for listed and candidate species in 2013 and 2015. The only listed or candidate species known to occur in the project area is the American alligator. No occurrence of any other listed, candidate, or protected species, to include gopher tortoises, eastern indigo snakes, frosted flatwoods salamanders, wood storks, or bald eagles have been documented in the proposed project area. There is no suitable habitat for wood storks or bald eagles in this location. The closest wood stork rookery occurs approximately 8 miles west of Moody AFB near Hahira, Georgia. There is limited habitat for round-tailed muskrats (less than 1 acre), but there are no known round-tailed muskrats in the Beatty Creek/Cat Creek watershed. The site has marginal habitat for eastern indigo snakes and is too small to support an indigo snake population. Also, there are no associated sandhills near the site for winter refugia. Additional information on rare, threatened, and endangered species surveys and management is provided in the base’s INRMP (Moody AFB, 2013a). Descriptions of other listed species are provided on the USFWS website (<http://www.fws.gov/endangered/>) and/or the Georgia DNR’s Wildlife Resources Division website (http://www.georgiawildlife.com/rare_species_profiles).

In addition to the listed species described above, migratory birds occur on and near Moody AFB at various times of the year. Increased migratory bird activity typically occurs from October to February.

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Species of blackbirds and songbirds are particularly active around sunrise and sunset during winter. Migratory waterfowl are prevalent in wet areas as well. Although migratory bird species may occur in the project area, the site is small, somewhat isolated, and located near developed portions of the installation. Bird habitat of greater quantity and quality occurs throughout the nearby large undeveloped wetland and forest areas of the Grand Bay Weapons Range, GBBL, and Banks Lake National Wildlife Refuge.

3.7 Water Resources

3.7.1 Definition of the Resource

Water resources include all surface water and groundwater resources in the project area. In general, surface water resources include lakes, rivers, streams, wetlands, and floodplains. Groundwater resources include all water reserves contained in soil and geologic deposits below the ground surface. These resources are important for a variety of reasons, including drinking water, irrigation, power generation, recreation, flood control, and human health.

The Clean Water Act (CWA) was established to ensure the “restoration and maintenance of the chemical, physical, and biological integrity of the Nation’s waters” (Section 402). Under the act, it is illegal to discharge pollutants from a “point source” into any surface water without a National Pollutant Discharge Elimination System (NPDES) permit. Furthermore, any applicant for a Federal license or permit to conduct activities that may result in the discharge of a pollutant into Waters of the United States must also obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over the affected waters at the point where the discharge would originate. Under Section 401, releasing of dredged or fill material is not permitted if it causes any degradation or violations to water quality.

Therefore, all projects that have a Federal component and may affect state water quality (including projects that require Federal agency approval, such as issuance of a Section 404 permit) must also comply with the CWA. USEPA sets standards for the quality of wastewater discharges. For projects at Moody AFB, the State of Georgia implements and enforces the provisions of the CWA, while the USEPA retains oversight responsibilities.

In December 2007, Congress enacted the Energy Independence and Security Act of 2007. Section 438 of that legislation establishes stormwater runoff requirements for Federal development and redevelopment projects. For projects with a footprint that exceeds 5,000 square feet, site planning, design, construction, and maintenance strategies are required to maintain or restore (to the extent technically feasible) the pre-development hydrology of the property, including temperature, rate, volume, and duration of flow.

Water resources in Georgia are afforded protection under the Georgia DNR Environmental Protection Division (GEPD). These programs are administered in accordance with the state’s stormwater management program and the state’s erosion and sedimentation control program (Georgia DNR, 2014; Georgia DNR, 2001a) under the auspices of the GEPD’s Watershed Protection Branch. Potential impacts to surface waters may result if a proposed action triggers permitting requirements under a Section 401 Certification Program (40 C.F.R. § 230.10[b]). The GEPD requires that all state waters (intermittent or perennial streams) have a minimum 25-foot undisturbed buffer from the point of wretched vegetation regardless of whether CWA Sections 404 or 401 are applicable. The GEPD reissued NPDES General Permits No. GAR100001, No. GAR100002, and No. GAR100003 for stormwater discharges associated with construction activity greater than 1 acre.

Groundwater includes the subsurface hydrologic resources of the physical environment. Groundwater is generally a safe and reliable source of fresh water for the general population and is commonly used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater plays an important role in the overall hydrologic cycle. Its properties are often described in terms of depth to aquifer or water table, water quality, and surrounding geologic composition.

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Wetlands are defined by the U.S. Army Corps of Engineers (USACE) and USEPA as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include marshes, bogs, and similar areas (40 C.F.R. § 230.3[t]). Wetlands provide a variety of functions, including groundwater recharge and discharge, flood flow attenuation, sediment stabilization, sediment and toxicant retention, nutrient removal and transformation, aquatic and terrestrial diversity and abundance, and uniqueness.

Three criteria are necessary to define wetlands: vegetation (hydrophytes), soils (hydric), and hydrology (frequency of flooding or soil saturation). Section 404 of the CWA established a program to regulate the discharge of dredged and fill material into Waters of the United States, including wetlands. The USACE, the lead agency in protecting wetland resources, maintains jurisdiction over Federal wetlands (33 C.F.R. 328.3) under Section 404 of the CWA (30 C.F.R. 320-330) and Section 10 of the Rivers and Harbors Act (30 C.F.R. 329).

Furthermore, EO 11990, *Protection of Wetlands*, 1977 (42 Federal Register 26961), requires Federal agencies to minimize the destruction, loss, or degradation of wetlands and preserve and enhance the natural and beneficial values of wetlands. Federal agencies must avoid, to the extent possible, destruction or modification of wetlands wherever there is a practicable alternative. Consequently, before an action adversely impacting wetlands may proceed, EO 11990 requires the head of the responsible Federal agency to find that there is no practicable alternative to conducting the action in wetlands. If, however, no practicable alternative exists to the proposed action, mitigation must be taken to minimize direct and indirect impacts in or adjacent to wetlands.

Floodplains are defined by EO 11988, *Floodplain Management*, as “the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, the area subject to a 1 percent or greater chance of flooding in any given year” (that area inundated by a 100-year flood). Floodplains and riparian habitat (land areas adjacent to or near a river or stream) are biologically unique and highly diverse ecosystems supporting a rich diversity of aquatic and terrestrial species and promoting stream bank stability and regulating water temperatures. Similar to wetlands, EO 11988 requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, amended EO 11988 by requiring Federal agencies to use natural systems, ecosystem processes, and nature-based approaches to identify alternatives and require Federal agency regulations or procedures to be consistent with the Federal Flood Risk Management Standard.

3.7.2 Existing Conditions

Surface Water

Moody AFB is situated within the Suwannee River Basin, which encompasses 2,785 square miles (Georgia DNR, 2001b). Water flow through the area is generally south and southeast. Major drainages in the Suwannee basin near Moody AFB include the Withlacoochee River to the west and the Alapaha River to the east. The ROI for surface water is the Cat Creek subwatershed since surface water located on the base impacts those downstream. Although stormwater from most portions of the main base is discharged into large wetland complexes to the east, surface water on the northwestern portion flows into Beatty Creek, which is the primary surface water feature in the proposed PR Campus project area. Beatty Creek flows into Cat Creek (approximately 2 miles west of the project area) and into the Withlacoochee River (Moody AFB, 2006). The Withlacoochee River flows into the Suwannee River, which in turn flows to the northeastern Gulf of Mexico. As described in a recent wetland delineation study report (Cardno, 2015), Beatty Creek is a long-duration, intermittent stream that was historically fed by elevated groundwater and

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surficial runoff. Previous development resulted in portions of the wetland headwaters being filled, with flow replaced by culverted conveyances.

Additional unnamed intermittent and ephemeral stream channels also occur in the project area and drain into Beatty Creek, although not all form a continuous channel. Two channels extending into the eastern end of the wetland carry stormwater discharge. Two other stormwater channels in the southeastern portion of the site extend to the Beatty Creek channel.

The Cat Creek subwatershed, which has a drainage area of approximately 33 square miles, is monitored by the Georgia DNR. The State of Georgia is responsible for maintaining surface water quality standards for all waters in the state in accordance with provisions of the CWA. Surface water features in the project area are shown on Figure 2.3-1 and Figure 2.3-2.

Water quality standards apply to pH, temperature, bacterial density, dissolved oxygen (DO), chloride concentration, sulfate concentration, and total dissolved solids (TDS). Designated uses are activities or conditions that water resources can sustain, such as primary contact recreation, which includes swimming and water skiing, and secondary contact recreation, which includes boating and sailing. Fish and Wildlife Propagation includes ecological conditions that are conducive to the propagation of aquatic organisms and are measured by water quality parameters that affect the health of fish and wildlife, such as the concentration of DO, TDS, and nutrients. Section 303 of the CWA requires the state to identify those water bodies that fail to meet the standards and to take action to restore these water bodies. Under Section 303(d) of the CWA, a total maximum daily load must be developed for all water bodies that do not meet their designated uses (e.g., drinking water, recreation, and shellfish harvesting) and are defined as impaired.

Cat Creek and Withlacoochee River are monitored by the GEPD to ensure compliance with CWA standards. Portions of the Withlacoochee River are on the GEPD 303(d) list for violating mercury trophic weighted residue standards, which means that the mercury found in fish tissue samples exceeds the GEPD human health standard of 0.3 milligrams/kilogram (mg/kg) (GEPD, 2014). A Total Maximum Daily Load (TMDL) of 5.58 kilograms of mercury per year has been established for the Withlacoochee River. Cat Creek is on the 303(d) list for DO, which means there is an insufficient concentration of DO in the water to support aquatic life. The causes of these impairments are considered to be non-point sources, and a TMDL has not been established. The discharge of pollutants into waters on the 303(d) list is regulated through NPDES permit requirements, which take into account overall waste loads in affected water bodies and may establish effluent limits.

Groundwater

Groundwater in the Moody AFB region occurs in two primary water-bearing zones: a surficial aquifer and the Floridan aquifer system (Moody AFB, 2013a). The surficial aquifer is composed of fine to coarse sand, gravels, silt, clayey silts, and clays and is situated approximately 10 to 20 feet below ground surface. This aquifer has low to moderate yields (usually less than 50 gallons per minute), and water quality is generally good. No drinking water wells on Moody AFB draw from this groundwater (Moody AFB, 2013a).

The Floridan aquifer, which is the primary water-bearing unit within the Moody AFB region, is within a limestone formation that is approximately 150 feet below ground surface (Moody AFB, 2013a). Water yields and water quality from the aquifer are considered to be good (except in the lower portions of the geological formation). This aquifer serves as the major source of water for domestic, commercial, industrial, irrigation, and municipal uses for Moody AFB as well as the surrounding region (Moody AFB, 2013a).

Wetlands

Moody AFB lies within the GBBL wetland complex, which covers more than 13,000 acres and is one of the largest freshwater lake/swamp systems in the Georgia coastal plain (Moody AFB, 2013a). Wetlands

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in the vicinity of the proposed PR Campus were recently delineated as part of preliminary project investigations (Cardno, 2015). This recent delineation effort is considered to supersede past delineations conducted in 2001 and 2011. The delineation consisted of a survey of approximately 19 acres of undeveloped forested uplands and wetlands generally between Sijan Street, Robinson Road, and the installation perimeter fence. A total of about 22 acres of potentially jurisdictional waters of the U.S. were identified, including about 20 acres of palustrine forested wetland, 1 acre of scrub/shrub wetland, and 1.9 miles of intermittent and ephemeral stream channels. Of this total, about 5 acres are within the construction footprint (Figure 2.3-1). The USACE issued a preliminary Jurisdictional Determination stating that the recent wetland delineation (Cardno, 2015) was conducted properly and provided an accurate delineation of all the jurisdictional boundaries on the site. A copy of the preliminary Jurisdictional Determination is provided in Appendix A.

Floodplains

Generally, floodplains are not a major concern at Moody AFB, as only two areas fall within the 100-year floodplain (east of the runways and in the southern portion of Grand Bay Weapons Range) (Moody AFB, 2013a). Information provided by the Federal Emergency Management Agency confirms that none of the project area lies within the 100-year floodplain (FEMA, 2015).

3.8 Earth Resources

3.8.1 Definition of the Resource

This section discusses the soil, underlying geology, and potential for geologic hazards and erosion located within the ROI of the Proposed Action. The term “soil” refers to unconsolidated materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodibility all determine the ability of the ground to support man-made structures and facilities, provide a landscaped environment, and control the transport of eroded soils into nearby drainages. In undeveloped areas, the quality and productivity of soil are critical components of agricultural production. The term “geologic hazard” refers to geologic conditions with the potential to cause damage to persons or property. Of specific concern in the region surrounding Moody AFB are the potential for groundwater recharge areas and karst environments. The ROI for earth resources includes the activity area on and around the proposed PR Campus.

3.8.2 Existing Conditions

Lowndes County is located within the Tifton Upland District of the Atlantic Coastal Plain physiographic province (Clark and Zisa, 1976). The underlying geology consists of the Hawthorn Formation that overlies the Tampa Formation. The Hawthorn Formation averages 150 feet in thickness and is phosphatic in composition (Stevens, 1979; U.S. Geological Survey [USGS], 2014). The underlying Tampa Formation is composed of limestone that can be seen in outcrops along the Withlacoochee River (Stevens, 1979; USGS, 2014). Additionally, Lowndes County is within a karst region, having abundant sinkholes and sinkhole lakes that have formed where the aquifer crops out and the overlying confining unit has been removed by erosion (Krause, 1979; Leeth et al., 2001). These are a result of groundwater dissolving the high calcium carbonate content of the underlying limestone formations.

A large portion of the proposed PR Campus area is considered highly hazardous for aquifer vulnerability and sinkhole formation because of the moderately shallow depth to water and moderately high recharge movement and low containment rate (Krause, 1979; Leeth et al., 2001).

The proposed area for the PR Campus is located within the Tifton Upland District of the Lower Coastal Plain. The soils on uplands in this region were formed in deep sedimentary sands and clays. Alluvial soils near streams and tributaries generally originated from material eroded from the uplands (Stevens, 1979). Five soil series are located within the project area (Table 3.8-1): these include Tifton-Urban land

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complex, 0 to 5 percent slope (56 percent of total area); Pelham loamy sand (30 percent of total area); Tifton loamy sand, 0 to 2 percent slope (6 percent of total area); Clarendon loamy sand (5 percent of total area); and Tifton loamy sand, 2 to 5 percent slope (3 percent of total area).

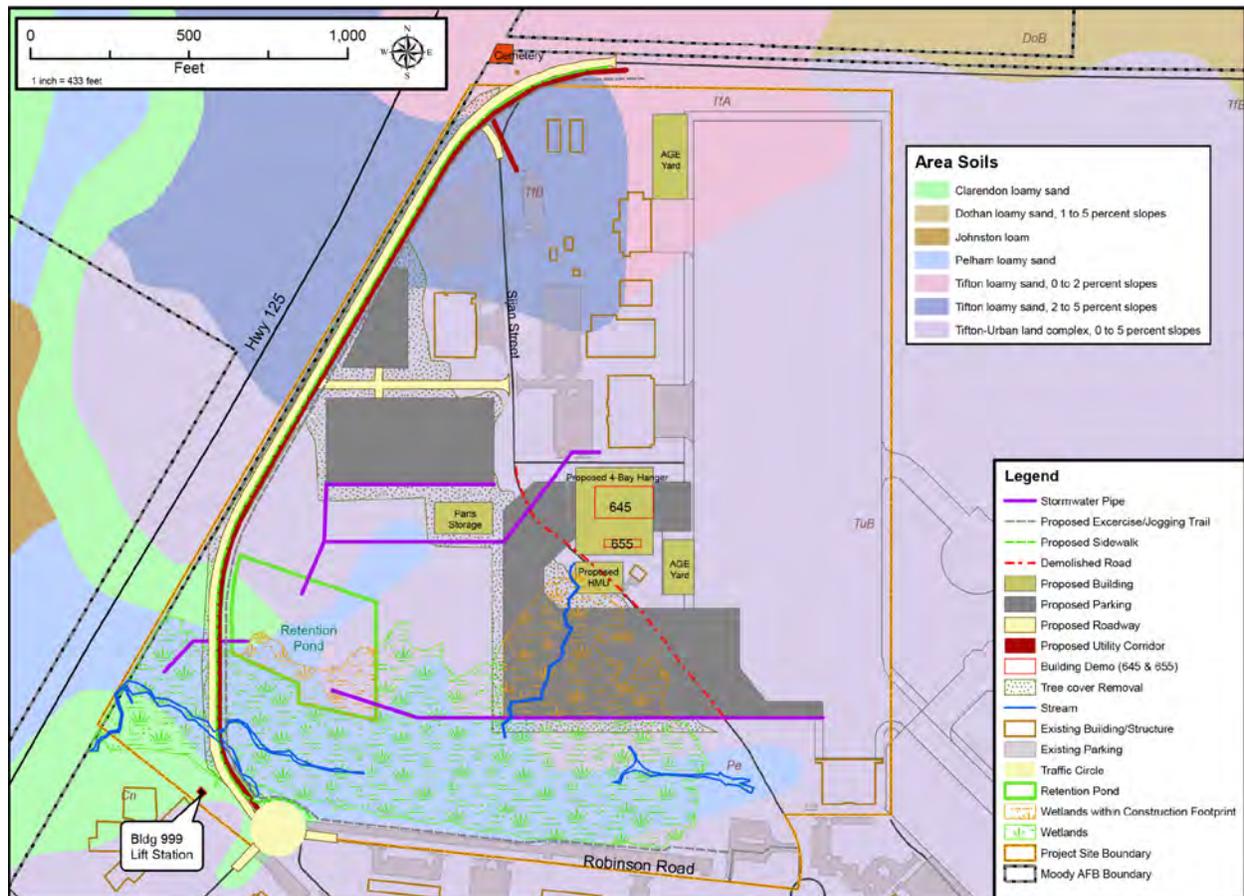
Table 3.8-1: Soil Types at the PR Campus Project Area

Soil Type	Acres in Project Area
Tifton loamy sand, 0 to 2 percent slope	0.67
Clarendon loamy sand	0.56
Pelham loamy sand	3.29
Tifton-Urban land complex, 0 to 5 percent slope	6.23
Tifton loamy sand, 2 to 5 percent slope	0.29
Total acres	11.04

Source: Stevens, 1979

The primary soil type found within the project area is the Tifton-Urban land complex, 0 to 5 percent slopes (Figure 3.8-1). Slopes are typically smooth and the soils are represented by a brown loamy sand surface layer about 8 inches thick. Subsoils within this complex are sandy clay loams that extend to a depth of 60 inches or more, with ironstone nodules located throughout the soil. This soil is moderate in natural fertility and low in organic matter content. Permeability is moderate, and available water capacity is medium (Stevens, 1979).

Figure 3.8-1: Soil Types at the PR Campus Project Area



Urban land soils have been altered by grading, cutting, filling, shaping, and smoothing for community development. Typically, urban land is used for private dwellings, industrial sites, streets and sidewalks,

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shopping centers, parking lots, airports, schools, and churches. This complex has high potential for most nonfarm uses. The slow permeability is a limitation for septic tank absorption fields but, if properly designed, is a suitable soil type for this use (Stevens, 1979).

The second most common soil type in the PR Campus project area is Pelham loamy sand. It is a poorly drained soil with a seasonally high water table and is prone to flooding. This soil type is also nearly level and found on low areas and drainage ways. Soils in the Pelham series are typically poorly suited for development due to wetness and flooding but can be utilized for such purposes.

Other soil types in the project area include Tifton loamy sand and Clarendon loamy sand, both of which have high potential for row crops, hay, and pasture and are considered prime farmland soil types. These soil types compose about 14 percent of the project area but are not currently being utilized for agricultural purposes. Tifton soils have slow permeability, which limits the potential for septic tank absorption fields; however, with proper design, septic field use is possible in this soil type (Stevens, 1979).

3.9 Infrastructure

3.9.1 Definition of the Resource

Infrastructure, within the context of this EA, is associated with utilities and transportation. The utilities described and analyzed for potential impacts from the implementation of the Proposed Action and alternatives include potable water, wastewater, electricity, natural gas. The description of each utility focuses on existing infrastructure (e.g., wells), current utility use, and any predefined capacity or limitations as set forth in permits or regulations. Transportation is defined as the roadways on the main base, base gates, and the public roadways that provide access to the proposed PR Campus area. The ROI for infrastructure includes Moody AFB and off-base areas near the proposed PR Campus in Lowndes County.

3.9.1 Existing Conditions

Potable Water

Nine active wells exist on Moody AFB. Three wells located on the main base provide potable water after being treated at the nanofiltration plant. This water is sent to a 500,000-gallon underground storage tank and a 250,000-gallon elevated storage tank. Water is delivered by the main distribution system through a network of cast iron and polyvinyl chloride (PVC) pipes. The six remaining wells located throughout the base provide water for fire protection, air conditioning, recreation, and personnel support in isolated areas. Within the PR Campus project site boundary, an 8-inch main currently runs along Sijan Street providing water service to the existing facilities within the project site.

Wastewater

Domestic and industrial wastewater at Moody AFB is discharged to an on-base wastewater treatment facility located across Bemiss Road adjacent to the Base Golf Course. The treatment facility is installation-owned and contractor-operated. It consists of a conventional biological treatment facility with trickle filters, clarifiers, and ultraviolet treatment before discharging to Beatty Creek. The plant operates under an NPDES permit, which allows effluent discharge at an average rate of 0.75 million gallons per day (MGD) with a maximum of 1.125 MGD; this is equivalent to the capacity of the plant. The sludge generated from treatment is anaerobically digested, dewatered, and disposed of in a local landfill.

An existing 8-inch sewer main is located along Sijan Street. Wastewater from the project site flows to a lift station located in building 999 and from there flows across Bemiss Road to the wastewater treatment facility.

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Electricity

Power to Moody AFB is provided by two 115-kilvolt (kV) feeders from two separate Georgia Transmission-owned substations located off-base. A single, three-phase, 22-megavolt ampere transformer steps the voltage down from 115 kV to 12.47 kV. Five protected circuits distribute power throughout the base. The system is approximately 80 percent underground and 20 percent overhead. All overhead distribution is located on the main base. All electrical lines on the runway side of the base are required to be buried underground due to the proximity to flightline operations. Generators provide backup and emergency power to several of the base facilities. Currently, the base is using about 15 percent of the existing electrical capacity (Moody AFB, 2015a).

Natural Gas

Atlanta Gas Light is the main natural gas supplier for Lowndes County, which is provided to Moody AFB through a contract managed by the Defense Energy Support Center. Natural gas is distributed throughout the main base and base housing areas. An existing 4-inch natural gas main is located along Sijan Street.

Transportation

In the proposed PR Campus area, Sijan Street serves as the primary access road from the project area to the rest of the main base. Sijan Street and North Perimeter Road are considered primary roads, which sustain regular traffic on the installation. The inbound peak traffic for the main base is between 7 AM and 8:30 AM, and the peak outbound traffic occurs between 4 PM and 5:30 PM (U.S. Air Force, 2010a).

Outside of the installation boundary, the project area is bordered by two public roads. State Route 125 (Bemiss Road) is located to the west, and Hightower Road borders the area to the north. Hightower Road also bisects the installation boundary within the northern parcel of property.

3.10 Solid/Hazardous Materials and Waste

3.10.1 Definition of the Resource

Solid wastes are defined in Georgia (Chapter-391-3-4) as garbage, rubbish, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations and from community and institutional activities. The rules establish requirements for the collection, transport, storage, separation, processing, recycling, and disposal of solid wastes.

Hazardous materials refer to substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act or the Solid Waste Disposal Act. In general, hazardous materials include substances that, because of their quantity concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or the environment when released into the environment.

Hazardous wastes are regulated under the Resource Conservation and Recovery Act (RCRA) and are defined as any solid, liquid, contained gaseous, or semisolid waste or any combination of wastes that either exhibit one or more of the hazardous characteristics of ignitability, corrosivity, toxicity, or reactivity or are listed as hazardous wastes under 40 C.F.R. Part 261. The State of Georgia has adopted Federal regulations for any solid waste that has been defined as a hazardous waste. These regulations are promulgated by the Board of Natural Resources in Chapter 391-3 -11 of the Georgia rules.

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Moody AFB ERP sites may also be affected by proposed activities. The ERP is used by the Air Force to identify, characterize, clean up, and restore sites contaminated with toxic and hazardous substances, low-level radioactive materials, petroleum products, or other pollutants and contaminants. The ERP has established a process to evaluate past disposal sites, control the migration of contaminants, identify potential hazards to human health and the environment, and remediate the sites.

Proposed activities may affect asbestos and lead-based paint (LBP) in existing structures. Asbestos is a naturally occurring mineral that is a very effective heat and sound insulator. Consequently, it was used in many buildings as a fire and noise retardant. Friable (brittle) asbestos becomes hazardous when fibers become airborne and are inhaled. Asbestos has been linked to several diseases, including lung cancer, and has not been used in construction materials since 1987. Lead was used as an additive and pigment in paints for many years prior to 1978; therefore, older structures on the base that have multiple layers of older paint are potential sources of lead. Exposure to lead is usually through inhalation during renovation and demolition activities or through ingestion of paint chips or lead-contaminated drinking water. Lead has been associated with central nervous system disorders, particularly among children and other sensitive populations.

3.10.2 Existing Conditions

The ROI for solid debris and hazardous materials and wastes is defined as on-base areas where hazardous materials would be utilized and hazardous wastes would be generated, as well as affected off-base areas, such as landfills where wastes would be disposed of.

Solid Wastes

All municipal solid waste at Moody AFB is disposed of in off-base, permitted, secure landfills. Additionally, construction and demolition (C&D) debris is occasionally generated from various projects. Typical C&D debris includes lumber, timber, reinforcing steel, piping, wiring, brick, plaster, masonry, metal, wall board, roofing, insulation materials, concrete, asphalt, and packing/packaging materials. Contractors are urged to recycle those materials that may be recycled (typically asphalt, concrete, and occasionally—and by request of Moody AFB personnel—metal products). No contractual language currently exists stating that contractors must recycle C&D debris, and it is at the contractor's discretion how they choose to manage C&D debris.

During 2012, Moody AFB generated a total of 1,426 tons of solid waste. Approximately, 40 percent of this waste was diverted for recycling. The remaining waste (approximately 860 tons) was disposed of in the local municipal landfills (Moody AFB, 2013b).

The Advanced Disposal Services Evergreen Municipal Solid Waste Landfill, located in Lowndes County, is utilized by Moody AFB for disposal of municipal solid waste, which includes household refuse. This landfill receives an average daily tonnage of 1,500 tons/day and has a projected life expectancy of 30 years (Georgia Department of Community Affairs [GDCA], 2015). In addition, there are two landfills in the region that are permitted to accept C&D debris: the Atkinson County Landfill and the Fitzgerald Landfill located in Ben Hill County, Georgia. These landfills also accept tree trimmings and wood debris, as may be generated by proposed land-clearing activities. The average daily tonnage and life expectancy, respectively, for each of these landfills are 105 tons/day, 19 years for Atkinson County Landfill and, 13 tons/day, 10 years for Fitzgerald Landfill (GDCA, 2015).

Hazardous Materials Management

A variety of products containing hazardous materials are used by the base as part of day-to-day operations. To administer these materials, Moody AFB has implemented a comprehensive hazardous material management process, including the use of a Hazardous Materials Pharmacy (HAZMART). The

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HAZMART encompasses both a storage facility and an established set of procedures designed to control the acquisition, storage, issue, and disposition of serviceable hazardous materials. Working in coordination with the Environmental Management, Bio-environmental, and Safety Offices, the HAZMART ensures that only approved products are purchased and stored and that they are only issued to authorized users. Contractors conducting operations on the base are required to supply information to the base regarding any hazardous material utilized.

Hazardous Waste Management

The base is regulated as a large-quantity generator of hazardous wastes and maintains USEPA identification number GA0570024109. Hazardous wastes are generated by aircraft, vehicle, and equipment maintenance activities. Types of hazardous and petroleum (nonhazardous) wastes generated include used oil and filters, used antifreeze, used solvent, used sealants, reclaimed JP-8, waste diesel and motor gasoline (MOGAS), fuel filters, paint waste, spent hydraulic fluid, waste corrosives, sludge from parts washers and oil/water separators, and lamps/batteries (both managed as universal waste) (Moody AFB, 2013c).

Hazardous wastes are initially stored at satellite accumulation points at work locations. No more than 55 gallons of hazardous waste or 1 quart of acute hazardous waste can be accumulated at these points. Once the storage limit is reached, the waste is transferred to the central accumulation point (building 932-B) and stored until an approved contractor removes the waste for disposal. The waste is then transported to an approved off-base treatment, storage, or disposal facility where it is managed in accordance with all applicable local, state, Federal, and DoD regulations (Moody AFB, 2013c).

Moody has implemented a Hazardous Waste Management Plan (Moody AFB, 2013c) that identifies hazardous waste generation areas and addresses the proper packaging, labeling, storage, and handling of these wastes.

Asbestos and LBP

There is a potential that renovation or demolition activities may disturb asbestos or LBP in buildings structures. Moody AFB manages asbestos and LBP in place where possible, removing it only when there is a threat to human health or the environment or when it may be impacted by construction or demolition. GEPD regulations require facility owners and/or operators involved in demolition and renovation activities to inspect the affected facility before attempting to remove any asbestos, file proper notification, and handle and dispose of asbestos properly. Removal and disposal of asbestos and LBP are stipulated in project designs and are carried out in strict compliance with all applicable Federal, state, and local laws, rules, regulations, and standards.

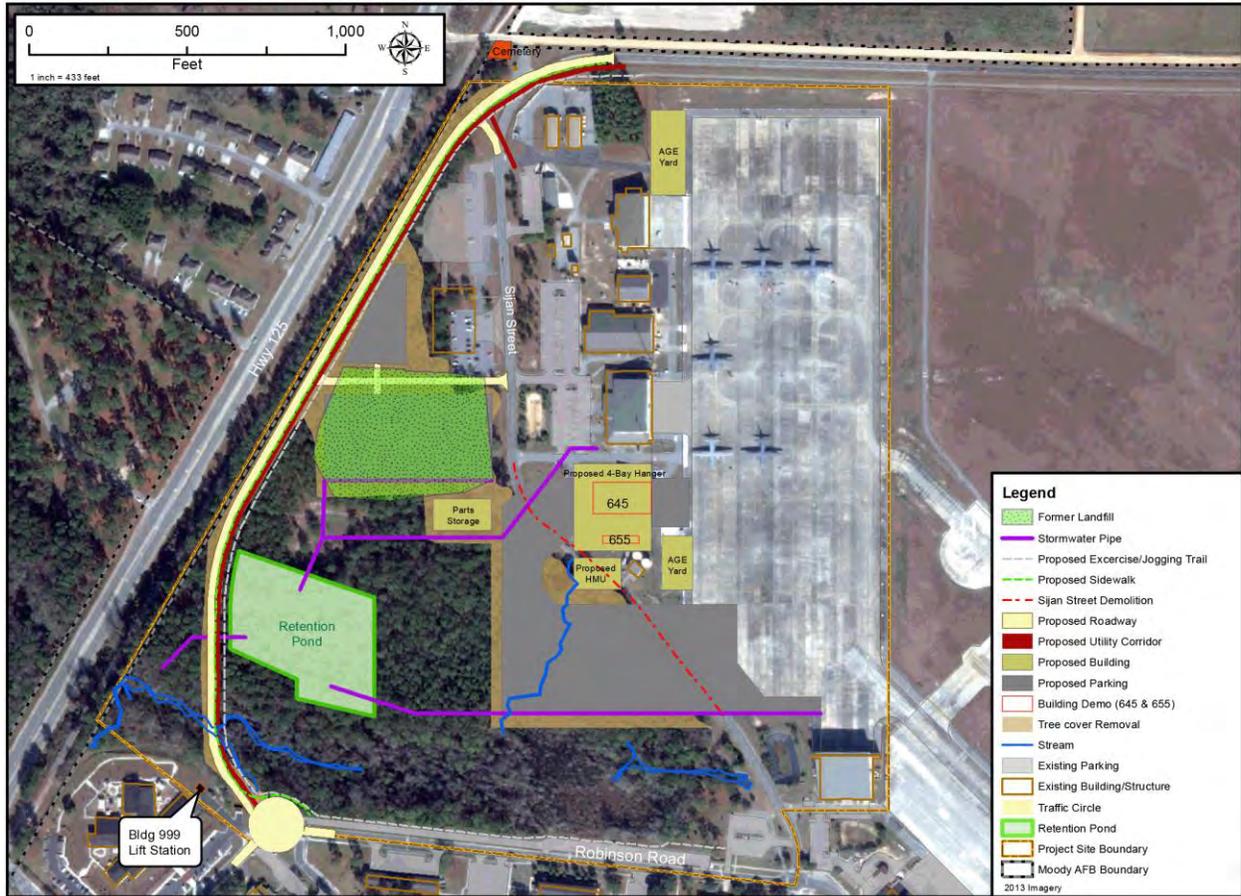
ERP Sites

The proposed locations of facilities coincide with an area formerly used as a base landfill (Figure 3.10-1). From 1953 to 1955, the landfill, designated as Site LF-02 in the Moody AFB ERP, received all general waste generated by the base. The contents of the landfill are unknown; however, no contamination has been identified as originating from the landfill contents and investigations at the site determined that neither soil nor groundwater posed a risk to human health, and the site was approved to be closed. Moody AFB submitted a RCRA no further action (NFA) request to GEPD in 2001, and NFA approval was received in 2005 (Moody AFB, 2014b).

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Figure 3.10-1: Location of Former Landfill LF-02



Environmental Consequences

4.0 ENVIRONMENTAL CONSEQUENCES

Potential impacts to all resources are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity in 40 C.F.R. 1508.27. This requires the significance of the action to be analyzed with respect to the setting of the proposed action and relative to the severity of the impact.

4.1 Air Quality

4.1.1 Analysis Methodology

The Clean Air Act Section 176(c), General Conformity, requires Federal agencies to demonstrate that their proposed activities would conform to the applicable SIP for attainment of the NAAQS. General conformity applies only to nonattainment and maintenance areas. The project region is designated as attainment for all criteria pollutants (USEPA, 2015a). Therefore, general conformity is not applicable and a determination is not required. The criteria pollutants were compared with Lowndes and Lanier County emissions, which are in attainment for all criteria pollutants.

In order to evaluate air emissions and their impact on the overall ROI, the emissions associated with the project activities were compared with the total emissions on a pollutant-by-pollutant basis for the ROI's 2011 NEI data. To provide a more conservative analysis, the two counties were selected as the ROI instead of the USEPA-designated Air Quality Control Region, which is a much larger area.

The Air Conformity Applicability Model (ACAM) Version 5.0.1 was utilized to provide a level of consistency with respect to emissions factors and calculations. The ACAM provides estimated air emissions from proposed Federal actions in areas designated as nonattainment and/or maintenance for each specific criteria and precursor pollutant as defined in the NAAQS. ACAM was utilized to calculate construction, demolition, and other emissions associated with the Proposed Action alternatives. Equations and emission factors can be found in Appendix C, *Air Quality Calculations*.

GHGs were included in the analysis. The primary source of carbon dioxide emissions would be fuel combustion from aircraft emissions during training activities. GHG emissions were compared with the CEQ's minimum level of 25,000 metric tons (27,558 tons) as a level at which consideration would be required in NEPA documentation. Air quality calculations are provided in Appendix C.

4.1.2 Alternative 1 (Preferred Alternative)

Emissions associated with Alternative 1 would not exceed 2.67 percent of the annual baseline emissions for each criteria pollutant in the Lowndes and Lanier Counties ROI (Table 4.1-1). GHG emissions would be less than 25,000 metric tons (27,558 tons). Changes to the aircraft parking apron and taxiway are likely to alleviate congestion and improve taxi times, which would lead to a minor beneficial decrease in aircraft pollutant and GHG emissions in the long term. Likewise, while roadway improvements would most likely cause delays and added emissions during the construction period, in the long-term traffic flow would increase and delays would decrease, leading to a minor beneficial decrease in pollutant and GHG emissions.

Based on air emissions modeling and analysis, Alternative 1 would not result in any significant increase in air emissions and no adverse impacts would occur.

Environmental Consequences

Table 4.1-1: Alternative 1 Air Emissions Compared with Lowndes and Lanier County Emissions

	Emissions (tons/year)						
	CO	NO _x	PM ₁₀	PM _{2.5}	SO _x	VOCs	CO _{2e}
Baseline for Lanier and Lowndes Counties	39,522	6,956	2,728	4,882	807	3,9324	1,038,681
Construction and demolition emissions	20.117	25.943	552.646	1.449	0.041	5.553	3,183.721
<i>Percent of county emissions¹</i>	<i>0.05%</i>	<i>0.37%</i>	<i>2.67%</i>	<i>0.03%</i>	<i>0.01%</i>	<i>0.01%</i>	<i>0.31%</i>

Source: USEPA, 2015b

CO = carbon monoxide; CO_{2e} = carbon dioxide equivalent; NO_x = nitrogen oxides; PM₁₀ and PM_{2.5} = particulate matter with an aerodynamic diameter of less than or equal to 10 microns and 2.5 microns, respectively; SO_x = sulfur oxides; VOC = volatile organic compound

1. Includes Lanier and Lowndes Counties, Georgia.

4.1.3 Alternative 2

Emissions associated with Alternative 2 would be the same as those under Alternative 1. Though the configuration of the building construction would vary slightly from Alternative 1, the size and scope of the construction and demolition efforts would be the same. Therefore, impacts would amount to 2.67 percent or less of each of the criteria pollutants, and GHG emissions would be less than 25,000 metric tons (27,558 tons).

4.1.4 Alternative 3

Emissions associated with Alternative 3 would be the same as those under Alternative 1. Though the configuration of the building construction would vary slightly from Alternative 1, the size and scope of the construction and demolitions efforts would be the same. Therefore, impacts would amount to 2.67 percent or less of each of the criteria pollutants and GHG emissions would be less than 25,000 metric tons (27,558 tons).

4.1.5 No Action Alternative

The No Action Alternative would not result in any additional impacts to air quality beyond the scope of normal conditions and influences within the ROI.

4.2 Acoustic Environment

4.2.1 Analysis Methodology

Potential acoustic environment impacts are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity in 40 C.F.R. 1508.27. Public annoyance is the most common impact associated with exposure to elevated noise levels. As described in Section 3.2.1, annoyance due to aircraft noise can be predicted based on the noise metric L_{dn} (Schultz, 1978; Finegold et al., 1994). When subjected to an L_{dn} of 65 dBA, approximately 12 percent of persons so exposed will be “highly annoyed” by the noise. At levels below 55 dBA, the percentage of annoyance is correspondingly lower (less than 3 percent). Based on numerous sociological surveys and recommendations of Federal interagency councils (FICUN, 1980; FICON, 1992), the most common benchmark referred to is 65 dBA L_{dn}. Above this threshold, not all land uses are considered to be compatible, according to guidelines adopted by the DoD (DoDI 4165.57). While residences and other noise-sensitive facilities with sufficient outdoor-to-indoor noise level reduction may be considered compatible at noise levels between 65 and 75 dBA L_{dn}, these land uses are never considered to be compatible at noise levels exceeding 75 dBA L_{dn}.

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Noise is a highly subjective phenomenon, and the likelihood of annoyance is strongly linked to characteristics of the listener, including the attitude of the listener toward the noise source. As most of the persons on-base are either directly or indirectly employed by the military, their attitude toward the military is generally assumed to be positive, and they may be less likely to be annoyed due to aircraft noise than the off-base civilian population.

The programs NOISEMAP and Rotorcraft Noise Model (RNM) were used to calculate time-averaged noise levels based on expected aircraft flight paths, altitudes, engine power settings, and airspeeds. The flight paths used in noise modeling are representative and would vary according to winds, weather conditions, and other factors. RNM is a program designed to handle the complex noise distribution patterns generated by rotorcraft, and it was used for modeling HH-60G operations noise. NOISEMAP was used to model all fixed-wing aircraft noise and noise generated by rotorcraft for which RNM reference acoustic data are not yet available. SH-60B reference acoustic data were used as a surrogate for HH-60G noise levels. As described in the *Final EA for A-29 Light Air Support (LAS) Training Beddown* (U.S. Air Force, 2014), the T-6 Texan II was used as a surrogate for the A-29 because of similarities between the aircraft, including aircraft size and similar engine type. In accordance with current policy, noise levels are presented for an average annual day, meaning that total annual operations are divided evenly among 365 days. The effects of terrain (e.g., hills, valleys) and surface impedance (e.g., grass absorbs sound energy to a greater degree than water) were incorporated. The effects of vertical vegetation (e.g., trees) are not accounted for in the currently available noise modeling software.

The program Roadway Construction Noise Model was used to predict noise levels associated with proposed demolition and construction activities (FHWA, 2006). Noise levels were modeled for a scenario in which several commonly used pieces of construction equipment are operating simultaneously.

Noise impacts could be considered significant if levels across large quantities of land used for noise-sensitive purposes were to increase to greater than 65 dBA L_{dn} . Noise impacts would also be considered significant if any residences were to be exposed to greater than 75 dBA L_{dn} .

4.2.2 Alternative 1 (Preferred Alternative)

Aircraft Noise

Under Alternative 1, several demolition and construction projects would be accomplished as described in Section 2.3.1. Once those projects are complete, aircraft operations would be relocated to make use of the newly available facilities (see Figure 2.3-1 and Figure 2.3-2).

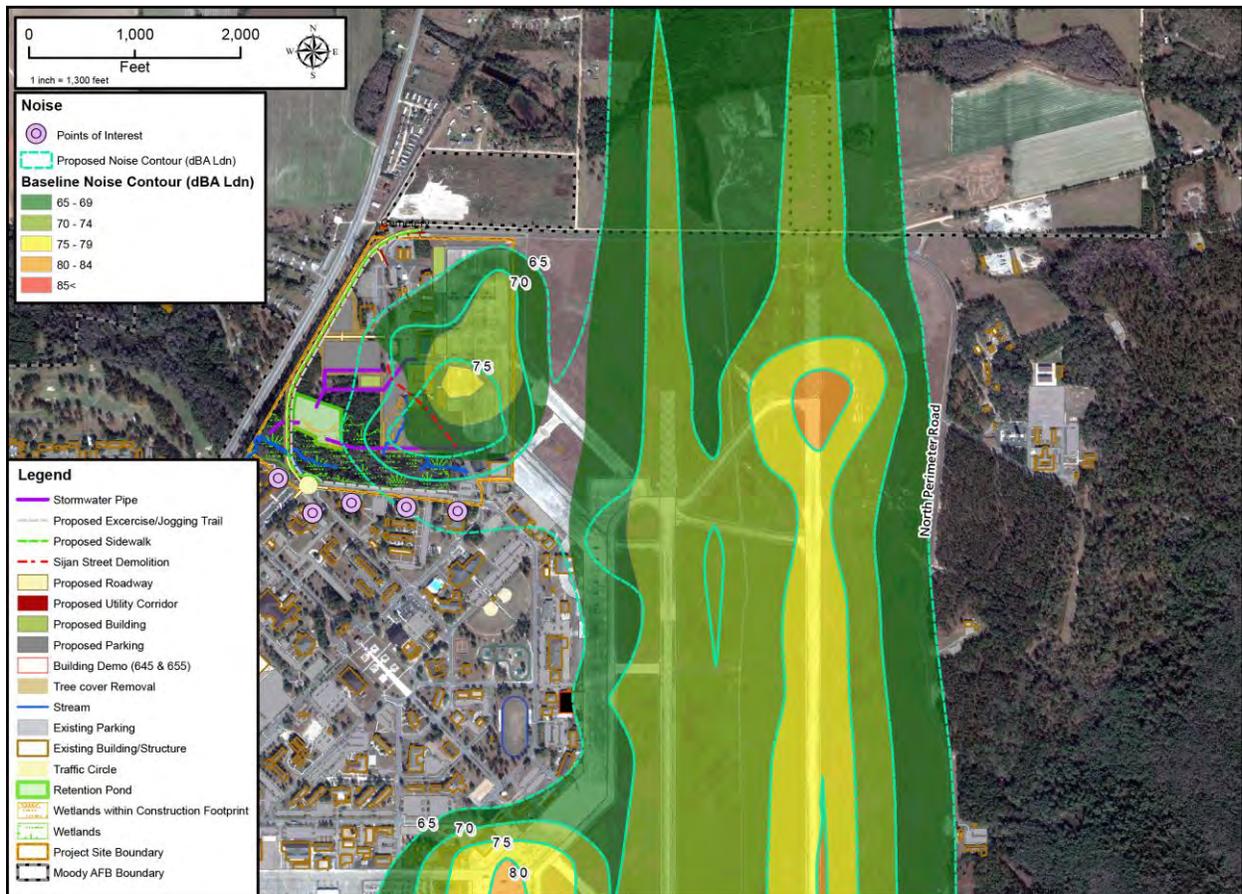
HH-60G parking spots would be established on newly constructed parking apron. HH-60G aircraft would “air taxi” (i.e., proceed slowly at an altitude of approximately 10 feet above the ground using designated taxiways) from the parking spots along Juliet taxiway to a designated takeoff/landing location on Foxtrot taxiway. After returning from flying missions, the aircraft would retrace their paths from Foxtrot taxiway to the parking spots. Approximately 4.4 taxi round trips per average annual day would be made, and about 36 percent of these taxi operations would be conducted in the late-night time period between 10:00 PM and 7:00 AM. HH-60G aircraft would also perform approximately three engine runs per average annual day related to engine maintenance on the new parking apron. About 40 percent of the maintenance-related engine runs would occur between 10:00 PM and 7:00 AM. Aspects of HH-60G operations other than parking, maintenance, and taxiing would not be affected by implementation of the Preferred Alternative. The operations of aircraft other than the HH-60G would not change in any way.

As shown in Figure 4.2-1, time-averaged aircraft noise levels (L_{dn}) would increase in the vicinity of the newly constructed HH-60G parking apron and the taxiway along which “air taxi” would be conducted. On-base areas newly affected by noise levels exceeding 65 dBA L_{dn} would include wetland areas south of

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the new parking apron as well as areas along Robinson Road where residential and mission support facilities are located. The number of on-base acres affected by noise levels exceeding 65 dBA L_{dn} would increase by about 53, from 2,197 acres to 2,250 acres. No structures in the ROI would be affected by noise levels exceeding 80 dBA L_{dn} , the level above which DoD policy indicates that populations are at an increased risk of potential hearing loss. No off-base areas that have not been exposed to noise levels above 65 dBA L_{dn} under baseline conditions would be affected by noise louder than 65 dBA L_{dn} under Alternative 1. The total amount of off-base land affected by noise levels louder 65 dBA L_{dn} would remain at 670 acres.

Figure 4.2-1: Preferred Alternative and Baseline L_{dn} in the ROI



A more-detailed aircraft noise analysis was conducted at noise-sensitive locations closest to the proposed PR Campus (Table 4.2-1). Time-averaged aircraft noise levels at one dormitory (building 324) would increase from 60 to 65 dBA L_{dn} and at the Education Center/Library (building 328) would increase from 61 to 65 dBA L_{dn} under Alternative 1. Unless the structure provides at least a 25-dB outdoor-to-indoor noise level reduction, group quarters and educational services are not considered a compatible land use at this noise level according to DoD guidelines (DoDI 4165.57). Although typical “stick-built” residential construction provides about a 20-dB outdoor-to-indoor noise level reduction, heavier construction materials (e.g., brick façade) and energy efficient construction elements commonly installed on military structures (e.g., double-paned windows) often provide higher levels of attenuation. The dormitory and Education Center/Library both have a brick façade. Outdoor-to-indoor noise level reduction is affected strongly by the structural element providing the lowest level of attenuation. For example, noise levels

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experienced inside a brick structure with an open vent directly connecting a bedroom to the exterior would be strongly affected by the noise entering via the vent. Extensive interior and exterior noise level measurements would be needed to determine the amount of outdoor-to-indoor noise level attenuation provided by these two structures. Given information available from exterior visual inspection, it is possible that these structures provide a 25-dB noise level reduction.

Table 4.2-1: Aircraft Noise Levels at Points of Interest under the Preferred Alternative and Baseline Conditions

Point of Interest ID*	Location Description	L _{dn} , dBA		
		Baseline	Preferred Alternative	Delta
1	Child Development Center, building 210	55	57	+2
2	Child Development Center, building 207	57	59	+2
3	Dormitory and Lodging, building 325	58	62	+4
4	Dormitory and Lodging, building 324	60	65	+5
5	Education Center/Library, building 328	61	65	+4

L_{dn} = day-night average sound level; dBA = A-weighted decibels

* As shown in Figure 4.2-1.

Land use recommendations are made based on the level of noise sensitivity of activities common to a particular land use. However, the noise and the noise-sensitive activity must overlap in time for activity interference to occur. Residential land uses such as dormitories are often used during the day for conversation, watching television, or other activities that involve listening and are often used at night for sleeping. The dormitory can be expected to be, in relative terms, more noise sensitive during the night and evening when airmen are at home and/or sleeping. The dormitory can be expected to be relatively less noise sensitive during the daytime hours when many airmen are at work. The Education Center/Library, on the other hand, is used for noise-sensitive activities (e.g., studying, testing) during the day but is not normally used between closing time (8:00 PM Monday to Thursday, 6:00 PM on Friday, 5:00 PM on Saturday, and closed on Sunday) and opening time at 10:00 AM. HH-60G operations noise during hours in which the Education Center/Library is closed would have no effect, as the facility is not noise sensitive during these times.

People living and working on an Air Force installation may be less likely to be annoyed by aircraft noise than the civilian population off-installation. As discussed in Section 3.2, noise is a highly subjective phenomenon, and the reaction of any individual to noise is dependent on several factors specific to that person (e.g., feelings about the noise source, mood) in addition to the physical characteristics of the noise itself. In this context, the potential impacts of aircraft operations noise at noise-sensitive locations near the PR Campus would not be significant.

Construction Noise

Construction and demolition would result in temporary localized increases in noise level while the construction projects are underway. The construction and demolition activities closest to noise-sensitive locations would be road demolition and construction. A traffic circle would be constructed about 100 feet from the CDC, and the proposed road along the western base boundary would be located about 250 feet from off-installation residences. The Education Center/Library and dormitories along Robinson Road would be located about 500 feet from the proposed aircraft parking apron expansion. Table 4.2-2 lists noise levels associated with common equipment types and presents a scenario in which all of the equipment types listed are operating simultaneously. Road demolition and construction activities can be expected to be completed within a relatively short time frame. While road construction is under way,

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heavy equipment would operate only for limited periods of time on certain days. During these times, children at the CDC could experience noise levels as high as 79 dBA L_{max} that could interrupt conversation and that could distract children from assigned tasks. The potential for disruption would be greatest when children are outdoors and on the side of the building closest to the construction activities. When children are indoors, noise levels and the potential for disruptions would be reduced by structural noise attenuation. Noise levels at the CDC would not be sufficiently high or of sufficient duration to pose any risk of hearing loss to children or CDC staff. Construction workers would wear hearing protection, as required, in accordance with applicable laws and regulations.

Off-installation residences, which are located about 250 feet from proposed construction, would be exposed to noise levels as high as 71 dBA L_{max} . Construction and demolition activities at locations within the PR Campus would occur adjacent to existing industrial facilities that are less noise sensitive. These construction activities would be farther from the CDC and off-installation structures. As shown in Table 4.2-2, noise levels at the closest on-base structure to the proposed Squad Ops building (a distance of 1,300 feet; see Figure 4.2-1) would be as high as 58 dBA L_{max} . These noise levels would be noticeable but would not typically be disruptive. As noted in Section 3.2, the ROI is exposed to frequent loud aircraft operations noise as well as ground vehicle traffic noise under baseline conditions. In this context, the temporary and localized noise generated by construction and demolition activities could be disruptive and annoying but would not be significant.

Table 4.2-2: Noise Levels of Common Construction Equipment

Equipment Type	Noise Level (dBA L_{max}) at Distance (feet)			
	100	250	1,000	1,300
Dozer	79	68	56	53
Backhoe	72	64	52	49
Grader	79	71	59	57
Dump truck (low speeds)	70	63	50	48
Simultaneous operation of equipment above	79	71	59	58

Source: FHWA, 2006

dBA = A-weighted decibels; L_{max} = maximum noise level

4.2.3 Alternative 2

Alternative 2 would differ from Alternative 1 only in the location of proposed structures. Aircraft operations noise impacts would be the same as those described for Alternative 1. Noise impacts would not be expected to be considered significant. Under Alternative 2, the demolition and construction projects located closest to noise-sensitive locations (i.e., roadway demolition and construction) would be the same as under Alternative 1. Alternative 2 differs from Alternative 1 in that the HMU would be co-located with the hangar, and the Squad Ops building would be sited separately and to the south of the hangar where building 655 currently exists. These different construction locations would mean that the closest proposed structure to an existing noise sensitive location would be approximately 1,000 feet whereas the closest distance under Alternative 1 would be 1,300 feet away. At a distance of 1,000 feet, the noise level during construction would be as high as 58 dBA L_{max} . The 1 dBA difference between Alternative 1 and Alternative 2 is minimal and neither noise level would result in significant noise impacts.

4.2.4 Alternative 3

Noise impacts from aircraft operations would be the same as those described for Alternative 1 and would not be expected to be considered significant. The demolition and construction projects located closest to noise-sensitive locations (i.e., roadway demolition and construction) would be the same as under

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Alternative 1. Alternative 3 would differ from Alternative 1 in that the Squad Ops building would be sited separately and to the west of the hangar near the proposed privately owned vehicle parking lot. These different construction locations mean that the closest proposed structure to an existing noise sensitive location would be approximately 1,300 feet away and the highest construction noise level would be the same as under Alternative 1. Construction and demolition noise impacts would not be significant.

4.2.5 No Action Alternative

Under the No Action Alternative, the PR Campus would not be constructed and aircraft operations would remain in their current locations. Implementation of the No Action Alternative would not result in any changes to the acoustic environment, and there would no noise impacts.

4.3 Safety

4.3.1 Analysis Methodology

This section evaluates the potential for the Proposed Action alternatives to increase safety risks as well as the Air Force's capability to manage these risks. Potential safety impacts are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity in 40 C.F.R. 1508.27. Potential impacts related to safety were considered significant if proposed activities would create a situation involving endangerment to life or health or pose an unusual risk to military personnel or nearby residents and the general public off-site. For example, the analyses evaluated whether construction activities would increase safety risks or if implementation of the alternatives would result in incompatible land use with regard to safety criteria such as Q-D arcs.

4.3.2 Alternative 1 (Preferred Alternative)

Construction Safety

Operations at Moody AFB would continue to be conducted using the same processes and procedures as under current operations. All actions would be accomplished by technically qualified personnel and would be conducted in accordance with applicable Air Force safety requirements, approved technical guidelines, and AFOSH standards.

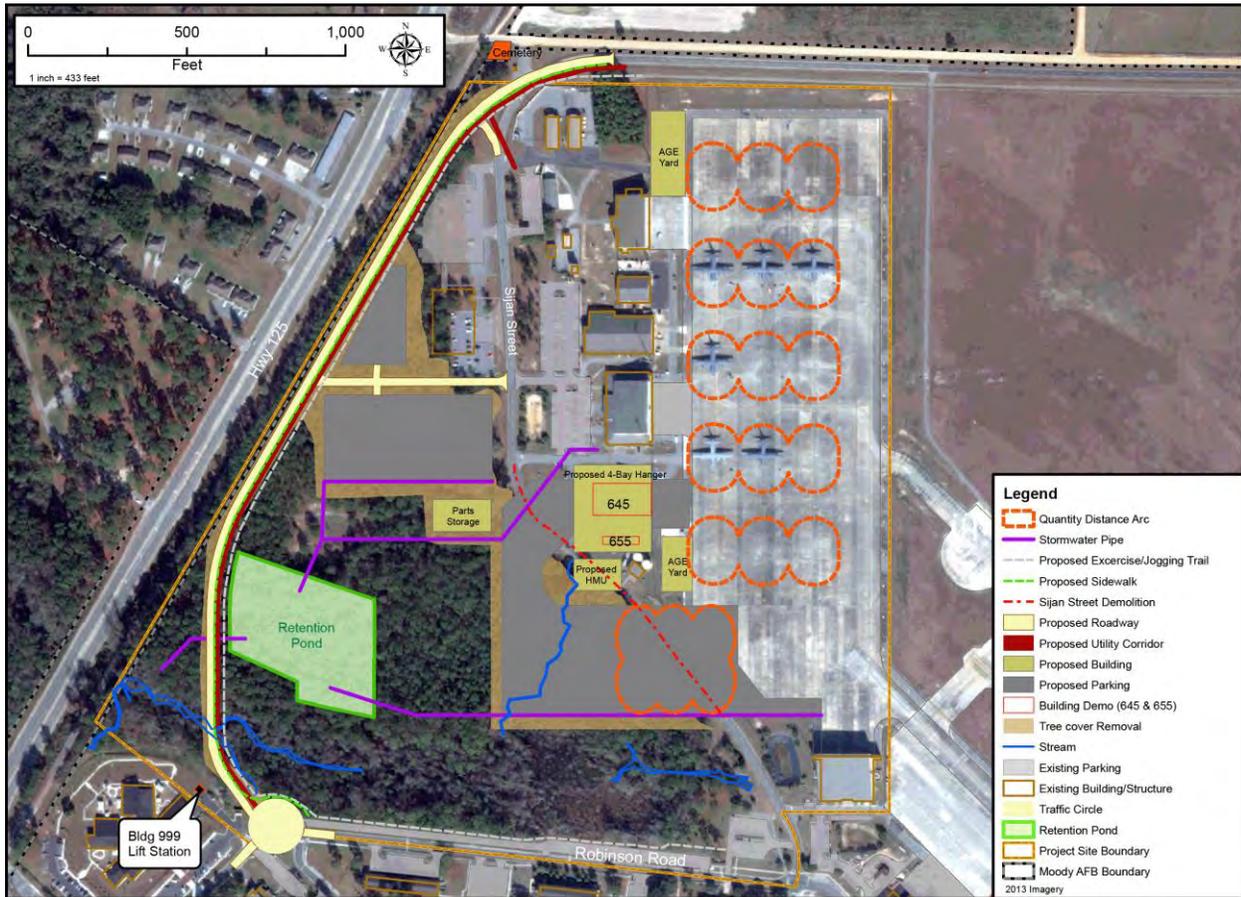
No unique construction practices or materials would be required to construct proposed buildings. During construction, standard industrial safety standards and best management practices (BMPs) would be followed, including implementing procedures to ensure that guards, housekeeping, and personal protective equipment are in place; establishing programs and procedures for lockout, right to know, confined space, hearing conservation, forklift operations, etc.; conducting employee safety orientations and performing regular safety inspections; and developing a plan of action for the correction of any identified hazards. No unusual ground safety risks would be expected from these activities and, with the adherence to safety standards, would not result in any significant impacts.

Explosives Safety

Proposed projects would not result in a change to existing Q-D arcs at the MSA, nor would any proposed structure be located within Q-D arcs. However, the Q-D arc for the southwesternmost C-130 parking location on the aircraft apron would slightly overlap the proposed HH-60 AGE Yard (Figure 4.3-1). The yard is not an inhabited space and would only be used for equipment storage; consequently, there would be no significant adverse safety impacts. New HH-60 Q-D arcs would not impact any of the proposed PR Campus facilities.

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Figure 4.3-1: Alternative 1 Q-D Arcs



AT/FP Considerations

Proposed projects would incorporate AT/FP standards to the maximum extent practicable, especially in the case of new construction. This would include ensuring that facilities meet required standoff criteria and the installation of a fence for the aircraft apron to improve security; consequently, implementation of Alternative 1 would not result in any significant impact with regard to safety.

4.3.3 Alternative 2

There are no impacts to safety under Alternative 2 that were not previously discussed under Alternative 1. Consequently, no significant impacts would occur.

4.3.4 Alternative 3

There are no impacts to safety under Alternative 3 that were not previously discussed under Alternative 1. Consequently, no significant impacts would occur.

4.3.5 No Action Alternative

Under the No Action Alternative, the proposed PR Campus plan would not be implemented. Current safety incompatibilities and inadequate AT/FP compliance would continue to exist. Therefore, adverse safety impacts would result from implementation of the No Action Alternative but would not be significant.

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4.4 Land Use

4.4.1 Analysis Methodology

Potential impacts to land use are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The methodology to assess impacts on individual land uses requires identifying those uses and determining the degree to which they would be affected by each alternative. Significance of potential land use impacts is based on the level of land use sensitivity in affected areas. In general, land use impacts would be significant if they would:

- Be inconsistent or in noncompliance with applicable land use plans or policies.
- Preclude the viability of existing land use.
- Preclude continued use or occupation of an area.
- Be incompatible with adjacent or land uses in the vicinity to the extent that public health or safety is threatened.
- Conflict with airfield planning criteria established to ensure the safety and protection of human life and property.

Analysis of land use impacts also considered the effects of flight operations using the proposed aircraft parking apron and taxiway and if the change in noise exposure would have an adverse impact on land use compatibility. Incompatible land use impacts that would result from noise generated from flight operations were evaluated using the AICUZ guidelines presented in the Moody AFB AICUZ study (Moody AFB, 2014a).

Nearly all studies analyzing aircraft noise recommend no sensitive noise receptors (e.g., residences, public buildings, schools, churches, hospitals, and certain recreational uses) be located in land areas associated with noise exposures of 75 dB L_{dn} or greater. Usually, no restrictions are recommended below 65 dB L_{dn} . For noise levels between 65 and 75 dB L_{dn} , there is currently no consensus on restrictions, but residential use is generally discouraged. Almost all land uses except manufacturing, agriculture, and mining are incompatible with noise exposures greater than 80 dB L_{dn} .

4.4.2 Alternative 1 (Preferred Alternative)

Alternative 1 would not result in any substantive land use changes or significant impacts based on the criteria listed in Section 4.4.1. The largest change in land use would be the conversion of 8.71 acres of existing open space to aircraft operations and maintenance. This is primarily associated with the construction of new vehicle parking and the proposed apron and taxiway. An additional 3.74 acres of open space would also be needed for the construction of the new stormwater catch basin.

Use of the proposed aircraft parking apron and taxiway was analyzed to determine if the change in noise exposure would have an adverse impact on land use compatibility (see Section 4.2.2). On-base areas newly affected by noise levels exceeding 65 dBA L_{dn} would include wetland areas south of the new parking apron/taxiway as well as areas along Robinson Road where residential and mission support facilities are located. Time-averaged noise levels at one dormitory (building 324) and the Education Center/Library (building 328) would increase from below 65 dBA L_{dn} to just above 65 dBA L_{dn} under Alternative 1. However, the negligible increase in noise would not have a significant adverse impact on land use compatibility. No off-base areas that had not been exposed to noise levels above 65 dBA L_{dn} under baseline conditions would be affected by noise louder than 65 dBA L_{dn} under Alternative 1.

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4.4.3 Alternative 2

Alternative 2 differs from Alternative 1 only in the location of proposed structures. There are no land use impacts under Alternative 2 that were not previously discussed under Alternative 1. Consequently, no significant impacts would occur.

4.4.4 Alternative 3

Alternative 3 differs from Alternative 1 only in the location of proposed structures. There are no land use impacts under Alternative 3 that were not previously discussed under Alternative 1. However, the proposed location of the new Squad Ops building would convert an additional 9.13 acres of open space to aircraft operations and maintenance. No significant impacts would occur.

4.4.5 No Action Alternative

Under the No Action Alternative, the PR Campus would not be constructed and aircraft operations would remain in their current locations. Implementation of the No Action Alternative would not result in any changes to the existing land uses within the ROI.

4.5 Cultural Resources

4.5.1 Analysis Methodology

Analysis focused on assessing the potential for impacts to culturally sensitive areas such as archaeological sites and historic structures from demolition, ground clearance, road construction, and facility construction activities and on identifying methods to reduce the potential for adverse effects to cultural resources from these activities.

Potential impacts to cultural resources can occur by physically altering, damaging, or destroying a resource or by altering characteristics of the surrounding environment that contribute to the resource's significance. Resources can also be impacted by neglecting the resource to the extent that it deteriorates or is destroyed. Adverse effects occur when these activities intersect with identified NRHP-eligible resources within the area of potential effect. Adverse effects to cultural resources could also be caused by noise levels significant enough to either cause direct structural damage or prevent use of the building, which may lead to abandonment and disrepair.

This section discusses potential impacts to cultural resources, including any historic and prehistoric resources located within and adjacent to the proposed PR Campus project area.

4.5.2 Alternative 1 (Preferred Alternative)

The proposed PR Campus project area does not contain any archaeological sites, historic districts, cemeteries, sacred sites, TCPs, or other resources identified as eligible for listing in the NRHP and, as such, no cultural resources would be adversely affected. In a previous iteration of this project, the Air Force consulted with the SHPO and requested a determination of "no effect" to cultural resources in a letter dated 12 November 2013. In a response letter dated 2 December 2013 the Georgia SHPO concurred that the PR Campus would have no effect on cultural resources. Both pieces of correspondence are located in Appendix A of this document. There are three structures (buildings 658, 328 and 325) within the APE that were evaluated for historic significance and found to be ineligible for NRHP listing. These structures were not under consideration for the previous iteration of this project.

In April 2016 the Air Force completed the SHPO consultation process in accordance with Section 106 of the NHPA, as amended; the SHPO concurred on a finding of no effect to cultural resources (see Appendix A).

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Buildings 609, 645, and 655 would be demolished as part of the planned project activities. None of these structures are considered eligible for listing in the NRHP and, as such, planned demolition of building 609 would not result in adverse effects to cultural resources and consultation was not required for buildings 645 and 655.

In case of an inadvertent discovery of new, previously unidentified cultural resources, work on-site would cease and the discovery immediately would be reported to the cultural resource manager, who would initiate the Section 106 process. Additionally, the archaeological site must be treated as potentially eligible for listing in the NRHP until the Georgia State Historic Preservation Officer has concurred that the site is not eligible and Air Force activity can then resume (U.S. Air Force, 2012).

4.5.3 Alternative 2

Alternative 2 shares the same APE as Alternative 1 and contains no NRHP-eligible resources, sacred sites, or TCPs. As a result, no effect to cultural resources is anticipated from implementation of this alternative.

4.5.4 Alternative 3

Alternative 3 shares the same APE as Alternative 1 and 2 and contains no NRHP-eligible resources, sacred sites, or TCPs. As a result, no effect to cultural resources is anticipated from implementation of this alternative.

4.5.5 No Action Alternative

Under the No Action Alternative, adverse effects to cultural resources would not occur.

4.6 Biological Resources

4.6.1 Analysis Methodology

Potential impacts to biological resources are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity in 40 C.F.R. 1508.27. Analysis of biological resources considered potential impacts to vegetation communities and wildlife, including sensitive species. The plant and animal resources potentially affected are identified based on habitat type and previously documented occurrence. The analysis included an assessment of impacts resulting from disturbance, the potential to physically impact individual specimens, and habitat alteration and loss (tree clearing and wetland impacts). Projected conditions were compared with baseline conditions within the context of regional habitat availability and species populations, and a determination was made as to whether impacts would be adverse. An *adverse* impact would degrade habitat quality or diminish species health. A *significant adverse* impact would be one that is likely to jeopardize the continued existence of a species or result in an overall decrease in population diversity, abundance, or fitness.

In 2013, Moody AFB completed informal consultation on similar actions during preparation of the initial Personnel Recovery Campus EA, and the USFWS concurred that the actions were not likely to adversely affect Federally listed or candidate species. On February 9, 2016, Moody AFB completed additional informal consultation with the USFWS under Section 7 of the ESA under this revised Proposed Action, as provided in Appendix A. The Air Force received concurrence from the USFWS on a finding of “not likely to adversely affect” endangered species based on the analyses provided below (see Appendix A). While the impacts would essentially be the same as under the previous proposal, the extent of impacts to Federally protected species resulting from the current Proposed Action is expected to be less compared with the 2013 evaluation due to the smaller overall footprint.

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In correspondence dated April 22, 2016, associated with agency review of the Revised Draft EA, the Georgia Wildlife Resources Division made the following recommendations (correspondence is provided in Appendix A):

- Consultation with the USFWS regarding sensitive species
 - This was accomplished in February 2016.
- Continuous surveys for the flatwoods salamander (federally listed as threatened)
 - Consultation with the USFWS found no likely adverse impacts to any federally listed species. However, Moody AFB may consider future flatwoods salamander surveys as part of their Integrated Natural Resources Management Plan.
- Machinery be kept out of streams during construction and use of stringent erosion controls
 - Machinery will be excluded from streams to the extent practicable; any NPDES or USACE Section 404 permitting requirements will be adhered to.
- Maintain a 100-foot vegetation buffer (at least shrubs and ground vegetation) around streams
 - A vegetative buffer will be maintained around streams to the extent that project design allows.
- Use of natural, biodegradable erosion control materials to minimize impacts to wildlife species
 - These materials will be used to the extent practicable.

4.6.2 Alternative 1 (Preferred Alternative)

Wildlife could be disturbed or physically impacted during land clearing, demolition, and construction activities. Demolition and some of the construction activities would occur in the currently developed portion of the project area. Although some wildlife species tolerant of human presence and activity (e.g., rodents and some birds, lizards, and snakes) are likely present, such areas have limited or no habitat value for many species. Activities that occur in wetland, pine plantation, or other forest habitat would disturb a greater number of species, such as those listed in Table 3.6-1, Representative Wildlife Species in Wetland and Forest Habitats on Moody AFB, potentially including sensitive species. Wildlife in the project area could be temporarily disturbed or displaced due to noise and increased human presence. It is expected that these effects would be short term and would affect only animals in the immediate project areas. In the absence of other types of impacts, affected individuals would generally be able to return to the area after completion of activities. There would be a small increase in human activity as functions are consolidated in the campus area, which could result in decreased occurrence or avoidance of the area. While individuals of some species could be displaced long-term, the affected areas are small compared with other available habitat nearby, and a portion of the area is currently subject to disturbance under existing conditions.

Construction and land-clearing activities could also result in injury, mortality, or indirect effects due to physical impacts to individual species. Potential impacts could include crushing by vehicles or construction equipment. Mobile species, such as adult birds, would not be as susceptible to physical strikes, while others, such as smaller and/or less mobile species, would have greater potential to be impacted. It is not expected that substantial numbers of wildlife would be physically impacted. In addition, most of the wildlife species expected in the project area are locally and regionally common, and the loss or displacement of these individuals would not result in an overall decrease in population diversity, abundance, or fitness of any species.

Sensitive species with potential occurrence in the project area, and therefore potentially affected by disturbance or physical strike, include wood stork, bald eagle, eastern indigo snake, American alligator,

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round-tailed muskrat, and migratory birds. The wood stork and bald eagle are occasionally observed foraging at wetlands on and near the installation and could possibly occur in the project area. However, foraging is typically observed within larger wetland areas on the eastern portion of the base, and regular occurrence in the project area is not expected. Neither species is known to nest in the project area. The indigo snake could theoretically occur in most any area of the installation, but based on minimal occurrences, the probability of impacting this species is low. American alligators use many wetland areas on and near the base and could potentially occur within impacted areas. Alligators are mobile and would likely be able to avoid most risk of physical strike, and additional wetland habitat is available nearby. The species is currently listed under the ESA only due to similarity in appearance to another protected species and is, therefore, not actively managed on Moody AFB. While potential occurrence of the round-tailed muskrat cannot be discounted, the likelihood is considered low based on the generally unsuitable conditions and absence of sightings on the main base. Migratory birds could utilize vegetated portions of the project area. Potential impacts would generally be limited to disturbance, as adult birds would usually be able to avoid physical impacts.

All installation personnel are informed at the Right Start Newcomers briefing and through other established outreach efforts regarding the presence of and requirement to protect listed species (including the eastern indigo snake), and this procedure would continue. Any additional training and monitoring activities for potential impacts to listed species would be conducted by the Moody AFB Natural Resources Office, as applicable. Given the low potential for protected species occurrence and ongoing management efforts, the Air Force concludes that (1) there would be no significant impacts to species listed by the State of Georgia or NHP, (2) the actions would not have a measurable negative effect on migratory bird populations, (3) there would be no take of bald eagles, and (4) activities included in the Proposed Action are not likely to adversely affect species listed under the ESA.

Habitat Alteration and Loss

In addition to temporary wildlife disturbance and the potential for physical impacts during construction activities, land clearing and wetland fill would represent long-term habitat loss. A total of approximately 30 acres of habitat would be removed under Alternative 1. Of this total, about 5 acres would be palustrine forested wetland and the remainder would consist primarily of loblolly pine plantation. Compared with other forested habitat available in the area, the pine plantation areas of the project site probably do not function as important wildlife habitat in the region due to the typically lower habitat value of plantations and their locations near developed areas and the associated disturbance. While any habitat loss could adversely affect individuals, the amount of impacted pine habitat is small compared with similar habitat available in the vicinity, and population-level effects to any species are unlikely. To the extent practicable, Moody AFB would time tree removal to occur outside of bird nesting season in order to minimize the potential for impacts to migratory bird species.

Wildlife displacement and a reduction in foraging habitat would occur as a result of wetlands filling. For example, wading birds would no longer be able to forage in these areas. However, the loss of 5 acres of wetlands would occur within the context of approximately 5,500 acres of other wetland habitat on the installation and over 13,000 acres in the nearby GBBL complex (Moody AFB, 2013a). Similar to the discussion of pine habitat, any wetland loss could adversely affect individuals, but population-level effects are unlikely based on the size, location, and regional context of the affected area. Soil disturbance and changes to stormwater flow could result in discharge of sediments and pollutants into the surrounding wetlands, reducing water quality and value as wildlife habitat on the installation and in downstream areas. However, BMPs identified in Section 4.8.2 would be employed to minimize erosion and sedimentation.

In summary, habitat loss could affect a small number of individuals but would not affect populations of any species. Similar to the discussion of potential impacts associated with disturbance and physical strikes, there would be no significant impacts to state-listed species or protected birds, and wetland removal would not adversely affect species listed under the ESA.

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4.6.3 Alternative 2

Alternative 2 would differ from Alternative 1 only in minor changes to building configurations. There would be no difference in the quantity, type, or location of the habitats and species affected. A total of approximately 30 acres of habitat would be removed, including about 5 acres of wetland habitat. Therefore, potential impacts to biological resources would be the same as those described previously.

4.6.4 Alternative 3

Alternative 3 would differ from Alternative 1 only in minor changes to building configurations. There would be no material difference in the quantity, type, or location of the habitats and species affected. Approximately 1 additional acre of upland habitat would be affected (total of 31 acres). Of this total, about 5 acres would be wetland habitat. Therefore, potential impacts to biological resources would be the same as those described previously.

4.6.5 No Action Alternative

Under the No Action Alternative, the PR Campus would not be established. There would be no associated land clearing or wetland fill (habitat loss), disturbance, or potential for physical impacts to wildlife, including sensitive species. There would be no significant effects to biological resources under the No Action Alternative.

4.7 Water Resources

4.7.1 Analysis Methodology

The Moody AFB INRMP (Moody AFB, 2013a), USGS 7.5-minute quadrangle maps (1:24,000 scale), U.S. Department of Agriculture soil survey data, and a wetlands delineation study conducted in support of the Proposed Action alternatives were examined to delineate the resources on the base. Areas where the project area overlapped with water resources were identified and evaluated for the potential for impacts. Potential impacts to water resources were evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity in 40 C.F.R. 1508.27. Criteria for evaluating impacts related to water resources are water availability, water quality, loss of a particular resource and/or its functions, and adherence to applicable regulations. Impacts are measured by the potential to (1) reduce water availability or supply to existing users, (2) endanger public health or safety by causing decreased surface water or groundwater quality, or (3) violate laws or regulations adopted to protect or manage water resources. Impacts are also measured by evaluating whether there would be a temporary or permanent loss of wetlands or floodplains or a loss or reduction in their ability to perform their unique functions. An impact to water resources would be significant if it would (1) adversely affect water quality or endanger public health by contributing pollutants to surface water or groundwater, (2) threaten or damage hydrologic characteristics, (3) cause the permanent loss of wetland or floodplains, or (4) violate established laws or regulations that have been adopted to protect or manage water resources of the area.

In correspondence dated April 22, 2016, associated with agency review of the Revised Draft EA, the Georgia Wildlife Resources Division made several recommendations associated with erosion control and stream protection; these are summarized in Section 4.6.1, and the correspondence is provided in Appendix A.

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4.7.2 Alternative 1 (Preferred Alternative)

Surface Water

Surface water resources associated with the proposed PR Campus area include Beatty Creek and intermittent or ephemeral streams that feed continuously or noncontinuously into Beatty Creek. Demolition, grading, and construction activities would have the potential to increase erosion, runoff, and sedimentation that could affect surface water resources. Accidental spills of hazardous substances (e.g., antifreeze, fuels, oils, or other lubricants) could also impact water resources during these activities. Any potential impacts would be minimized by implementing erosion BMPs before, during, and after demolition and construction activities as required through regulatory compliance. Examples of BMPs would include use of silt fences and other erosion control structures, minimization of earth-moving activities during wet weather, covering soil stockpiles, and use of secondary containment for the temporary storage of hazardous liquids, such as fuels for generators and during construction activities. Following construction, disturbed areas not covered with impervious surfaces would be reestablished with appropriate vegetation and naturalized seed mixtures and managed to minimize future erosion potential. An NPDES permit would be required due to the overall area of land disturbance.

Hydrologic modification is defined as activities that affect natural stream flow. Alternative 1 could potentially change the hydrology of the project area by adding impervious surfaces, such as rooftops, parking lots, parking aprons, and by modifying drainage ditches to manage water flow during rainfall. Alternative 1 would increase the area of impervious surface draining into the Cat Creek subwatershed and would also include filling of wetlands associated with Beatty Creek (discussed in the *Wetlands* subsection below). Stormwater channelization, reduction of floodwater storage capacity in wetlands, and new impervious surfaces could increase soil erosion and flooding downstream.

Section 438 of the EISA of 2007 established strict stormwater runoff requirements for Federal development and redevelopment projects. The EISA states that, for projects with a footprint in excess of 5,000 square feet, the sponsor shall use site planning, design, construction, and maintenance strategies to maintain or restore predevelopment hydrology. The overall intent of Section 438 of the EISA is to require Federal agencies to design facilities in a manner that maintains or restores stormwater runoff to the maximum extent technically feasible. Such designs would ensure that receiving waters are not negatively impacted by changes in runoff temperature, volumes, durations, or rates resulting from Federal projects. During preparation of the original Personnel Recovery Campus EA in 2014, the USACE conducted stormwater analyses and made a determination for stormwater conveyance in the campus area. As provided in the *Personnel Recovery Campus Area Development Plan Update* (Moody AFB, 2015a), the USACE required the placement of stormwater lines to manage post-development runoff and placement of a stormwater management basin to intercept stormwater runoff before it enters Beatty Creek.

Accordingly, Alternative 1 would include construction of a catchment basin in the southwest portion of the site, three stormwater lines to direct runoff to the basin, and a stormwater swale. The basin would collect and store rainwater from the campus before releasing it to Beatty Creek via an additional stormwater line. This separate stormwater system would minimize peak flow impacts to Beatty Creek and the Cat Creek subwatershed. It is noted that stormwater calculations and analyses conducted by the USACE are applicable to the project scope described in Chapter 2 of this document. The addition of buildings or construction activities outside the scope of this EA would require new stormwater analyses.

With implementation of permit requirements and associated BMPs and the additional stormwater system that would be constructed for the campus (based on USACE requirements), no significant adverse impacts to surface waters associated with Alternative 1 have been identified.

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Groundwater

Under Alternative 1, a small amount of water could be required to suppress fugitive dust during construction activities. Portable latrines would be utilized during construction activities to collect sanitary waste. There is no long-term increase in staff associated with Alternative 1 and, therefore, no increase in long-term demand for groundwater such as construction of new wells. Any potential groundwater quality impacts from spills while handling fuels and other automotive fluids would be mitigated through appropriate procedures for handling those materials and a response plan to address any spills.

An increase in impervious surface, such as rooftops and parking lots, can limit the recharge rate of groundwater aquifers. Alternative 1 would increase the amount of impervious surface in the area, but would not significantly affect groundwater recharge rates because of the limited area of new impervious surfaces, construction of a stormwater catchment basin, and the fact that the project site is located in the Cat Creek subwatershed, which is a rural, mostly agricultural area with less than 5 percent impervious surface area in the drainage basin (Georgia DNR, 2001b).

Under Alternative 1, a stormwater pipe and roadway segment would be placed on top of Site LF-02. Construction activities would disturb soils within the landfill. The contents of the landfill are unknown; however, no contamination has been identified as originating from the landfill contents. Soil disturbance within the boundaries of Site LF-02 should be minimized, and Moody AFB would implement BMPs to ensure that the landfill contents are not disturbed. Specific BMPs would be developed during the design phase of the project. With implementation of these measures, impacts to groundwater would not be significant.

Wetlands

Approximately 5 acres of palustrine forested wetlands would be impacted by the construction of the PR Campus (Figure 2.3-1). Impacts would consist of mechanically clearing vegetation and depositing fill material within jurisdictional wetlands associated with the parking apron and a proposed roadway segment. Implementation of Alternative 1 would result in the loss of this wetland acreage and the associated functions (i.e., flood storage, sediment retention, wildlife habitat, and organic carbon transport). The USACE may allow an action proponent to utilize jurisdictional wetlands through the CWA Section 404 permitting process, which would require measures to minimize potential impacts. The State of Georgia has no requirements for use of these wetlands. Accordingly, the Air Force would obtain a CWA Section 404 Individual Permit (also known as a Department of the Army permit) prior to depositing fill material or initiating construction operations within jurisdictional wetlands or Waters of the U.S. Given the requirements identified in Section 1.3 and the selection standards as described in Section 2.2, there are no practicable alternatives to impacting the wetland areas. As discussed in Section 1.1, because the execution of any of the alternatives would unavoidably occur in a wetland, a Finding of No Practicable Alternative is required in conjunction with the FONSI, pursuant to the requirements of EO 11990, *Protection of Wetlands* (refer to the discussion in Section 2.3.1).

As part of the permitting process, the Air Force would be required to mitigate for the unavoidable loss of approximately 5 acres of jurisdictional wetlands. The Section 404 permitting process would most likely require the purchase of wetland banking credits at a USACE-approved wetland bank in the service area where Moody AFB is located. Generally, in Georgia, the USACE requires that permit applicants mitigate for impacted wetlands at a 12-to-1 ratio. The exact number of wetland bank credits would be determined by the USACE when the final permit is issued for the proposed project; however, based on a potential 12-to-1 ratio, approximately 60 credits could be required. The cost for those credits is currently unknown. Currently, there are two wetland banks in the service area, but only one of these has stream banking credits for sale.

For the remaining wetlands in the project area that would not be filled, Georgia DNR recommends an undisturbed 100-foot buffer around streams or wetlands, while Lowndes County development guidelines

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only require a minimum of a 25-foot buffer zone around streams and jurisdictional wetland complexes that are not permitted for disturbance through the CWA Section 404 permitting process. Development plans would provide a minimum 25-foot buffer around any unpermitted wetlands consistent with Lowndes County requirements, unless USACE prescribes more stringent requirements.

Indirect effects to wetlands from erosion and sedimentation during construction would be controlled using BMPs as part of the NPDES permit for stormwater runoff and a project-specific stormwater pollution prevention plan. Indirect operational impacts would be mitigated through site design that precludes stormwater discharges to wetland areas. Provided all the requirements described above are met, impacts to wetlands would be mitigated to a level that is less than significant.

Floodplains

None of the project area lies within the 100-year floodplain and, therefore, there would be no direct alteration of, or construction within, floodplains; this was confirmed by the Georgia Department of Natural Resources Watershed Protection Branch in correspondence dated March 30, 2016 (see Appendix A). However, as discussed under *Surface Water* above, changes to the hydrology of the project area could potentially affect the downstream Cat Creek subwatershed. During construction, water quality would be protected through BMPs. In addition, stormwater would be directed to a catchment basin, where it would collect before release to Beatty Creek. This separate stormwater system would minimize peak flow impacts to Beatty Creek and the Cat Creek subwatershed. With implementation of these actions, there would be no significant impacts to floodplains.

4.7.3 Alternative 2

Alternative 2 would differ from Alternative 1 only in minor changes to building configurations. There would be no material difference in stormwater management or in the acreage or location of impacted wetlands. Therefore, potential impacts to water resources would be the same as those described previously for Alternative 1.

4.7.4 Alternative 3

Alternative 3 would differ from Alternative 1 only in minor changes to building configurations. There would be no material difference in stormwater management or in the acreage or location of impacted wetlands. Therefore, potential impacts to water resources would be the same as those described previously.

4.7.5 No Action Alternative

Under the No Action Alternative, none of the proposed activities would occur, and there would be no new impacts to water resources in the area proposed for the PR Campus. Existing water resources would be maintained in their current state, and no special mitigation measures would be required.

4.8 Earth Resources

4.8.1 Analysis Methodology

Potential impacts to earth resources are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity in 40 C.F.R. 1508.27. Exposure to potential geologic hazards and potential for soil erosion and soil limitations were considered when evaluating impacts to soils and geology. Generally, impacts can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering designs are incorporated into project development.

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Analysis of impacts to soils and geology examined the suitability of locations for proposed operations and activities.

Impacts to soils can result from disturbances, such as grading during construction activities that expose soil to wind or water erosion. Impacts resulting from geologic hazards can occur where the potential for harm to persons or property is high due to existing hazards.

In correspondence dated April 22, 2016, associated with agency review of the Revised Draft EA, the Georgia Wildlife Resources Division made several recommendations associated with erosion control and stream protection; these are summarized in Section 4.6.1 and the correspondence is provided in Appendix A.

4.8.2 Alternative 1 (Preferred Alternative)

With the implementation of permit requirements and associated BMPs (see Section 6.2 for examples), the Air Force has identified no significant adverse impacts under Alternative 1. Since ground-disturbing activities would exceed 1 acre, an NPDES permit would be required. Under the permit, Moody AFB would be required to implement BMPs as part of the *Erosion, Sedimentation & Pollution Control Plan* requirements. These BMPs would serve to mitigate any potential impacts to soils. The base would also have to obtain a Lowndes County Land Disturbing Permit per the Georgia Erosion and Sedimentation Control Act. With application of BMPs as required and adherence to permit stipulations, potential impacts to soil resources and groundwater recharge areas would not be anticipated.

Much of the activity associated with Alternative 1 would occur on Tifton-Urban soils and Pelham loamy sand. With flood control and proper drainage measures, there are no major limitations that would preclude this soil type from development. The other two common soil types in terms of project area coverage are Clarendon loamy sand and Tifton loamy sands. Tifton loamy sands in particular are considered to be suitable farmland soil and would be disturbed during pavement and structural construction. The disturbance footprint would negligibly impact the utility of this soil type, since it is not currently used for, nor are there future plans to utilize the parcel for, agricultural purposes.

Ground disturbance owing to tree removal, addition of fill, grading, construction, and pavement construction activities could result in soil erosion within the project area. The use of permit-required BMPs would reduce any potential impacts from erosion during these activities. With the implementation of these actions, groundwater resources in the area are likely to be unaffected as well.

4.8.3 Alternative 2

With implementation of permit requirements and associated BMPs (as presented in Section 6.2 under Water Resources), potential impacts under Alternative 2 would be similar to those described for Alternative 1. The only change from Alternative 1 is that the HMU would be co-located with the hangar, and the Squad Ops building would be sited separately to the south of the hangar where building 655 currently exists, rather than co-located with the hangar as in Alternative 1. As a similar degree of soil disturbance is expected with Alternative 2 as with Alternative 1, no significant adverse impacts to earth resources would occur.

4.8.4 Alternative 3

With implementation of permit requirements and associated BMPs (as presented in Section 6.2 under Water Resources), potential impacts under Alternative 3 would be similar to those described for Alternative 2, except that the Squad Ops building would be sited separately to the west of the hangar near the proposed privately owned vehicle parking lot rather than south of the hangar. The parts storage building would also be shifted west to accommodate the Squad Ops building. All other project components would be the same as those detailed for Alternative 1. As a similar degree of soil disturbance

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is expected with Alternative 3 as with Alternatives 1 and 2, no significant adverse impacts to earth resources would occur.

4.8.5 No Action Alternative

The No Action Alternative would not result in any additional impacts to soils or geology within and adjacent to the proposed Moody PR Campus project area.

4.9 Infrastructure

4.9.1 Analysis Methodology

Utilities analysis focused on assessing the existing utility capacity to accommodate increases or decreases in usage, identifying potential problems related to connecting to existing utilities, and identifying coordinating and procedural requirements associated with establishing new utility infrastructure.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, sets numerous Federal energy requirements and goals that should be considered in the design, construction, and operation of any NETC facilities that utility requirements. These include increasing alternative and renewable energy use, pursuing cost-effective, innovative strategies to minimize consumption of energy, water, and materials within existing building systems, and identifying alternatives to renovation that reduce existing asset deferred maintenance costs.

Potential impacts to transportation were assessed with respect to the potential for disruption or improvement of existing levels of service and changes in existing levels of transportation safety. Impacts may arise from physical changes to circulation, construction activities, and introduction of construction-related traffic. Adverse impacts on roadway capacities would be significant if roads with no history of capacity exceedance had to operate at or above their full design capacity as a result of an action. Transportation effects may arise from changes in traffic circulation, delays due to construction activity, or changes in traffic volumes.

4.9.2 Alternative 1 (Preferred Alternative)

Utilities

Implementation of the Preferred Alternative would not have any significant impacts on utility use but would require some substantial changes to the existing utility infrastructure in the proposed PR Campus area. Existing supply and capacities for all utilities, except natural gas, are adequate to service the development of the new PR Campus. Because the existing 4-inch natural gas main may be inadequate to support future growth with the PR Campus and the East Airfield area (Moody AFB, 2015a), it is proposed to be replaced under the PR Campus project. The main utility corridor would be rerouted from Sijan Street to the Coney Street extension to the west of the PR Campus (Figure 2.3-3). Where surface disturbance would not occur, the existing infrastructure would be maintained. Existing utilities that cross the new aircraft parking ramp and hangar would be demolished. Installation of new utility lines for water, sanitary sewer, electrical, natural gas, and communications would connect to existing tie-in points wherever possible to serve the existing and proposed buildings. Approximate linear footages of each line are provided in Table 2.3-2.

Other than natural gas, utility usage, along with wastewater generation, would not add to the demand on the existing systems and would not exceed permitted water or wastewater capacity ceilings, since no new permanent personnel would be added to the base population. Measures that would be incorporated into the design for the building projects to help meet the goals of EO 13514 include high-efficiency lighting upgrades, HVAC efficiency improvements, building automation and controls, water-efficient and low-flow fixtures, weather sealing, and replacement of windows and doors. Additionally, some buildings would be demolished, potentially resulting in some consolidation of utility use. An existing plan to

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expand the gas main from building 328 would be incorporated into the Proposed Action and future planning processes (Moody AFB, 2015a). The stormwater system is discussed in Section 2.3.1 and Section 4.7 (Water Resources).

Transportation

Adverse impacts to transportation would be limited to the existing transportation network in the project area. Some use of public roadways would be needed to transport equipment and materials during the construction period, but they would be minimal and temporary. Road demolition and construction activities would primarily occur along Sijan Street, Kangaroo Lane, Coney Street, and Robinson Road (Figure 2.3-2). Portions of existing roadways and pavements would be demolished (approximately 40,000 SF) to accommodate new facilities, roadways, and pavements. Approximately 229,000 SF of roadway would be constructed. Details of the Sijan Street closure/reroute, Kangaroo Lane expansion, Parking Access Road, Coney Street extension, and the new traffic circle are provided in Section 2.3.1. As part of the Proposed Action, the Moody AFB Transportation Plan would also need to be updated.

Since no additional personnel would occur under the Preferred Alternative, no increase in vehicle traffic would be anticipated. Demolition and construction activities would require the delivery of materials to and removal of construction-related debris from demolition, renovation, and new construction sites. Trucks associated with these activities, along with construction crews, would likely travel Bemiss Road (Highway 125) and access the base via the North Gate and/or the cemetery and contractor gates. Construction-related traffic would make up only a small portion of the total existing traffic volume in the area and at the base.

Additionally, intermittent traffic delays, detours, and temporary road closures would result in the immediate vicinity of the facility and infrastructure project sites. Potential congestion impacts could be avoided or minimized by scheduling truck deliveries outside of the peak inbound traffic time and by using different access gates. Also, many of the heavy construction vehicles would be driven to the site and kept on-base for the duration of the C&D activities, resulting in relatively few additional trips. Traffic delays would be temporary in nature, ending once construction activities have ceased. As a result, no long-term or significant impacts on transportation infrastructure are anticipated.

4.9.3 Alternative 2

Alternative 2 would differ from Alternative 1 only in minor changes to building configurations. There would be no difference in the proposed utility and transportation layouts. Therefore, potential infrastructure impacts would be the same as those described for Alternative 1.

4.9.4 Alternative 3

Alternative 3 would differ from Alternative 1 only in minor changes to building configurations. There would be no difference in the proposed utility and transportation layouts. Therefore, potential infrastructure impacts would be the same as those described for Alternative 1.

4.9.5 No Action Alternative

The No Action Alternative would not result in any additional utility or transportation impacts beyond the scope of normal conditions and influences within the ROI.

4.10 Solid/Hazardous Materials and Waste

4.10.1 Analysis Methodology

The analysis focused on how and to what degree the alternatives would affect hazardous materials usage and hazardous/solid waste generation and management, as well as how alternatives would impact ERP sites.

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A significant impact would occur if implementation of the alternatives resulted in the use of hazardous materials that are highly toxic or have a potential to cause severe environmental damage (e.g., extremely hazardous substances as listed in the Superfund Amendments and Reauthorization Act Title III). A significant impact would also occur if proposed activities generated hazardous/solid waste types or quantities that could not be accommodated by the current management system. Finally, a significant impact would occur if a disturbance to an ERP site resulted in potential release of hazardous constituents or would pose an elevated safety risk to workers due to exposure to these constituents.

4.10.2 Alternative 1 (Preferred Alternative)

Solid Wastes

Construction, renovation, and demolition activities associated with Alternative 1 would result in the generation of C&D debris, including construction materials for buildings, concrete, and asphalt rubble. In addition, land-clearing debris (trees, stumps, grubblings, brush, rocks, etc.) would be generated. Under Alternative 1, there would be no change in personnel or other activities that would result in a change in the quantity of municipal solid waste over that currently generated.

Quantities of C&D debris associated with proposed construction/demolition activities are shown in Table 4.10-1. As Table 4.10-1 shows, proposed activities would generate approximately a total of 8,600 tons of debris. Most of this debris would be associated with demolition activities. The Atkinson County and Fitzgerald Landfills have a combined remaining capacity of approximately 740,000 tons. Consequently, the quantity of debris generated under Alternative 1 would represent approximately 1.1 percent of the remaining total landfill capacity.

Table 4.10-1: C&D Debris from Implementation of Alternative 1

Activity	Area (SF)	Conversion Factors (lb/SF)	C&D Debris (tons)
Facility Demolition			
Building 645/655	16,620		
Building 609	23,500		
Roadway/pavement demolition	40,000		
Total	80,120	158^a	6,329
Facility Construction			
Maintenance Hangar	78,738		
Squadron Operations	33,904		
Parts Storage	18,400		
Total	131,042	4.34^a	284
Infrastructure Construction			
AGE Yards	47,000		
Vehicle Parking	184,986		
Aircraft Apron / Taxi	374,760		
Road Construction / Expansion (Total)	229,150		
Miscellaneous Pavements	285,000		
Total	1,120,896	0.434^{a,b}	243
Clearing/Site Preparation			
Site Preparation (includes clearing/grading, etc.)	1,300,000		
Stormwater Basin	108,900		
Total	1,408,900	2.58^{c,d}	1,817
		Total (tons)	8,673

AGE = aerospace ground equipment; C&D = construction and demolition; lb = pounds; SF = square feet
a. Source: USEPA, 2003

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b. Estimates of C&D generation rates from pavement construction are not available; therefore, the analyses assumed that pavement construction would generate 10 percent of C&D debris generated during construction. Most debris would be associated with wooden forms or minor concrete rubble, etc.

c. Source: USEPA, 1999

d. This generation rate represents the average values reported for long-needle pine slash (21 tons/acre) and mixed conifer slash (54 tons/acre), and includes an additional factor of 1.5 to account for the mass of tree below the soil surface.

Air Force Instruction 32-7042, Waste Management, requires that installations make every practical effort to maximize nonhazardous solid waste and construction debris diversion from landfills through reuse, composting, and mulching or other waste diversion activities. Furthermore, under Moody AFB's Affirmative Procurement Program, contractors are encouraged to recycle materials discarded as waste from construction activities. It would be expected that the majority of other residual land-clearing debris (such as rocks) would be used on-site as much as possible. Stumps may also be ground and stockpiled on-site for use as erosion control mix, while small amounts of stumps, brush, or tree limbs may be buried on-site during the course of site grading. No stumps, brush, wood chips, rocks, or other cleared material would be placed within wetlands or other sensitive resource areas. Appropriate management of construction and land-clearing debris, including recycling and reuse when possible, would limit any potential adverse impacts. Additionally, construction activities would occur over multiple years, limiting the quantity of debris generated at any one time.

Overall, sufficient landfill capacity exists to accommodate the additional solid waste generated as a result of proposed construction activities. In addition, application of the waste recycling practices described above would further reduce the quantity of debris generated. As a result, no significant adverse impacts to solid waste have been identified.

Hazardous Materials Management

New buildings and renovations would be constructed utilizing normal construction methods, which would limit, to the extent possible, the use of hazardous materials. Petroleum products and other hazardous materials (e.g., paints and solvents) would be used during construction and renovation activities. These materials would be stored in proper containers, employing secondary containment as necessary to prevent and limit accidental spills. All spills and accidental discharges of petroleum products, hazardous materials, or hazardous wastes would be reported and mitigated. The base has emergency response procedures and site-specific contingency plans for all hazardous materials locations.

Emergency generators with integral fuel storage tanks may be required at buildings proposed for construction. Management of these would be in accordance with existing oil and hazardous substances spill prevention and response plans.

Because Alternative 1 does not involve a change in the type or scope of ongoing maintenance activities, this section does not address hazardous materials or hazardous wastes used or generated from those maintenance activities. No new materials would be used, and no change in the type or quantity of waste generated are expected. Moody AFB would continue to apply established procedures for the management of these materials/wastes.

Hazardous Wastes Management

Construction/demolition activities associated with Alternative 1 would not be expected to generate hazardous wastes; however, renovation and demolition of some buildings could result in the production of LBP or asbestos waste (see below). Wastes that cannot be recycled would be disposed of in a manner approved by the USEPA at licensed facilities. No change to permits, hazardous waste generator status, or management would be required and there would be no significant environmental impacts from implementation of Alternative 1.

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Asbestos and LBP

Building 609 was constructed in 1941 and poses a significant potential for containing asbestos and LBP. Buildings 645 and 655 were constructed in 1997; consequently, they pose a minor potential for asbestos and LBP.

Asbestos, if present, would be abated prior to demolition. Disposal of asbestos wastes would be conducted as directed by the National Emission Standards for Hazardous Air Pollutants (NESHAPs). The GEPD would be notified prior to removal actions and only Georgia-licensed contractors would be allowed to perform the work. Contractor personnel would have to be trained and certified. Transport and disposal documentation records, including signed manifests, would also be required.

Prior to demolition, an LBP survey would be conducted. Demolition of structures known to contain LBP would be conducted in accordance with applicable regulations. Proper disposal of any resulting lead-containing wastes would also be conducted in accordance with Federal regulations, including the Toxic Substances Control Act and the Occupational Safety and Health Act. Further, these wastes would be accompanied by a waste manifest and disposed of at an approved facility.

Implementation of these waste management requirements would mitigate any adverse impacts resulting from asbestos or LBP, and neither of these materials would be employed in new construction. Consequently, there would be beneficial impacts from the removal of existing asbestos/LBP.

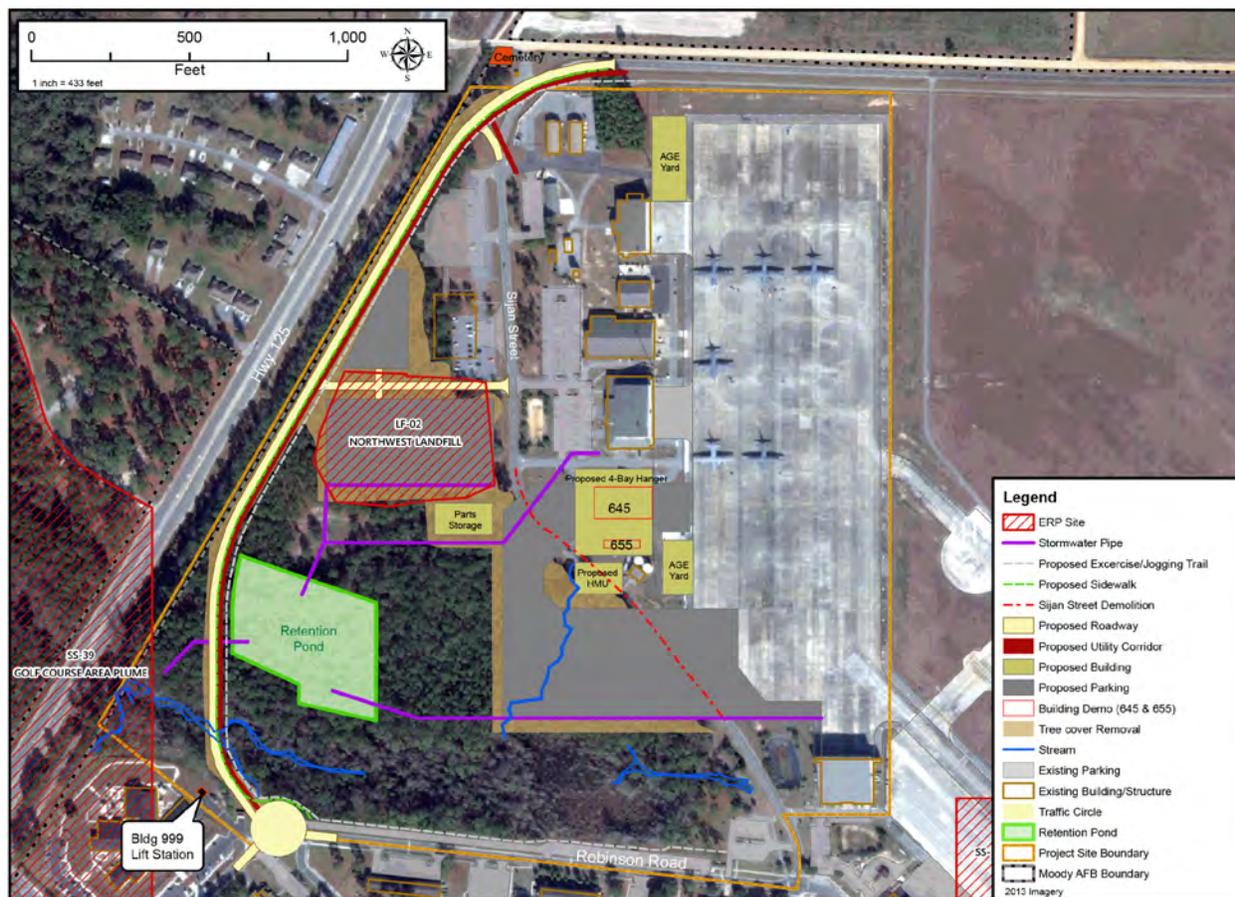
ERP Sites

As shown in Figure 4.10-1, one of the proposed parking lots would overlap areas associated with former ERP Site LF-02. As described in Section 2.3.1, it was determined with Moody AFB stakeholders that a surface lot would be the most appropriate use for the landfill since it would require minimal surface disturbance. Based on previous investigations and risk assessments, GEPD has approved no further action for LF-02, and exposure to LF-02 environmental media (soil, surface water, sediment, or groundwater) is unlikely to result in adverse human health effects. Should soils need to be removed, transported, treated, and/or disposed, RCRA regulations would apply to the characterization, transportation, and disposal of this material. Prior to disturbing these soils, the potential presence of hazardous constituents would be communicated to workers, and properly trained personnel would be on-site during the construction project to identify anything that may require additional sampling and handling. Site safety briefings that include distribution of material safety data sheets for all chemicals used on-site and discussion of safe work practices would be conducted to protect worker health.

With implementation of the procedures described above, there would be no significant impacts to ERP sites or to human health and safety.

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Figure 4.10-1: ERP Sites and Alternative 1 Projects



4.10.3 Alternative 2

There would be no impacts to hazardous materials, hazardous wastes, asbestos, and LBP; ERP sites; and solid waste under Alternative 2 that were not previously discussed under Alternative 1. Consequently, no significant impacts would occur.

4.10.4 Alternative 3

There are no impacts to hazardous materials, hazardous wastes, asbestos, and LBP; ERP sites, and solid waste under Alternative 3 that were not previously discussed under Alternative 1. Consequently, no significant impacts would occur.

4.10.5 No Action Alternative

Under the No Action Alternative, the proposed PR Campus plan would not be implemented. Baseline conditions for solid debris and hazardous materials and wastes, as described in Section 3.10.2, would remain unchanged. Therefore, no significant impacts would occur as a result of implementation of the No Action Alternative.

Cumulative Impacts

5.0 CUMULATIVE IMPACTS

According to CEQ regulations, cumulative effects analysis should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 C.F.R. 1508.7). Cumulative effects may occur when there is a relationship between a proposed action or alternative and other actions expected to occur in a similar location or during a similar time period. This relationship may or may not be obvious. The effects may then be incremental (increasing) in nature, resulting in cumulative impacts.

Actions overlapping with or in close proximity to a proposed action or alternative can reasonably be expected to have more potential for cumulative effects on “shared resources” than actions that may be geographically separated. Similarly, actions that coincide temporally tend to have a greater potential for cumulative effects.

Analysis was conducted by first identifying past, present, and reasonably foreseeable actions as related to the ROI for the particular resource. Cumulative impacts were then identified if the combination of proposed actions and past, present, and reasonably foreseeable actions were to interact with the resource to the degree that incremental or additive effects occur.

5.1 Past, Present, and Reasonably Foreseeable Future Actions

There are many ongoing activities at Moody AFB to support current and future goals of the base operations. As funding becomes available, there may be opportunities to upgrade, renovate, or expand existing mission activities or beddown new programs at the base. Identified within the Moody AFB Final Installation Development Plan (IDP), more than 50 potential development projects have been identified for upcoming fiscal years (1 to 5 years out) (Moody AFB, 2015b). Within the context of this EA and the scope of the Proposed Action, past, ongoing, and future projects relevant to cumulative impacts analyses include those involving demolition, site preparation, facility/infrastructure construction, and noise generating activities within or near the proposed PR Campus location because those actions may have an incremental impact on the resources analyzed within this EA.

Past activities relevant to this cumulative impact analysis include construction of the flight simulator building near the proposed PR Campus parking area, as well as development of a new base access gate near the north end of the base and various cantonment development projects (e.g., facility demolition and construction and infrastructure upgrades).

There are no current/ongoing development projects within or near the proposed PR Campus; however, ongoing training/flight activities do contribute to the existing noise environment (this has been accounted for in baseline discussions presented in Chapter 3).

Proposed future activities adjacent to the PR Campus, as identified in the 2015 Moody AFB IDP include construction of a paintball facility and relocation of the golf course driving range (both projects are located west across Bemiss Highway), building 899 (Medical Facility) expansion and conversion of building 207 to an athletic center located just to the southwest of the proposed PR Campus location.

All other ongoing and potential future activities occur outside the PR Campus location on either other parts of the Moody AFB cantonment area well to the south or other parts of the installation east or south of the airfield or on Grand Bay Range; examples include current use of Bemiss Field for aircraft operations as well as potential future development and use of the Northeast Training Complex located to the east of the airfield.

Appendix D provides a graphic that shows the short-term development projects at Moody AFB, as identified in the Moody AFB 2015 IDP.

Cumulative Impacts

5.2 Air Quality

Air quality impacts and emissions associated with the proposed construction and demolition operations would be minor. Depending on the timing of capital and infrastructure improvement projects occurring on Moody AFB and in the surrounding community, incremental increases in air emissions would result from construction activities. However, emissions from several, simultaneous projects are not likely to result in temporary or long-term combined emissions that would exceed county significance criteria or negatively affect attainment status or otherwise adversely affect regional air quality.

5.3 Acoustic Environment

Several proposed changes to flying and ground operations are currently being analyzed for potential environment impacts pursuant to NEPA. These changes would affect areas in the northeast quadrant of Moody AFB and on the Grand Bay Range. Although operations in these areas are sometimes audible in the ROI, noise levels at the PR Campus are affected most strongly by aircraft operations on and near Moody AFB runways. Implementation of changes to operations at the proposed Northeast Training Complex, Bemiss Unimproved Landing Zone, and Grand Bay Range would have no measurable effect on time-averaged noise levels (L_{dn}) at the PR Campus (Moody AFB, 2015c, 2015d, and 2015e).

5.4 Safety

There would be no cumulative impacts to personnel safety. Operations at the base would continue to be accomplished by technically qualified personnel and would be conducted in accordance with applicable Air Force safety requirements, approved technical guidelines, and AFOSH standards. Proposed projects would also incorporate AT/FP standards to the maximum extent practicable, which would result in a beneficial impact with regard to safety.

5.5 Land Use

Implementation of the Proposed Action would convert additional open space to other land uses, and other potential future activities may result in land use changes throughout the installation (e.g., relocation of the golf driving range would change open area to recreational use; use of open space for development of the Northeast Training Complex). However, no substantial or significant cumulative impacts resulting in land use incompatibility have been identified given that these land use conversions occur within the installation and would be consistent with current uses on Moody AFB.

5.6 Cultural Resources

In regard to past, present or future actions, if adverse effects are anticipated to occur to resources on Moody AFB, adherence to the Section 106 process in the NHPA, and standard operating procedures set forth in the Moody AFB *Integrated Cultural Resources Management Plan* would be followed. Since there are no identified impacts to cultural resources, no cumulative impacts are expected for this resource area under this action in conjunction with other past, present, or future proposed actions.

5.7 Biological Resources

Potential cumulative impacts to biological resources would be associated with actions undertaken by Moody AFB that could affect similar pine and wetland habitats and the wildlife species associated with them. Multiple small, incremental effects can become pronounced if they reach some threshold of significance. For example, multiple actions that individually cause a small amount of habitat loss could eventually result in an area becoming unusable for wide-ranging species such as the indigo snake. Such

Cumulative Impacts

effects could be magnified by the consequences of similar activities conducted by other entities outside the installation.

The types of biological resources affected by the Proposed Action may also be affected by other possible future actions at Moody AFB. Vegetated upland and wetland habitats have occasionally been altered, and could be further altered in the future, due to training or construction activities. Although about 30 total acres of pine habitat and wetlands would be removed, and wildlife species relying on these habitats would be affected to some degree, it is not anticipated that the overall health or viability of wildlife populations, including sensitive species and those species protected by Federal laws, would be substantively impacted. Substantial areas of similar habitat occur in the vicinity, including on base property, although future incremental habitat eradication or alteration could remove some of this habitat. Moody AFB manages and conserves forest and wetland resources on the installation, as described in the INRMP (Moody AFB, 2013a). Examples include wetland delineation, stormwater controls, wetland mitigation bank maintenance, selective tree removal and thinning, and prescribed burning, among others.

5.8 Water Resources

The cumulative impacts on water resources should take into account all surface-altering actions that have occurred or are likely to occur within or adjacent to Moody AFB. The most frequent effect of surface disturbance in this region is accelerated erosion and sediment deposition, which may affect water resources by contributing sediment, introducing contaminants, or increased flooding. The primary cumulative impacts on surface water and wetlands would result from any increase in the acreage of earth-moving activities and accelerated erosion that have the potential to increase sediment delivery and surface water runoff downstream or introduction of chemical contaminants into surface water bodies and wetlands. Cumulative impacts associated with groundwater would result from activities and projects that alter groundwater supply and demand or affect groundwater quality.

All proposed activities at the PR Campus would comply with all Federal, state, or local regulations. In addition, Air Force environmental management regulations and policy would require use of BMPs to prevent soil erosion and sedimentation in streams and wetlands and use of spill prevention measures to prevent contamination in surface waters, aquifers, or wetlands from fuel spills. The Proposed Action would use up to approximately 5 acres of wetlands in the site design. It is expected that the Air Force would be required to purchase wetland banking credits, as specified by USACE. Those wetlands that would not be used for construction will have a 25-foot buffer along the perimeter and appropriate soil erosion controls in place for the site location.

Adherence to all environmental management requirements would help to ensure that there would be minimal impacts to any water resources as a result of the proposed activities. Therefore, the Air Force does not expect any of the proposed training activities to incrementally contribute to other impacts to water resources at or near Moody AFB.

5.9 Earth Resources

As with water resources, ground-disturbance activities would be required to comply with Georgia DNR NPDES and Lowndes County Land Disturbance Permit requirements. Under these permits, Moody AFB would be required to implement BMPs as part of the *Erosion, Sedimentation & Pollution Control Plan*. Implementation of these BMPs would minimize the potential for incremental impacts associated with soil erosion. Since the proposed construction, road building and grading activities are small and localized, any potential impacts would be short term. Since the area is located within a groundwater recharge zone, there is always a concern for groundwater contamination issues. However the proposed activities would follow proscribed BMPs for soil erosion and are unlikely to introduce contaminants that could enter the

Cumulative Impacts

groundwater. With the implementation of BMPs and compliance with permitting requirements, the Air Force has not identified any cumulative impacts to earth resources.

5.10 Infrastructure

The Proposed Action would improve the existing utility infrastructure and capacity in the PR Campus area of the base, and minor, short-term transportation impacts would occur during construction. Other development projects that occur during the same timeframe may also contribute to minor, short-term transportation impacts during construction activities, while other transportation improvement projects (road widening, North Gate improvements, etc.) and utility upgrades throughout the installation would serve to improve installation transportation and utility infrastructure over the long term. Over the long term, there would likely be beneficial cumulative impacts to transportation and utility infrastructure from these types of improvements, while any adverse cumulative impacts would be minor and short-term.

5.11 Solid/Hazardous Materials and Waste

Proposed activities involve demolition of existing structures and construction of new buildings and pavements resulting in the generation of C&D debris. However, the estimated quantity of generated debris, when compared with regional landfill capacity, would not represent a significant impact to the life expectancy of the landfills. Consequently, significant cumulative impacts are not anticipated.

Special Requirements and Operating Procedures

6.0 SPECIAL REQUIREMENTS AND OPERATING PROCEDURES

No substantive adverse impacts have been identified in this EA that would require mitigative measures. However, there are special requirements such as permits that have been identified that would be required for implementation of the Proposed Action. This chapter identifies special requirements such as permits, as well as standard operating procedures (those that are already part of standard management activities or other operations at Moody AFB), recommended operating procedures (not currently part of Moody AFB operations but recommended to further minimize adverse impacts), and special operating requirements (adjustments to proposed activities that would serve to further minimize any identified adverse impacts).

No special requirements or operating procedures have been identified for the following resource areas: air quality, noise, safety, land use, cultural resources, and infrastructure.

6.1 Biological Resources

The following standard operating procedures would be implemented as part of normal natural resource management requirements on Moody AFB as outlined in the Moody INRMP.

- Provide education to all installation personnel, through the Right Start Newcomers briefing and other established outreach efforts, on the presence of and the requirement to protect listed species.
- In order to reduce the potential for impacts to bird nesting activity and the risk of harm to migratory birds, conduct tree-clearing activities between September 1 and March 31 to the extent practicable.

In correspondence dated April 22, 2016, associated with agency review of the Revised Draft EA, the Georgia Wildlife Resources Division made the following recommendations (correspondence is provided in Appendix A):

- Consultation with the USFWS regarding sensitive species
 - This was accomplished in February 2016.
- Continuous surveys for the flatwoods salamander (federally listed as threatened)
 - Consultation with the USFWS found no likely adverse impacts to any federally listed species. However, Moody AFB may consider future flatwoods salamander surveys as part of their Integrated Natural Resources Management Plan.
- Use of natural, biodegradable erosion control materials to minimize impacts to wildlife species.
 - These materials will be used to the extent practicable.

6.2 Water Resources

Grading and excavation activities associated with construction have the potential to increase runoff, erosion, and sedimentation in wetlands associated with Beatty Creek and in the Cat Creek subwatershed. Any potential impacts to surface water and groundwater would be prevented or minimized by implementing permit-related erosion BMPs during and after construction. Separate Georgia NPDES Construction Stormwater General Permit and land disturbance activity permits from Lowndes County would be required. Permit conditions would specify BMPs and mitigative measures required to prevent fugitive soil, sediment, and other potential contaminants from entering water bodies and wetlands. Such conditions could include minimization of earth-moving activities during wet weather/conditions, covering soil stockpiles, installation of silt fencing and sediment traps, and revegetation of disturbed areas with native plants as soon as possible to contain and prevent any off-site migration of sediment or eroded soils from the project areas.

Special Requirements and Operating Procedures

The site drainage plan for the campus area should provide effective engineering controls and adequate naturally vegetated buffers around unused wetlands to prevent any soil, sediment, or other potential contaminants resulting from stormwater runoff from impervious surfaces (e.g., roads and roofs) from entering these sensitive natural resources. Following construction, disturbed areas not covered with impervious surfaces would be reestablished with appropriate vegetation and native seed mixtures and managed to minimize future erosion potential.

A USACE Section 404 Clean Water Act Individual Permit will be required for disturbance of the wetland areas, with wetland mitigation required (the extent of which to be determined during permitting). Lowndes County development guidelines require a minimum of a 25-foot buffer zone around streams and jurisdictional wetland complexes that are not permitted for disturbance through the CWA Section 404 permitting process; Georgia DNR recommends an undisturbed 100-foot buffer around streams or wetlands. In addition, a minimum 25-foot buffer around unpermitted wetlands is required.

The Georgia Department of Natural Resources Watershed Protection Branch also made the following recommendations in regard to the proposed project (correspondence provided in Appendix A):

- Machinery be kept out of streams during construction and use of stringent erosion controls.
 - Machinery will be excluded from streams to the extent practicable; any NPDES or USACE Section 404 permitting requirements will be adhered to.
- Maintain a 100-foot vegetation buffer (at least shrubs and ground vegetation) around streams
 - A vegetative buffer will be maintained around streams to the extent that project design allows.

Changes to the Proposed Action (e.g., additional buildings or construction activities beyond the scope of the project as defined in Chapter 2) would require new stormwater management analysis.

6.3 Earth Resources

An NPDES General Permit issued by the GEPD would be required for ground-disturbing activities associated with the proposed construction activities. Furthermore, a Lowndes County Land Disturbance Permit would be required in accordance with the Georgia Erosion and Sediment Control Act, the authority of which is delegated to Lowndes County. Under these permits, Moody AFB would be required to implement BMPs as part of the *Erosion, Sedimentation & Pollution Control Plan* requirements.

The Georgia Department of Natural Resources Watershed Protection Branch also made several recommendations for erosion control in regard to the proposed project (correspondence provided in Appendix A); these were previously summarized in Sections 6.1 and 6.2.

6.4 Solid/Hazardous Materials and Waste

Disposal of any asbestos wastes would be conducted as directed by the NESHAPs. The GAEPD would be notified prior to removal actions and only Georgia-licensed contractors would be allowed to perform the work. Contractor personnel would have to be trained and certified. Transport and disposal documentation records, including signed manifests, would also be required. Also, prior to demolition, an LBP survey would be conducted. Demolition of structures known to contain LBP would be conducted in accordance with applicable regulations. Proper disposal of any resulting lead-containing wastes would also be conducted in accordance with Federal regulations, including the Toxic Substances Control Act and the Occupational Safety and Health Act. Further, these wastes would be accompanied by a waste manifest and disposed of at an approved facility.

Special Requirements and Operating Procedures

Prior to construction activities on or near ERP Site LF-02, notification requirements to GEPD would be met. Also, should soils need to be removed from LF-02, RCRA regulations regarding the characterization, transportation, and disposal of this material would be followed. Prior to disturbing these soils, the potential presence of hazardous constituents would be communicated to workers. Site safety briefings that include distribution of material safety data sheets and discussion of safe work practices would be conducted to protect worker health.

Disposal of any asbestos wastes would be conducted as directed by the NESHAPs. The GEPD would be notified prior to removal actions, and only Georgia-licensed contractors would be allowed to perform the work.

Special Requirements and Operating Procedures

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FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Persons/Agencies Contacted

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Georgia Department of Community Affairs	
Georgia Wildlife Resources Division	
Georgia Historic Protection Division	
Georgia Department of Transportation	
South Georgia Regional Planning Council	
Lanier County Commission	
Lowndes County Commission	
Caddo Nation	
Alabama-Quassarte Tribal Town-Creek Nation of Indians	
The Cherokee Nation	
United Keetoowah Band of Cherokee Indians	
Muscogee (Creek) Nation	
Poarch Band of Creek Indians	
Thlopthlocco Tribal Town	
Seminole Nation of Oklahoma	
Seminole Tribe of Florida	
Kialegee Tribal Town	
Alabama Coushatta Tribe of Texas	
Coushatta Tribe of Louisiana	
Muscogee Nation of Florida	

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Appendix A Public Involvement and Agency Correspondence

APPENDIX A

PUBLIC INVOLVEMENT AND AGENCY CORRESPONDENCE

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence

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CURRENT (REVISED EA) PUBLIC NOTICES AND AGENCY CORRESPONDENCE

Valdosta & Lowndes

www.valdostadailytimes.com

Friday, September 4, 2015

3A

City races attracting candidates

BY JOE ADGIE
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VALDOSTA — A number of candidates officially threw their hats into the ring Wednesday for city council and school board seats, while smaller towns saw races fill up.

Candidates qualifying Wednesday included three Valdosta City Council candidates and a Valdosta Board of Education member. In addition, one BOE candidate moved from one race to another. Edward Mack has withdrawn from the District 8 race and qualified to run for the At-Large seat.

Candidates qualifying Thursday included candidates in Dasher, Lake Park, Remerton and Hahira.

One race — the special election for District 6 of the Valdosta Board of Election to fill Bill Love's seat, remains empty.

Candidates can qualify for races at the Lowndes County Elections Office, 2808 N. Oak St.

In person qualifying continues through Friday, from 8:30 a.m.-4:30 p.m.

Wednesday and Thursday qualifiers included:

Valdosta City Council District 1

- James Wright (Incumbent)
- Wade S. McCrae

Valdosta City Council District 3

- Marion Ramsey
- Dasher City Council Post 3
- Bill Hatfield (incumbent)
- Dasher City Council Post 4
- Anita Armstrong Scott (incumbent)

Hahira City Council District 3

- Patrick Warren
- Lake Park City Council At-Large
- Jena Sandlin
- Paul Mulkey (incumbent)

Remerton City Council At-Large

- Steve Koffler (incumbent)
- Valdosta School Board At-Large District
- Edward Mack (withdrew from District 8)
- Stacy Bush

The complete list of qualified candidates includes:

Valdosta Mayor

- John Gayle (incumbent)
- Brooks Bivins
- J.D. Rice
- City Council District 1
- Vivian Miller-Cody
- Wade McCrae
- James Wright (incumbent)

City Council District 3

- Sonny Vickers (incumbent)
- Marion Ramsey
- City Council District 5
- Tim Carroll (incumbent)

City Council At-Large

- Ben Norton (incumbent)
- Ronnie Pierce

Gregory Williams

- Valdosta School Board District 7 (Superward East)
- Debra Bell (incumbent)
- Valdosta School Board District 8 (Superward West)
- Kelly Wilson (Incumbent)
- Valdosta School Board At Large District

- Edward Mack
- Stacy Bush

Valdosta School Board District 6

- (Special election to fill the unexpired term of Bill Love)
- No candidates qualified

Hahira City Council District 2

- Kenneth Davis (incumbent)

Hahira City Council District 3

- Patrick Warren
- Dasher City Council Post 3
- Bill Hatfield (incumbent)
- Dasher City Council Post 4
- Anita Armstrong Scott (incumbent)

Remerton Mayor

- Cornelius Holsendolph (incumbent)

Remerton City Council At Large

- Bill Wetherington (incumbent)
- Steve Koffler (incumbent)

Lake Park Mayor

- Eric Ian Schindler (incumbent)
- Lake Park City Council At Large
- Ronald Carter (incumbent)
- Bert Rutland (incumbent)
- Paul Mulkey (incumbent)
- Jena Sandlin

Deputy tases man cutting himself with a knife

BY ADAM FLOYD
adam.floyd@gafnews.com

VALDOSTA — Law-enforcement officers subdued a 23-year-old man Thursday morning who was cutting himself at the South Georgia Medical Center parking deck.

At approximately 9:03 p.m., the 911 center received a call concerning a man who had walked onto the SGMC parking lot near the outpatient clinic on Patterson Street and threatened to harm himself.

Hospital security, the Lowndes County Sheriff's Office and the Valdosta Police Department were immediately notified and responded to the call, incident reports stated.

"Both agencies arrived quickly, and given the concern for the person's safety, efforts to locate the male began," said LCSO Lt. Stryde Jones.

Officers and security personnel found a 23-year-old man under the parking deck at the back of the hospital near Patterson Street. Officers reportedly saw the man repeatedly cutting himself with a knife, said VPD Capt. Bobbi McGraw.

"Officers began pleading with the male to stop,

allowing Deputy Johnson, VPD officers Stephen Turnmeyer and Phillip Hay and security officers from SGMC to subdue the male," said Jones.

The man was taken inside SGMC for treatment of self-inflicted injuries, which included serious cuts to his arms and neck, reports stated.

"The male is now in stable condition," said McGraw. "The reasoning for the male's actions are unknown at this time."

Sheriff Chris Prine said he is "proud of all of the employees of his office, but the decisive actions of Deputy Anthony Johnson to deploy his Taser and incapacitate the male no doubt prevented this person from possibly ending his own life or injuring someone else."

"Law enforcement is asked everyday to make split-second decisions that impact lives," said Prine.

"Deputy Johnson and the officers acted swiftly displaying quick thinking and great team work."

VPD Chief Brian Childress said, "because of the quick reactions of SGMC security staff, Valdosta Police officers Stephen Turnmeyer and Phillip Hay and Deputy Anthony Johnson, they probably

Hands Across the Border targets impaired drivers

BY ADAM FLOYD
adam.floyd@gafnews.com

VALDOSTA — Wednesday night, law enforcement agencies in Lowndes and its 12 surrounding counties came together for Hands Across the Border, an operation aimed at catching impaired drivers entering

Safety (GOHS).

"So many people see Labor Day as the unofficial end of summer and want to hit the road before fall rolls around," said Harris Blackwood, director of the GOHS. "Because so many people are going to be traveling leading up to Labor Day weekend, we want to

the number of fatalities contributed by driving under the influence and not wearing seatbelts," said Adams. "Our hope is that we conduct a road block, and we don't have to issue any citation or make any arrests."

Traffic fatalities have increased 12 percent across

whole year, we had 14. This year, we have already had 15."

Adams said roadblock operations like Hands Across the Border do result in a drop in fatalities and decreases the number of people driving impaired.

"We did a roadblock

Continued on the next page...

Appendix A Public Involvement and Agency Correspondence

and leaving Georgia and decreasing the state's traffic fatality rate.

For the six days leading up to the Labor Day weekend, police, sheriff's deputies and state troopers throughout Georgia meet in communities along the state line to set up checkpoints, according to the Georgia Governor's Office of Highway

make sure that drunk drivers don't turn someone's summer of fun into a summer of tragedy."

More than 170 deputies, officers and troopers from Lowndes and its surrounding counties have mobilized to "saturate" Lowndes and Echols counties, said Lowndes County Sheriff's Lt. Mike Adams.

"The goal is to reduce

the state compared to this time last year. Last year, 758 people lost their lives on Georgia roads. As of Wednesday morning, that number was 847, said Adams.

"In Lowndes County, including Valdosta and the other municipalities, our fatality rate is matched with the state's," said Adams. "Last year, for the

last Friday in Remerton. We came out again on Saturday, and everyone was talking about getting designated drivers so they don't get in trouble," said Adams.

Hands Across the Border is a part of the national Operation Zero-Tolerance initiative encouraging drivers to "drive sober or get pulled over."

but he continued harming himself," said McGraw. "Deputy Anthony Johnson deployed his Taser, which immediately incapacitated the male,

saved the male's life. This is the kind of work officers and deputies do each day, protecting our citizens from themselves and others."

Guardian hosts cystic fibrosis yard sale

VALDOSTA — A Guardian Bank branch hosts a yard sale Saturday to benefit cystic fibrosis research.

The yard sale will feature numerous items, said organizers.

Cystic fibrosis is a genetic disorder primarily affecting the lungs but it also affects the pancreas, liver, intestines and kidneys.

The yard sale will be held 8 a.m.-noon Saturday, Guardian Bank, 246 Norman Drive.

Valdosta gets into the Halloween Spirit

BY DESIREE CARVER
desiree.carver@gafnews.com

VALDOSTA — Returning this year to Valdosta is Spirit Halloween Store.

District Manager Ryan Clanton said that it took roughly two weeks to set up and the store has come to Valdosta for about five years.

The store offers a variety of Halloween props, accessories, hats, wigs, shoes, make-up, masks, etc., according to Spirit's website. Costumes range from sexy to scary, with some being professional grade theatrical quality.

The store offers costumes for all ages.

Open, the hours for the store can be found online at www.spirithalloween.com. The hours change and begin extending the closer it gets to Halloween.

It is located at 1839 Norman Drive and will remain open until the beginning of November.

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**PUBLIC NOTICE
POTENTIAL TO IMPACT WETLANDS
MOODY AIR FORCE BASE, GEORGIA**

The Air Force is preparing an Environmental Assessment (EA) to construct a Personnel Recovery Campus (PR Campus) for Moody Air Force Base (AFB). The project is necessary to support current and future mission requirements by consolidating the operations and maintenance functions of the 347th Rescue Group into one geographic area on the installation.

The construction of a new helicopter parking ramp and re-routing of a perimeter road as part of the project is subject to Executive Order 11990, *Protection of Wetlands*, requirements and objectives because approximately 13 acres of wetlands associated with the PR Campus is within the proposed project area. The Air Force requests advance public comment to determine if there are any public concerns regarding the project's potential to impact wetlands. The Air Force would also like to solicit public input or comments on potential project alternatives. The proposed PR Campus project will be analyzed in a forthcoming EA and the public will have the opportunity to comment on the draft EA when it is released.

The public comment period is September 4th, 2015 – October 4th, 2015. Please submit comments or requests for more information to Mr. Hank Santicola, Air Force Project Manager, by standard mail to: 23d Civil Engineer Squadron, Attn: Mr. Hank Santicola, 7258 Robbins Road, Moody AFB, GA 31699 or by calling 229-257-2396.

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THE VALDOSTA DAILY TIMES

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***A WALK IN THE WOODS (R)**
(Fri-Mon: 1:45) 4:30 7:10 9:35

***DOPE (R)**
(Fri-Mon: 2:20) 5:00 7:35 10:10

***SOUTHPAW (R)**
(Fri-Mon: 1:20) 5:45

***WAR ROOM (PG)**
(Fri-Mon: 1:00 2:00) 4:00 5:00 7:00 8:00 9:45

***WE ARE YOUR FRIENDS (R)**
5:15 10:00

***NO ESCAPE (R)**
(Fri-Mon: 1:40) 4:15 7:10 9:35

HITMAN: AGENT 47 (R)
4:15 9:30

SINISTER 2 (R)
(Fri-Mon: 1:10 3:25) 5:40 7:55 10:15

AMERICAN ULTRA (R)
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STRAIGHT OUTTA COMPTON (R)
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FANTASTIC FOUR (PG13)
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THE GIFT (R)
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ANT-MAN (PG13)
(Fri-Mon: 2:05) 4:40 7:20 9:55

MINIONS (PG)
(Fri-Mon: 12:30 2:40) 4:50 7:00 9:10

INSIDE OUT (PG)
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Appendix A Public Involvement and Agency Correspondence

**NOTICE OF AVAILABILITY
FOR DRAFT ENVIRONMENTAL ASSESSMENT**

**USAF ANNOUNCES AN
ENVIRONMENTAL ASSESSMENT**

In accordance with the National Environmental Policy Act and Air Force regulations, Moody Air Force Base (AFB) has completed a Draft Environmental Assessment (EA) and Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) to evaluate the consequences of the following stated proposed action:

The Air Force proposes to consolidate 347th Rescue Group (347 RQG) facilities through development of a Personnel Recovery (PR) Campus at Moody Air Force Base (AFB), Georgia. This involves several components, including demolition activities, construction of facilities, and construction of supporting infrastructure. Site preparation to allow for new construction would affect approximately 1.3 million square feet of area and would include approximately 18 acres of tree removal, 5 acres of wetland fill, 0.6 acre of soil dewatering, and grading of the construction sites. Construction would total approximately 1.2 million square feet among several buildings and parking/roadways within the installation cantonment area.

To review the Draft EA and FONSI/FONPA copies are available at the South Georgia Regional Library in Valdosta, Georgia and on the Moody AFB website at <http://www.moody.af.mil/Home/EnvironmentalInitiative.aspx>. The public is invited to review these documents and make comments during the 30-day comment period from now until April 25, 2016. Comments on the Draft EA can be sent to Mr. Hank Santicola, Environmental Planner, at 23 CES/CEIEA, 7258 Robbins Road, Moody AFB, GA 31699.

961786

Appendix A Public Involvement and Agency Correspondence

DRAFT EA TRANSMITTAL LETTER TO AGENCIES



DEPARTMENT OF THE AIR FORCE
23D CIVIL ENGINEER SQUADRON (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR FEDERAL, STATE, AND LOCAL PUBLIC AGENCIES, OTHER INTERESTED PARTIES, AND MEMBERS OF THE PUBLIC

FROM: 23 CES/CEIEA
3485 Georgia Street
Moody AFB, GA 31699

SUBJECT: Proposed Construction of a Personnel Recovery (PR) Campus facility at Moody Air Force Base (AFB), Georgia.

1. Enclosed please find a copy of the Draft Environmental Assessment (EA) the U.S. Air Force has prepared for proposed airfield improvements at Moody AFB, Georgia.
2. The Proposed Action is to consolidate 347th Rescue Group (347 RQG) facilities through development of a Personnel Recovery (PR) Campus at Moody AFB, Georgia. This involves several components, including demolition activities, construction of facilities, and construction of supporting infrastructure. Site preparation to allow for new construction would affect approximately 1.3 million square feet of area and would include approximately 18 acres of tree removal, 5 acres of wetland fill, 0.6 acre of soil dewatering, and grading of the construction sites. Construction would total approximately 1.2 million square feet among several buildings and parking/roadways within the installation cantonment area. At this time, the U.S. Air Force requests your comments on the Proposed Action as discussed in the Draft EA. The U.S. Air Force has identified a Preferred Alternative for implementation in accordance with Title 40 Code of Federal Regulations, Section 1502.14(e). After careful consideration of all comments received on the Draft EA the Air Force will update the Final EA and identify the decision made via public notice.
3. The public comment period for this EA is 30 days. Please provide any written comments within 30 days from receipt of this letter to Mr. Hank Santicola at the above address. Libraries should file this document for public access and reference until the public comment period has ended. If you have any questions, please feel free to contact Mr. Santicola by telephone at (229) 257-2396. Thank you for your participation.

A handwritten signature in black ink, appearing to read "H. J. Santicola".

HENRY J. SANTICOLA, GS-12
Environmental Planner/NEPA Manager

Attachment

1. *Draft Environmental Assessment for Personnel Recovery Campus at Moody AFB, Georgia.*

Global Power for America

Appendix A Public Involvement and Agency Correspondence

U.S. FISH AND WILDLIFE SERVICE (USFWS) CORRESPONDENCE



DEPARTMENT OF THE AIR FORCE
23D CIVIL ENGINEER SQUADRON (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR U.S. FISH AND WILDLIFE SERVICE
Ecological Services Field Office
Attn: Ms. Gail Martinez
4980 Wildlife Drive NE
Townsend GA 31331

JAN 04 2016

FROM: 23 CES/CC

SUBJECT: Consultation for Proposed Personnel Recovery (PR) Campus, Moody AFB GA

1. Moody AFB requests informal consultation per Section 7 of the Endangered Species Act regarding the proposed PR Campus project at Moody AFB, Lowndes County, GA. A map showing the location of this project is attached (Attachment 1).
2. The purpose of the PR Campus project is to consolidate all rescue aviation and maintenance functions at Moody AFB into one area to improve operational, ergonomic, and energy efficiencies while eliminating Unified Facilities Criteria airfield violations. The campus will be created by relocating and integrating helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, three facilities and a new helicopter parking apron and ramp would be constructed west of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 2). Approximately 18 acres of trees would be removed, including about 5 acres of forested wetlands that would be filled and converted to uplands as part of the site development, and a 0.6 acre stormwater retention pond would be created to minimize stormwater impacts to the Beatty Creek watershed.
3. Surveys for listed species were first conducted in these areas in 1993-1994, and have been supplemented by periodic surveys by installation staff and species-specific surveys for gopher tortoises (*Gopherus polyphemus*), eastern indigo snakes (*Drymarchon couperi*) and frosted flatwoods salamander (*Ambystoma cingulatum*) (Note: Additional information on rare, threatened, and endangered species surveys and management is in the Moody AFB Integrated Natural Resources Management Plan). The project area has been resurveyed by the installation certified wildlife biologist for listed and candidate species in 2013 and again in 2015 as part of the environmental impact analysis process. The only listed or candidate species known to occur in this area is the American alligator (*Alligator mississippiensis*). No occurrences of any other listed, candidate, or protected species, to include gopher tortoises, eastern indigo snakes, frosted flatwoods salamanders, wood storks (*Mycteria americana*), or bald eagles (*Haliaeetus leucocephalus*) have been documented in the proposed project area.

Global Power for America

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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4. The draft environmental assessment (Excerpt at Attachment 3) completed for the proposed action indicates there will be no significant impacts to listed or candidate species as a result of implementation of the proposed action.
5. Based upon the analysis conducted in this environmental assessment, it is the opinion of our staff that the proposed action will not adversely affect any listed or candidate species. Therefore, Moody AFB requests your written concurrence on this assessment as an informal consultation under Section 7 of the Endangered Species Act.
6. If you have any questions or need any further information, please contact Mr. Gregory Lee at 229-257-5881 or by e-mail at gregory.lee.5@us.af.mil.



OSCAR F. PORTILLO, Lt Col, USAF
Commander

Attachments:

1. Location of Moody AFB, GA, and Proposed Location of PR Campus Project
2. Proposed PR Campus Layout
3. Excerpt from Draft EA, *Environmental Assessment for the Proposed Personnel Recovery Campus at Moody Air Force Base, Georgia*

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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PRELIMINARY DRAFT Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Affected Environment

1 **Figure 3.5-1: Area of Potential Effects (Proposed PR Campus Limits)**



3 **3.6 Biological Resources**

4 **3.6.1 Definition of the Resource**

5 Biological resources include plant and animal species occurring within and near the proposed project area
6 and the habitats in which they occur. The ROI for biological resources consists of the specific project
7 sites at Moody AFB, as well as off-base areas in the vicinity that could potentially be affected by the
8 Proposed Action. This section describes plant and animal species and natural community types that are
9 typical of the ROI and also identifies biological resources that are protected by Federal or state law or
10 statute. Species with regulatory protection or those otherwise considered rare or vulnerable to human
11 disturbance are defined as sensitive species in this document. Sensitive species are protected by and/or
12 listed under the Endangered Species Act of 1973 (ESA), the Migratory Bird Treaty Act (MBTA),
13 EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds), the Bald and Golden Eagle
14 Protection Act (BGEPA), the Georgia Department of Natural Resources (DNR), and the Georgia Natural
15 Heritage Program (NHP).

16 The ESA prohibits the unauthorized take of threatened or endangered species, where "take" is defined as
17 to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such
18 conduct. An endangered species is defined as any species in danger of extinction throughout all or a
19 significant portion of its range, while a threatened species is defined as any species likely to become an
20 endangered species in the foreseeable future. The ESA also requires critical habitat to be identified for
21 listed species. Critical habitat is defined as the physical and biological features essential for a species'
22 conservation. In addition to endangered and threatened designations, the USFWS has identified an

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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PRELIMINARY DRAFT Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Affected Environment

- 1 additional status category of “candidate species.” Candidate species are species for which sufficient
2 information is available to propose them as endangered or threatened under the ESA but for which
3 development of a proposed regulation is precluded by other, higher-priority listing activities.
- 4 The Georgia DNR provides lists of protected plants and animals, which may be designated as endangered,
5 threatened, rare, or unusual. The definitions of endangered and threatened are the same as those provided
6 under the Federal ESA. Rare species are considered those species that are not listed as endangered or
7 threatened but that should be protected because of their scarcity. Unusual species are defined as species
8 deserving of special consideration and, in the case of plants, subject to commercial exploitation.
- 9 Georgia’s NHP also lists species for which conservation is considered desirable based on their association
10 with relatively undisturbed habitats, as well as their recreational, aesthetic, or cultural value. A number of
11 global and state NHP designations are available, including:
- 12 • G1: critically imperiled globally
 - 13 • G2: imperiled globally
 - 14 • G3: rare and local throughout range or in a special habitat, or narrowly endemic
 - 15 • G4: apparently secure
 - 16 • G5: demonstrably secure globally
 - 17 • S1: critically imperiled in Georgia
 - 18 • S2: imperiled in Georgia
 - 19 • S3: rare and uncommon throughout the state or in a special habitat, or narrowly endemic
 - 20 • S4: apparently secure
 - 21 • S5: demonstrably secure in state
- 22 The MBTA provides for the conservation of migratory birds, which are generally defined as any species
23 or family of birds that live, reproduce, or migrate within or across international borders at some point
24 during their annual life cycle. Unless permitted, the MBTA prohibits the pursuit, hunting, taking,
25 capturing, killing, or possession of migratory birds. In 2014, the DoD and USFWS entered into a
26 Memorandum of Understanding (MOU) regarding migratory bird conservation during activities other
27 than military readiness and airfield operations (including construction, demolition, and facility
28 renovation) (DoD and USFWS, 2014). In general, the MOU identifies discretionary actions a DoD
29 proponent may undertake, to the extent practicable and consistent with the military mission, for projects
30 that are likely to have a measurable negative effect on migratory bird populations. Such actions include
31 avoiding or minimizing exposure of birds and their habitats to avian stressors (alterations of the
32 environment that affects birds or their resources) that may result in take.
- 33 Migratory birds are further addressed in EO 13186, *Responsibilities of Federal Agencies to Protect*
34 *Migratory Birds*, which requires Federal agencies to evaluate the effects of their actions on migratory
35 birds (with an emphasis on species of concern). Species of concern are (1) those identified in the USFWS
36 report *Migratory Nongame Birds of Management Concern in the United States* (USFWS, 2011),
37 (2) priority species identified by established plans such as those prepared by Partners In Flight, or
38 (3) listed species in 50 C.F.R. § 17.11, Endangered and Threatened Wildlife.
- 39 The BGEPA prohibits, without a permit issued by the USFWS, the taking of bald eagles (*Haliaeetus*
40 *leucocephalus*) or golden eagles (*Aquila chrysaetos*). “Take” is defined as to pursue, shoot, shoot at,
41 poison, wound, kill, capture, trap, collect, molest, or disturb. “Disturb” is defined as actions that result in
42 or are likely to result in injury, decreased productivity, or nest abandonment.

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PRELIMINARY DRAFT Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Affected Environment

1 3.6.2 Existing Conditions

2 *Vegetation and Habitats*

3 Detailed descriptions of the various vegetation and community associations of Moody AFB and the
 4 surrounding region are provided in the base's *Integrated Natural Resources Management Plan* (INRMP)
 5 (Moody AFB, 2013a).

6 Vegetation communities within the proposed PR Campus area consist primarily of wetlands and loblolly
 7 pine plantation, with a small area of open grass field (Figure 3.6-1). Wetlands, scattered pines, and mixed
 8 hardwood habitats occur off-base immediately adjacent to the project area. Wetland vegetation
 9 composition was identified during a recent wetland investigation at the proposed site (Cardno, 2015). A
 10 total of about 22 acres of potentially jurisdictional waters of the U.S. were identified, including about
 11 20 acres of palustrine forested wetland, 1 acre of scrub/shrub wetland, and 1.9 miles of intermittent and
 12 ephemeral stream channels. Of this total, about 5 acres of wetland are within the proposed construction
 13 footprint. Most of the project site, including some wetland areas, were historically bedded and planted
 14 with loblolly pine (*Pinus taeda*), and large relict pines occur throughout the wetland system. Pines
 15 dominate the canopy of the site and also occupy large hummocks within deeper areas. Other vegetation
 16 identified in the palustrine wetlands during the 2015 survey includes swamp tupelo (*Nyssa sylvatica* var.
 17 *biflora*), red maple (*Acer rubrum*), tulip poplar (*Liriodendron tulipifera*), sweet bay magnolia (*Magnolia*
 18 *virginiana*), sweet gum (*Liquidambar styraciflua*), fetterbush (*Lyonia lucida*), gallberry (*Ilex glabra*),
 19 sweet pepperbush (*Clethra alnifolia*), and various ferns. A similar vegetation composition is present in
 20 the scrub/shrub wetland area, with the exception that canopy and subcanopy tree species are absent,
 21 which suggests long-term water inundation.

22 **Figure 3.6-1: PR Campus Project Area Vegetation Communities**



23

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PRELIMINARY DRAFT Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Affected Environment

1 Upland areas of the project site are dominated by loblolly pine plantation and also contain some
 2 bottomland hardwood and an open grass field. The bottomland hardwood area is dominated by red maple
 3 (*Acer rubrum*), sweet bay magnolia, and water oak (*Quercus nigra*) in the tree stratum. Dominant
 4 understory species include Japanese honeysuckle (*Lonicera japonica*), cinnamon fern (*Osmunda*
 5 *cinnamomea*), southern dewberry (*Rubus trivialis*), American buckwheat vine (*Brunnichia ovata*), and
 6 lanceleaf greenbrier (*Smilax smallii*). The grass field is composed of various grass and forb species. The
 7 project area is located adjacent to developed portions of the base and has been previously disturbed.

8 **Wildlife**

9 The habitats on Moody AFB support numerous wildlife species. Species considered representative of
 10 wetland and upland pine and mixed pine/hardwood forest habitats on and near the base are listed in
 11 Table 3.6-1. In addition to the mammals listed, seven bat species have been documented in forested
 12 and/or wetland habitats on the base (BHE Environmental, 2001). The table does not present an
 13 exhaustive list of wildlife on Moody AFB, and not all the species listed necessarily occur in the proposed
 14 PR Campus project area. However, these species are typical of wildlife found on the installation and that
 15 have potential to occur at undeveloped portions of the proposed PR Campus area. Compared with other
 16 natural habitats, wildlife occurrence may be limited in pine plantation due to the dense canopy and
 17 understory that often develops. Wildlife occurrence is likely limited in the currently developed portions
 18 of the project area, consisting of species generally found in urban areas and tolerant of human presence
 19 and activity (e.g., rodents and other small mammals, some bird species).

20 **Table 3.6-1: Representative Wildlife Species in Wetland and Forest Habitats on Moody AFB**

Common Name	Scientific Name	Potential Occurrence	
		Wetlands	Pine/Hardwood Forest
Mammals			
Opossum	<i>Didelphis virginiana</i>	*	*
Raccoon	<i>Procyon lotor</i>	*	*
Striped skunk	<i>Mephitis mephitis</i>		*
Gray fox	<i>Urocyon cinereoargenteus</i>	*	*
Fox squirrel	<i>Sciurus niger</i>		*
Gray squirrel	<i>Sciurus carolinensis</i>	*	*
Eastern cottontail rabbit	<i>Sylvilagus floridanus</i>	*	*
White-tailed deer	<i>Odocoileus virginianus</i>	*	*
North American beaver	<i>Castor canadensis</i>	*	
Birds			
Red-shouldered hawk	<i>Buteo lineatus</i>	*	*
Northern bobwhite quail	<i>Colinus virginianus</i>		*
Pileated woodpecker	<i>Dryocopus pileatus</i>	*	*
Downy woodpecker	<i>Picoides pubescens</i>	*	*
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	*	*
Northern flicker	<i>Colaptes auratus</i>	*	*
Yellow-billed cuckoo	<i>Coccyzus americanus</i>		*
Ruby-throated hummingbird	<i>Archilochus colubris</i>		*
American crow	<i>Corvus brachyrhynchos</i>		*
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	*	*
Carolina chickadee	<i>Poecile carolinensis</i>	*	*
Tufted titmouse	<i>Baeolophus bicolor</i>	*	*
Brown-headed nuthatch	<i>Sitta pusilla</i>		*
Carolina wren	<i>Thryothorus ludovicianus</i>	*	*
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	*	*
Great crested flycatcher	<i>Myiarchus crinitus</i>	*	*
Ruby-crowned kinglet	<i>Regulus calendula</i>	*	*

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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PRELIMINARY DRAFT Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Affected Environment

Table 3.6-1: Representative Wildlife Species in Wetland and Forest Habitats on Moody AFB, Continued

Common Name	Scientific Name	Potential Occurrence	
		Wetlands	Pine/Hardwood Forest
Wild turkey	<i>Meleagris gallopavo</i>		*
Eastern kingbird	<i>Tyrannus tyrannus</i>	*	
White-eyed vireo	<i>Vireo griseus</i>	*	*
Red-eyed vireo	<i>Vireo olivaceus</i>	*	*
Northern parula	<i>Setophaga americana</i>	*	*
Common grackle	<i>Quiscalus quiscula</i>	*	*
Summer tanager	<i>Piranga rubra</i>		*
Eastern towhee	<i>Pipilo erythrophthalmus</i>		*
White-throated sparrow	<i>Zonotrichia albicollis</i>		*
Blue jay	<i>Cyanocitta cristata</i>	*	
Brown thrasher	<i>Toxostoma rufum</i>	*	*
Gray catbird	<i>Dumetella carolinensis</i>	*	
Northern cardinal	<i>Cardinalis cardinalis</i>	*	*
Hooded warbler	<i>Setophaga citrina</i>	*	*
Prothonotary warbler	<i>Protonotaria citrea</i>	*	
Wood duck	<i>Aix sponsa</i>	*	
Great blue heron	<i>Ardea herodias</i>	*	
Great egret	<i>Ardea alba</i>	*	
Belted kingfisher	<i>Megasceryle alcyon</i>	*	
Reptiles			
Eastern box turtle	<i>Terrapene carolina carolina</i>	*	*
Common snapping turtle	<i>Chelydra serpentina</i>	*	
Eastern cottonmouth	<i>Agkistrodon piscivorus</i>	*	*
Southern water snake	<i>Nerodia fasciata</i>	*	
Eastern mud snake	<i>Farancia abacura abacura</i>	*	
Five-lined skink	<i>Eumeces inexpectatus</i>		*
Timber rattlesnake	<i>Crotalus horridus</i>		*
Black racer	<i>Coluber constrictor</i>		*
Amphibians			
Spotted salamander	<i>Ambystoma maculatum</i>	*	
Tiger salamander	<i>Ambystoma tigrinum</i>	*	
Green tree frog	<i>Hyla cinerea</i>	*	
Eastern spadefoot toad	<i>Scaphiopus holbrookii</i>	*	
Southern toad	<i>Bufo terrestris</i>	*	
Little grass frog	<i>Pseudacris ocularis</i>		*
Squirrel tree frog	<i>Hyla squirella</i>		*
Eastern spadefoot toad	<i>Scaphiopus holbrookii</i>		*

1 Source: Moody AFB, 2013a

2 **Sensitive Species**

3 Sensitive species with known or potential occurrence on or near Moody AFB are listed in Table 3.6-2. Of
 4 these species, seven are protected by Federal laws (ESA, BGEPA, and MBTA). The frosted flatwoods
 5 salamander (*Ambystoma cingulatum*), wood stork (*Mycteria americana*) (U.S. breeding population),
 6 American alligator (*Alligator mississippiensis*), and eastern indigo snake (*Drymarchon corais couperi*)
 7 are listed as threatened under the ESA, while the striped newt (*Notophthalmus perstriatus*) and gopher
 8 tortoise (*Gopherus polyphemus*) are candidate species. The bald eagle is protected under the BGEPA, as
 9 well as the MBTA. The frosted flatwoods salamander and striped newt occur in the geographic region of

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence

PRELIMINARY DRAFT Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Affected Environment

- 1 the installation but have not been observed on the base, and habitat conditions for these species are
 2 generally considered marginal (Palis, 2005). Gopher tortoises are prevalent at some areas of the base, but
 3 the nearest known tortoise burrows are located east of the runway. No burrows are known in the project
 4 area and, therefore, occurrence is considered unlikely.
- 5 Thirteen of the species are listed as endangered, threatened, rare, or unusual by the State of Georgia. Six
 6 of these state-listed species are also federally protected and are identified above. Of the remaining seven
 7 species, four have been identified on the base: round-tailed muskrat (*Neofiber alleni*) (threatened),
 8 alligator snapping turtle (*Macrochelys temminckii*) (threatened), Bachman's sparrow (*Aimophila*
 9 *aestivalis*) (rare), and green-fly orchid (*Epidendrum concopseum*) (unusual). The alligator snapping turtle
 10 typically occurs in large streams and rivers and though occurrence in the project area is possible, it is
 11 considered unlikely. Bachman's sparrow occurs in the Grand Bay-Banks Lake (GBBL) system, but this
 12 species prefers mature pine forest and probably does not occur regularly in the affected habitats of the
 13 project area. The green-fly orchid is known from only a few locations east of the main base in Grand Bay
 14 Weapons Range (Moody AFB, 2013a).
- 15 The remaining federally listed species and state-listed species (i.e., wood stork, bald eagle, eastern indigo
 16 snake, American alligator, and round-tailed muskrat) have potential for occurrence in the project area, and
 17 descriptions for each are provided in the base's *Integrated Natural Resources Management Plan* (Moody
 18 AFB, 2013a). Descriptions of other listed species are provided on the USFWS website
 19 (<http://www.fws.gov/endangered/>) and/or the Georgia DNR's Wildlife Resources Division website
 20 (http://www.georgiawildlife.com/rare_species_profiles).
- 21 In 2014, Moody AFB completed informal consultation with the USFWS under Section 7 of the ESA
 22 during preparation of the initial PR Campus EA, and the USFWS concurred that the proposed actions
 23 were not likely to adversely affect federally listed or candidate species. Compared with the 2013
 24 consultation, under the current Proposed Action there would be less habitat removal and lower potential
 25 for impacts to gopher tortoises; Moody AFB is currently coordinating with the USFWS on a
 26 determination regarding this project update.
- 27 **Table 3.6-2: Sensitive Species with Known or Potential Occurrence on or near Moody AFB**

Common Name	Scientific Name	Federal Status	State Status	NHP Status
Amphibians				
Frosted flatwoods salamander	<i>Ambystoma cingulatum</i>	T	T	G2/S2
Striped newt	<i>Notophthalmus perstriatus</i>	Candidate	T	G2G3/S2
Broad-striped dwarf siren ¹	<i>Pseudobranchius striatus striatus</i>	None	None	G5/S3
Birds				
Bachman's sparrow ¹	<i>Aimophila aestivalis</i>	None	R	G3/S3
American bittern ¹	<i>Botaurus lentiginosus</i>	None	None	G4/S3?
Little blue heron ¹	<i>Egretta caerulea</i>	None	None	G5/S3?
Yellow-crowned night heron	<i>Nyctanassa violacea</i>	None	None	G5/S3S4
Black-crowned night heron	<i>Nycticorax nycticorax</i>	None	None	G5/S4
Southeastern American kestrel ¹	<i>Falco sparverius paulus</i>	None	None	G5/S3
Florida sandhill crane ¹	<i>Grus canadensis pratensis</i>	None	None	G5/S1
Greater sandhill crane ¹	<i>Grus canadensis tabida</i>	None	None	G5/S2
Wood stork ¹	<i>Mycteria americana</i>	T	E	G4/S2
Southern bald eagle ¹	<i>Haliaeetus l. leucocephalus</i>	BGEPA	E	G4/S2
Loggerhead shrike ¹	<i>Lanius ludovicianus migrans</i>	None	None	G5/S?
Mammals				
Florida black bear	<i>Ursus americanus floridanus</i>	None	None	G5T2/S2
Northern yellow bat ¹	<i>Lasiurus intermedius</i>	None	None	G4G5/S2S3
Southeastern myotis ¹	<i>Myotis austroriparius</i>	None	None	G3G4/S3

Appendix A Public Involvement and Agency Correspondence

PRELIMINARY DRAFT Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Affected Environment

Table 3.6-2: Sensitive Species with Known or Potential Occurrence on or near Moody AFB, Continued

Common Name	Scientific Name	Federal Status	State Status	NHP Status
Round-tailed muskrat ¹	<i>Neofiber allei</i>	None	T	G3/S3
Reptiles				
American alligator ¹	<i>Alligator mississippiensis</i>	T (S/A)	None	G5/S4
Eastern indigo snake ¹	<i>Drymarchon corais couperi</i>	T	T	G4/S3
Striped crayfish snake ¹	<i>Regina alleni</i>	None	None	G5/S2
Southern hognose snake ¹	<i>Heterodon simus</i>	None	None	G2/S2
Eastern coral snake ¹	<i>Micrurus fulvius</i>	None	None	G5/S3
Gopher tortoise ¹	<i>Gopherus polyphemus</i>	Candidate	T	G3/S3
Striped mud turtle ¹	<i>Kinosternon bairii</i>	None	None	G5/S3
Alligator snapping turtle ¹	<i>Macrochelys temminckii</i>	None	T	G3G4/S3
Spotted turtle	<i>Clemmys guttata</i>	None	U	G5/S3
Plants				
Blue maidencane	<i>Amphicarpum muehlenbergianum</i>	None	None	G4/S3?
Green-fly orchid ¹	<i>Epidendrum conopseum</i>	None	U	G4/S3
Climbing heath	<i>Pieris phillyreifolia</i>	None	None	G3/S3
Needle palm	<i>Rhaphidophyllum hystrix</i>	None	None	G4/S3S2
Hooded pitcher plant	<i>Sarracenia minor</i>	None	U	G4/S4
Yellow flytrap	<i>Sarracenia flava</i>	None	U	G5?/S3S4
Three-birds orchid	<i>Triphora trianthophora</i>	None	None	G3G4/S2?
Savanna cowbane	<i>Oxypolis ternata</i>	None	None	G3/S2
Bluff white oak	<i>Quercus austrina</i>	None	None	G4?/S3?

1 Source: Moody AFB, 2013a; Moody AFB, 2008b; Georgia DNR, 2013
 2 BGEPA = Bald and Golden Eagle Protection Act; E = endangered; NHP = Natural Heritage Program; R = rare; S/A = similarity
 3 of appearance; T = threatened; U = unusual; ? = questionable rank, best guess provided
 4 1. Species identified on Moody AFB.

6 In addition to the listed species described above, migratory birds occur on and near Moody AFB at
 7 various times of the year. Increased migratory bird activity typically occurs from October to February.
 8 Species of blackbirds and songbirds are particularly active around sunrise and sunset during winter.
 9 Migratory waterfowl are prevalent in wet areas as well. Although migratory bird species may occur in the
 10 project area, the site is small, somewhat isolated, and located near developed portions of the installation.
 11 Bird habitat of greater quantity and quality occurs throughout the nearby large undeveloped wetland and
 12 forest areas of the Grand Bay Weapons Range, GBBL, and Banks Lake National Wildlife Refuge.

13 **3.7 Water Resources**

14 **3.7.1 Definition of the Resource**

15 Water resources include all surface water and groundwater resources in the project area. In general,
 16 surface water resources include lakes, rivers, streams, wetlands, and floodplains. Groundwater resources
 17 include all water reserves contained in soil and geologic deposits below the ground surface. These
 18 resources are important for a variety of reasons, including drinking water, irrigation, power generation,
 19 recreation, flood control, and human health.

20 The Clean Water Act (CWA) was established to ensure the "restoration and maintenance of the chemical,
 21 physical, and biological integrity of the Nation's waters" (Section 402). Under the act, it is illegal to
 22 discharge pollutants from a "point source" into any surface water without a National Pollutant Discharge

Appendix A Public Involvement and Agency Correspondence

USFWS RESPONSE



United States Department of the Interior

Fish and Wildlife Service

105 West Park Drive, Suite D
Athens, Georgia 30606
Phone: (706) 613-9493
Fax: (706) 613-6059

West Georgia Sub-Office
Post Office Box 52560
Fort Benning, Georgia 31995-2560
Phone: (706) 544-6428
Fax: (706) 544-6419

Coastal Sub-Office
4980 Wildlife Drive
Townsend, Georgia 31331
Phone: (912) 832-8739
Fax: (912) 832-8744

February 9, 2016

Lieutenant Colonel Oscar F. Portillo
Department of the Air Force
23rd Civil Engineer Squadron
3485 Georgia Street
Moody Air Force Base, Georgia 31699
Attention: Mr. Gregory Lee

Re: USFWS 2016-0258

Colonel Portillo,

Thank you for your letter initiating informal section 7 consultation for the proposed Personnel Recovery (PR) Campus at Moody Air Force Base (AFB), Lowndes County, Georgia. We submit the following comments in accordance with provisions of the Endangered Species Act of 1973, as amended; (16 U.S.C. 1531 *et seq.*), the Bald and Golden Eagle Protection Act of 1940 (BGEPA), and the Migratory Bird Treaty Act of 1918 (MBTA) to further the conservation of fish and wildlife resources and their habitat, including federally listed threatened and endangered species.

The project proposes to consolidate all rescue aviation and maintenance functions at Moody AFB to one location. Approximately 18 acres of trees are planned for removal, including five acres of forested wetlands that would be filled and converted to uplands, and a 0.6 acre stormwater retention pond will be created.

Five federally listed species were identified as potentially affected by proposed action. These species are: frosted flatwoods salamander (*Ambystoma cingulatum*), eastern indigo snake (*Drymarchon couperi*), gopher tortoise (*Gopherus polyphemus*), wood stork (*Mycteria*

Appendix A Public Involvement and Agency Correspondence

americana), and American alligator (*Alligator mississippiensis*). Additionally, the bald eagle (*Haliaeetus leucocephalus*), is protected under the BGEPA and MBTA.

Based on the information provided in your letter, we concur with your determination that the proposed action is "not likely to adversely affect" federally protected species. Based on the known distribution of the federally protected species in and around the proposed action area and the scope of the proposed action, we do not anticipate significant risks of adverse effects on these protected species as a result of implementing the proposed action.

We appreciate the opportunity to comment during the planning stages of your project. If you have any additional questions, please write or call our Coastal Georgia Sub Office staff biologist, Gail Martinez at 912-832-8739 extension 7.

Sincerely,



Strant Colwell
Coastal Georgia Supervisor

Appendix A Public Involvement and Agency Correspondence

U.S. ARMY CORPS OF ENGINEERS JURISDICTIONAL DETERMINATION



DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
1104 NORTH WESTOVER BOULEVARD, UNIT 9
ALBANY, GEORGIA 31707

REPLY TO
ATTENTION OF:

JANUARY 13 2016

Regulatory Division
SAS-2015-00878

Mr. Gregory Lee
Moody Air Force Base
23 CES/CEAN
3485 Georgia Street, Bldg 918
Moody AFB, Georgia 31699

Dear Mr. Lee:

I refer to a letter dated November 20, 2015, submitted on your behalf by Cardno, requesting a Jurisdictional Determination (JD) for your site located north of Robinson Road, on Moody Air Force Base, in Lowndes County, Georgia (Latitude 30.9814, Longitude -83.2044). This project has been assigned number SAS-2015-00878 and it is important that you refer to this number in all communication concerning this matter.

We have completed a preliminary JD for the site. The wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

The wetlands/other waters on the subject property may be waters of the United States within the jurisdiction of Section 404 of the Clean Water Act (33 United States Code 1344). The enclosed Global Positioning System (GPS) delineation entitled "Figure 2 – Wetland Stream Map", dated November 18, 2015, is an accurate delineation of all the jurisdictional boundaries on the site. This delineation will remain valid for a period of 5-years unless new information warrants revision prior to that date. The placement of dredged or fill material into any waterways and/or their adjacent wetlands or mechanized land clearing of those wetlands would require prior Department of the Army authorization pursuant to Section 404.

Preliminary JDs are advisory in nature and may not be appealed (see 33 Code of Federal Regulations 331.2). If you are not in agreement with this preliminary JD, then you may request an approved JD for your project site or review area.

If you intend to sell property that is part of a project that requires Department of the Army Authorization, it may be subject to the Interstate Land Sales Full Disclosure Act. The Property Report required by Housing and Urban Development Regulation must state whether, or not a permit for the development has been applied for, issued or

Appendix A Public Involvement and Agency Correspondence

- 2 -

denied by the U.S. Army Corps of Engineers (Part 320.3(h) of Title 33 of the Code of Federal Regulations).

This communication does not convey any property rights, either in real estate or material, or any exclusive privileges. It does not authorize any injury to property, invasion of rights, or any infringement of federal, state or local laws, or regulations. It does not obviate your requirement to obtain state or local assent required by law for the development of this property. If the information you have submitted, and on which the U.S. Army Corps of Engineers has based its determination is later found to be in error, this decision may be revoked.

A copy of this letter is being provided to the following party: Mr. Josh Hofkes, Cardno, 2220 Lakeshore Drive, Tallahassee, Florida 32303.

Thank you in advance for completing our on-line Customer Survey Form located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. We value your comments and appreciate your taking the time to complete a survey each time you have interaction with our office.

If you have any questions, please call me at 229-430-8567.

Sincerely,



Terry C. Kobs
Project Manager, Coastal Branch

Enclosures

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: Moody AFB	File Number: SAS-2015-00878	Date: January 6, 2016
Attached is:		See Section below
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input checked="" type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E
<p>SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/GECW/Pages/req_materials.aspx or Corps regulations at 33 CFR Part 331.</p>		
<p>A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.</p> <p>ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.</p> <p>OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.</p>		
<p>B: PROFFERED PERMIT: You may accept or appeal the permit.</p> <p>ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.</p> <p>APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.</p>		
<p>C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.</p>		
<p>D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.</p> <p>ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.</p> <p>APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. The division engineer must receive this form within 60 days of the date of this notice.</p>		
<p>E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.</p>		

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



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GEORGIA DNR, WATERSHED PROTECTION BRANCH COMMENT

Georgia Department of Natural Resources

Environmental Protection Division • Watershed Protection Branch
2 Martin Luther King Jr. Drive • Suite 1152 East • Atlanta • Georgia 30334
(404) 463-1511; Fax (404) 656-2453
Judson H. Turner, Director

March 30, 2016

Henry J. Santicola, GS-12
Environmental Planner/NEPA Manager
23 CES/CEIEA
3485 Georgia Street
Moody AFB, GA 31699

PROJECT: Proposed Construction of a Personnel Recovery Campus Facility, Moody Air Force Base – Lowndes County

Dear Mr. Santicola:

This correspondence has been prepared pursuant to the Draft Environmental Assessment dated March 2016 for the proposed construction of a personnel recovery campus facility at the Moody Air Force Base (AFB). Please note that this response addresses issues related specifically to the possible effects of the project on floodplains in the area and does not represent the complete review process of the Georgia Department of Natural Resources, Environmental Protection Division (EPD).

The proposed project involves demolition activities, construction of facilities, and construction of supporting infrastructure. Site preparation and new construction will affect approximately 1.3 million square feet of area (including 18 acres of tree removal), 5 acres of wetland fill, 0.6 acres of soil dewatering, and grading of the construction sites. Construction would total approximately 1.2 million square feet among several buildings and parking/roadways within the installation cantonment area.

From inspection of the effective Flood Insurance Rate Maps (FIRMs) developed by the Federal Emergency Management Agency (FEMA), the project area appears to be located outside of the Special Flood Hazard Area (SFHA), in Zone X (unshaded), an area of minimal flood hazard. A Floodplain Snapshot Map for the area accompanied by the relevant extract of FEMA's FIRM is attached.

As this project is developed, let us know if the Georgia Floodplain Management Unit can be of further assistance. For your records, please send all floodplain encroachment reviews to Tom Shillock, State NFIP Coordinator at 2 Martin Luther King Jr. Drive, S.E., Suite 1152 East, Atlanta, Georgia 30334.

Should you have questions you can reach me at number (404) 463-4935.

Sincerely,

Sincerely,



Haydn Blaize
Environmental Protection Division
Watershed Protection Branch
Floodplain Management Unit

Cc: Tom Shillock/EPD

Attachments

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
23D CIVIL ENGINEER SQUADRON (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR FEDERAL, STATE, AND LOCAL PUBLIC AGENCIES, OTHER INTERESTED PARTIES, AND MEMBERS OF THE PUBLIC

FROM: 23 CES/CEIEA
3485 Georgia Street
Moody AFB, GA 31699

SUBJECT: Proposed Construction of a Personnel Recovery (PR) Campus facility at Moody Air Force Base (AFB), Georgia.

1. Enclosed please find a copy of the Draft Environmental Assessment (EA) the U.S. Air Force has prepared for proposed airfield improvements at Moody AFB, Georgia.
2. The Proposed Action is to consolidate 347th Rescure Group (347 RQG) facilities through development of a Personnel Recovery (PR) Campus at Moody AFB, Georgia. This involves several components, including demolition activities, construction of facilities, and construction of supporting infrastructure. Site preparation to allow for new construction would affect approximately 1.3 million square feet of area and would include approximately 18 acres of tree removal, 5 acres of wetland fill, 0.6 acre of soil dewatering, and grading of the construction sites. Construction would total approximately 1.2 million square feet among several buildings and parking/roadways within the installation cantonment area. At this time, the U.S. Air Force requests your comments on the Proposed Action as discussed in the Draft EA. The U.S. Air Force has identified a Preferred Alternative for implementation in accordance with Title 40 Code of Federal Regulations, Section 1502.14(e). After careful consideration of all comments received on the Draft EA the Air Fore will update the Final EA and identify the decision made via public notice.
3. The public comment period for this EA is 30 days. Please provide any written comments within 30 days from receipt of this letter to Mr. Hank Santicola at the above address. Libraries should file this document for public access and reference until the public comment period has ended. If you have any questions, please feel free to contact Mr. Santicola by telephone at (229) 257-2396. Thank you for your participation.

A handwritten signature in black ink, appearing to read "H. J. Santicola".

HENRY J. SANTICOLA, GS-12
Environmental Planner/NEPA Manager

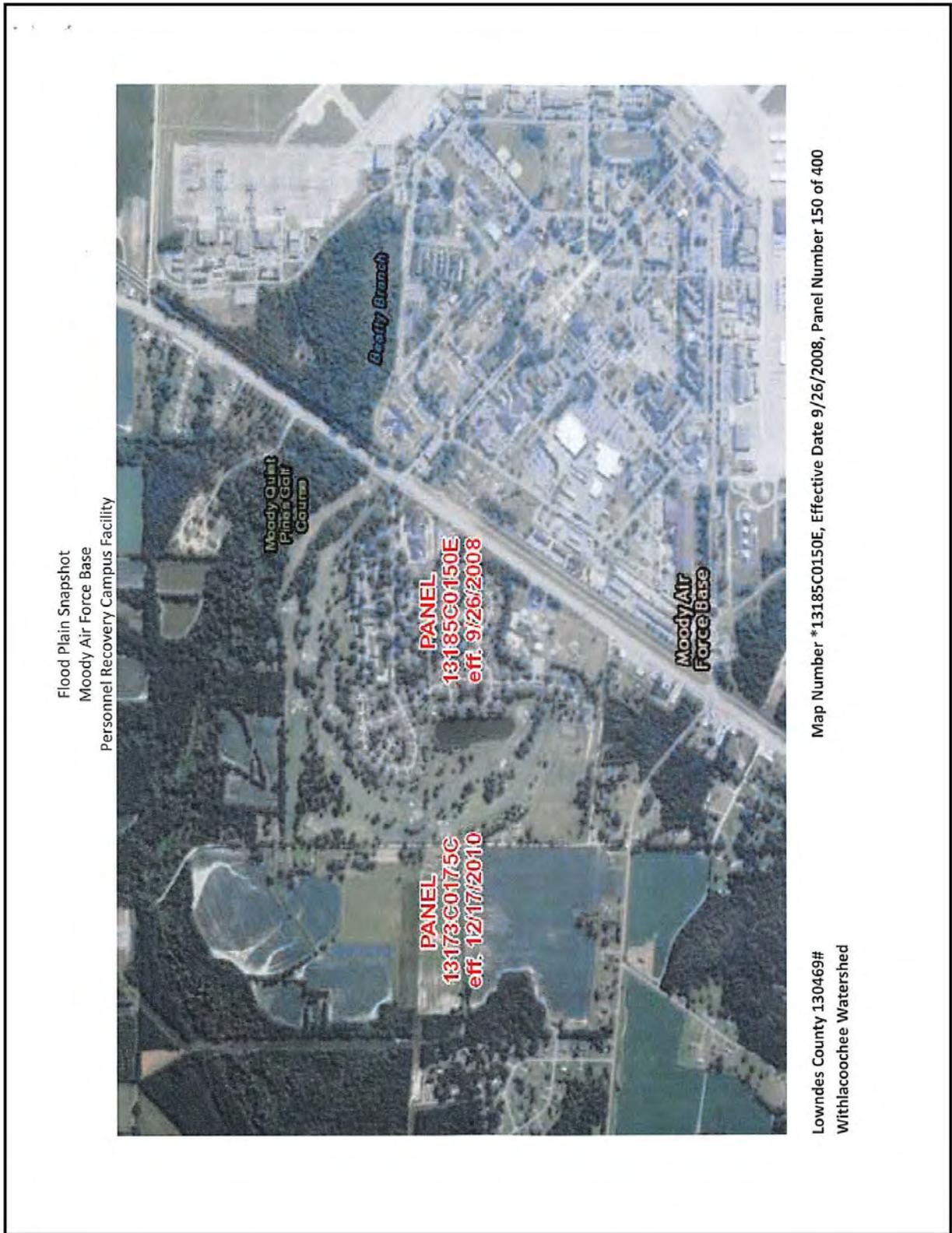
Attachment

1. *Draft Environmental Assessment for Personnel Recovery Campus at Moody AFB, Georgia.*

Global Power for America

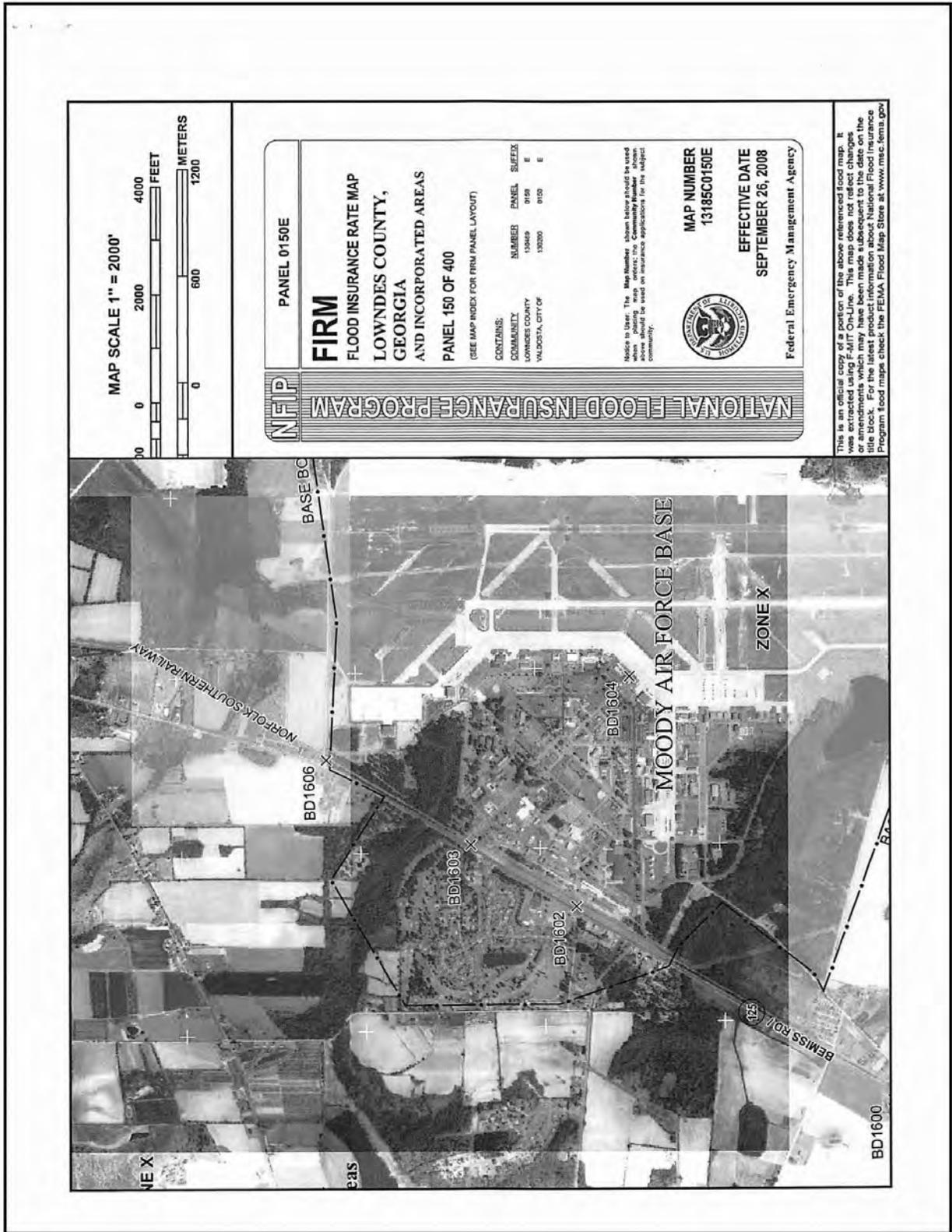
FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



Appendix A Public Involvement and Agency Correspondence

GEORGIA DNR, HISTORIC PRESERVATION DISTRICT COMMENT



MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

April 10, 2016

John L. Eunice, III, GS-14, DAF
Deputy Base Civil Engineer
23D Civil Engineer Squadron
3485 Georgia Street
Moody AFB, Georgia 31699
Attn: Henry Santicola, Environmental Planner

RE: **Moody AFB: Personnel Recovery Campus Consolidation Project**
Lowndes County, Georgia
HP-131118-003

Dear Mr. Eunice:

The Historic Preservation Division (HPD) has received the additional information submitted concerning the above referenced undertaking. Our comments are offered to assist the US Department of the Air Force and Moody Air Force Base (AFB) in complying with provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

The subject project consists of the consolidation of facilities through the development of a Personnel Recovery Campus at Moody AFB, to include demolition activities, construction of facilities, and construction of supporting infrastructure. The project was previously found to have no historic properties affected that are listed or eligible for listing in the National Register of Historic Places (NRHP), based on previous cultural resource surveys. The current submitted information includes an updated scope of work, including a smaller project footprint, and now involves buildings at or near fifty (50) years old. Based on the additional information provided and a recent Section 110 survey submitted under separate cover (FP-160307-001), HPD continues to concur that no historic properties that are listed or eligible for listing in the NRHP will be affected by this undertaking, as defined in 36 CFR Part 800.4(d)(1).

This letter evidences consultation with our office for compliance with Section 106 of the NHPA. It is important to remember that any future changes to this project as it is currently proposed may require additional consultation. HPD encourages federal agencies to discuss such changes with our office to ensure that potential effects to historic resources are adequately considered in project planning.

Please refer to project number **HP-131118-003** in any future correspondence regarding this project. If we may be of further assistance, please do not hesitate to contact me at (770) 389-7851 or jennifer.dixon@dnr.ga.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "JD", written over a light blue horizontal line.

Jennifer Dixon, MHP, LEED Green Associate
Program Manager
Environmental Review & Preservation Planning

JEWETT CENTER FOR HISTORIC PRESERVATION
2610 GA HWY 155, SW | STOCKBRIDGE, GA 30281
770.389.7844 | FAX 770.389.7878 | WWW.GEORGIAHPD.ORG

Appendix A Public Involvement and Agency Correspondence

GEORGIA DNR, WILDLIFE RESOURCES DIVISION COMMENT



MARK WILLIAMS
COMMISSIONER

DAN FORSTER
DIRECTOR

April 22, 2016

Henry Santicola
Environmental Planner/ NEPA Manager
Department of the Air Force
23 CES/ CEIBA
3485 Georgia Street
Moody AFB, GA 31699

Subject: Known occurrences of natural communities, plants and animals of highest priority conservation status on or near Personnel Recovery Campus, Lowndes County, Georgia

Dear Mr. Santicola:

This is in response to your request of March 25, 2016. According to our records, within a three-mile radius of the project site, there are the following Natural Heritage Database occurrences:

(Site Center: -83.203715, 30.982124, WGS84)

- US *Ambystoma cingulatum* (Frosted Flatwoods Salamander) [HISTORIC] approx. 2.5 mi W of site
- US *Ambystoma cingulatum* (Frosted Flatwoods Salamander) [HISTORIC] approx. 1.5 mi NE of site
- Botaurus lentiginosus* (American Bittern) approx. 2.1 mi S of site
- GA *Clemmys guttata* (Spotted Turtle) in an uncertain location near the project site
- US *Drymarchon couperi* (Eastern Indigo Snake) approx. 2.4 mi SE of site
- GA *Epidendrum magnoliae* (Greenfly Orchid) approx. 2.9 mi SE of site
- US *Gopherus polyphemus* (Gopher Tortoise), approx. 0.8 mi SE of site
- Grus canadensis pratensis* (Florida Sandhill Crane) in an uncertain location near the project site
- Grus canadensis tabida* (Greater Sandhill Crane) approx. 2.1 mi E of site
- Lanius ludovicianus migrans* (Migrant Loggerhead Shrike) approx. 0.1 mi E of site
- Lanius ludovicianus migrans* (Migrant Loggerhead Shrike) approx. 1.0 mi S of site
- US *Notophthalmus perstriatus* (Striped Newt) [HISTORIC] approx. 2.8 mi NE of site
- Nyctanassa violacea* (Yellow-crowned Night-heron) approx. 2.1 mi S of site
- Nyctanassa violacea* (Yellow-crowned Night-heron) approx. 2.2 mi SE of site
- Oxypholis ternata* (Savanna Cowbane) [HISTORIC?] approx. 2.6 mi S of site
- Pseudobranchius striatus spheniscus* (Slender Dwarf Siren) approx. 2.9 mi SE of site
- Pseudobranchius striatus spheniscus* (Slender Dwarf Siren) approx. 2.6 mi E of site
- Pseudobranchius striatus spheniscus* (Slender Dwarf Siren) approx. 2.2 mi S of site
- Pteronotropis metallicus* (Metallic Shiner) approx. 2.1 mi W of site in Beatty Branch

NONGAME CONSERVATION SECTION

2065 U.S. HIGHWAY 275 S.E. | SOCIAL CIRCLE, GEORGIA 30025-4743
770.918.6411 | FAX 706.557.3033 | WWW.GEORGIAWILDLIFE.COM

Appendix A Public Involvement and Agency Correspondence

Pteronotrops metallicus (Metallic Shiner) approx. 2.6 mi NW of site in Beatty Mill Creek
Quercus austrina (Bluff White Oak) approx. 1.8 mi SE of site
Regina alleni (Striped Crayfish Snake) approx. 1.2 mi S of site
GA *Sarracenia flava* (Yellow Flytrap) approx. 1.4 mi S of site
GA *Sarracenia flava* (Yellow Flytrap) in an uncertain location near the project site
GA *Sarracenia minor var. minor* (Hooded Pitcherplant) approx. 2.6 mi S of site
Seminatrix pygaea pygaea (Northern Florida Swamp Snake) approx. 2.3 mi S of site
Ursus americanus floridanus (Florida Black Bear) in an uncertain location near the project site
Wading Bird Colony (Wading Bird Colony) approx. 1.5 mi SE of site
Withlacoochee River 3 (0311020304) [SWAP High Priority Watershed], approx. 2.5 mi SW of site

Recommendations:

We have no records of high priority species or habitats within the project area. However, four federal listed species, *Drymarchon couperi* (Eastern Indigo Snake), *Gopherus polyphemus* (Gopher Tortoise), *Notophthalmus perstriatus* (Striped Newt), and *Ambystoma cingulatum* (Frosted Flatwoods Salamander) have been documented within three miles of the proposed project. To minimize potential impacts to these or other federal listed species, we recommend consultation with the United States Fish and Wildlife Service. In southwest Georgia, please contact John Doresky (706-544-6030 or John_Doresky@fws.gov).

Please be aware that state protected species have been documented within three miles of the proposed project. For information about these species, including survey recommendations, please visit our webpage at http://www.georgiawildlife.org/rare_species_profiles. Surveys for federal and state listed species of conservation concern should be conducted prior to commencement of construction.

We have a record of the federally threatened flatwoods salamander (*Ambystoma cingulatum*) near the project site. This species is most often found in association with mesic flatwoods in longleaf pine / wiregrass communities in the coastal plain. We suggest that a survey for the flatwoods salamander within the project boundary be conducted over more than a single season, as one, two, or even three or more years may be insufficient to detect the flatwoods salamander, especially during and following extended drought conditions.

We are concerned about stream habitats that could be impacted by construction activities. In order to protect aquatic habitats and water quality, we recommend that all machinery be kept out of streams during construction. We urge you to use stringent erosion control practices during construction activities. Further, we strongly advocate leaving vegetation intact within 100 feet of streams wherever possible, which will reduce inputs of sediments, assist with maintaining riverbank integrity, and provide shade and habitat for aquatic species. We realize that some trees may have to be removed, but recommend that shrubs and ground vegetation be left in place.

Please be aware that the type of erosion control material that is used may have an impact on wildlife, particularly snakes. We recommend natural, biodegradable materials such as "jute" or

IR 16303

Appendix A Public Involvement and Agency Correspondence

'coir' be used. Mesh strands should be movable, as opposed to fixed. We do not recommend plastic fencing, as it frequently leads to snake entrapment and death.

Disclaimer:

Please keep in mind the limitations of our database. The data collected by the Nongame Conservation Section comes from a variety of sources, including museum and herbarium records, literature, and reports from individuals and organizations, as well as field surveys by our staff biologists. In most cases the information is not the result of a recent on-site survey by our staff. Many areas of Georgia have never been surveyed thoroughly. Therefore, the Nongame Conservation Section can only occasionally provide definitive information on the presence or absence of rare species on a given site. Our files are updated constantly as new information is received. **Thus, information provided by our program represents the existing data in our files at the time of the request and should not be considered a final statement on the species or area under consideration.**

If you know of populations of highest priority species that are not in our database, please fill out the appropriate data collection form and send it to our office. Forms can be obtained through our web site (<http://www.georgiawildlife.com/node/1376>) or by contacting our office. If I can be of further assistance, please let me know.

Sincerely,



Anna Yellin
Environmental Review Coordinator

Data Available on the Nongame Conservation Section Website

- Georgia protected plant and animal profiles are available on our website. These accounts cover basics like descriptions and life history, as well as threats, management recommendations and conservation status. Visit <http://www.georgiawildlife.com/node/2721>.
- Rare species and natural community information can be viewed by Quarter Quad, County and HUC8 Watershed. To access this information, please visit our GA Rare Species and Natural Community Information page at: <http://www.georgiawildlife.com/conservation/species-of-concern?cat=conservation>.
- Downloadable files of rare species and natural community data by quarter quad and county are also available. They can be downloaded from: <http://www.georgiawildlife.com/node/1370>.

IR 16303

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GOVERNMENT-TO-GOVERNMENT CORRESPONDENCE



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

23 WG/CC
23 Flying Tiger Way
Bldg 105 Suite 1
Moody AFB, GA 31699

25 FEB 2016

Ann Denson Tucker, Chairwoman
Muscogee Nation of Florida
278 Church Road
Ponce de Leon, FL 32455

Dear Ms. Tucker

The United States Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) at Moody Air Force Base (AFB), Georgia to assess the potential environmental consequences associated with constructing a personnel recovery campus on Moody AFB. Moody AFB is located in south central Georgia, north of the city of Valdosta on federal property in Lanier and Lowndes counties. The proposed project area is in the northwest portion of the installation.

In 2011 an EA was begun to assess the potential environmental consequences resulting from a proposal to construct a personnel recovery campus on Moody AFB. Your office was invited to consult on this proposal, however consultation was never initiated. During the course of the EA, it was determined that several site plan revisions would be required to minimize environmental impact. In 2015 the site plan was revised and three new alternatives are now under consideration. The revised proposed action is smaller in scale than the original campus concept.

The purpose of the proposed campus is to improve facility support for mission requirements of the 347th Rescue Group (RQG) at Moody AFB. Currently the 347th RQG facilities are spread throughout the northern part of the installation flightline in outdated facilities that require facility waivers for flight and maintenance operations. Three site plan variations are now under consideration. These three variations all relocate the aircraft parts storage facility to allow construction of a new maintenance hangar, include construction of a new aircraft parking ramp adjacent to the existing apron, rerouting of roads and utility infrastructure, and construction of new squadron operations and maintenance facilities.

Phase I archeological surveys of Moody AFB were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the National Register of Historic Places (NRHP). Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71

Global Power for America

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence

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Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base.

In accordance with Executive Order 13175, Consultation with Indian Tribal Governments, and Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800, the USAF would like to initiate government-to-government consultation regarding the proposed construction of the PR Campus at Moody AFB. The USAF requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis. Additionally, please let us know if you believe this proposal might adversely affect any traditional cultural properties, including those of religious significance to the tribe.

To ensure the USAF has sufficient time to consider your input in the preparation of the EA, please forward written issues or concerns to Mr Henry Santicola, Environmental Planner, 3485 Georgia Street, Moody AFB, GA 31699. Though we will consider comments received at any time during the environmental impact analysis process, to the extent possible, we would like to hear from you within 30 days of receipt of this letter.

If you have any questions or need any additional information, please feel free to contact Mr. Santicola at (229) 257-2396 or Henry.Santicola.2@us.af.mil. Thank you in advance for your assistance in this effort.

Sincerely



THOMAS E. KUNKEL, Colonel, USAF
Commander

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

23 WG/CC
23 Flying Tiger Way
Bldg 105 Suite 1
Moody AFB, GA 31699

25 FEB 2016

Lovelin Poncho, Chairman
Coushatta Tribe of Louisiana
P.O. Box 818
Elton, LA 70532

Dear Chairman Poncho

The United States Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) at Moody Air Force Base (AFB), Georgia to assess the potential environmental consequences associated with constructing a personnel recovery campus on Moody AFB. Moody AFB is located in south central Georgia, north of the city of Valdosta on federal property in Lanier and Lowndes counties. The proposed project area is in the northwest portion of the installation.

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Phase I archeological surveys of Moody AFB were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the National Register of Historic Places (NRHP). Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71

Global Power for America

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(2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP. This site is located approximately 1.5 miles southeast of the proposed project area.

Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base.

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Sincerely



THOMAS E. KUNKEL, Colonel, USAF
Commander

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

23 WG/CC
23 Flying Tiger Way
Bldg 105 Suite 1
Moody AFB, GA 31699

25 FEB 2016

Jeremiah Hobia, Chief
Kialagee Tribal Town
P.O. Box 332
Wetumka OK 74883

Dear Chief Hobia

The United States Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) at Moody Air Force Base (AFB), Georgia to assess the potential environmental consequences associated with constructing a personnel recovery campus on Moody AFB. Moody AFB is located in south central Georgia, north of the city of Valdosta on federal property in Lanier and Lowndes counties. The proposed project area is in the northwest portion of the installation.

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Sincerely



THOMAS E. KUNKEL, Colonel, USAF
Commander

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

23 WG/CC
23 Flying Tiger Way
Bldg 105 Suite 1
Moody AFB, GA 31699

25 FEB 2016

Leonard M. Harjo, Principal Chief
The Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Dear Chief Harjo

The United States Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) at Moody Air Force Base (AFB), Georgia to assess the potential environmental consequences associated with constructing a personnel recovery campus on Moody AFB. Moody AFB is located in south central Georgia, north of the city of Valdosta on federal property in Lanier and Lowndes counties. The proposed project area is in the northwest portion of the installation.

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Global Power for America

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Sincerely



THOMAS E. KUNKEL, Colonel, USAF
Commander

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

23 WG/CC
23 Flying Tiger Way
Bldg 105 Suite 1
Moody AFB, GA 31699

25 FEB 2016

Ryan Morrow, Town King
Thlopthlocco Tribal Town
P.O. Box 188
Okemah, OK 75859

Dear Mr. Morrow

The United States Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) at Moody Air Force Base (AFB), Georgia to assess the potential environmental consequences associated with constructing a personnel recovery campus on Moody AFB. Moody AFB is located in south central Georgia, north of the city of Valdosta on federal property in Lanier and Lowndes counties. The proposed project area is in the northwest portion of the installation.

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THOMAS E. KUNKEL, Colonel, USAF
Commander

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

23 WG/CC
23 Flying Tiger Way
Bldg 105 Suite 1
Moody AFB, GA 31699

25 FEB 2016

Stephanie Bryan, Chairwoman
Poarch Band of Creeks
5811 Jack Springs Road
Atmore, AL 36502

Dear Ms. Bryan

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In 2011 an EA was begun to assess the potential environmental consequences resulting from a proposal to construct a personnel recovery campus on Moody AFB. Your office was invited to consult on this proposal, however consultation was never initiated. During the course of the EA, it was determined that several site plan revisions would be required to minimize environmental impact. In 2015 the site plan was revised and three new alternatives are now under consideration. The revised proposed action is smaller in scale than the original campus concept.

The purpose of the proposed campus is to improve facility support for mission requirements of the 347th Rescue Group (RQG) at Moody AFB. Currently the 347th RQG facilities are spread throughout the northern part of the installation flightline in outdated facilities that require facility waivers for flight and maintenance operations. Three site plan variations are now under consideration. These three variations all relocate the aircraft parts storage facility to allow construction of a new maintenance hangar, include construction of a new aircraft parking ramp adjacent to the existing apron, rerouting of roads and utility infrastructure, and construction of new squadron operations and maintenance facilities.

Phase I archeological surveys of Moody AFB were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the National Register of Historic Places (NRHP). Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71

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Appendix A Public Involvement and Agency Correspondence

which are located over two miles to the southeast. There are no known archeological sites in the project area.

(1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleo-Indian, Early Archaic, Deptford, and Weeden Island manifestations. A Phase II investigation of 9LW71 in November 1999 recommended the site as eligible for listing under the NRHP. This site is over 2 miles to the southeast of the project area.

(2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP. This site is located approximately 1.5 miles southeast of the proposed project area.

Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base.

In accordance with Executive Order 13175, Consultation with Indian Tribal Governments, and Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800, the USAF would like to initiate government-to-government consultation regarding the proposed construction of the PR Campus at Moody AFB. The USAF requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis. Additionally, please let us know if you believe this proposal might adversely affect any traditional cultural properties, including those of religious significance to the tribe.

To ensure the USAF has sufficient time to consider your input in the preparation of the EA, please forward written issues or concerns to Mr Henry Santicola, Environmental Planner, 3485 Georgia Street, Moody AFB, GA 31699. Though we will consider comments received at any time during the environmental impact analysis process, to the extent possible, we would like to hear from you within 30 days of receipt of this letter.

If you have any questions or need any additional information, please feel free to contact Mr. Santicola at (229) 257-2396 or Henry.Santicola.2@us.af.mil. Thank you in advance for your assistance in this effort.

Sincerely



THOMAS E. KUNKEL, Colonel, USAF
Commander

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

23 WG/CC
23 Flying Tiger Way
Bldg 105 Suite 1
Moody AFB, GA 31699

25 FEB 2016

James Floyd, Principal Chief
The Muscogee (Creek) Nation
P.O. Box 580
Okmulgee, OK 74447

Dear Chief Floyd

The United States Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) at Moody Air Force Base (AFB), Georgia to assess the potential environmental consequences associated with constructing a personnel recovery campus on Moody AFB. Moody AFB is located in south central Georgia, north of the city of Valdosta on federal property in Lanier and Lowndes counties. The proposed project area is in the northwest portion of the installation.

In 2011 an EA was begun to assess the potential environmental consequences resulting from a proposal to construct a personnel recovery campus on Moody AFB. Your office was invited to consult on this proposal, however consultation was never initiated. During the course of the EA, it was determined that several site plan revisions would be required to minimize environmental impact. In 2015 the site plan was revised and three new alternatives are now under consideration. The revised proposed action is smaller in scale than the original campus concept.

The purpose of the proposed campus is to improve facility support for mission requirements of the 347th Rescue Group (RQG) at Moody AFB. Currently the 347th RQG facilities are spread throughout the northern part of the installation flightline in outdated facilities that require facility waivers for flight and maintenance operations. Three site plan variations are now under consideration. These three variations all relocate the aircraft parts storage facility to allow construction of a new maintenance hangar, include construction of a new aircraft parking ramp adjacent to the existing apron, rerouting of roads and utility infrastructure, and construction of new squadron operations and maintenance facilities.

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Global Power for America

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Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base.

In accordance with Executive Order 13175, Consultation with Indian Tribal Governments, and Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800, the USAF would like to initiate government-to-government consultation regarding the proposed construction of the PR Campus at Moody AFB. The USAF requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis. Additionally, please let us know if you believe this proposal might adversely affect any traditional cultural properties, including those of religious significance to the tribe.

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If you have any questions or need any additional information, please feel free to contact Mr. Santicola at (229) 257-2396 or Henry.Santicola.2@us.af.mil. Thank you in advance for your assistance in this effort.

Sincerely



THOMAS E. KUNKEL, Colonel, USAF
Commander

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PREVIOUS (2011–2014 EA) PUBLIC NOTICES AND AGENCY CORRESPONDENCE



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR ALABAMA-QUASSARTE TRIBAL TOWN
TRIBAL HISTORIC PRESERVATION OFFICER
101 EAST BROADWAY
P.O. BOX 187
WETUMKA OK 74883

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

2. Summary of Archeological Investigations at Moody AFB:

a. Phase I archeological surveys of Moody AFB and Grand Bay Range were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the NHPA. Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71 (see map at Attachment 3).

b. In support of the proposed PR Campus development, an additional Phase I archeological survey was completed on 25 acres of recently acquired property north of the existing C-130 ramp (see map at Attachment 5). No archeological sites were discovered during this survey.

3. The proposed Airfield Improvements project involves the elimination of airfield obstructions and safety concerns, including removing trees along the eastern boundary of the airfield and the filling of low areas on the airfield to meet topographic slope requirements (see map at Attachment 4).

a. The proposed action would involve the mechanical disturbance of the soil surface by wheeled and tracked forest management vehicles to remove the standing trees. The remaining activities proposed would consist of adding soil in the upland areas of Area 13 and filling wetlands to bring the site to appropriate airfield topography grades.

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b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In Area 13, 31 acres of wetlands would be filled, and an additional 32 acres of uplands in Area 13 may receive surface fill to ensure final slopes meet airfield requirements. Stumps will not be removed and no ground disturbance other than the addition of fill dirt and the planting of bahia grass would occur in Area 13 because of the presence of Site 9LW71. Areas 1-12 would not be converted to airfield grass, and stumps will either be removed or left in place to decay naturally.

c. The proposed Airfield Improvements project encompasses Site 9LW71 and is located 850 feet northwest of Site 9LW63 (Attachment 3):

1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleo-Indian, Early Archaic, Deptford, and Weeden Island manifestations. Originally, this site was comprised of two separate sites (9LW70 and 9LW71), but the subsequent Phase II survey of 9LW71 completed in November 1999 recommended that these two sites be combined into one consolidated site to be designated 9LW71, and recommended the new, larger site as eligible for listing under the NRHP.

2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands approximately 850 feet southeast of the proposed Airfield Improvements project area. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP.

4. The PR Campus project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west and north of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 5). There are no known archeological sites in or near the proposed PR Campus development. The closest archeological sites to this area are 9LW63 and 9LW71 (described in detail in Paragraph 3 above), located approximately 1.5 miles southwest of the proposed PR Campus (Attachment 3).

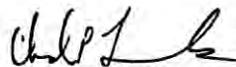
5. Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base. Also, because of the limited ground disturbance in the area of Site 9LW71, the installation does not believe the proposed actions have the potential to affect any cultural resources.

6. Moody AFB requests your review of the proposed projects in accordance with Section 106 of the NHPA. If you have any comments or inputs on these proposed actions or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881. If you do not respond within 30 days, the Air Force will assume your concurrence with the proposed activities and will proceed with these actions.

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7. Finally, we would like to have open discussions with your Tribal Government over the possibility of establishing a programmatic agreement to ensure appropriate consideration of cultural resources important to your Tribe. We feel a programmatic agreement would streamline the consultation process by identifying relevant issues and the types of projects you wish to review prior to implementation. Our cultural resources manager will be in contact with your Tribal Historic Preservation Officer in regards to this potential programmatic agreement.



CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

1. Location of Moody AFB
2. Location of Proposed Projects at Moody AFB
3. Location of Archeological Sites at Moody AFB
4. Map of Proposed Airfield Improvements Project
5. Proposed Personnel Recovery Campus Development Plan

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR THLOPTHLOCCO TRIBAL TOWN
MR. CHARLES COLEMAN, THPO/NAGPRA
P.O. BOX 188
OKEMAH OK 74859

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

2. Summary of Archeological Investigations at Moody AFB:

a. Phase I archeological surveys of Moody AFB and Grand Bay Range were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the NHPA. Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71 (see map at Attachment 3).

b. In support of the proposed PR Campus development, an additional Phase I archeological survey was completed on 25 acres of recently acquired property north of the existing C-130 ramp (see map at Attachment 5). No archeological sites were discovered during this survey.

3. The proposed Airfield Improvements project involves the elimination of airfield obstructions and safety concerns, including removing trees along the eastern boundary of the airfield and the filling of low areas on the airfield to meet topographic slope requirements (see map at Attachment 4).

a. The proposed action would involve the mechanical disturbance of the soil surface by wheeled and tracked forest management vehicles to remove the standing trees. The remaining activities proposed would consist of adding soil in the upland areas of Area 13 and filling wetlands to bring the site to appropriate airfield topography grades.

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b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In Area 13, 31 acres of wetlands would be filled, and an additional 32 acres of uplands in Area 13 may receive surface fill to ensure final slopes meet airfield requirements. Stumps will not be removed and no ground disturbance other than the addition of fill dirt and the planting of bahia grass would occur in Area 13 because of the presence of Site 9LW71. Areas 1-12 would not be converted to airfield grass, and stumps will either be removed or left in place to decay naturally.

c. The proposed Airfield Improvements project encompasses Site 9LW71 and is located 850 feet northwest of Site 9LW63 (Attachment 3):

1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleo-Indian, Early Archaic, Deptford, and Weeden Island manifestations. Originally, this site was comprised of two separate sites (9LW70 and 9LW71), but the subsequent Phase II survey of 9LW71 completed in November 1999 recommended that these two sites be combined into one consolidated site to be designated 9LW71, and recommended the new, larger site as eligible for listing under the NRHP.

2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands approximately 850 feet southeast of the proposed Airfield Improvements project area. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP.

4. The PR Campus project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west and north of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 5). There are no known archeological sites in or near the proposed PR Campus development. The closest archeological sites to this area are 9LW63 and 9LW71 (described in detail in Paragraph 3 above), located approximately 1.5 miles southwest of the proposed PR Campus (Attachment 3).

5. Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base. Also, because of the limited ground disturbance in the area of Site 9LW71, the installation does not believe the proposed actions have the potential to affect any cultural resources.

6. Moody AFB requests your review of the proposed projects in accordance with Section 106 of the NHPA. If you have any comments or inputs on these proposed actions or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881. If you do not respond within 30 days, the Air Force will assume your concurrence with the proposed activities and will proceed with these actions.

Appendix A Public Involvement and Agency Correspondence

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7. Finally, we would like to have open discussions with your Tribal Government over the possibility of establishing a programmatic agreement to ensure appropriate consideration of cultural resources important to your Tribe. We feel a programmatic agreement would streamline the consultation process by identifying relevant issues and the types of projects you wish to review prior to implementation. Our cultural resources manager will be in contact with your Tribal Historic Preservation Officer in regards to this potential programmatic agreement.



CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

1. Location of Moody AFB
2. Location of Proposed Projects at Moody AFB
3. Location of Archeological Sites at Moody AFB
4. Map of Proposed Airfield Improvements Project
5. Proposed Personnel Recovery Campus Development Plan

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR SEMINOLE NATION OF OKLAHOMA
NATALIE HARJO, THPO
P.O. BOX 1768
SEMINOLE OK 74884

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

2. Summary of Archeological Investigations at Moody AFB:

a. Phase I archeological surveys of Moody AFB and Grand Bay Range were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the NHPA. Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71 (see map at Attachment 3).

b. In support of the proposed PR Campus development, an additional Phase I archeological survey was completed on 25 acres of recently acquired property north of the existing C-130 ramp (see map at Attachment 5). No archeological sites were discovered during this survey.

3. The proposed Airfield Improvements project involves the elimination of airfield obstructions and safety concerns, including removing trees along the eastern boundary of the airfield and the filling of low areas on the airfield to meet topographic slope requirements (see map at Attachment 4).

a. The proposed action would involve the mechanical disturbance of the soil surface by wheeled and tracked forest management vehicles to remove the standing trees. The remaining activities proposed would consist of adding soil in the upland areas of Area 13 and filling wetlands to bring the site to appropriate airfield topography grades.

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b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In Area 13, 31 acres of wetlands would be filled, and an additional 32 acres of uplands in Area 13 may receive surface fill to ensure final slopes meet airfield requirements. Stumps will not be removed and no ground disturbance other than the addition of fill dirt and the planting of bahia grass would occur in Area 13 because of the presence of Site 9LW71. Areas 1-12 would not be converted to airfield grass, and stumps will either be removed or left in place to decay naturally.

c. The proposed Airfield Improvements project encompasses Site 9LW71 and is located 850 feet northwest of Site 9LW63 (Attachment 3):

1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleo-Indian, Early Archaic, Deptford, and Weeden Island manifestations. Originally, this site was comprised of two separate sites (9LW70 and 9LW71), but the subsequent Phase II survey of 9LW71 completed in November 1999 recommended that these two sites be combined into one consolidated site to be designated 9LW71, and recommended the new, larger site as eligible for listing under the NRHP.

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4. The PR Campus project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west and north of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 5). There are no known archeological sites in or near the proposed PR Campus development. The closest archeological sites to this area are 9LW63 and 9LW71 (described in detail in Paragraph 3 above), located approximately 1.5 miles southwest of the proposed PR Campus (Attachment 3).

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6. Moody AFB requests your review of the proposed projects in accordance with Section 106 of the NHPA. If you have any comments or inputs on these proposed actions or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881. If you do not respond within 30 days, the Air Force will assume your concurrence with the proposed activities and will proceed with these actions.

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CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

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5. Proposed Personnel Recovery Campus Development Plan

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR SEMINOLE NATION OF FLORIDA
PAUL N. BACKHOUSE, PHD, THPO
30290 JOSIE BILLIE HWY, PMB 1004
CLEWISTON FL 33440

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

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CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

1. Location of Moody AFB
2. Location of Proposed Projects at Moody AFB
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4. Map of Proposed Airfield Improvements Project
5. Proposed Personnel Recovery Campus Development Plan

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR POARCH BAND OF CREEK INDIANS
MR. ROBERT THROWER, THPO
5811 JACK SPRINGS ROAD
ATMORE AL 36502

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

2. Summary of Archeological Investigations at Moody AFB:

a. Phase I archeological surveys of Moody AFB and Grand Bay Range were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the NHPA. Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71 (see map at Attachment 3).

b. In support of the proposed PR Campus development, an additional Phase I archeological survey was completed on 25 acres of recently acquired property north of the existing C-130 ramp (see map at Attachment 5). No archeological sites were discovered during this survey.

3. The proposed Airfield Improvements project involves the elimination of airfield obstructions and safety concerns, including removing trees along the eastern boundary of the airfield and the filling of low areas on the airfield to meet topographic slope requirements (see map at Attachment 4).

a. The proposed action would involve the mechanical disturbance of the soil surface by wheeled and tracked forest management vehicles to remove the standing trees. The remaining activities proposed would consist of adding soil in the upland areas of Area 13 and filling wetlands to bring the site to appropriate airfield topography grades.

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Appendix A Public Involvement and Agency Correspondence

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b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In Area 13, 31 acres of wetlands would be filled, and an additional 32 acres of uplands in Area 13 may receive surface fill to ensure final slopes meet airfield requirements. Stumps will not be removed and no ground disturbance other than the addition of fill dirt and the planting of bahia grass would occur in Area 13 because of the presence of Site 9LW71. Areas 1-12 would not be converted to airfield grass, and stumps will either be removed or left in place to decay naturally.

c. The proposed Airfield Improvements project encompasses Site 9LW71 and is located 850 feet northwest of Site 9LW63 (Attachment 3):

1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleo-Indian, Early Archaic, Deptford, and Weeden Island manifestations. Originally, this site was comprised of two separate sites (9LW70 and 9LW71), but the subsequent Phase II survey of 9LW71 completed in November 1999 recommended that these two sites be combined into one consolidated site to be designated 9LW71, and recommended the new, larger site as eligible for listing under the NRHP.

2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands approximately 850 feet southeast of the proposed Airfield Improvements project area. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP.

4. The PR Campus project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west and north of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 5). There are no known archeological sites in or near the proposed PR Campus development. The closest archeological sites to this area are 9LW63 and 9LW71 (described in detail in Paragraph 3 above), located approximately 1.5 miles southwest of the proposed PR Campus (Attachment 3).

5. Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base. Also, because of the limited ground disturbance in the area of Site 9LW71, the installation does not believe the proposed actions have the potential to affect any cultural resources.

6. Moody AFB requests your review of the proposed projects in accordance with Section 106 of the NHPA. If you have any comments or inputs on these proposed actions or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881. If you do not respond within 30 days, the Air Force will assume your concurrence with the proposed activities and will proceed with these actions.

Appendix A Public Involvement and Agency Correspondence

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7. Finally, we would like to have open discussions with your Tribal Government over the possibility of establishing a programmatic agreement to ensure appropriate consideration of cultural resources important to your Tribe. We feel a programmatic agreement would streamline the consultation process by identifying relevant issues and the types of projects you wish to review prior to implementation. Our cultural resources manager will be in contact with your Tribal Historic Preservation Officer in regards to this potential programmatic agreement.



CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

1. Location of Moody AFB
2. Location of Proposed Projects at Moody AFB
3. Location of Archeological Sites at Moody AFB
4. Map of Proposed Airfield Improvements Project
5. Proposed Personnel Recovery Campus Development Plan

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR MUSCOGEE NATION OF FLORIDA
278 CHURCH ROAD
PONCE DE LEON FL 32455-4769

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

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b. In support of the proposed PR Campus development, an additional Phase I archeological survey was completed on 25 acres of recently acquired property north of the existing C-130 ramp (see map at Attachment 5). No archeological sites were discovered during this survey.

3. The proposed Airfield Improvements project involves the elimination of airfield obstructions and safety concerns, including removing trees along the eastern boundary of the airfield and the filling of low areas on the airfield to meet topographic slope requirements (see map at Attachment 4).

a. The proposed action would involve the mechanical disturbance of the soil surface by wheeled and tracked forest management vehicles to remove the standing trees. The remaining activities proposed would consist of adding soil in the upland areas of Area 13 and filling wetlands to bring the site to appropriate airfield topography grades.

b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In

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5. Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base. Also, because of the limited ground disturbance in the area of Site 9LW71, the installation does not believe the proposed actions have the potential to affect any cultural resources.

6. Moody AFB requests your review of the proposed projects in accordance with Section 106 of the NHPA. If you have any comments or inputs on these proposed actions or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881. If you do not respond within 30 days, the Air Force will assume your concurrence with the proposed activities and will proceed with these actions.

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CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

1. Location of Moody AFB
2. Location of Proposed Projects at Moody AFB
3. Location of Archeological Sites at Moody AFB
4. Map of Proposed Airfield Improvements Project
5. Proposed Personnel Recovery Campus Development Plan

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR MUSCOGEE (CREEK) NATION
MS. JOYCE A. BEAR
CULTURAL PRESERVATION OFFICE MANAGER
P.O. BOX 580
OKMULGEE OK 74447

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

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CHAD P. FRANKS, Colonel, USAF
Commander

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Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR KIALEGEE TRIBAL TOWN
TRIBAL HISTORIC PRESERVATION OFFICER
P.O. BOX 332
WETUMKA OK 74883

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

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b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In Area 13, 31 acres of wetlands would be filled, and an additional 32 acres of uplands in Area 13 may receive surface fill to ensure final slopes meet airfield requirements. Stumps will not be removed and no ground disturbance other than the addition of fill dirt and the planting of bahia grass would occur in Area 13 because of the presence of Site 9LW71. Areas 1-12 would not be converted to airfield grass, and stumps will either be removed or left in place to decay naturally.

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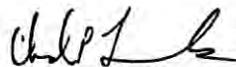
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Appendix A Public Involvement and Agency Correspondence

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CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

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Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR UNITED KEETOOWAH BAND OF CHEROKEE
MS. LISA BAKER, THPO
P.O. BOX 746
TAHLEQUAH OK 74465

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

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Commander

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Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR ALABAMA COUSHATTA TRIBE OF TEXAS
BRYANT CELESTINE, THPO
571 STATE PARK ROAD 56
LIVINGSTON TX 77351

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

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b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In Area 13, 31 acres of wetlands would be filled, and an additional 32 acres of uplands in Area 13 may receive surface fill to ensure final slopes meet airfield requirements. Stumps will not be removed and no ground disturbance other than the addition of fill dirt and the planting of bahia grass would occur in Area 13 because of the presence of Site 9LW71. Areas 1-12 would not be converted to airfield grass, and stumps will either be removed or left in place to decay naturally.

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1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleo-Indian, Early Archaic, Deptford, and Weeden Island manifestations. Originally, this site was comprised of two separate sites (9LW70 and 9LW71), but the subsequent Phase II survey of 9LW71 completed in November 1999 recommended that these two sites be combined into one consolidated site to be designated 9LW71, and recommended the new, larger site as eligible for listing under the NRHP.

2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands approximately 850 feet southeast of the proposed Airfield Improvements project area. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP.

4. The PR Campus project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west and north of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 5). There are no known archeological sites in or near the proposed PR Campus development. The closest archeological sites to this area are 9LW63 and 9LW71 (described in detail in Paragraph 3 above), located approximately 1.5 miles southwest of the proposed PR Campus (Attachment 3).

5. Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base. Also, because of the limited ground disturbance in the area of Site 9LW71, the installation does not believe the proposed actions have the potential to affect any cultural resources.

6. Moody AFB requests your review of the proposed projects in accordance with Section 106 of the NHPA. If you have any comments or inputs on these proposed actions or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881. If you do not respond within 30 days, the Air Force will assume your concurrence with the proposed activities and will proceed with these actions.

Appendix A Public Involvement and Agency Correspondence

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7. Finally, we would like to have open discussions with your Tribal Government over the possibility of establishing a programmatic agreement to ensure appropriate consideration of cultural resources important to your Tribe. We feel a programmatic agreement would streamline the consultation process by identifying relevant issues and the types of projects you wish to review prior to implementation. Our cultural resources manager will be in contact with your Tribal Historic Preservation Officer in regards to this potential programmatic agreement.



CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

1. Location of Moody AFB
2. Location of Proposed Projects at Moody AFB
3. Location of Archeological Sites at Moody AFB
4. Map of Proposed Airfield Improvements Project
5. Proposed Personnel Recovery Campus Development Plan

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR COUSHATTA TRIBE OF LOUISIANA
1940 C.C. BEL ROAD
P.O. BOX 818
ELTON LA 70532

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

2. Summary of Archeological Investigations at Moody AFB:

a. Phase I archeological surveys of Moody AFB and Grand Bay Range were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the NHPA. Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71 (see map at Attachment 3).

b. In support of the proposed PR Campus development, an additional Phase I archeological survey was completed on 25 acres of recently acquired property north of the existing C-130 ramp (see map at Attachment 5). No archeological sites were discovered during this survey.

3. The proposed Airfield Improvements project involves the elimination of airfield obstructions and safety concerns, including removing trees along the eastern boundary of the airfield and the filling of low areas on the airfield to meet topographic slope requirements (see map at Attachment 4).

a. The proposed action would involve the mechanical disturbance of the soil surface by wheeled and tracked forest management vehicles to remove the standing trees. The remaining activities proposed would consist of adding soil in the upland areas of Area 13 and filling wetlands to bring the site to appropriate airfield topography grades.

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b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In Area 13, 31 acres of wetlands would be filled, and an additional 32 acres of uplands in Area 13 may receive surface fill to ensure final slopes meet airfield requirements. Stumps will not be removed and no ground disturbance other than the addition of fill dirt and the planting of bahia grass would occur in Area 13 because of the presence of Site 9LW71. Areas 1-12 would not be converted to airfield grass, and stumps will either be removed or left in place to decay naturally.

c. The proposed Airfield Improvements project encompasses Site 9LW71 and is located 850 feet northwest of Site 9LW63 (Attachment 3):

1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleo-Indian, Early Archaic, Deptford, and Weeden Island manifestations. Originally, this site was comprised of two separate sites (9LW70 and 9LW71), but the subsequent Phase II survey of 9LW71 completed in November 1999 recommended that these two sites be combined into one consolidated site to be designated 9LW71, and recommended the new, larger site as eligible for listing under the NRHP.

2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands approximately 850 feet southeast of the proposed Airfield Improvements project area. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP.

4. The PR Campus project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west and north of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 5). There are no known archeological sites in or near the proposed PR Campus development. The closest archeological sites to this area are 9LW63 and 9LW71 (described in detail in Paragraph 3 above), located approximately 1.5 miles southwest of the proposed PR Campus (Attachment 3).

5. Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base. Also, because of the limited ground disturbance in the area of Site 9LW71, the installation does not believe the proposed actions have the potential to affect any cultural resources.

6. Moody AFB requests your review of the proposed projects in accordance with Section 106 of the NHPA. If you have any comments or inputs on these proposed actions or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881. If you do not respond within 30 days, the Air Force will assume your concurrence with the proposed activities and will proceed with these actions.

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7. Finally, we would like to have open discussions with your Tribal Government over the possibility of establishing a programmatic agreement to ensure appropriate consideration of cultural resources important to your Tribe. We feel a programmatic agreement would streamline the consultation process by identifying relevant issues and the types of projects you wish to review prior to implementation. Our cultural resources manager will be in contact with your Tribal Historic Preservation Officer in regards to this potential programmatic agreement.



CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

1. Location of Moody AFB
2. Location of Proposed Projects at Moody AFB
3. Location of Archeological Sites at Moody AFB
4. Map of Proposed Airfield Improvements Project
5. Proposed Personnel Recovery Campus Development Plan

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR THE CHEROKEE NATION
MR. RICHARD ALLEN
P.O. BOX 948
TAHLEQUAH OK 74465

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

2. Summary of Archeological Investigations at Moody AFB:

a. Phase I archeological surveys of Moody AFB and Grand Bay Range were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the NHPA. Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71 (see map at Attachment 3).

b. In support of the proposed PR Campus development, an additional Phase I archeological survey was completed on 25 acres of recently acquired property north of the existing C-130 ramp (see map at Attachment 5). No archeological sites were discovered during this survey.

3. The proposed Airfield Improvements project involves the elimination of airfield obstructions and safety concerns, including removing trees along the eastern boundary of the airfield and the filling of low areas on the airfield to meet topographic slope requirements (see map at Attachment 4).

a. The proposed action would involve the mechanical disturbance of the soil surface by wheeled and tracked forest management vehicles to remove the standing trees. The remaining activities proposed would consist of adding soil in the upland areas of Area 13 and filling wetlands to bring the site to appropriate airfield topography grades.

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b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In Area 13, 31 acres of wetlands would be filled, and an additional 32 acres of uplands in Area 13 may receive surface fill to ensure final slopes meet airfield requirements. Stumps will not be removed and no ground disturbance other than the addition of fill dirt and the planting of bahia grass would occur in Area 13 because of the presence of Site 9LW71. Areas 1-12 would not be converted to airfield grass, and stumps will either be removed or left in place to decay naturally.

c. The proposed Airfield Improvements project encompasses Site 9LW71 and is located 850 feet northwest of Site 9LW63 (Attachment 3):

1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleo-Indian, Early Archaic, Deptford, and Weeden Island manifestations. Originally, this site was comprised of two separate sites (9LW70 and 9LW71), but the subsequent Phase II survey of 9LW71 completed in November 1999 recommended that these two sites be combined into one consolidated site to be designated 9LW71, and recommended the new, larger site as eligible for listing under the NRHP.

2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands approximately 850 feet southeast of the proposed Airfield Improvements project area. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP.

4. The PR Campus project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west and north of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 5). There are no known archeological sites in or near the proposed PR Campus development. The closest archeological sites to this area are 9LW63 and 9LW71 (described in detail in Paragraph 3 above), located approximately 1.5 miles southwest of the proposed PR Campus (Attachment 3).

5. Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base. Also, because of the limited ground disturbance in the area of Site 9LW71, the installation does not believe the proposed actions have the potential to affect any cultural resources.

6. Moody AFB requests your review of the proposed projects in accordance with Section 106 of the NHPA. If you have any comments or inputs on these proposed actions or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881. If you do not respond within 30 days, the Air Force will assume your concurrence with the proposed activities and will proceed with these actions.

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7. Finally, we would like to have open discussions with your Tribal Government over the possibility of establishing a programmatic agreement to ensure appropriate consideration of cultural resources important to your Tribe. We feel a programmatic agreement would streamline the consultation process by identifying relevant issues and the types of projects you wish to review prior to implementation. Our cultural resources manager will be in contact with your Tribal Historic Preservation Officer in regards to this potential programmatic agreement.



CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

1. Location of Moody AFB
2. Location of Proposed Projects at Moody AFB
3. Location of Archeological Sites at Moody AFB
4. Map of Proposed Airfield Improvements Project
5. Proposed Personnel Recovery Campus Development Plan

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR CADDO NATION
P.O. BOX 487
BINGER OK 73009

FROM: 23 WG/CC
23 Flying Tiger Way, Ste 1
Moody AFB GA 31699

SUBJECT: Section 106 Tribal Consultation for Proposed Airfield Improvement and Personnel Recovery (PR) Campus Projects, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your tribe in regards to two proposed projects on the installation: Airfield Improvements and PR Campus Consolidation. A map showing the location of these two projects is attached (Attachment 2).

2. Summary of Archeological Investigations at Moody AFB:

a. Phase I archeological surveys of Moody AFB and Grand Bay Range were conducted by Pan-American Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the NHPA. Subsequent Phase II investigations were completed for these seven sites, resulting in a determination that only two sites were actually eligible for listing, Site 9LW63 and Site 9LW71 (see map at Attachment 3).

b. In support of the proposed PR Campus development, an additional Phase I archeological survey was completed on 25 acres of recently acquired property north of the existing C-130 ramp (see map at Attachment 5). No archeological sites were discovered during this survey.

3. The proposed Airfield Improvements project involves the elimination of airfield obstructions and safety concerns, including removing trees along the eastern boundary of the airfield and the filling of low areas on the airfield to meet topographic slope requirements (see map at Attachment 4).

a. The proposed action would involve the mechanical disturbance of the soil surface by wheeled and tracked forest management vehicles to remove the standing trees. The remaining activities proposed would consist of adding soil in the upland areas of Area 13 and filling wetlands to bring the site to appropriate airfield topography grades.

b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In

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c. The proposed Airfield Improvements project encompasses Site 9LW71 and is located 850 feet northwest of Site 9LW63 (Attachment 3):

1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleo-Indian, Early Archaic, Deptford, and Weeden Island manifestations. Originally, this site was comprised of two separate sites (9LW70 and 9LW71), but the subsequent Phase II survey of 9LW71 completed in November 1999 recommended that these two sites be combined into one consolidated site to be designated 9LW71, and recommended the new, larger site as eligible for listing under the NRHP.

2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands approximately 850 feet southeast of the proposed Airfield Improvements project area. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP.

4. The PR Campus project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west and north of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 5). There are no known archeological sites in or near the proposed PR Campus development. The closest archeological sites to this area are 9LW63 and 9LW71 (described in detail in Paragraph 3 above), located approximately 1.5 miles southwest of the proposed PR Campus (Attachment 3).

5. Based upon the archeological investigations conducted on the installation, Moody AFB is not aware of the presence of any Native American Traditional Cultural Properties (TCP), including human remains, funerary objects, sacred objects, or objects of cultural patrimony within the boundaries of the base. Also, because of the limited ground disturbance in the area of Site 9LW71, the installation does not believe the proposed actions have the potential to affect any cultural resources.

6. Moody AFB requests your review of the proposed projects in accordance with Section 106 of the NHPA. If you have any comments or inputs on these proposed actions or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881. If you do not respond within 30 days, the Air Force will assume your concurrence with the proposed activities and will proceed with these actions.

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7. Finally, we would like to have open discussions with your Tribal Government over the possibility of establishing a programmatic agreement to ensure appropriate consideration of cultural resources important to your Tribe. We feel a programmatic agreement would streamline the consultation process by identifying relevant issues and the types of projects you wish to review prior to implementation. Our cultural resources manager will be in contact with your Tribal Historic Preservation Officer in regards to this potential programmatic agreement.



CHAD P. FRANKS, Colonel, USAF
Commander

Attachments:

1. Location of Moody AFB
2. Location of Proposed Projects at Moody AFB
3. Location of Archeological Sites at Moody AFB
4. Map of Proposed Airfield Improvements Project
5. Proposed Personnel Recovery Campus Development Plan

Appendix A Public Involvement and Agency Correspondence

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC
PRESERVATION OFFICE
SEMINOLE TRIBE OF FLORIDA
AH-TAH-THI-KI MUSEUM
30290 JOSIE BILLIE HWY
PMB 1004
CLEWISTON, FL 33440
PHONE: (863) 983-6549
FAX: (863) 902-1117



TRIBAL OFFICERS
CHAIRMAN
JAMES E. BILLIE
VICE CHAIRMAN
TONY SANCHEZ, JR.
SECRETARY
PRISCILLA D. SAYEN
TREASURER
MICHAEL D. TIGER

November 8, 2013

Gregory Lee
Department of the Air Force
Headquarters 23D Wing (ACC)
Moody Air Force Base, Georgia

THPO#: 0012811

Subject: Proposed Airfield Improvement and Personal Recovery Campus Projects, Moody AFB, Georgia

Dear Mr. Lee,

The Seminole Tribe of Florida's Tribal Historic Preservation Office (STOF-THPO) received the Department of the Air Force cultural resource survey on October 30, 2013. The STOF-THPO has no objection to the proposed project and concurs with the survey's recommendations. However, the STOF-THPO would like to be informed if cultural resources that are potentially ancestral or historically relevant to the Seminole Tribe of Florida are inadvertently discovered at any time.

Thank you for the opportunity to review the information that has been sent to date regarding this project. Please reference **THPO-0012811** for any related issues.

Sincerely,

Geoffrey Wasson
Compliance Review Analyst
Seminole Tribe of Florida
30290 Josie Billie Hwy, PMB 1004
Clewiston, Florida 33440
(863)983-6549 Ext. 12216

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence

-----Original Message-----

From: Lisa LaRue-Baker - UKB THPO
Sent: Friday, November 15, 2013 1:35 PM
To: LEE, GREGORY W GS-12 USAF ACC 23 CES/CEIE
Cc:
Subject: Airfield Improvement and Personnel Recovery Moody AFB, Georgia

The United Keetoowah Band of Cherokee Indians in Oklahoma has reviewed your project under Section 106 of the NHPA, and at this time, has no comments or objections. However, if any human remains are inadvertently discovered, please cease all work and contact us immediately.

Thank you,

Lisa C. Baker
Acting THPO
United Keetoowah Band of Cherokee Indians in Oklahoma

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
23D CIVIL ENGINEER SQUADRON (ACC)
MOODY AIR FORCE BASE GEORGIA

NOV 12 2013

MEMORANDUM FOR Ms. Elizabeth Shirk
Environmental Review Coordinator
Historic Preservation Division
Georgia Department of Natural Resources
254 Washington Street, SW
Atlanta GA 30334

FROM: 23 CES/CD
3485 Georgia Street
Moody AFB GA 31699-1707

SUBJECT: Section 106 Consultation for Proposed Personnel Recovery (PR) Campus Consolidation Project, Moody AFB GA

1. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and 36 CFR Part 800: Protection of Historic Properties, Moody AFB (Attachment 1) is requesting consultation with your agency in regards to the proposed PR Campus Consolidation Project at Moody AFB, Lowndes County, GA. The Area of Potential Effect (APE) for this project consists of approximately 98 acres located in the northeast corner of Moody AFB (Attachment 2).

2. The PR Campus Consolidation project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (Attachment 3).

3. Summary of Archeological Investigations at Moody AFB:

a. Phase I archeological surveys of Moody AFB and Grand Bay Range were conducted by Panamerican Consultants, Inc., from 1994 to 1995. This initial survey identified 21 archeological sites, with seven sites potentially eligible for listing under the NHPA. No archeological sites were recorded within the APE for this project.

b. Subsequent Phase II investigations were completed for the seven sites potentially eligible for listing, resulting in a determination that only two sites were actually eligible for listing: Site 9LW63 and Site 9LW71 (Attachment 4).

1) Site 9LW71 is a multicomponent extractive/base camp prehistoric site affiliated with the Late Paleoindian, Early Archaic, Deptford, and Weeden Island manifestations. Originally, this site was comprised of two separate sites (9LW70 and 9LW71), but the subsequent Phase II survey of 9LW71 completed in November 1999 recommended that these two sites be combined

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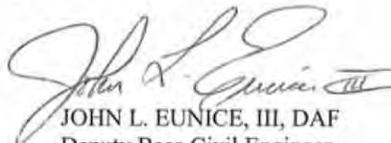
into one consolidated site to be designated 9LW71, and recommended the new, larger site as eligible for listing under the NRHP.

2) Site 9LW63 is a multi-component prehistoric artifact scatter located on a small landform between adjacent wetlands approximately 850 feet southeast of the proposed Airfield Improvements project area. This site contains intact activity areas with temporally diagnostic artifacts. A Phase II investigation of 9LW63 in November 2008 recommended this site as eligible for listing under the NRHP.

c. In support of the proposed PR Campus Consolidation project, an additional Phase I archeological survey was completed on 25 acres of recently acquired property north of the existing C-130 ramp (see map at Attachment 3). No archeological sites were discovered during this survey. A copy of the final survey report is attached on CD (Attachment 5).

4. There are no known archeological sites in or near the proposed PR Campus development. The closest archeological sites to this area are 9LW63 and 9LW71 (described in detail in Paragraph 3 above), located approximately 1.5 miles southwest of the proposed PR Campus (Attachment 4). Therefore, the installation does not believe the proposed action has the potential to affect any cultural resources.

5. Moody AFB requests your review of the proposed project in accordance with Section 106 of the NHPA. If you have any comments or inputs on this proposed action or need any additional information, please contact Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699-1707, gregory.lee.5@us.af.mil, (229) 257-5881.


JOHN L. EUNICE, III, DAF
Deputy Base Civil Engineer

Attachments:

1. Location of Moody AFB
2. Location of Proposed PR Campus Consolidation Project at Moody AFB
3. Proposed Personnel Recovery Campus Development Plan
4. Location of Archeological Sites at Moody AFB
5. Final Report, Intensive Archaeological Survey for the Proposed Personnel Recovery Campus, September 2011 (CD)

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

December 2, 2013

John L. Eunice, III, DAF
Deputy Base Civil Engineer
Department of the Air Force
3485 Georgia Street, Moody AFB
Georgia 31699-1707

Attention: Gregory Lee
Gregory.lee.5@us.af.mil

**RE: Moody AFB: Personnel Recovery (PR) Campus Consolidation Project
Lowndes County, Georgia
HP-131118-003**

Dear Mr. Eunice:

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

HPD has reviewed the final report *Intensive Archaeological Survey for the Proposed Personnel Recovery Campus*, dated September 2011 which we received on November 18, 2013 as part of the current project submittal. Based on the information contained in the report, HPD concurs that the proposed project will have **no effect** on archaeological and historical properties that are listed in or eligible for listing in the National Register of Historic Places (NRHP), as defined in 36 CFR Part 800.4(d)(1).

Please submit an electronic character enabled pdf of the final report. For your information, HPD will forward the electronic copy to the Georgia Archaeological Site File at the University of Georgia, Athens for permanent curation.

Please refer to project number **HP-131118-003** in any future correspondence regarding this undertaking. If we may be of further assistance, please do not hesitate to contact me at (404)651-6461 or karen.anderson-cordova@dnr.state.ga.us.

Sincerely,

A handwritten signature in cursive script, appearing to read "Karen Anderson-Cordova".

Karen Anderson-Cordova
Program Manager
Environmental Review & Preservation Planning

KAC

254 WASHINGTON STREET, SW | GROUND LEVEL | ATLANTA, GEORGIA 30334
404.656.2840 | FAX 404.657.1368 | WWW.GEORGIAHPO.ORG

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix A Public Involvement and Agency Correspondence



DEPARTMENT OF THE AIR FORCE
23D CIVIL ENGINEER SQUADRON (ACC)
MOODY AIR FORCE BASE GEORGIA

MEMORANDUM FOR U.S. FISH AND WILDLIFE SERVICE
Ecological Services Field Office
Attn: Mr. Chris Coppola
4980 Wildlife Drive NE
Townsend GA 31331

NOV 12 2013

FROM: 23 CES/CC

SUBJECT: Consultation for Proposed Airfield Improvement and Personnel Recovery (PR)
Campus Projects, Moody AFB GA

1. Moody AFB requests informal consultation per Section 7 of the Endangered Species Act regarding the proposed Airfield Improvement and PR Campus projects at Moody AFB, Lowndes County, GA (Attachment 1). A map showing the location of these two projects is attached (Attachment 2).

2. The proposed Airfield Improvements project involves the elimination of airfield obstructions and safety concerns, including removing trees along the eastern boundary of the airfield and the filling of low areas on the airfield to meet topographic slope requirements (see map at Attachment 3).

a. The proposed action would involve the mechanical disturbance of the soil surface by wheeled and tracked forest management vehicles to remove the standing trees. The remaining activities proposed would consist of adding soil in the upland areas of Area 13 and filling wetlands to bring the site to appropriate airfield topography grades.

b. Approximately 34.5 acres of trees in Areas 1-12 that are penetrating the 7:1 (7-foot horizontal to 1-foot vertical) airfield transition slope would be removed as part of this project. In Area 13, 31 acres of wetlands would be filled, and an additional 32 acres of uplands in Area 13 may receive surface fill to ensure final slopes meet airfield requirements. Stumps will not be removed and no ground disturbance other than the addition of fill dirt and the planting of Bahia grass would occur in Area 13. Areas 1-12 would not be converted to airfield grass, and stumps will either be removed or left in place to decay naturally.

3. The PR Campus project integrates existing helicopter training and operations into the existing HC-130 operational area to provide continued support for Moody AFB mission requirements. To accomplish this, eight facilities and a new helicopter parking apron would be constructed west of the existing C-130 ramp, and Coney Street would be extended to create a new access road west and north of the new PR Campus (see map at Attachment 4).

4. Surveys for listed species were first conducted in these areas in 1993-1994, and have been supplemented by periodic surveys by installation staff and species-specific surveys for gopher

Global Power for America

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tortoises (*Gopherus polyphemus*), eastern indigo snakes (*Drymarchon couperi*) and frosted flatwoods salamander (*Ambystoma cingulatum*) (Note: Additional information on rare, threatened, and endangered species surveys and management is in the Moody AFB Integrated Natural Resources Management Plan). Both proposed project areas were resurveyed by the installation certified wildlife biologist for listed and candidate species in 2013 as part of the environmental impact analysis process. The only listed or candidate species known to occur within or adjacent to the main administrative areas of the base are the gopher tortoise (Colony 71st and Colony CP) and American alligator (*Alligator mississippiensis*).

a. The proposed Airfield Improvements project area includes the western portion of a gopher tortoise colony designated by the installation as the Colony 71st (Attachment 5). This colony consists of approximately 88 burrows, with an estimated population of 40 tortoises. There are approximately 18 burrows (20.5% of 88) within the proposed project area. Despite species-specific surveys for eastern indigo snakes and continuous monitoring of the health of the Colony 71st gopher tortoise population, no evidence of eastern indigo snakes or any other listed species has been noted by installation staff or research cooperators in or near the Colony 71st. American alligators occur seasonally within the small wetlands proposed for filling in Area 13 (Attachment 6). No other listed or candidate species have been identified within the Airfield Improvements project area.

b. The only listed or candidate species identified in the PR Campus project area is the American alligator, which occurs seasonally in the Beatty Creek drainage (Attachment 6).

5. The draft environmental assessments (Excerpts at Attachments 7 and 8) completed for the proposed actions indicate that there will be no significant impacts to listed or candidate species as a result of implementation of the proposed action. Impacts from the proposed Airfield Improvements project to Gopher Tortoise Colony 71st would be minimized through identification and marking of burrows in the field, education of timber harvesting personnel, and limiting harvesting to fall and winter during periods of gopher tortoise and eastern indigo snake inactivity.

6. Based upon the analysis conducted in these environmental assessments, it is the opinion of our staff that the proposed action will not adversely affect any listed or candidate species. Therefore, Moody AFB requests your written concurrence on these assessments as an informal consultation under Section 7 of the Endangered Species Act.

7. If you have any questions or need any further information, please contact Mr. Gregory Lee at 229-257-5881 or by e-mail at gregory.lee.5@us.af.mil.


PATRICK M. ALBRITTON, Lt Col, USAF
Commander

Appendix A Public Involvement and Agency Correspondence

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Attachments:

1. Location of Moody AFB, GA
2. Location of Proposed Project Areas
3. Proposed Location of Airfield Improvements Project
4. Proposed Location of PR Campus Project
5. Location of Gopher Tortoises in Proximity to Proposed Projects
6. Location of Alligators in Proximity to Proposed Projects
7. Excerpt from Draft EA, *Environmental Assessment for Airfield Improvements at Moody Air Force Base, Georgia*
8. Excerpt from Draft EA, *Environmental Assessment for the Proposed Personnel Recovery Campus at Moody Air Force Base, Georgia*

Appendix A Public Involvement and Agency Correspondence



United States Department of the Interior

Fish and Wildlife Service

105 West Park Drive, Suite D
Athens, Georgia 30606
Phone: (706) 613-9493
Fax: (706) 613-6059

West Georgia Sub-Office
Post Office Box 52560
Fort Benning, Georgia 31995-2560
Phone: (706) 544-6428
Fax: (706) 544-6419

Coastal Sub-Office
4980 Wildlife Drive
Townsend, Georgia 31331
Phone: (912) 832-8739
Fax: (912) 832-8744

December 9, 2013

Lieutenant Colonel Patrick M. Albritton
Commander
Department of the Air Force
23rd Civil Engineer Squadron
3485 Georgia Street
Moody Air Force Base, Georgia 31699
Attention: Gregory Lee

Re: USFWS 2014-0055

Dear Colonel Albritton:

Thank you for your letter initiating informal Section 7 consultation for the proposed airfield improvements and Personnel Recovery Campus development at Moody Air Force Base (MAFB) in Lowndes County, Georgia. We submit the following comments in accordance with provisions of the Endangered Species Act of 1973, as amended; (16 U.S.C. 1531 *et seq.*) (ESA), the Bald and Golden Eagle Protection Act of 1940 (BGEPA), and the Migratory Bird Treaty Act (MBTA), (16 U.S.C. 703 *et seq.*) to further the conservation of fish and wildlife resources and their habitat, including federally listed threatened and endangered species.

The project proposes to improve the airfield on the base by removing obstructions and safety concerns. Approximately 34.5 acres of trees along the east side of the airfield would be removed. Additionally, 31 acres of wetlands would be cleared and filled to meet airfield slope requirements. Eight new facilities, a helicopter parking apron, and an extension of Coney Street are proposed as part of the Personnel Recovery Campus development.

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One federally listed species and one candidate species were identified as potentially occurring within the action area and possibly affected by the proposed action. These species are: eastern indigo snake (*Drymarchon couperi*) and gopher tortoise (*Gopherus polyphemus*) (Candidate). The removal of trees near the airfield would be limited to the period between September 1 through March 31 to reduce risk of harm to migratory birds and gopher tortoises. Additionally, the proposed action includes marking known gopher tortoise burrows, installation of temporary protective covers, and providing contractor education.

Based on the information provided in the July 2013 draft Environmental Analysis document for the proposed action, we concur with your determination that the proposed action is “not likely to adversely affect” federally protected species. Based on the known distribution of the federally protected species in and around the proposed action area and the scope of the proposed action, we do not anticipate significant risks of adverse effects on these protected species as a result of implementing the proposed action.

We appreciate the opportunity to comment during the planning stages of your project. If you have any additional questions, please write or call Coastal Georgia Sub Office staff biologist, Chris Coppola, at 912-832-8739.

Sincerely,



Strant Colwell
Coastal Georgia Supervisor

Appendix A Public Involvement and Agency Correspondence

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APPENDIX B

**CHAPTER 2 EXCERPT OF PREVIOUS PR CAMPUS EA
(FROM PUBLIC DRAFT EA, FEBRUARY 2014)**

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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**SECTION 2.0
DESCRIPTION OF ALTERNATIVES**



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2.0 DESCRIPTION OF ALTERNATIVES

An ADP was prepared for the Rescue Group at Moody AFB. The Rescue Group ADP is a subset of the traditional master planning process. The purpose of the Rescue Group ADP is to analyze the Rescue Group's current operations and conditions and develop viable, achievable alternatives that dramatically improve both the mission of the Rescue Group and the operations and expansion capability of Moody AFB. Two alternatives from the ADP, the Plan E Alternative, and the Plan F Alternative, will be carried forward for analysis in this EA. The Preferred Alternative was developed during the preparation of this EA. It is the Plan E Alternative except that the helicopter landing lane and extension of the HC-130 parking area have been removed from the alternative. The proposed project would include the construction of a four-bay hangar with HMU and GPMS, CCF, squadrons operations, flight simulator, expansion of the existing parking apron for 18 helicopters, 723rd HC-130 squadron operations, and AMXS administration facility/AMU extension/alternation, acquisition of approximately 1 acre of privately owned land, as well as the relocation of the Installation boundary to the north and closure of an approximately 1-mile segment of Hightower Road. The alternatives are describe in detail in the following sections.

This chapter describes the Preferred Alternative, the Plan E Alternative, the Plan F Alternative, and the No Action Alternative for the Personnel Recovery Campus. The Preferred Alternative is described in Section 2.1; the Plan E Alternative is described in Section 2.2, the Plan F Alternative is described in Section 2.3; and the No Action Alternative is described in Section 2.4. Siting options considered for the proposed project, but eliminated, are discussed in Section 2.5. A comparison of alternatives and summary of potential impacts are presented in Sections 2.6 and 2.7.

2.1 PROPOSED ACTION

Under the Preferred Alternative, the Air Force would construct the Personnel Recovery Campus at Moody AFB. The objective is to integrate existing helicopter training and operations into the existing HC-130 operational area and to provide continued support for mission requirements of the 347th Rescue Group at Moody AFB (Figure 2-1). The

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FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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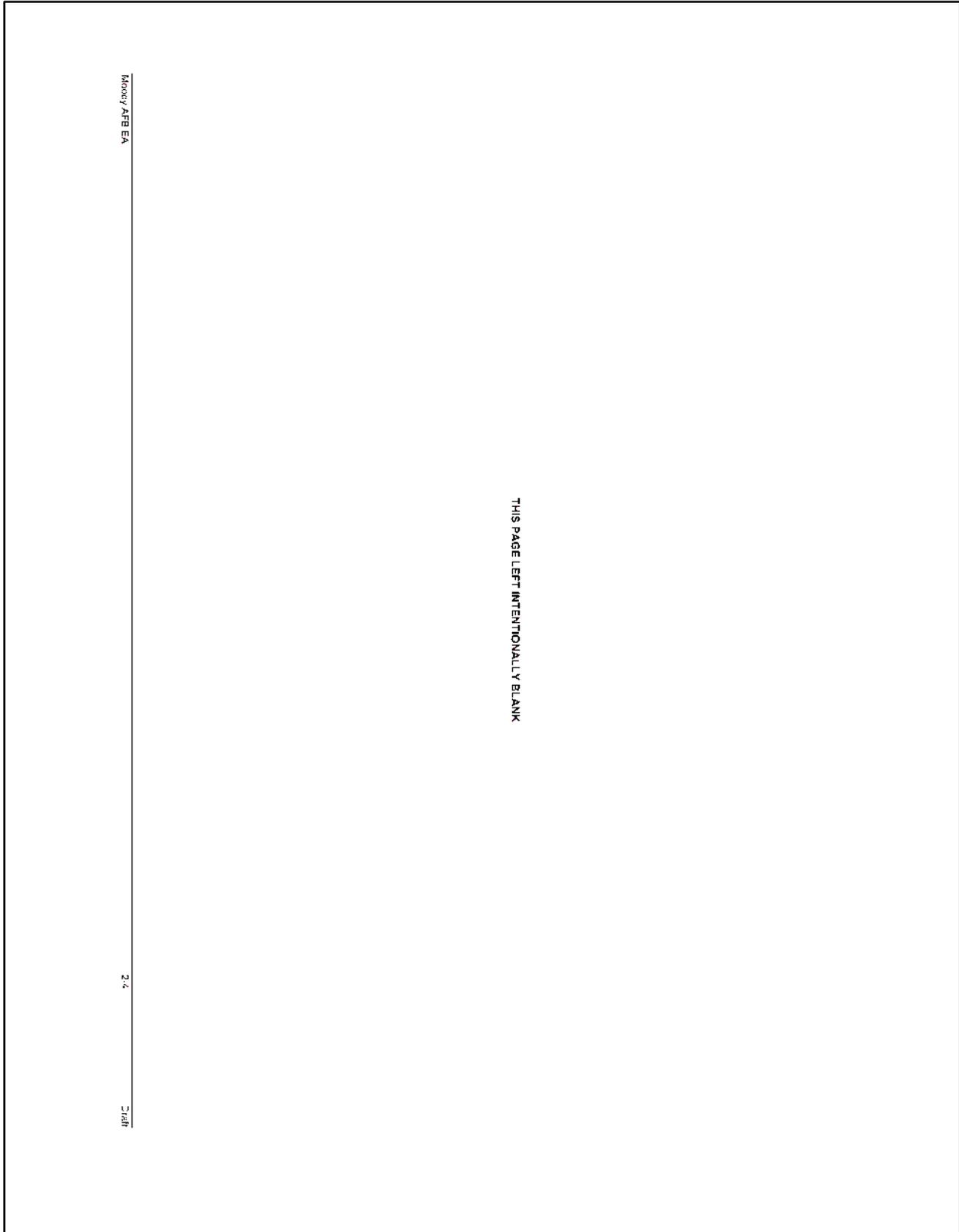


Figure 2-1. Preferred Alternative



FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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Preferred Alternative would provide a fully functional rescue operation capable of supporting a variety of training missions. No increase in aircraft or personnel is included as part of the Preferred Alternative. A separate NEPA document would be prepared for any increase in mission requiring additional aircraft or personnel. The Preferred Alternative would include the construction of the following infrastructure:

Sustainable design strategies would be incorporated into the design of the proposed facilities to reduce energy dependency. The new facilities would be designed to meet the Leadership in Energy and Environmental Design (LEED) criteria for a LEED-New Construction Silver rating. Incorporation of these design strategies and criteria would aid in meeting the Air Force's goal of reducing the current funded Air Force physical plant by 20 percent by the Year 2020.

2.1.1 Four-Bay Hangar with HMU and GPMS

The proposed four-bay hangar, HMU, and GPMS would be constructed on an approximately 20-acre site north of Robinson Road and due west of the existing HC-130 operational area (see Figure 2-1). The four-bay hangar would be a side-loaded hangar with hangar bays in the middle and shop and office space located in the wings along the north and south sides of the building (Moody AFB 2010b). Combining all maintenance functions into one facility would greatly improve operational efficiency. The four-bay hangar, HMU, and GPMS would contain space for the following organizations and functions:

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- **Four-bay Hangar**
 - Phase dock hangar bay area
 - Flightline maintenance hangar bay area
 - Space for mechanical, electrical, communications, and fire suppression
- **HMU (Flightline Maintenance)**
 - Debrief/expeditor room
 - Specialist section Non-Commissioned Officer in Charge (NCOIC) office
 - Airspace propulsion general office
 - Vault
 - Copy/fax/mail/stock room
 - Electronic countermeasure (ECM) office
 - Unassigned office
 - ECM safe room
 - Two production offices
 - Break room
 - Officer in Charge (OIC) Chief office
 - OIC Chief support office
 - Assistant OIC Chief office
 - Conference room
 - Two training offices
 - Aeronautical Research, Incorporated (ARINC, test pilot) Office
- **HMU (Phase Maintenance)**
 - Phase dock support sections 1 and 2
 - Phase dock Chief office/general purpose room
 - Phase dock NCOIC section Chief office
- **HMU (Consolidated Tool Kit [CTK] Support)**
 - Customer receiving/drop-off area
 - CTK custodian office
 - Break room
 - Support NCOIC office
 - Secured tool room
 - Secured tool storage
 - Secured tool storage (Mezzanine)
- **HMU (Combat Oriented Supply Organization [COSO] Support)**
 - COSO NCOIC office
 - COSO NCOIC assistant office
 - Building custodian office
 - Plans and schedules
 - Raytheon office
 - Two Air Force engineering technical support offices
 - Two storage areas
 - Conference room
 - COSO storage/bench stock area

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- **HMU (DASH-21 Mobility Section)**
 - Mobility section storage
 - DASH-21 NCOIC office
 - Mobility section toolroom
 - Mobility section storage (Mezzanine)
 - Outdoor mobility section storage
- **GPMS (Weapons Maintenance)**
 - Weapons vault
 - Expeditor office
 - Flight Chief office
 - Weapons work area
 - Support chemical lockers
 - Cleaning vat room
 - Grinder room
 - Men and Women's locker rooms (weapons)
 - Break room (weapons)
- **GPMS (Avionics)**
 - Avionics vault
 - Secure room
- **GPMS (Multi-Purpose)**
 - Ready room
 - Locker room

In addition to the construction of the four-bay hangar, the project would include construction of a taxiway and hangar access ramp, an extension of Coney Street for privately owned vehicle (POV) and government-owned vehicle (GOV) access, and parking for approximately 175 POV/GOVs (see Figure 2-1). The proposed taxiway would be located due south of the parts storage building in the HC-130 operational area, and would connect to the existing parking apron and traverse east to west (see Figure 2-1). The taxiway would be of a size sufficient to accommodate a taxiing HC-130J, with a minimum 30-foot asphalt shoulder. It would be located at least 25 feet from any fixed or mobile obstacles to provide the minimum level of horizontal clearance from the wing-tip of a taxiing HC-130J per United Facility Criteria (UFC) 3-260-01 (Moody AFB 2010b).

A segment of Sijan Street would be closed and demolished as a result of constructing the new taxiway, and the main access to the site would be provided by constructing an extension of Coney Street. The extension of Coney Street would begin at or near the intersection of Robinson Road and Coney Street. This extension would cross over

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Beatty Branch and traverse northeast along the western installation boundary before turning east and connecting back to Sijan Street (see Figure 2-1).

The proposed 175-space parking area for POV/GOVs would be constructed between the extension of Coney Street and the four-bay hangar (see Figure 2-1). The parking area would be located 82 feet from the four-bay hangar as required by force protection standards outlined in *UFC 04-020-01: DoD Minimum Antiterrorism Standards for Buildings* (Moody AFB 2010b). The project would require the demolition of an existing lighted jogging trail that traverses the site. All lighting and asphalt pavement associated with the jogging trail would be removed.

An approximate 30-acre wetland associated with Beatty Branch is located south of the proposed four-bay hangar site and would be partially developed to accommodate the construction of the four-bay hangar and taxiway (Moody AFB 2010b). A large quantity of fill material would be deposited within the wetland to establish the required grade for the four-bay hangar and taxiway. As a result of the amount of fill material required, the existing utilities corridor along Sijan Street would be relocated as part of the taxiway construction. The following utilities are located in the existing corridor: primary lines for water, sanitary sewer, natural gas, electrical power, and communications. The utility corridor would be relocated west of Sijan Street and would traverse west from Sijan Street along the north side of Robinson Street and turn north and across the wetlands to the proposed project site (see Figure 2-1). The following utilities would be constructed to support the four-bay hangar, HMU, and GPMS.

- | | |
|---------------------------------------|------------|
| • 10-inch diameter water main | 1,100 feet |
| • 10-inch diameter sewer main | 1,400 feet |
| • Underground primary electrical line | 1,100 feet |
| • Underground communications conduit | 1,250 feet |
| • 4-inch primary natural gas mainline | 1,500 feet |

Stormwater drainage for the site would be separated into two systems: one system for POV/GOV roads, parking lots, and buildings and a separate system for taxiway and four-bay hangar access ramp pavements (Moody AFB 2010b). Stormwater drainage for

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roads and parking lots would be captured and the flow would be directed toward the extension of Coney Street.

2.1.2 Corrosion Control Facility (CCF)

The proposed CCF would be constructed on 12 acres of land located immediately west of the existing fuel cell hangar and due north of the intersections of Robinson Road, Sijan Street, and Hickam Street (see Figure 2-1, Moody AFB 2010c). The CCF would be a hangar capable of hosting an aircraft painting operation and would be sized to accommodate HC-130J aircraft, as well as the planning size helicopter airframes of the Rescue Group mission. The CCF would contain space for the following organizations and functions:

- Office and break room for Crew Chief and maintenance staff
- Small area for tool kit storage
- Lockers and showers
- Separate area for removal and storage of painting gear
- Gerber room, for small painting and decal work
- Filtration chamber to handle large filtration of air flowing through the paint bay
- Separated storage areas for wet and dry materials, with exterior access for each
- Space for mechanical, electrical, communications, and fire suppression
- Parking space for 50 POV/GOVs

An aircraft access ramp would be constructed to allow access from the aircraft parking apron. The aircraft access ramp would require fencing to secure the flightline from unauthorized personnel. Fencing would be high-grade, steel, chain-link topped with barbed wire. The aircraft access ramps would be 75 feet wide to accommodate the HC-130J aircraft and would provide the wing-tip clearance distance (75 feet from wing tip) as required per UFC 3-260-1. An aircraft towlane would also be constructed to support aircraft paint operations.

An aqueous film-forming foam/stormwater detention pond and oil/water separator, which currently serve the HC-130 parking area, are located on the proposed CCF site. Stormwater from non-airfield surfaces in the area converge and are released at a point immediately west of Sijan Street. These storm drainage systems would require rerouting

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to accommodate the proposed CCF. Storm drainage for the site would be separated into two systems: one system for POV/GOV roads, parking lots, buildings, and other non-airfield surfaces and a separate system for the CCF access ramp and other aircraft pavements (Moody AFB 2010c). Approximately 900 feet of a 48-inch diameter stormwater line and 2,600 feet of a 36-inch stormwater line would be constructed. The existing stormwater detention pond and oil/water separator would be relocated as part of the Preferred Alternative (see Figure 2-1).

The relocation of an existing utilities corridor along Sijan Street would be completed during the development of the four-bay hangar. Utility service lines for the proposed CCF would connect to proposed trunk lines that would run along Robinson Road. The following utilities would need to be constructed to support the CCF:

- 10-inch diameter water main 240 feet
- 10-inch diameter sewer main 200 feet
- Underground electrical line 110 feet
- Underground communications conduit 50 feet

2.1.3 Squadron Operations

The helicopter squadron operations (HSO) building would be constructed on an approximate 5-acre tract of land immediately west of the existing HC-130 operational area (see Figure 2-1). The HSO facility would include construction of airfield access, parking for approximately 170 POV/GOVs, and the necessary infrastructure to support operations at the facility. An extension of Coney Street and relocation of existing utilities would be required as part of the construction of the HSO facility. The HSO building would be set back more than 148 feet from the installation boundary and 82 feet from the parking area and non-secure roads, as required by force protection standards outlined in *UFC 04-020-01: Department of Defense Minimum Antiterrorism Standards for Buildings* (Moody AFB 2010d).

The HSO building would have flightline access for personnel and equipment. The aircraft access ramp would require fencing to secure the flightline from unauthorized personnel. Fencing would be high-grade steel chain-link topped with barbed wire. The

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following organizations and functions would be housed in the HSO building (Moody AFB 2010d):

- Squadron Commander and associated administrative functions
- Office space for flight crews and support functions
- Life support, including flight equipment storage and maintenance
- Secured vault (Sensitive Compartmented Information Facility-rated) for Mission Planning and Briefing, Weapons, Intelligence, and Library functions
- Locker rooms
- Fitness and heritage room areas
- Associated building support functions such as mechanical, electrical, and communications

2.1.4 Flight Simulator

The flight simulator would be located on approximately 5 acres of land immediately west of the existing HC-130 operational area, and due north of the proposed four-bay hangar (see Figure 2-1). Associated pavements and parking for 108 POV/GOVs and the necessary infrastructure to support operations of the flight simulator would be included as part of construction. The flight simulator would be set back at a distance greater than 148 feet from the installation perimeter and more than 82 feet from the parking area and non-secure roads in accordance with *UFC 04-020-01: Department of Defense Minimum Antiterrorism Standards for Buildings* (Moody AFB 2010e). Access to the extension of Coney Street would be included as part of the flight simulator construction.

The flight simulator building would be a secured-access facility for personnel and equipment. The following functions would be housed in the flight simulator building (Moody AFB 2010e):

- Office space for administrators
- Secure office space
- Secure classroom, briefing/debriefing, mission planning, and conference room
- Secure high-bay space for full-motion flight simulator

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- Secure mechanical, electrical, image generation, and technical support space for the flight simulator
- Associated building support functions such as mechanical, electrical, and communications

Construction of the flight simulator should not require the relocation of any existing utilities. The following utilities would be constructed as part of the flight simulator:

- | | |
|---|----------|
| • Primary electrical cable (15 Kilovolt) | 120 feet |
| • Twisted pair copper and fiber-optic lines | 200 feet |
| • 4-inch diameter water service line | 80 feet |
| • 6-inch diameter sanitary sewer service line | 150 feet |
| • 2-inch diameter natural gas service line | 200 feet |

2.1.5 Parking Apron for 18 Helicopters

The existing parking apron would be expanded to the west to create the new helicopter parking apron (see Figure 2-1). The new helicopter parking area would be approximately 513,408 ft². Construction of the helicopter parking apron would be achieved by expanding the existing parking apron west across Sijan Street into the existing wetland area.

2.1.6 Relocation of the Installation Boundary

The Preferred Action Alternative would relocate the installation boundary north of the current installation boundary to provide a buffer along the north side of the installation (see Figure 2-1). The expansion of the installation to the north would require the closure of an approximately 1-mile segment of Hightower Road located adjacent to the northern boundary of the installation. The closure of Hightower Road would not include the eastern portion of road in front of the Hightower Cemetery and the access to Yate Lane. The closure of Hightower Road would not eliminate access to Runway Lane and the residences north of Runway Lane from State Highway 125 (Bemiss Road) via Hightower Road. The Hightower Cemetery and residential homes north of Runway Lane would still be accessible from Bemiss Road.

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2.1.7 HC-130 Squadron Operations/AMU Extension/Alteration

The existing CTK tool facility would be expanded to create space for administration, scheduling, training, briefing, aircrew personnel, and equipment maintenance, and storage (see Figure 2-1). New construction would include a reinforced concrete foundation and floor slab, split-faced block walls, structural steel frame, standing seam metal roof, fire detection/protection, utilities, landscaping and other site improvements, roads/parking, communications support, and all other work needed to provide a complete and usable facility (Moody AFB 2012a). Alterations would include interior reconfiguration and upgraded finishes, upgrades to mechanical/utility systems, and exterior coatings/finishes. The facility will comply with DoD antiterrorism force protection requirements per UFC criteria.

The following functions would be housed in the HC-130 Squadron Operations/AMU facility:

Squadron Operations

- o OIC Chief office
- o OIC Chief support office
- o Aircrew work space
- o Support personnel work space
- o Scheduling room
- o Training room
- o Briefing room
- o Intelligence room
- o Photograph and map room
- o Aircrew flight equipment systems storage
- o Clothing and equipment issuing room
- o Aircrew personal equipment maintenance and storage area
- o Space for mechanical, electrical, communications, and fire suppression
- o Locker area

• AMU

- o OIC Chief office
- o OIC Chief support office
- o NCOIC office
- o Scheduling room
- o Production area
- o Section flight chiefs' offices
- o Staff offices
- o Briefing room
- o Training room
- o Test/support equipment and tool storage

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2.1.8 723rd AMXS Facility

The new 723rd AMXS facility would either be located in a maintained area between a parking lot and the proposed extension of Coney Street or in a maintained area west of the washrack (see Figure 2-1). Construction would include a 6,996 ft² steel frame building; all electrical, mechanical, communication, security, energy monitoring systems; other utilities; paving; and landscaping (Moody AFB 2012b). This facility would replace the oversized and aging facility that houses the 723rd AMXS. The old facility is in such a state of disrepair that new construction is the most feasible option. The old facility is removed from the MX area and is not compatible with the Rescue Group ADP. The new facility would be more appropriately sized and located adjacent to the Personnel Recovery MX Area. The location of the new facility would better support mission command and control, and reduce repair and utility costs. The old facility would be demolished upon completion of the new facility, resulting in a 3,240 ft² net reduction in facility footprint on Moody AFB (Moody AFB 2012b). The demolition of the old facility would occur as part of Project QSEU110262, DEMO 923 AMXS, B662.

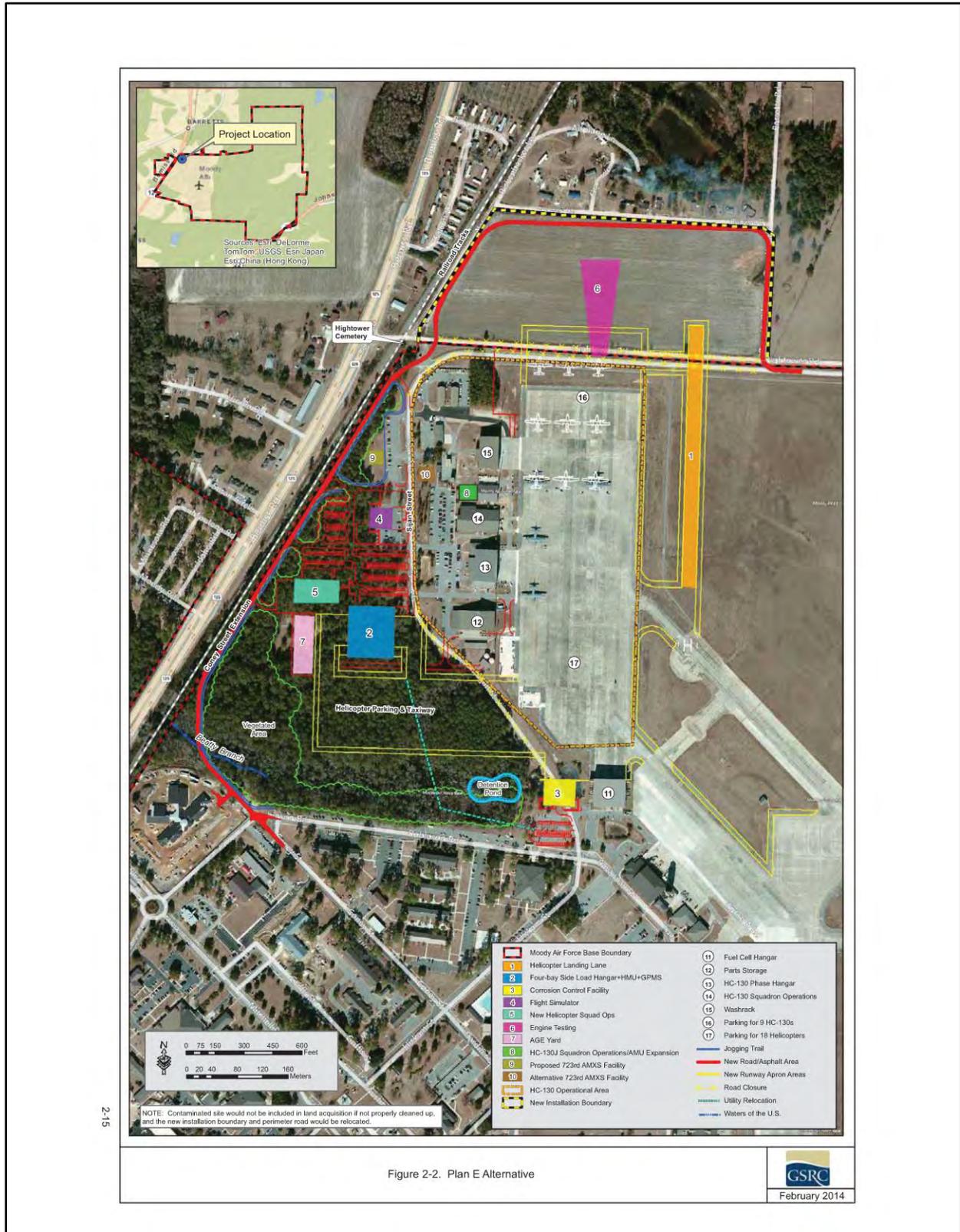
2.2 PLAN E ALTERNATIVE

The Plan E Alternative is similar to Preferred Alternative and includes the same facilities and layout with the exception of the addition of a helicopter landing lane (283,000 ft²) and expanding the existing parking apron to the west and north (720,000 ft²) (Figure 2-2). The HC-130 parking ramp would be extended north across Hightower Road. The HC-130 engine testing area would be relocated to the north. Noise mitigation measures (e.g., blast fence) will be included as part of the Plan E Alternative. This alternative would provide a fully functional rescue operation capable of supporting multiple aircraft departures and a variety of training missions.

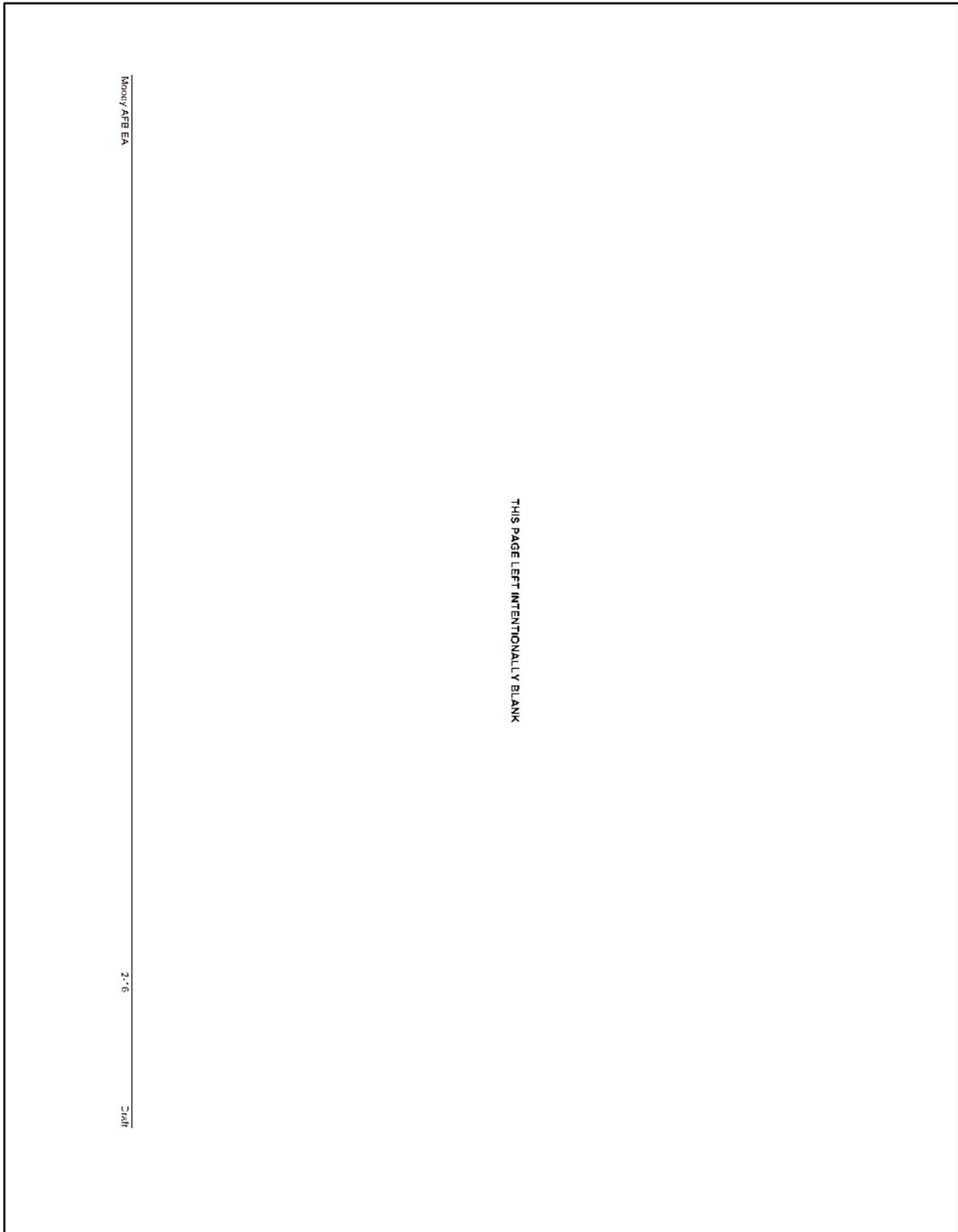
Construction of the helicopter landing lane and expansion of the HC-130 parking area would require expansion of the installation to the north (see Figure 2-2). The expansion of the installation to the north would require the closure of approximately 1 mile of Hightower Road, which is located adjacent to the northern boundary of the installation. Closure of Hightower Road would not eliminate access from State Highway 125 (Bemiss Road) to Yate Lane and the residential homes located north of Runway Lane and Hightower Cemetery.

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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2.3 PLAN F ALTERNATIVE

This alternative is similar to the Plan E Alternative, but the layout of facilities would be different (Figure 2-3). The installation would be expanded to the north to accommodate the construction of the helicopter landing lane and the aircraft parking apron would be expanded to the north to provide helicopter parking. Parking for HC-130 aircraft would be relocated to the southern portion of the apron, and the apron would be expanded to the east (Moody AFB 2010a). The proposed four-bay hangar, HMU and GPMS, CCF, and HSO buildings would be located west of and adjacent to the expanded apron. In contrast to the Preferred Alternative, the proposed four-bay hangar would be a front-loaded hangar instead of a side-loaded hangar. The proposed helicopter landing lane would be located east of the apron, in approximately the same location proposed in the Plan E Alternative, and could accommodate a possible four-helicopter departure (see Figure 2-3). The proposed flight simulator would be located in the eastern portion of the proposed Personnel Recovery Campus and would be accessed from the proposed new Perimeter Road (see Figure 2-3).

To accommodate the proposed helicopter support facilities, the HC-130 aircraft maintenance unit and HC-130 squadron operations building would be relocated to the southern portion of the proposed Personnel Recovery Campus (see Figure 2-3). The HC-130 engine testing area would also be relocated to the southern portion of the Personnel Recovery Campus, closer to parked HC-130s. A blast fence would be constructed south of the proposed engine testing area to deflect air flow from aircraft engines. Noise attenuation measures would be installed in buildings located along Robinson Road.

Sijan Street would be closed, as in the Preferred Alternative, and the existing utility corridor would need to be relocated. The following utilities would be constructed to support the CCF:

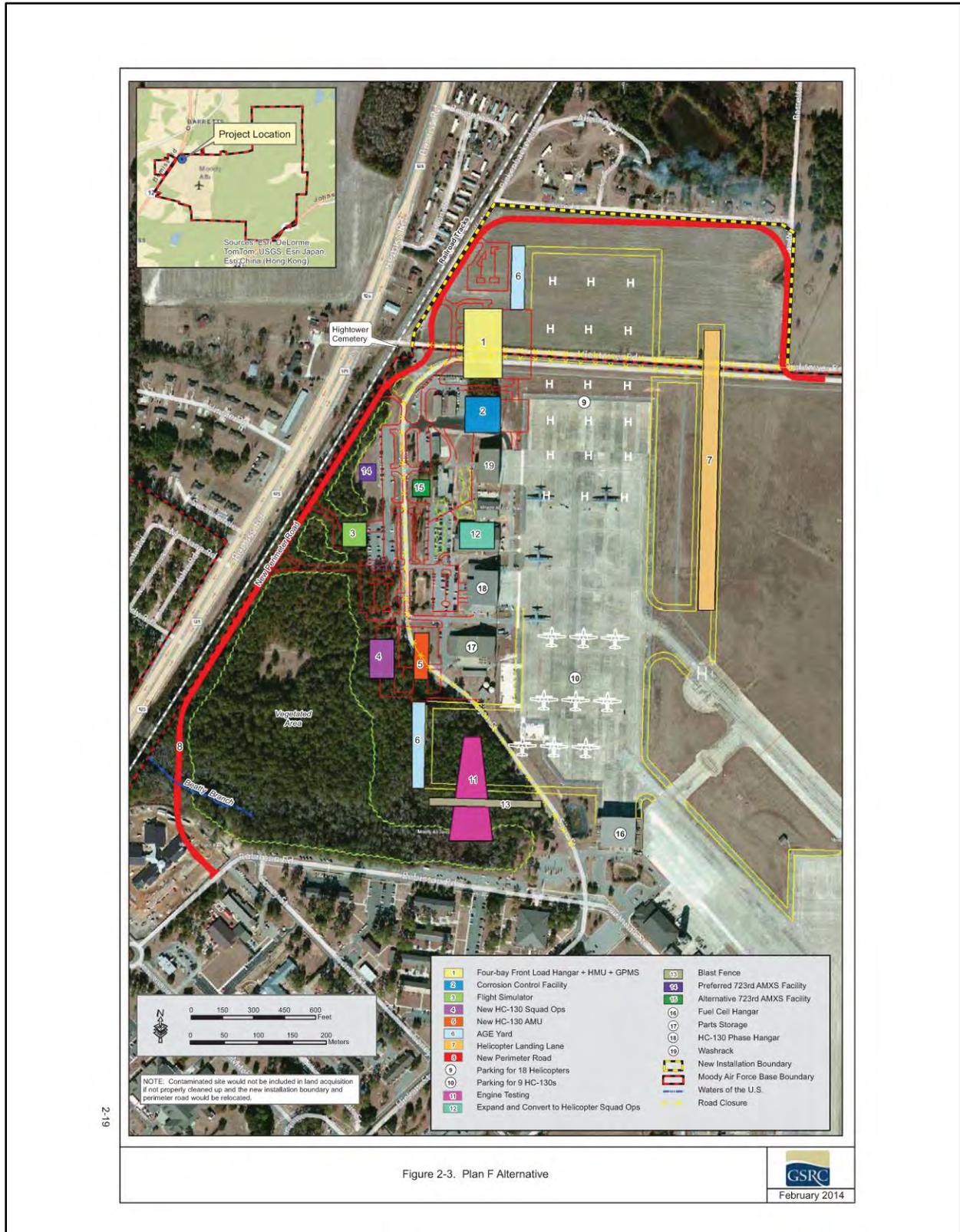
- Existing utility corridor 1,000 feet
- 10-inch diameter sewer main 1,500 feet

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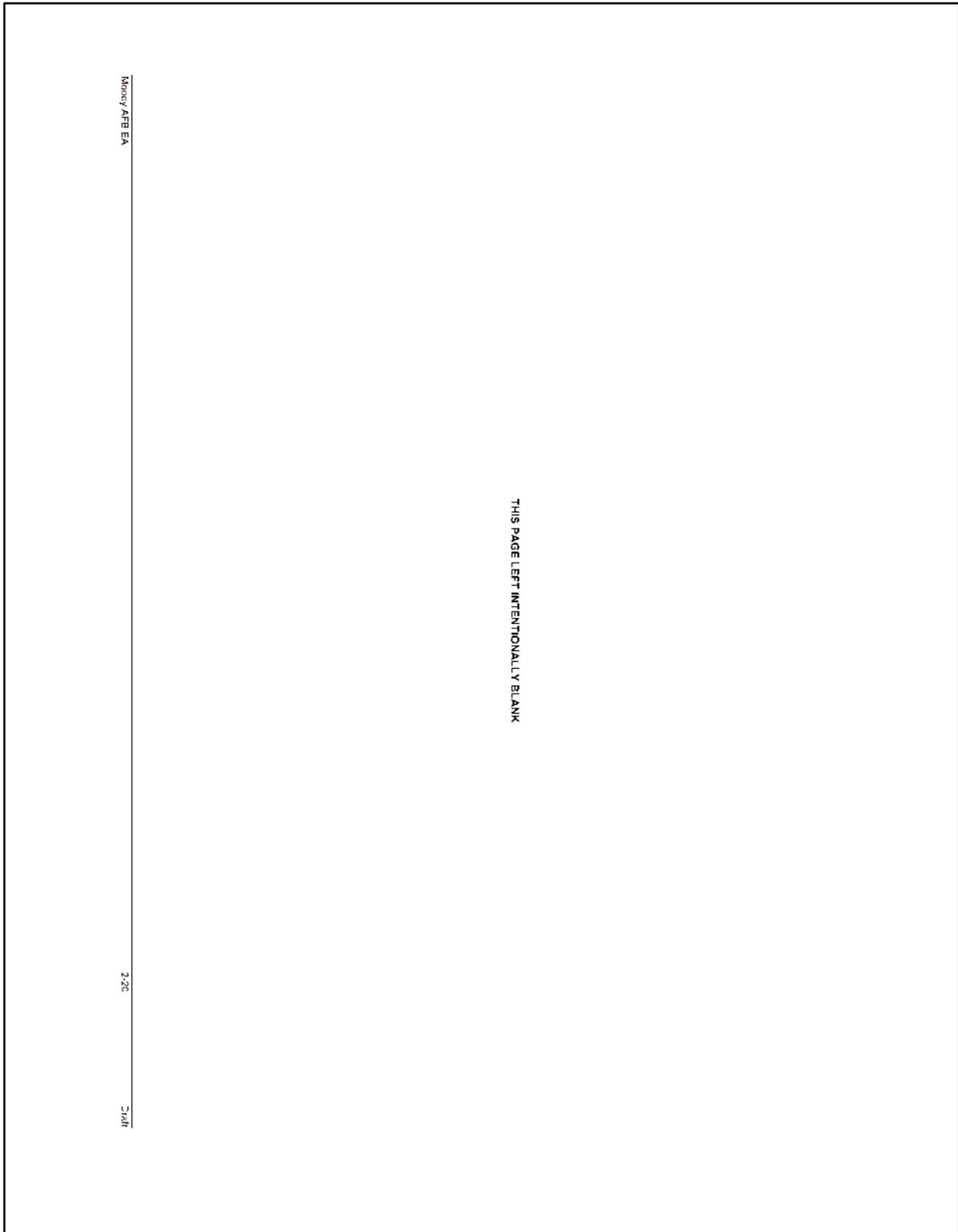
FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

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A new Perimeter Road would be constructed immediately west of the proposed Personnel Recovery Campus and would be accessed from Georgia Street (see Figure 2-3). The new Perimeter Road would be extended to the north to follow the new installation boundary and connect to the existing Perimeter Road where the new installation boundary connects to the existing installation boundary. The expansion of the installation to the north would also require the closure of approximately 1 mile of Hightower Road; however, Hightower Cemetery and Yate and Runway Lane would still be accessible from Bemiss Road.

2.4 NO ACTION ALTERNATIVE

CEQ regulations require inclusion of the No Action Alternative as a standard to compare the environmental impacts of the proposed alternatives to the existing conditions. Under the No Action Alternative, construction of the Personnel Recovery Campus would not occur. The No Action Alternative would maintain the environmental status quo, and the aviation functions of the Rescue Group would remain separate at the HC-130 operational area and HH-60 operational area. The existing facilities would not be able to support a change to a larger helicopter airframe or the HC-130J weapons system replacement, would not improve operational efficiency, and would not support multiple helicopter departures and landings.

2.5 SITING OPTIONS ELIMINATED

Three locations (options) on Moody AFB were evaluated for the siting of the Personnel Recovery Campus. Option 1 is the current Preferred Alternative, the Plan E Alternative, and the Plan F Alternative site, Option 2 (current HH-60 operational area) is located immediately west of the flightline, and Option 3 is located east of the flightline near the control tower (Figure 2-4). The benefits and constraints identified for the siting location (option) are presented in Table 2-1.

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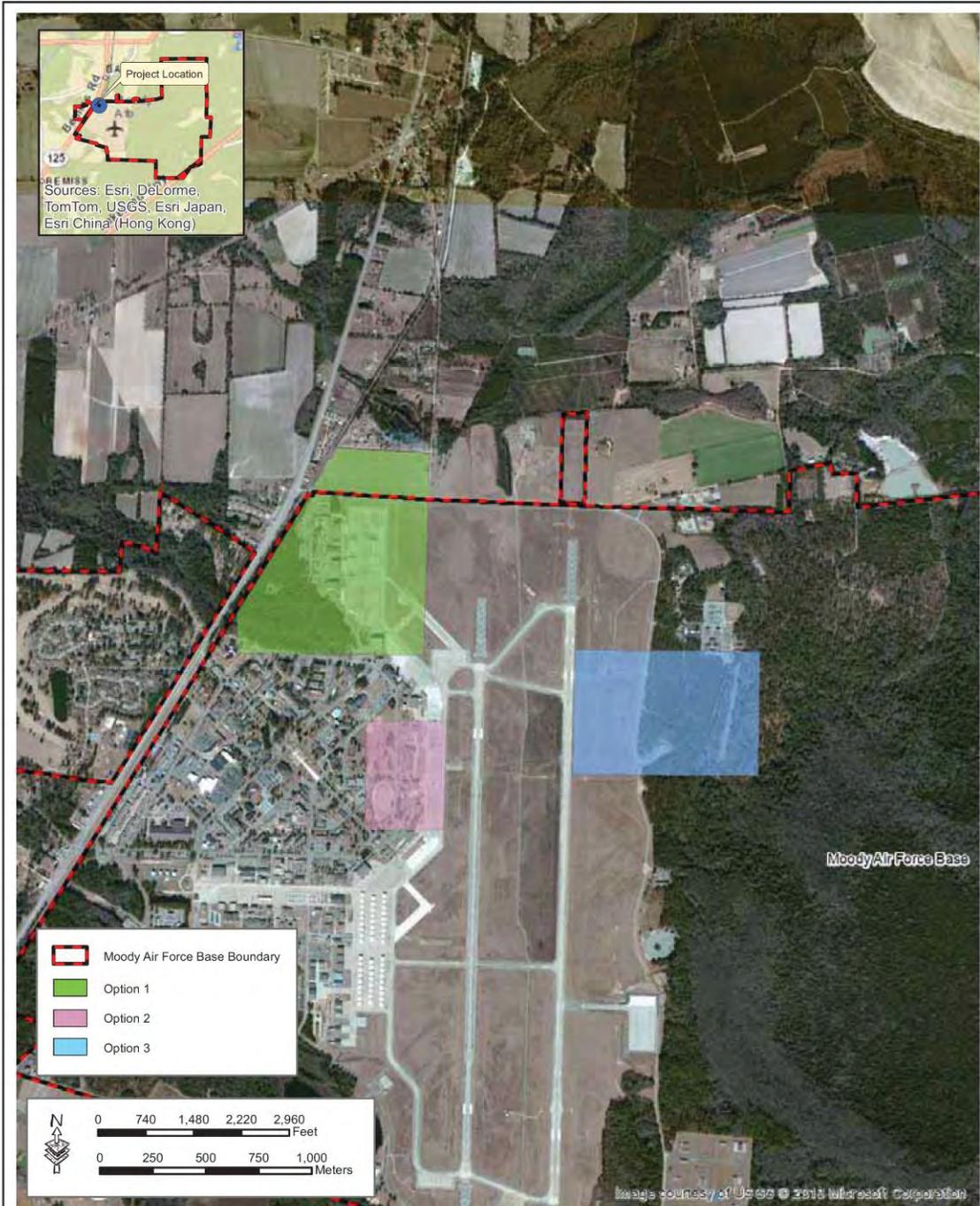


Figure 2-4. Personnel Recovery Campus Location Options



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Table 2-1. Option Siting Considerations

Option	Benefits	Constraints
1	<ul style="list-style-type: none"> All CSAR operations and maintenance consolidated Best use of existing infrastructure 	<ul style="list-style-type: none"> Wetlands impact and mitigation issues Drainage concerns Noise mitigation issues Purchasing new property Force Protection issues (railroad/highway proximity) Demolition of existing facilities (administrative and maintenance)
2	<ul style="list-style-type: none"> Consolidates activities 	<ul style="list-style-type: none"> Increased noise in administrative areas Additional cost to replace facilities New construction still required Aircraft parking separated from maintenance
3	<ul style="list-style-type: none"> "Clean Slate" beddown of Personnel Recovery assets Reduced noise impact 	<ul style="list-style-type: none"> Split flightline/back shop maintenance functions Fuel delivery impacts Ground-to-Air Transmit & Receive communication system may require relocation May impact A-10 Grand Bay Range operations Separation from other base operating support Increased east side vehicle traffic flow Environmental impacts (relocate gopher tortoises [<i>Gopherus polyphemus</i>])

2.5.1 Option 2

Although HH-60 operations and maintenance would be consolidated at the existing HH-60 operational area under Option 2, new construction would still be required, as the existing facilities could not be sufficiently modified to accommodate a larger airframe (Moody AFB 2010a). The Air Force would incur additional costs for the demolition of existing facilities and construction of the new facilities, increasing the total costs beyond that required under the Preferred Alternative. The aviation functions of the Rescue Group would not be consolidated under Option 2, as they would be under the Preferred Alternative.

Under Option 2, aircraft parking would be separated from maintenance facilities. Maintenance personnel would incur downtime traveling between the aircraft and maintenance facilities during maintenance operations.

Noise abatement issues would occur under Option 2. Consolidation of the Rescue Group operations and maintenance at the existing Personnel Recovery Area would increase noise levels within the administrative areas. Noise abatement measures would need to be implemented to maintain noise levels to an acceptable level within the administrative area. Noise abatement costs would be incurred under Option 2.

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Option 2 would require the demolition of existing recreational facilities on Moody AFB. Implementation of Option 2 would eliminate the existing athletic track, two baseball fields, and a walking area located directly west of the existing HH-60 operational area. These facilities would need to be relocated and constructed elsewhere on Moody AFB, or these functions would be lost on the installation. Construction of these facilities elsewhere on Moody AFB would require additional costs and create additional natural resources impacts compared to the Preferred Alternative.

Option 2 was eliminated from consideration based on the lack of improvement of operational and energy efficiencies, not meeting the purpose and need of consolidating squadron operations, increased noise levels, and the loss of existing recreational facilities on Moody AFB.

2.5.2 Option 3

Under Option 3, the Rescue Group operations and maintenance facilities would be consolidated and located east of the flightline; however, the back shop maintenance area would remain west of the flightline in the HC-130 operational area. Maintenance personnel would have to transport parts from the east side of the flightline to the west side of the flightline for back shop maintenance functions. Considerable downtime resulting from the transport of parts and equipment would be expected under this option.

Locating the Rescue Group operations and maintenance facilities east of the flightline would separate the facility from the existing fuel cell located west of the flightline. Fuel would need to be transported from west of the flightline to the east side of the flightline. The transportation of fuels across the flightline would hinder flight operations and logistics. The transportation of fuel would increase the risk of fuel spills. It would require additional time and expenses, and offer no improvement to operational and energy efficiencies.

Construction of the Rescue Group operations and maintenance facilities may require the relocation of the ground-to-air transmit-and-receive communication system at Moody AFB. Relocation of the communication system would add a major expense under Option 3 and, compared to the Preferred Alternative, project costs could be greater.

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The siting of the Personnel Recovery Campus at Option 3 could potentially impact A-10 Grand Bay operations, since it would locate a major flight operation next to a range. The east runway is the primary runway at Moody AFB. Helicopter departures and A-10 Grand Bay operations could not occur simultaneously.

Option 3 would separate Personnel Recovery personnel from installation operating support facilities (e.g., dining hall and gym) that are located west of the flightline. Personnel would have to travel from the east side of the flightline to the west side of the flightline to use troop support facilities. Option 3 would also increase traffic on the installation and inconvenience personnel seeking to use installation operating support facilities during the workday.

Siting at Option 3 could potentially impact gopher tortoise, requiring relocation of the affected individuals. The State of Georgia lists the gopher tortoise as a threatened species. No impact on protected species would occur under either the Preferred Alternative or Option 2. Relocation of gopher tortoises would also represent an additional cost to the proposed project.

Option 3 was eliminated from consideration based on a decrease in operating and energy inefficiencies, not meeting the purpose and need of consolidating squadron operations, inconvenience to personnel, adverse effects on the flightline and A-10 Grand Bay operations, increased traffic on the east side of Moody AFB, and potential impacts on a protected species.

2.6 COMPARISON OF ALTERNATIVES

Four alternatives are presented and compared in this EA: the Preferred Alternative, Plan E Alternative, Plan F Alternative, and the No Action Alternative. The Preferred Alternative is the Air Force's "Proposed Action" for the proposed project. Both the Plan E and the Plan F alternatives were evaluated by the Rescue Group ADP (Moody AFB 2010a). The Preferred Alternative is the Plan E Alternative from the Rescue Group ADP with the helicopter landing lane and extension of the existing HC-130 parking area removed. The Preferred Alternative was identified as the "Proposed Action" for the following reasons:

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1. The Preferred Alternative increases overall operational efficiencies.
2. The side-loaded hangar is the preferred maintenance facility.
3. The Plan E Alternative could result in significant noise level increase at residential noise receptors and would require additional noise analysis and environmental documentation.
4. The Plan F Alternative would cost the Air Force approximately \$5 to \$6 million more to construct than the Preferred Alternative.

The Plan E Alternative would result in noise level increases of 3 to 5 dBA. Egan (1988) examined the sensitivity of human hearing to increases in noise levels and found that an increase in sound level of 3 dBA was barely perceptible to human hearing and an increase of 5 dBA was readily perceptible. Implementation of the Plan E Alternative would require additional noise analysis and environmental documentation.

The additional costs associated with the Plan F Alternative are associated with relocating the HC-130 Squadron Operations and AMU, renovating the existing HC-130 Squadron Operations for helicopter squadron operations, and noise attenuation for buildings located immediately south of the relocated engine testing stand.

Two other siting options were considered for this EA but were eliminated. The other siting options presented constraints that were unacceptable when compared to the Preferred Alternative, the Plan E Alternative, and the Plan F Alternative, such as impacts on endangered species, complications with fuel delivery, and interference with other military operations.

2.7 COMPARATIVE SUMMARY OF IMPACTS

Potential environmental impacts of the Preferred Alternative would be those associated with the construction, operation, and maintenance of the Personnel Recovery Campus.

The following resources will be analyzed in this EA for impacts:

- Geological Resources
- Soils and Prime Farmland
- Water Resources
- Noise
- Land Use

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- Infrastructure
- Hazardous and Toxic Substances
- Socioeconomics
- Cultural Resources
- Safety and Occupational Health
- Biological Resources
- Air Quality
- Airspace

The proposed construction would occur in areas located adjacent to existing facilities, part of which has been disturbed in the past but has grown over with trees or grasses and other sections that are wetland habitats that are not considered previously disturbed. Impacts related to noise, water resources, socioeconomics, and natural resources associated with the construction of new facilities, helicopter activities, and engine testing are anticipated. Table 2-2 presents a summary of the potential impacts associated with the Preferred Alternative, the Plan E Alternative, the Plan F Alternative, and the No Action Alternative.

Table 2-2. Summary of Potential Impacts of the Alternatives

Resource	No Action	Preferred Alternative	Plan E Alternative	Plan F Alternative
Geological Resources	There would be no impact on geological resources under the No Action Alternative.	Implementation of the Preferred Alternative would not require deep excavations; therefore, no impacts on geological resources would occur.	Impacts on geological resources would be similar to the Preferred Alternative.	Impacts on geological resources would be similar to the Preferred Alternative.
Soils and Prime Farmland	Baseline soil conditions as described in Section 3.2 would remain unchanged; therefore, no impacts would occur.	Approximately 37 acres of soils would be permanently removed from biological production. Approximately 25 acres of Prime Farmland soils would be removed from agricultural production. None of the soils in the project area are considered rare in the State of Georgia. There is no practicable alternative to using the open land north of Moody AFB for the Preferred Alternative; therefore, the Preferred Alternative is consistent with the FPPA and would have less than significant impacts on Prime Farmland soils.	Approximately 62 acres of soils would be permanently removed from biological production, including approximately 25 acres of Prime Farmland soils. None of the soils in the project area are considered rare in the State of Georgia. Impacts on Prime Farmland soils would be similar to those described for the Preferred Alternative.	Approximately 50 acres of soils, including approximately 25 acres of Prime Farmland soils, would be permanently removed from biological production. Impacts on Prime Farmland soils would be similar to those described for the Preferred Alternative.

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Table 2-2, continued

Resource	No Action	Preferred Alternative	Plan E Alternative	Plan F Alternative
Water Resources	Baseline conditions as described in Section 3.3 would remain unchanged; therefore, no impacts would occur.	Implementation of the Preferred Alternative would impact surface waters, floodplains, and groundwater resources. Approximately 10 acres of wetlands would also be impacted by the Preferred Alternative. However, through the implementation of Best Management Practices (BMPs) and mitigation measures these impacts would be less than significant.	Impacts on water resources would be similar to those described for the Preferred Alternative.	Implementation of the Plan F Alternative would impact surface waters, floodplains, and groundwater resources to a greater degree than the Preferred Alternative. Approximately 7.6 acres of wetlands would also be impacted under the Plan F Alternative. However, through the implementation of BMPs and mitigation measures these impacts would be less than significant.
Noise	Baseline noise conditions as described in Section 3.4 would remain unchanged. Currently 125 people are exposed to a Day-Night Average Sound Level (DNL) greater or equal to 65 dBA (A-weighted decibel).	The 65 dBA DNL would shift on the installation in the area immediately south of the project area but would remain on the Installation. No additional residences off the installation would be exposed to DNL greater than or equal to 65 dBA. The Preferred Alternative would result in temporary and intermittent noise emissions during construction.	The 65 dBA DNL would shift on the installation in the area immediately south of the project area and up to 1 mile north of the installation boundary east of Bcmis Road. Approximately 256 people would be exposed to a DNL greater than or equal to 65 dBA, an increase of 131 people over the baseline. Approximately 22 residences would be exposed to 65 dBA DNL or greater and would experience at least a 2 dB increase in DNL. Temporary and intermittent noise emissions would occur during construction.	Noise impacts would be similar to the Plan E Alternative except additional area immediately south of the project area would be exposed to DNL greater than or equal to 65 dBA. Additionally, approximately 21 residences would be exposed to 65 dBA DNL or greater and would experience at least a 2 dB increase in DNL.

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Table 2-2, continued

Resource	No Action	Preferred Alternative	Plan E Alternative	Plan F Alternative
Land Use	Baseline land use conditions as described in Section 3.5 would remain unchanged; therefore, no impacts would occur. Five of the eight Points of Interest (POI) on the installation and south of the project area are exposed to DNL greater than or equal to 65 dBA (five are dormitory and lodging buildings). The Child Development Center (CDC) buildings have DNL of 60 to 61 dBA.	The Preferred Alternative would convert approximately 37 acres of open space to aircraft operations and maintenance and outdoor recreation (jogging trail) to aircraft operations and maintenance. The CDC buildings would experience a 2 dB increase in DNL; however, DNL would remain less than 65 dBA. Transient lodging (DL 325) would experience an increase of 3 dB from 63 dBA to 66 dBA.	The Plan E Alternative would convert approximately 62 acres of open space to aircraft operations and maintenance and outdoor recreation (jogging trail) to aircraft operations and maintenance. The CDC buildings would experience a 1 dB increase in DNL; however, DNL would remain less than 65 dBA. Transient lodging (DL 325) would experience an increase of 2 dB from 63 dBA to 65 dBA.	The Plan F Alternative would convert approximately 50 acres of open space to aircraft operations and maintenance and outdoor recreation (jogging trail) to aircraft operations and maintenance. Relative to baseline, the CDC buildings would experience up to a 2 dB increase in DNL but would remain less than 65 dBA. All of the dorms except DL322 would have DNL greater than or equal to 65 dBA and experience an increase of at least 2 dB. DL324 would experience a 6 dB increase in DNL to 73 dBA.
Infrastructure	Baseline conditions as described in Section 3.6 would remain unchanged; therefore, no impacts would occur.	Although the Preferred Alternative would require the relocation of a utility corridor, implementation of the Preferred Alternative would not significantly impact electrical distribution, potable water availability, sewer capacity, stormwater drainage capacity, fuels use or storage, or communications.	Impacts would be similar to those described for the Preferred Alternative.	Impacts would be similar to those described for the Preferred Alternative.
Hazardous and Toxic Substances	Baseline conditions as described in Section 3.7 would remain unchanged; therefore, no impacts would occur.	Through the implementation of BMPs and mitigation measures, the risks to human health and safety would be less than significant.	Impacts would be similar to those described for the Preferred Alternative.	Impacts would be similar to those described for the Preferred Alternative.

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Table 2-2, continued

Resource	No Action	Preferred Alternative	Plan E Alternative	Plan F Alternative
Socioeconomics and Environmental Justice	Baseline socioeconomic conditions as described in Section 3.8 would remain unchanged; therefore, no impacts would occur.	Low-income population and children would not be impacted under the Preferred Alternative.	Implementation of the Plan E Alternative could have a potential adverse effect on low-income populations and children as a result of increased noise emissions.	Implementation of the Plan F Alternative could have a potential adverse effect on low-income populations and children as a result of increased noise emissions.
Cultural Resources	Baseline conditions as described in Section 3.9 would remain unchanged; therefore, no impacts would occur.	The Preferred Alternative would not impact cultural resources.	The Plan E Alternative would not impact cultural resources.	The Plan F Alternative would not impact cultural resources.
Safety and Occupational Health	The No Action Alternative would not improve the safety of operational and maintenance personnel.	Implementation of the Preferred Alternative would improve the safety of operational and maintenance personnel.	Implementation of the Plan E Alternative would improve the safety of operational and maintenance personnel and helicopter pilots.	Impacts would be similar to those described for the Preferred Alternative.
Biological Resources	Baseline biological resources conditions as described in Section 3.11 would remain unchanged; therefore, no impacts would occur.	Implementation of the Preferred Alternative would cause the permanent loss of 25 acres of pine habitat and 11 acres of bottomland hardwood habitat. Individuals inhabiting these areas would likely be extirpated from the project area.	Impacts would be similar to those described for the Preferred Alternative.	Implementation of the Plan F Alternative would cause the permanent loss of 6 acres of pine habitat and 8 acres of bottomland hardwood habitat. Individuals inhabiting these areas would likely be extirpated from the project area.
Air Quality	Baseline air quality conditions as described in Section 3.12 would remain unchanged; therefore, no impacts would occur.	Temporary and minor increase in air emissions would occur during construction of the Preferred Alternative.	Impacts would be similar to those described for the Preferred Alternative.	Impacts would be similar to those described for the Preferred Alternative.

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Table 2-2, continued

Resource	No Action	Preferred Alternative	Plan E Alternative	Plan F Alternative
Airspace	Baseline airspace conditions as described in Section 3.13 would remain unchanged; therefore, no impacts would occur.	The Preferred Alternative would not increase the number of aircraft operations at Moody AFB and would not result in a significant impact on Moody AFB airspace.	Impacts would be similar to those described for the Preferred Alternative.	Impacts would be similar to those described for the Preferred Alternative.

Appendix C Air Quality Calculations

APPENDIX C
AIR QUALITY CALCULATIONS

Appendix C Air Quality Calculations

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Appendix C Air Quality Calculations

This appendix presents an overview of the Clean Air Act (CAA) and Georgia Department of Natural Resources (DNR) Air Protection Branch requirements, as well as calculations, including the assumptions used for the air quality analyses presented in the Environmental Assessment.

C.1 AIR QUALITY PROGRAM OVERVIEW

In order to protect public health and welfare, the U.S. Environmental Protection Agency (USEPA) has developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for six “criteria” pollutants (based on health-related criteria) under the provisions of the CAA Amendments of 1970. There are two kinds of NAAQS: primary and secondary standards. Primary standards prescribe the maximum permissible concentration in the ambient air to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards prescribe the maximum concentration or level of air quality required to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings (40 Code of Federal Regulations [C.F.R.] 50).

The CAA gives states the authority to establish air quality rules and regulations. These rules and regulations must be equivalent to, or more stringent than, the Federal program. The Georgia DNR Air Protection Branch is the state agency that regulates air quality emissions sources in Georgia under the authority of the Federal CAA and amendments, Federal regulations, and state laws.

Georgia has adopted the Federal NAAQS as shown in Table C-1 (Georgia DNR, 2015). In addition, Georgia has annual and 24-hour standards for sulfur dioxide.

Table C-1. Summary of National and State Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	Federal Primary NAAQS	Federal Secondary NAAQS	Georgia Standards
Carbon monoxide (CO)	8-hour	9 ppm (10 mg/m ³)	No standard	9 ppm (10 mg/m ³)
	1-hour	35 ppm (40 mg/m ³)	No standard	35 ppm (40 mg/m ³)
Lead (Pb)	Rolling 3-month average	0.15 µg/m ³ ^a	0.15 µg/m ³	0.15 µg/m ³
Nitrogen dioxide (NO ₂)	Annual	0.053 ppm ^b (100 µg/m ³)	0.053 ppm (100 µg/m ³)	0.053 ppm (100 µg/m ³)
	1-hour	100 ppb	No standard ^c	100 ppb
Particulate matter ≤10 micrometers (PM ₁₀)	24-hour	150 µg/m ³	150 µg/m ³	150 µg/m ³
Particulate matter <2.5 micrometers (PM _{2.5})	Annual	15 µg/m ³	15 µg/m ³	15 µg/m ³
	24-hour	35 µg/m ³	35 µg/m ³	35 µg/m ³
Ozone (O ₃)	8-hour	0.075 ppm ^b (157 µg/m ³)	0.075 ppm (157 µg/m ³)	0.075 ppm (157 µg/m ³)
Sulfur dioxide (SO ₂)	Annual	No standard	No standard	80 µg/m ³
	24-hour ^d	No standard	No standard	365 µg/m ³
	3-hour	No standard	0.50 ppm ^c (1,300 µg/m ³)	0.50 ppm (1,300 µg/m ³)
	1-hour	75 ppb ^d	No standard	75 ppb

Source: USEPA, 2015a (Federal standards); Georgia DNR, 2015 (Georgia standards)
 mg/m³ = milligrams per cubic meter; µg/m³ = micrograms per cubic meter; NAAQS = National Ambient Air Quality Standards; ppb = parts per billion; ppm = parts per million
 a. Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard

Appendix C Air Quality Calculations

Table C-1. Summary of National and State Ambient Air Quality Standards, Continued

<p>remains in effect until implementation plans to attain or maintain the 2008 standard are approved.</p> <p>b. The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.</p> <p>c. Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, USEPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard (“anti-backsliding”). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.</p> <p>d. Final rule signed June 2, 2010. The 1971 annual and 24-hour SO₂ standards were revoked in that same rulemaking. However, these standards remain in effect until 1 year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.</p>
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Based on measured ambient air pollutant concentrations, the USEPA designates areas of the United States as having air quality better than the NAAQS (attainment), worse than the NAAQS (nonattainment), and unclassifiable. The areas that cannot be classified (on the basis of available information) as meeting or not meeting the NAAQS for a particular pollutant are “unclassifiable” and are treated as attainment areas until proven otherwise. Attainment areas can be further classified as “maintenance” areas, which are areas previously classified as nonattainment areas but where air pollutant concentrations have been successfully reduced to below the standard. Maintenance areas are subject to special maintenance plans and must operate under some of the nonattainment area plans to ensure compliance with the NAAQS. Lowndes and Lanier Counties are in attainment for all criteria pollutants (USEPA, 2015).

A general conformity analysis is required to be conducted for areas designated as nonattainment or maintenance of the NAAQS if the action’s direct and indirect emissions have a potential to emit one or more of the six criteria pollutants at or above concentrations standards known as the *de minimis* emission rate thresholds (Table C-2 or Table C-3).

Table C-2. De Minimis Thresholds for Criteria Pollutants in Nonattainment Areas¹

Pollutant	Emission Rate (tons/year)
Ozone (VOCs or NO _x)	
Serious nonattainment areas	50
Severe nonattainment areas	25
Extreme nonattainment areas	10
Other ozone nonattainment areas outside an ozone transport region	100
Marginal and moderate nonattainment areas inside an ozone transport region	
VOCs	50
NO _x	100
CO: All nonattainment areas	100
SO ₂ or NO ₂ : All nonattainment areas	100
PM ₁₀	
Moderate nonattainment areas	100
Serious nonattainment areas	70
PM _{2.5}	
Direct emissions	100
SO ₂	100
NO _x (unless determined not to be a significant precursor)	100
VOCs or ammonia (if determined to be significant precursors)	100
Pb: All nonattainment areas	25

Source: USEPA, 2015b

CO = carbon monoxide; NO₂ = nitrogen dioxide; NO_x = nitrogen oxides; VOC = volatile organic compound; Pb = lead; PM_{2.5} = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns; PM₁₀ = particulate matter with an aerodynamic diameter less than or equal to 10 microns; SO₂ = sulfur dioxide

1. *De minimis* threshold levels for conformity applicability analysis.

Appendix C Air Quality Calculations

Table C-3. De Minimis Emission Thresholds for Criteria Pollutants in Attainment (Maintenance) Areas¹

Pollutant	Emission Rate (tons/year)
Ozone (NO _x , SO ₂ , or NO ₂): All maintenance areas	100
Ozone (VOCs)	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
CO: All maintenance areas	100
PM ₁₀ : All maintenance areas	100
PM _{2.5}	
Direct emissions	100
SO ₂	100
NO _x (unless determined not to be a significant precursor)	100
VOCs or ammonia (if determined to be significant precursors)	100
Pb: All maintenance areas	25

Source: USEPA, 2015b

CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compound; Pb = lead; PM_{2.5} = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns; PM₁₀ = particulate matter with an aerodynamic diameter less than or equal to 10 microns; SO₂ = sulfur dioxide

1. *De minimis* threshold levels for conformity applicability analysis.

Each state is required to develop a State Implementation Plan (SIP) that sets forth how CAA provisions will be imposed within the state. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain the NAAQS within each state and includes control measures, emissions limitations, and other provisions required to attain and maintain the ambient air quality standards. The purpose of the SIP is twofold. First, it must provide a control strategy that will result in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is being made in attaining the standards in each nonattainment area.

The Ambient Monitoring Program measures levels of air pollutants throughout the state. The data are used to determine compliance with air standards established for five compounds and to evaluate the need for special controls for various other pollutants.

The air quality monitoring network is used to identify areas where the ambient air quality standards are being violated and plans are needed to reduce pollutant concentration levels to be in attainment with the standards. Also included are areas where the ambient standards are being met, but plans are necessary to ensure maintenance of acceptable levels of air quality in the face of anticipated population or industrial growth.

The result of this attainment/maintenance analysis is the development of local and statewide strategies for controlling emissions of criteria air pollutants from stationary and mobile sources. The first step in this process is the annual compilation of the ambient air monitoring results, and the second step is the analysis of the monitoring data for general air quality, exceedances of air quality standards, and pollutant trends.

C.2 REGULATORY COMPARISONS

The CAA Section 176(c), General Conformity, requires Federal agencies to demonstrate that their proposed activities would conform to the applicable SIP for attainment of the NAAQS. General conformity applies only to nonattainment and maintenance areas. If the emissions from a Federal action proposed in a nonattainment area exceed annual *de minimis* thresholds identified in the rule, a formal conformity determination is required of that action. The thresholds are more restrictive as the severity of

Appendix C Air Quality Calculations

the nonattainment status of the region increases. Since the project region is designated as attainment for all criteria pollutants (USEPA, 2015), the criteria pollutants are compared with Lowndes County emissions, which are in attainment.

For the analysis, in order to evaluate air emissions and their impact on the overall region of influence (ROI), the emissions associated with the project activities were compared with the total emissions on a pollutant-by-pollutant basis for the ROI's 2008 National Emissions Inventory (NEI) data. Potential impacts to air quality are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The Council on Environmental Quality (CEQ) defines significance in terms of context and intensity in 40 C.F.R. 1508.27. This requires that the significance of the action must be analyzed in respect to the setting of the proposed action and based relative to the severity of the impact. The CEQ National Environmental Policy Act regulations (40 C.F.R. 1508.27(b)) provide 10 key factors to consider in determining an impact's intensity. To provide a more conservative analysis, the county was selected as the ROI instead of the USEPA-designated Air Quality Control Region, which is a much larger area.

C.3 PROJECT CALCULATIONS

1. General Information

- Action Location

Base: MOODY AFB
County(s): Lowndes; Lanier
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: PERSONNEL RECOVERY (PR) CAMPUS AT

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2016

- Action Purpose and Need:

The purpose for this Proposed Action is to consolidate and improve facility support for the 347 RQG at Moody AFB through consolidation of all rescue aviation and maintenance functions; upgrade outdated facilities; reduce and/or eliminate existing Unified Facilities Criteria (UFC) violations; and improve operational, ergonomic, and energy efficiencies. The Moody AFB PR program is experiencing numerous facility shortfalls that currently impair mission effectiveness. There is a shortage of space and overcrowding causing inadequate work space for training, mission planning, and briefing, as well as insufficient facilities for storage, parking aircraft, and shop space.

- Action Description:

The Proposed Action is to provide a consolidated PR Campus that meets the needs of the 347 RQG as identified in Table 1.3 1. This involves providing the 41st Rescue Squadron (RQS) a Squadron Operations (Squad Ops) facility that meets their size requirements, providing updated hangar and parts storage facilities due to current facility age, providing adequate exterior aircraft-to-apron clearances, and providing adequate interior aircraft clearance for the maintenance hangar. Consolidation of these facilities into a Campus environment would require all necessary supporting infrastructure (roads, utilities, etc.).

- Point of Contact

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Phone Number: 850-609-3450

Appendix C Air Quality Calculations

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Site Preparation
3.	Construction / Demolition	Bldg 645/655
4.	Construction / Demolition	Bldg 609
5.	Construction / Demolition	Roadway / Pavement Demolition
6.	Construction / Demolition	Maintenance Hangar
7.	Construction / Demolition	Squadron Operations
8.	Construction / Demolition	Parts Storage
9.	Construction / Demolition	Pavement - Parking/Vehicles
10.	Construction / Demolition	Road Construction/Expansion
11.	Construction / Demolition	Misc. Pavements
12.	Construction / Demolition	Utilities

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location

County: Lowndes; Lanier

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Site Preparation

- Activity Description:

Clearing and grading operations of approximately 1,300,000 square feet.

- Activity Start Date

Start Month: 1

Start Month: 2016

- Activity End Date

Indefinite: False

End Month: 6

End Month: 2016

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.764906
SO _x	0.008621
NO _x	5.739370
CO	3.510817
PM 10	76.998799

Pollutant	Total Emissions (TONs)
PM 2.5	0.256879
Pb	0.000000
NH ₃	0.003606

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 1

Start Quarter: 1

Start Year: 2016

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix C Air Quality Calculations

- Phase Duration

Number of Month: 6
 Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 1300000
 Amount of Material to be Hauled On-Site (yd³): 30
 Amount of Material to be Hauled Off-Site (yd³): 30

- Site Grading Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	3	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0987	0.0013	0.6602	0.5212	0.0332	0.0332	0.0089	119.58
Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.1196	0.0014	0.8866	0.5883	0.0441	0.0441	0.0107	132.74
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0719	0.0012	0.5679	0.3602	0.0233	0.0233	0.0064	122.56
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂

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Appendix C Air Quality Calculations

Emission Factors	0.2591	0.0024	2.0891	0.9833	0.0858	0.0858	0.0233	239.09
Scrapers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.2382	0.0026	1.9017	0.9053	0.0783	0.0783	0.0214	262.48
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.0610	0.0007	0.4069	0.3689	0.0258	0.0258	0.0055	66.797

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH₃	CO₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
 ACRE: Total acres (acres)
 WD: Number of Total Work Days (days)
 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
 NE: Number of Equipment
 WD: Number of Total Work Days (days)
 H: Hours Worked per Day (hours)
 EF_{POL}: Emission Factor for Pollutant (lb/hour)
 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
 HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
 VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds

Appendix C Air Quality Calculations

EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
 VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Worker Trips On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

3. Construction / Demolition

3.1 General Information & Timeline Assumptions

- Activity Location

County: Lowndes; Lanier
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Bldg 645/655

- Activity Description:

16,620 SF of demolition.

- Activity Start Date

Start Month: 1
Start Month: 2016

- Activity End Date

Indefinite: False
End Month: 3
End Month: 2016

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.055450
SO _x	0.000559
NO _x	0.345186
CO	0.331772
PM 10	0.108780

Pollutant	Total Emissions (TONs)
PM 2.5	0.021429
Pb	0.000000
NH ₃	0.000721

Appendix C Air Quality Calculations

3.1 Demolition Phase

3.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2016

- Phase Duration

Number of Month: 3
 Number of Days: 0

3.1.2 Demolition Phase Assumptions

- General Demolition Information

Area of Building to be demolished (ft²): 16620
 Height of Building to be demolished (ft): 25

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

3.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Concrete/Industrial Saws Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0756	0.0006	0.4589	0.3936	0.0336	0.0336	0.0068	58.463
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.2591	0.0024	2.0891	0.9833	0.0858	0.0858	0.0233	239.09

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix C Air Quality Calculations

Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.0610	0.0007	0.4069	0.3689	0.0258	0.0258	0.0055	66.797

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH₃	CO₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

3.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (0.00042 * BA * BH) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

0.00042: Emission Factor (lb/ft³)

BA: Area of Building to be demolished (ft²)

BH: Height of Building to be demolished (ft)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building being demolish (ft²)

BH: Height of Building being demolish (ft)

(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)

0.25: Volume reduction factor (material reduced by 75% to account for air space)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

Appendix C Air Quality Calculations

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- WD: Number of Total Work Days (days)
- WT: Average Worker Round Trip Commute (mile)
- 1.25: Conversion Factor Number of Construction Equipment to Number of Works
- NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

- V_{POL}: Vehicle Emissions (TONs)
- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- 0.002205: Conversion Factor grams to pounds
- EF_{POL}: Emission Factor for Pollutant (grams/mile)
- VM: Worker Trips On Road Vehicle Mixture (%)
- 2000: Conversion Factor pounds to tons

4. Construction / Demolition

4.1 General Information & Timeline Assumptions

- Activity Location

County: Lanier; Lowndes
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Bldg 609

- Activity Description:

23,500 SF demolition

- Activity Start Date

Start Month: 1
Start Month: 2016

- Activity End Date

Indefinite: False
End Month: 3
End Month: 2016

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.055450
SO _x	0.000559
NO _x	0.345186
CO	0.331772
PM 10	0.144900

Pollutant	Total Emissions (TONs)
PM 2.5	0.021429
Pb	0.000000
NH ₃	0.000721

Appendix C Air Quality Calculations

4.1 Demolition Phase

4.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2016

- Phase Duration

Number of Month: 3
 Number of Days: 0

4.1.2 Demolition Phase Assumptions

- General Demolition Information

Area of Building to be demolished (ft²): 23500
 Height of Building to be demolished (ft): 25

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

4.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Concrete/Industrial Saws Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0756	0.0006	0.4589	0.3936	0.0336	0.0336	0.0068	58.463
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.2591	0.0024	2.0891	0.9833	0.0858	0.0858	0.0233	239.09

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Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.0610	0.0007	0.4069	0.3689	0.0258	0.0258	0.0055	66.797

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH₃	CO₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

4.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (0.00042 * BA * BH) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

0.00042: Emission Factor (lb/ft³)

BA: Area of Building to be demolished (ft²)

BH: Height of Building to be demolished (ft)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building being demolish (ft²)

BH: Height of Building being demolish (ft)

(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)

0.25: Volume reduction factor (material reduced by 75% to account for air space)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

Appendix C Air Quality Calculations

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- WD: Number of Total Work Days (days)
- WT: Average Worker Round Trip Commute (mile)
- 1.25: Conversion Factor Number of Construction Equipment to Number of Works
- NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

- V_{POL}: Vehicle Emissions (TONs)
- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- 0.002205: Conversion Factor grams to pounds
- EF_{POL}: Emission Factor for Pollutant (grams/mile)
- VM: Worker Trips On Road Vehicle Mixture (%)
- 2000: Conversion Factor pounds to tons

5. Construction / Demolition

5.1 General Information & Timeline Assumptions

- Activity Location

County: Lanier; Lowndes
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Roadway / Pavement Demolition

- Activity Description:
 40,000 SF roadway and/or pavement demolition.

- Activity Start Date

Start Month: 1
Start Month: 2016

- Activity End Date

Indefinite: False
End Month: 3
End Month: 2016

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.055450
SO _x	0.000559
NO _x	0.345186
CO	0.331772
PM 10	0.025725

Pollutant	Total Emissions (TONs)
PM 2.5	0.021429
Pb	0.000000
NH ₃	0.000721

Appendix C Air Quality Calculations

5.1 Demolition Phase

5.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2016

- Phase Duration

Number of Month: 3
 Number of Days: 0

5.1.2 Demolition Phase Assumptions

- General Demolition Information

Area of Building to be demolished (ft²): 40000
 Height of Building to be demolished (ft): 0.5

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

5.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Concrete/Industrial Saws Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0756	0.0006	0.4589	0.3936	0.0336	0.0336	0.0068	58.463
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.2591	0.0024	2.0891	0.9833	0.0858	0.0858	0.0233	239.09

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Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.0610	0.0007	0.4069	0.3689	0.0258	0.0258	0.0055	66.797

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH₃	CO₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

5.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (0.00042 * BA * BH) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

0.00042: Emission Factor (lb/ft³)

BA: Area of Building to be demolished (ft²)

BH: Height of Building to be demolished (ft)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building being demolish (ft²)

BH: Height of Building being demolish (ft)

(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)

0.25: Volume reduction factor (material reduced by 75% to account for air space)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

Appendix C Air Quality Calculations

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- WD: Number of Total Work Days (days)
- WT: Average Worker Round Trip Commute (mile)
- 1.25: Conversion Factor Number of Construction Equipment to Number of Works
- NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

- V_{POL}: Vehicle Emissions (TONs)
- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- 0.002205: Conversion Factor grams to pounds
- EF_{POL}: Emission Factor for Pollutant (grams/mile)
- VM: Worker Trips On Road Vehicle Mixture (%)
- 2000: Conversion Factor pounds to tons

6. Construction / Demolition

6.1 General Information & Timeline Assumptions

- Activity Location

County: Lanier; Lowndes
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Maintenance Hangar

- Activity Description:

78,738 SF Construction of a new Maintenance Hangar

- Activity Start Date

Start Month: 1
Start Month: 2016

- Activity End Date

Indefinite: False
End Month: 12
End Month: 2017

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	3.689747
SO _x	0.010606
NO _x	5.683134
CO	4.872290
PM 10	0.320520

Pollutant	Total Emissions (TONs)
PM 2.5	0.316117
Pb	0.000000
NH ₃	0.014654

Appendix C Air Quality Calculations

6.1 Building Construction Phase

6.1.1 Building Construction Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2016

- Phase Duration

Number of Month: 12
 Number of Days: 0

6.1.2 Building Construction Phase Assumptions

- General Building Construction Information

Building Category: Office or Industrial
 Area of Building (ft²): 78738
 Height of Building (ft): 40
 Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

Appendix C Air Quality Calculations

6.1.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.1136	0.0013	0.9387	0.4263	0.0387	0.0387	0.0102	128.62
Forklifts Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.0427	0.0006	0.2815	0.2189	0.0136	0.0136	0.0038	54.395
Generator Sets Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.0580	0.0006	0.4369	0.2862	0.0240	0.0240	0.0052	60.992
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.0610	0.0007	0.4069	0.3689	0.0258	0.0258	0.0055	66.797
Welders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH₄	CO₂
Emission Factors	0.0482	0.0003	0.2173	0.1950	0.0168	0.0168	0.0043	25.602

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH₃	CO₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

6.1.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building (ft²)

BH: Height of Building (ft)

(0.42 / 1000): Conversion Factor ft³ to trips (0.42 trip / 1000 ft³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

Appendix C Air Quality Calculations

0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft²)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft³ to trips (0.38 trip / 1000 ft³)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

6.2 Architectural Coatings Phase

6.2.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date

Start Month: 7
Start Quarter: 1
Start Year: 2016

- Phase Duration

Number of Month: 6
Number of Days: 0

Appendix C Air Quality Calculations

6.2.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information

Building Category:
Total Square Footage (ft²): 78738
Number of Units: N/A

- Architectural Coatings Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.2.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH₃	CO₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

6.2.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$$VMT_{WT} = (1 * WT * PA) / 800$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 1: Conversion Factor man days to trips (1 trip / 1 man * day)
 WT: Average Worker Round Trip Commute (mile)
 PA: Paint Area (ft²)
 800: Conversion Factor square feet to man days (1 ft² / 1 man * day)

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
 VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Worker Trips On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)

Appendix C Air Quality Calculations

BA: Area of Building (ft²)
 2.0: Conversion Factor total area to coated area (2.0 ft² coated area / total area)
 0.0116: Emission Factor (lb/ft²)
 2000: Conversion Factor pounds to tons

7. Construction / Demolition

7.1 General Information & Timeline Assumptions

- Activity Location

County: Lanier; Lowndes
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Squadron Operations

- Activity Description:

33,904 SF building constructions

- Activity Start Date

Start Month: 1
Start Month: 2016

- Activity End Date

Indefinite: False
End Month: 12
End Month: 2017

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.107263
SO _x	0.009736
NO _x	5.521184
CO	4.826789
PM 10	0.313842

Pollutant	Total Emissions (TONs)
PM 2.5	0.311367
Pb	0.000000
NH ₃	0.012663

7.1 Building Construction Phase

7.1.1 Building Construction Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2016

- Phase Duration

Number of Month: 12
Number of Days: 0

7.1.2 Building Construction Phase Assumptions

- General Building Construction Information

Building Category: Office or Industrial
Area of Building (ft²): 33904

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix C Air Quality Calculations

Height of Building (ft): 30
 Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

7.1.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.1136	0.0013	0.9387	0.4263	0.0387	0.0387	0.0102	128.62
Forklifts Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0427	0.0006	0.2815	0.2189	0.0136	0.0136	0.0038	54.395
Generator Sets Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0580	0.0006	0.4369	0.2862	0.0240	0.0240	0.0052	60.992
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0610	0.0007	0.4069	0.3689	0.0258	0.0258	0.0055	66.797
Welders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0482	0.0003	0.2173	0.1950	0.0168	0.0168	0.0043	25.602

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix C Air Quality Calculations

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

7.1.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building (ft²)

BH: Height of Building (ft)

(0.42 / 1000): Conversion Factor ft³ to trips (0.42 trip / 1000 ft³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

Appendix C Air Quality Calculations

EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Worker Trips On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
 BA: Area of Building (ft²)
 BH: Height of Building (ft)
 (0.38 / 1000): Conversion Factor ft³ to trips (0.38 trip / 1000 ft³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
 VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Worker Trips On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

7.2 Architectural Coatings Phase

7.2.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date

Start Month: 7
 Start Quarter: 1
 Start Year: 2016

- Phase Duration

Number of Month: 6
 Number of Days: 0

7.2.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information

Building Category:
 Total Square Footage (ft²): 33904
 Number of Units: N/A

- Architectural Coatings Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDTV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

Appendix C Air Quality Calculations

7.2.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH₃	CO₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

7.2.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$$VMT_{WT} = (1 * WT * PA) / 800$$

- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- 1: Conversion Factor man days to trips (1 trip / 1 man * day)
- WT: Average Worker Round Trip Commute (mile)
- PA: Paint Area (ft²)
- 800: Conversion Factor square feet to man days (1 ft² / 1 man * day)

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

- V_{POL}: Vehicle Emissions (TONs)
- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- 0.002205: Conversion Factor grams to pounds
- EF_{POL}: Emission Factor for Pollutant (grams/mile)
- VM: Worker Trips On Road Vehicle Mixture (%)
- 2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$$

- VOC_{AC}: Architectural Coating VOC Emissions (TONs)
- BA: Area of Building (ft²)
- 2.0: Conversion Factor total area to coated area (2.0 ft² coated area / total area)
- 0.0116: Emission Factor (lb/ft²)
- 2000: Conversion Factor pounds to tons

8. Construction / Demolition

8.1 General Information & Timeline Assumptions

- Activity Location

- County:** Lanier; Lowndes
- Regulatory Area(s):** NOT IN A REGULATORY AREA

- Activity Title: Parts Storage

- Activity Description:

18,400 SF Part Storage facility construction.

Appendix C Air Quality Calculations

- Activity Start Date

Start Month: 1
Start Year: 2016

- Activity End Date

Indefinite: False
End Month: 12
End Year: 2017

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.051520
SO _x	0.005241
NO _x	2.723871
CO	2.334539
PM 10	0.137406

Pollutant	Total Emissions (TONs)
PM 2.5	0.136307
Pb	0.000000
NH ₃	0.006117

8.1 Building Construction Phase

8.1.1 Building Construction Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2016

- Phase Duration

Number of Month: 12
Number of Days: 0

8.1.2 Building Construction Phase Assumptions

- General Building Construction Information

Building Category: Office or Industrial
Area of Building (ft²): 18400
Height of Building (ft): 20
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix C Air Quality Calculations

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

8.1.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.1136	0.0013	0.9387	0.4263	0.0387	0.0387	0.0102	128.62
Forklifts Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0427	0.0006	0.2815	0.2189	0.0136	0.0136	0.0038	54.395
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0610	0.0007	0.4069	0.3689	0.0258	0.0258	0.0055	66.797

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

8.1.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

Appendix C Air Quality Calculations

$$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft²)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft³ to trips (0.42 trip / 1000 ft³)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft²)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft³ to trips (0.38 trip / 1000 ft³)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

Appendix C Air Quality Calculations

8.2 Architectural Coatings Phase

8.2.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date

Start Month: 7
 Start Quarter: 1
 Start Year: 2016

- Phase Duration

Number of Month: 6
 Number of Days: 0

8.2.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information

Building Category:
 Total Square Footage (ft²): 18400
 Number of Units: N/A

- Architectural Coatings Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

8.2.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

8.2.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$$VMT_{WT} = (1 * WT * PA) / 800$$

- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- 1: Conversion Factor man days to trips (1 trip / 1 man * day)
- WT: Average Worker Round Trip Commute (mile)
- PA: Paint Area (ft²)
- 800: Conversion Factor square feet to man days (1 ft² / 1 man * day)

Appendix C Air Quality Calculations

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

- V_{POL}: Vehicle Emissions (TONs)
- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- 0.002205: Conversion Factor grams to pounds
- EF_{POL}: Emission Factor for Pollutant (grams/mile)
- VM: Worker Trips On Road Vehicle Mixture (%)
- 2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$$

- VOC_{AC}: Architectural Coating VOC Emissions (TONs)
- BA: Area of Building (ft²)
- 2.0: Conversion Factor total area to coated area (2.0 ft² coated area / total area)
- 0.0116: Emission Factor (lb/ft²)
- 2000: Conversion Factor pounds to tons

9. Construction / Demolition

9.1 General Information & Timeline Assumptions

- Activity Location

- County:** Lanier; Lowndes
- Regulatory Area(s):** NOT IN A REGULATORY AREA

- Activity Title: Pavement - Parking/Vehicles

- Activity Description:

- AGE Yards - 47,000 SF
- Vehicle Parking - 184,986
- Aircraft Apron/Taxi - 374,760

- Activity Start Date

- Start Month:** 1
- Start Month:** 2016

- Activity End Date

- Indefinite:** False
- End Month:** 12
- End Month:** 2017

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.979878
SO _x	0.007263
NO _x	5.753940
CO	4.566554
PM 10	0.390455

Pollutant	Total Emissions (TONs)
PM 2.5	0.389498
Pb	0.000000
NH ₃	0.007208

Appendix C Air Quality Calculations

9.1 Paving Phase

9.1.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2016

- Phase Duration

Number of Month: 12
 Number of Days: 0

9.1.2 Paving Phase Assumptions

- General Paving Information

Paving Area (ft²): 606746

- Paving Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	2	8
Rollers Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

9.1.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂
LDGV	00.5990	00.0068	00.4360	08.0000	00.0248	00.0113		00.1017	00368.1
LDGT	00.8220	00.0095	00.6670	09.6300	00.0249	00.0114		00.1017	00516.1
HDGV	00.9080	00.0165	01.4390	08.5200	00.0485	00.0321		00.0451	00905.3
LDDV	00.1320	00.0029	00.2000	00.8080	00.0532	00.0374		00.0068	00314.0
LDDT	00.3870	00.0056	00.4600	00.6570	00.0601	00.0438		00.0068	00599.2

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix C Air Quality Calculations

HDDV	00.3430	00.0116	03.2960	00.9410	00.1285	00.0996		00.0270	01245.6
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

9.1.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

- CEE_{POL}: Construction Exhaust Emissions (TONs)
- NE: Number of Equipment
- WD: Number of Total Work Days (days)
- H: Hours Worked per Day (hours)
- EF_{POL}: Emission Factor for Pollutant (lb/hour)
- 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$$

- VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
- PA: Paving Area (ft²)
- 0.25: Thickness of Paving Area (ft)
- (1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)
- HC: Average Hauling Truck Capacity (yd³)
- (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
- HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

- V_{POL}: Vehicle Emissions (TONs)
- VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
- 0.002205: Conversion Factor grams to pounds
- EF_{POL}: Emission Factor for Pollutant (grams/mile)
- VM: Vehicle Exhaust On Road Vehicle Mixture (%)
- 2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- WD: Number of Total Work Days (days)
- WT: Average Worker Round Trip Commute (mile)
- 1.25: Conversion Factor Number of Construction Equipment to Number of Works
- NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

- V_{POL}: Vehicle Emissions (TONs)
- VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
- 0.002205: Conversion Factor grams to pounds
- EF_{POL}: Emission Factor for Pollutant (grams/mile)
- VM: Worker Trips On Road Vehicle Mixture (%)
- 2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

Appendix C Air Quality Calculations

$$VOC_p = (2.62 * PA) / 43560$$

VOC_p: Paving VOC Emissions (TONs)

2.62: Emission Factor (lb/acre)

PA: Paving Area (ft²)

43560: Conversion Factor square feet to acre (43560 ft² / acre)² / acre)

10. Construction / Demolition

10.1 General Information & Timeline Assumptions

- Activity Location

County: Lanier; Lowndes

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Road Construction/Expansion

- Activity Description:

Sijan St, Kangaroo Ln, Parking Access Rd, Coney St, Traffic Cir - 229,150

- Activity Start Date

Start Month: 1

Start Month: 2016

- Activity End Date

Indefinite: False

End Month: 12

End Month: 2017

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.858013
SO _x	0.006543
NO _x	5.096477
CO	4.134863
PM 10	0.345609

Pollutant	Total Emissions (TONs)
PM 2.5	0.344652
Pb	0.000000
NH ₃	0.007208

10.1 Paving Phase

10.1.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 1

Start Quarter: 1

Start Year: 2016

- Phase Duration

Number of Month: 12

Number of Days: 0

10.1.2 Paving Phase Assumptions

- General Paving Information

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix C Air Quality Calculations

Paving Area (ft²): 229150

- Paving Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

10.1.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂
LDGV	00.5990	00.0068	00.4360	08.0000	00.0248	00.0113		00.1017	00368.1
LDGT	00.8220	00.0095	00.6670	09.6300	00.0249	00.0114		00.1017	00516.1
HDGV	00.9080	00.0165	01.4390	08.5200	00.0485	00.0321		00.0451	00905.3
LDDV	00.1320	00.0029	00.2000	00.8080	00.0532	00.0374		00.0068	00314.0
LDDT	00.3870	00.0056	00.4600	00.6570	00.0601	00.0438		00.0068	00599.2
HDDV	00.3430	00.0116	03.2960	00.9410	00.1285	00.0996		00.0270	01245.6
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

10.1.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

Appendix C Air Quality Calculations

$$\text{VMT}_{\text{VE}} = \text{PA} * 0.25 * (1 / 27) * (1 / \text{HC}) * \text{HT}$$

VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)
 PA : Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
 HC : Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
 HT : Average Hauling Truck Round Trip Commute (mile/trip)

$$\text{V}_{\text{POL}} = (\text{VMT}_{\text{VE}} * 0.002205 * \text{EF}_{\text{POL}} * \text{VM}) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM : Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$\text{VMT}_{\text{WT}} = \text{WD} * \text{WT} * 1.25 * \text{NE}$$

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
 WD : Number of Total Work Days (days)
 WT : Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE : Number of Construction Equipment

$$\text{V}_{\text{POL}} = (\text{VMT}_{\text{WT}} * 0.002205 * \text{EF}_{\text{POL}} * \text{VM}) / 2000$$

V_{POL} : Vehicle Emissions (TONs)
 VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
 EF_{POL} : Emission Factor for Pollutant (grams/mile)
 VM : Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$$\text{VOC}_p = (2.62 * \text{PA}) / 43560$$

VOC_p : Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
 PA : Paving Area (ft^2)
43560: Conversion Factor square feet to acre ($(43560 \text{ ft}^2 / \text{acre})^2 / \text{acre}$)

11. Construction / Demolition

11.1 General Information & Timeline Assumptions

- Activity Location

County: Lanier; Lowndes
Regulatory Area(s): NOT IN A REGULATORY AREA

Appendix C Air Quality Calculations

- **Activity Title:** Misc. Pavements

- **Activity Description:**
Sidewalks, gutters, etc. - 285,000 SF

- **Activity Start Date**

Start Month: 1
Start Month: 2016

- **Activity End Date**

Indefinite: False
End Month: 12
End Month: 2017

- **Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.861372
SO _x	0.006543
NO _x	5.096477
CO	4.134863
PM 10	0.345609

Pollutant	Total Emissions (TONs)
PM 2.5	0.344652
Pb	0.000000
NH ₃	0.007208

11.1 Paving Phase

11.1.1 Paving Phase Timeline Assumptions

- **Phase Start Date**

Start Month: 1
Start Quarter: 1
Start Year: 2016

- **Phase Duration**

Number of Month: 12
Number of Days: 0

11.1.2 Paving Phase Assumptions

- **General Paving Information**

Paving Area (ft²): 285000

- **Paving Default Settings**

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- **Construction Exhaust (default)**

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6

- **Vehicle Exhaust**

Average Hauling Truck Round Trip Commute (mile): 20 (default)

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix C Air Quality Calculations

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

11.1.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂
LDGV	00.5990	00.0068	00.4360	08.0000	00.0248	00.0113		00.1017	00368.1
LDGT	00.8220	00.0095	00.6670	09.6300	00.0249	00.0114		00.1017	00516.1
HDGV	00.9080	00.0165	01.4390	08.5200	00.0485	00.0321		00.0451	00905.3
LDDV	00.1320	00.0029	00.2000	00.8080	00.0532	00.0374		00.0068	00314.0
LDDT	00.3870	00.0056	00.4600	00.6570	00.0601	00.0438		00.0068	00599.2
HDDV	00.3430	00.0116	03.2960	00.9410	00.1285	00.0996		00.0270	01245.6
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

11.1.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

PA: Paving Area (ft²)

0.25: Thickness of Paving Area (ft)

(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

Appendix C Air Quality Calculations

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$$VOC_p = (2.62 * PA) / 43560$$

VOC_p: Paving VOC Emissions (TONs)

2.62: Emission Factor (lb/acre)

PA: Paving Area (ft²)

43560: Conversion Factor square feet to acre (43560 ft² / acre)² / acre

12. Construction / Demolition

12.1 General Information & Timeline Assumptions

- Activity Location

County: Lanier; Lowndes

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Utilities

- Activity Description:

Includes trenching of:

Stormwater conveyance - 3,760 LF

Water Lines - 2,353 LF

Sanitary Sewer Lines - 2,283

Electrical Lines - 7,731 LF

Natural Gas Lines - 2,566 LF

Communications Lines - 7,000 LF

Excavating of 2.5 acres for Stormwater Basin

Grading of Utility corridor - 3 acres

- Activity Start Date

Appendix C Air Quality Calculations

Start Month: 1
Start Month: 2016

- Activity End Date

Indefinite: False
End Month: 12
End Month: 2017

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.020921
SO _x	0.012808
NO _x	7.061173
CO	5.344366
PM 10	937.241368

Pollutant	Total Emissions (TONs)
PM 2.5	0.345738
Pb	0.000000
NH ₃	0.007039

12.1 Site Grading Phase

12.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2016

- Phase Duration

Number of Month: 3
Number of Days: 0

12.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 392040
Amount of Material to be Hauled On-Site (yd³): 3
Amount of Material to be Hauled Off-Site (yd³): 3

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

FINAL Revised Environmental Assessment (EA) for Personnel Recovery (PR) Campus at Moody Air Force Base, Georgia

Appendix C Air Quality Calculations

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0987	0.0013	0.6602	0.5212	0.0332	0.0332	0.0089	119.58
Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.1196	0.0014	0.8866	0.5883	0.0441	0.0441	0.0107	132.74
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0719	0.0012	0.5679	0.3602	0.0233	0.0233	0.0064	122.56
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.2591	0.0024	2.0891	0.9833	0.0858	0.0858	0.0233	239.09
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0610	0.0007	0.4069	0.3689	0.0258	0.0258	0.0055	66.797

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HdGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

12.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

Appendix C Air Quality Calculations

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
HC: Average Hauling Truck Capacity (yd³)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

12.2 Trenching/Excavating Phase

12.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2016

- Phase Duration

Appendix C Air Quality Calculations

Number of Month: 12
 Number of Days: 0

12.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 3918744
 Amount of Material to be Hauled On-Site (yd³): 90
 Amount of Material to be Hauled Off-Site (yd³): 90

- Trenching Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipment Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
 Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0987	0.0013	0.6602	0.5212	0.0332	0.0332	0.0089	119.58
Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.1196	0.0014	0.8866	0.5883	0.0441	0.0441	0.0107	132.74
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0719	0.0012	0.5679	0.3602	0.0233	0.0233	0.0064	122.56
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.2591	0.0024	2.0891	0.9833	0.0858	0.0858	0.0233	239.09
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO ₂
Emission Factors	0.0610	0.0007	0.4069	0.3689	0.0258	0.0258	0.0055	66.797

Appendix C Air Quality Calculations

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂
LDGV	00.4790	00.0068	00.3370	07.3300	00.0248	00.0113		00.1017	00368.0
LDGT	00.6930	00.0095	00.5340	08.6600	00.0248	00.0113		00.1017	00516.7
HDGV	00.7140	00.0165	00.9260	08.0800	00.0414	00.0259		00.0451	00904.2
LDDV	00.0970	00.0029	00.1080	00.7150	00.0408	00.0260		00.0068	00314.1
LDDT	00.3160	00.0056	00.3420	00.5790	00.0492	00.0337		00.0068	00598.6
HDDV	00.2990	00.0116	02.1550	00.6470	00.0889	00.0632		00.0270	01243.4
MC	02.3900	00.0033	01.1500	14.2500	00.0372	00.0207		00.0113	00177.4

12.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
 ACRE: Total acres (acres)
 WD: Number of Total Work Days (days)
 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
 NE: Number of Equipment
 WD: Number of Total Work Days (days)
 H: Hours Worked per Day (hours)
 EF_{POL}: Emission Factor for Pollutant (lb/hour)
 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
 HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
 VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

Appendix C Air Quality Calculations

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)

VMT_{VE} : Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL} : Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

C.4 NATIONAL EMISSIONS INVENTORY

The NEI is operated under the USEPA's Emission Factor and Inventory Group, which prepares the national database of air emissions information with input from numerous state and local air agencies, tribes, and industries. The database contains information on stationary and mobile sources that emit criteria air pollutants and hazardous air pollutants (HAPs). The database includes estimates of annual emissions, by source, of air pollutants in each area of the country on a yearly basis. The NEI includes emission estimates for all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands. Emission estimates for individual point or major sources (facilities), as well as county-level estimates for area, mobile, and other sources, are currently available for year 2011 (Version 2 update released March 6, 2015) for criteria pollutants and HAPs.

Criteria air pollutants are those for which the USEPA has set health-based standards. Four of the six criteria pollutants are included in the NEI database:

- Carbon monoxide
- Nitrogen oxides
- Sulfur dioxide
- Particulate matter (with a diameter less than or equal to 10 and 2.5 microns)

The NEI also includes emissions of volatile organic compounds (VOCs), which are ozone precursors, emitted from motor vehicle fuel distribution and chemical manufacturing, as well as other solvent uses. VOCs react with nitrogen oxides in the atmosphere to form ozone. The NEI database defines three classes of criteria air pollutant sources:

- **Point sources.** Stationary sources of emissions, such as an electric power plant, that can be identified by name and location. A "major" source emits a threshold amount (or more) of at least one criteria pollutant and must be inventoried and reported. Many states also inventory and report stationary sources that emit amounts below the thresholds for each pollutant.
- **Area sources.** Small point sources such as a home or office building or a diffuse stationary source such as wildfires or agricultural tilling. These sources do not individually produce sufficient emissions to qualify as point sources. Dry cleaners are one example; for instance, a single dry cleaner within an inventory area typically will not qualify as a point source, but collectively the emissions from all of the dry cleaning facilities in the inventory area may be significant and, therefore, must be included in the inventory.

Appendix C Air Quality Calculations

- **Mobile sources.** Any kind of vehicle or equipment with a gasoline or diesel engine (such as an airplane or ship).

The following are the main sources of criteria pollutant emissions data for the NEI:

- For electric generating units—USEPA’s Emission Tracking System/Continuous Emissions Monitoring Data and Department of Energy fuel use data.
- For other large stationary sources—state data and older inventories where state data were not submitted.
- For on-road mobile sources—the Federal Highway Administration’s estimate of vehicle miles traveled and emission factors from USEPA’s MOBILE Model.
- For nonroad mobile sources—USEPA’s NONROAD Model.
- For stationary area sources—state data, USEPA-developed estimates for some sources, and older inventories where state or USEPA data were not submitted.
- State and local environmental agencies supply most of the point source data.
- USEPA’s Clean Air Market program supplies emissions data for electric power plants.

C.5 REFERENCES

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Appendix D Short-term Development Projects at Moody AFB

APPENDIX D

SHORT-TERM DEVELOPMENT PROJECTS AT MOODY AFB

Appendix D Short-term Development Projects at Moody AFB

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Appendix D Short-term Development Projects at Moody AFB

Plan Implementation

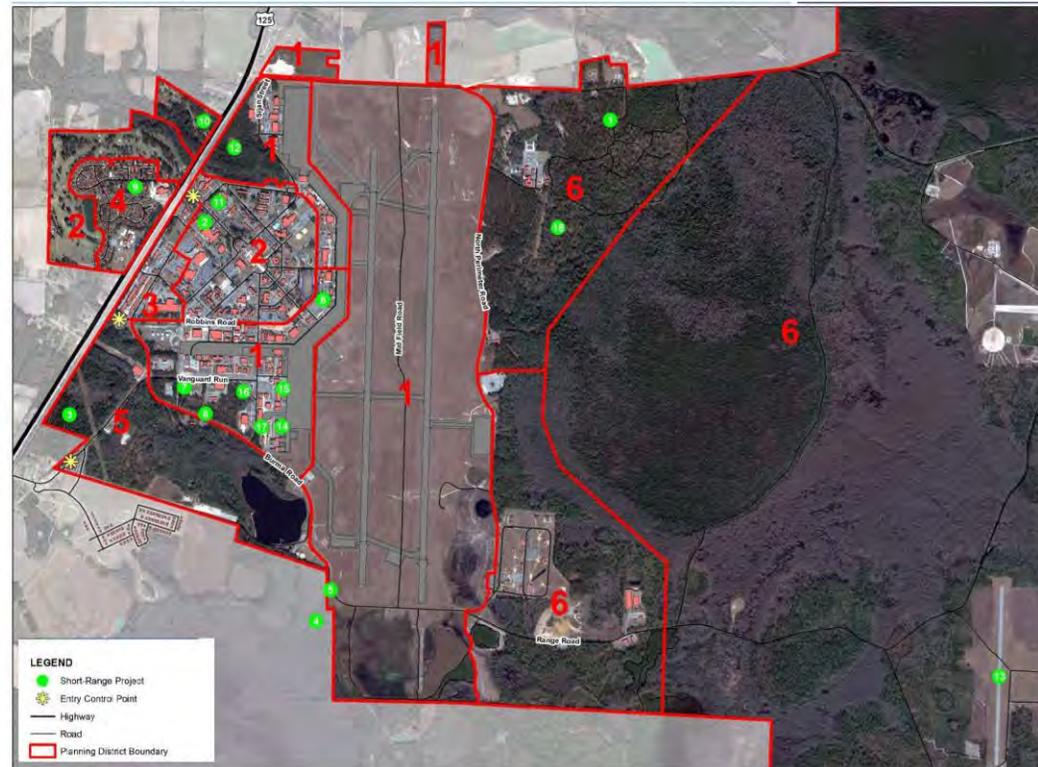
10.2 SHORT-RANGE DEVELOPMENT PLAN (1-5 YEARS)

The short-range development plan consists primarily of projects implemented by the installation that can be implemented with limited military construction or operations and maintenance dollars (Tables 10.1 through 10.7 and Figures 10.1 through 10.7). Most projects are related to space or mission optimization and privatized housing.

Table 10.1 // Short-Range Development Plan (1-5 Years)

Map ID	Description	Planning District	Alignment*
Short Range Projects			
1	Construction of Northeast Training Complex Facilities	6	G3 O3.1, G6 O6.1
2	Building 899 medical facility expansion	2	G1 O1.1, G5 O5.4
3	Construction of Air Combat Command III housing (11 officer units)	5	G1 O1.3, G1 O1.4
4	Carabetta land purchase (southwest airfield area)	N/A	G4 O4.4, G4 O4.5
5	Perimeter Road realignment at southwest airfield	1	G4 O4.4, G4 O4.5
6	Construction of new fire rescue center	1	G4 O4.6
7	New government gas station	1	G1 O1.5
8	New Security Forces Squadron headquarters facility	1	G4 O4.6
9	Relocation of the golf course driving range	4	G5 O5.4
10	Construction of paintball facility	3	G5 O5.4
11	Conversion of Building 207 to a Warrior Athlete Center of Excellence facility	2	G1 O1.1, G1 O1.3
12	Extension of N. Perimeter Road to connect to Coney Street	1	G4 O4.4, G4 O4.5
13	Airfield Improvements at Bemiss Field	6	G3 O3.1, G6 O6.1
14	Squadron operations/aircraft maintenance unit addition to Building 774	1	G2 O2.1, G3 O3.1, G6 O6.1
15	Squadron operations/aircraft maintenance unit addition to Building 775	1	G2 O2.1, G3 O3.1, G6 O6.1
16	Construction of a parking lot west of Flying Tiger Road	1	G1 O1.7
17	Construction of a two-bay hangar	1	G1 O1.3, G1 O1.4
18	Construction of Tactical Combat Casualty Care vehicle training facilities	6	G3 O3.1, G6 O6.1

Figure 10.1 MAFB Short-Range Development Plan



Appendix D Short-term Development Projects at Moody AFB

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