

***DRAFT***  
**ENVIRONMENTAL ASSESSMENT (EA)**  
**FOR**  
**SECURITY ENHANCEMENTS AT MOODY AIR FORCE BASE**



Prepared for:  
**Moody Air Force Base**

**May 2019**



### **PRIVACY ADVISORY**

This Environmental Assessment (EA) is provided for public comment in accordance with the National Environmental Policy Act, the President's Council on Environmental Quality NEPA Regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), and 32 CFR 989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

Public commenting allows the Air Force to make better, informed decisions. Letters or other written or oral comments provided may be published in the EA. As required by law, comments provided will be addressed in the EA and made available to the public. Providing personal information is voluntary. Any personal information provided will be used only to identify your desire to make a statement during the public comment portion of any public meetings or hearings or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of EA; however, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the EA.

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## COVER PAGE

### DRAFT ENVIRONMENTAL ASSESSMENT FOR SECURITY ENHANCEMENTS AT MOODY AIR FORCE BASE, GEORGIA

- a. Responsible Agency: United States Air Force (Air Force)
- b. Cooperating Agency: None
- c. Proposals and Actions: This Environmental Assessment (EA) analyzes the actions required to meet force protection recommendations for the HC-130 parking ramp at Moody AFB through acquiring a portion of the Lowndes County-owned Hightower Road, relocating Hightower Road north of the recommended force protection distance from the HC-130 parking ramp's restricted area, and realigning the Base security fence and boundary road. The Proposed Action would acquire approximately 1,800 feet of Hightower Road from Lowndes County, cede property for the newly rerouted Hightower Road to Lowndes County, and move the Moody AFB security fence a minimum of 250 feet from the HC-130 parking ramp's restricted area boundary barrier to meet the Air Force Instruction (AFI) 31-101 force protection recommendations. An overflow parking lot would also be constructed. Two alternatives and the No Action Alternative are evaluated in this EA.
- d. For Additional Information: Mr. Gregory Lee, Moody Air Force Base (AFB) Environmental Element Chief, 3485 Georgia St., Moody AFB, Georgia 31699-1707, (229) 257-5881, or by email at gregory.lee.5@us.af.mil
- e. Designation: Draft EA
- f. Abstract: This EA has been prepared pursuant to provisions of the National Environmental Policy Act, Title 42 United States Code Sections 4321 to 4347, implemented by Council on Environmental Quality Regulations, Title 40, Code of Federal Regulations (CFR) Parts 1500-1508, and 32 CFR 989, *Environmental Impact Analysis Process*. Potentially affected environmental resources were identified in coordination with local, state, and federal agencies. Specific environmental resources with the potential for environmental consequences include land use; noise; air quality; earth resources; water resources; biological resources; cultural resources; socioeconomics; environmental justice; infrastructure, transportation, and utilities; hazardous materials, Environmental Restoration Program (ERP), and toxic substances; and health and safety.

The purpose of the Proposed Action is to meet the force protection design recommendations for the HC-130 parking ramp at Moody AFB as described in AFI 31-101. A minimum distance of 250 feet between the restricted area boundary barrier and the Moody AFB boundary fence is necessary to meet the AFI 31-101 force protection design recommendations.

The Air Force owns the 24-acre parcel of land north of the Base boundary proximate to the HC-130 parking ramp's restricted area boundary barrier and north of the current alignment of Hightower Road. Therefore, the Proposed Action would allow Lowndes County to reroute Hightower Road north of the recommended force protection distance from the HC-130 parking ramp's restricted area to allow the Base security fence and associated boundary road to be realigned. The old security fence would be removed following the relocation of Hightower Road and the new security fence, as well as a new paved parking lot, would be constructed in the 24-acre parcel to provide Moody AFB with overflow parking.

The analysis of the affected environment and environmental consequences of implementing the Proposed Action concluded that by implementing standing environmental protection measures and best management practices, there would be no significant adverse impacts from the acquisition and relocation of Hightower Road and the realignment of the Base security fence and boundary road under either Alternative 1 or 2 on the following resources: land use; noise; air quality; earth resources; water resources; biological resources; cultural resources; socioeconomics; environmental justice; infrastructure, transportation, and utilities; hazardous materials, ERP, and toxic substances; or health and safety. Moody AFB is an active installation with new construction and demolition actions under way and future development actions in the planning phase. Impacts to air quality, soils, noise, and socioeconomics associated with construction would be minor and short in duration; therefore, significant cumulative impacts are not anticipated from activities associated with the Proposed Action when considered with past, present, or reasonably foreseeable future actions.

## **DRAFT FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

### **SECURITY ENHANCEMENTS AT MOODY AIR FORCE BASE, GEORGIA**

Pursuant to provisions of the National Environmental Policy Act (NEPA), 42 United States Code § 4321 to 4370h; Council on Environmental Quality (CEQ) Regulations, 40 Code of Federal Regulations (CFR) Parts 1500-1508; and 32 CFR 989, *Environmental Impact Analysis Process*, the United States Air Force (Air Force) prepared the attached Draft Environmental Assessment (EA) to address the potential environmental consequences associated with the acquisition and relocation of a portion of Hightower Road to allow for the realignment of the Base security fence and boundary road to meet the recommended force protection distances for the HC-130 parking ramp as described by Air Force Instruction (AFI) 31-101.

#### **Purpose and Need**

The purpose of the Proposed Action is to meet the force protection design recommendations for the HC-130 parking ramp at Moody Air Force Base (AFB) as described in AFI 31-101. A minimum distance of 250 feet between the restricted area boundary barrier and the Moody AFB boundary fence is necessary to meet the AFI 31-101 force protection design recommendations.

The Proposed Action is needed because the current HC-130 parking ramp does not meet the Air Force's recommended force protection distance between the restricted area boundary barrier and the Base boundary fence. This requires the acceptance of avoidable risk by Moody AFB.

#### **Description of Proposed Action and Alternatives**

The Proposed Action would increase the distance between the HC-130 parking ramp's restricted area boundary barrier and the Base boundary to meet the recommended force protection distances as described by AFI 31-101. Currently the distance between the HC-130 parking ramp's restricted area boundary barrier and the Base boundary is approximately 120 feet. To meet the AFI 31-101 force protection recommendations, the minimum distance between the restricted area boundary barrier and the Base boundary would need to be 250 feet. The alignment of the Lowndes County-owned Hightower Road is currently within the footprint of this minimum recommended force protection distance. Therefore, any relocation of the Base boundary security fence north of its current alignment would require the relocation of approximately 1,800 feet of Hightower Road. The Air Force owns the 24-acre parcel of land north of the Base boundary proximate to the HC-130 parking ramp's restricted area boundary barrier and north of the current alignment of Hightower Road. Therefore, the Proposed Action would allow Lowndes County to reroute Hightower Road north of this recommended force protection distance. The Air Force would acquire approximately 1,800 feet of the current Hightower Road property north of the Base boundary from Lowndes County, cede property for the newly rerouted Hightower Road to Lowndes County, and move the Moody AFB boundary security fence a minimum of 250 feet from the HC-130 parking ramp's restricted area boundary barrier. A boundary road would be constructed parallel to the Base boundary fence alignment on the interior of the new Base perimeter. In addition to the relocation of Hightower Road and the Moody AFB boundary, a new paved parking lot would be constructed within the 24-acre parcel to provide Moody AFB with overflow parking.

In addition to the No Action Alternative, two alternatives for the implementation of the proposed acquisition and relocation of Hightower Road were identified for evaluation in the EA. These alternatives are described below and represent options for meeting the force protection design recommendations for the HC-130 parking ramp as described in AFI 31-101.

## **Alternative 1**

Under Alternative 1, the Air Force would request Lowndes County to reroute Hightower Road from its current alignment between Barretts Road and Yate Lane to a new alignment along the north side of the Air Force-owned 24-acre property north of the HC-130 parking ramp. The Moody AFB boundary fence would be realigned to parallel the south side of the rerouted Hightower Road, and a new 24-foot-wide boundary road would be constructed on the interior of the boundary fence. The Air Force would acquire ownership of the land that composes Hightower Road between Barretts Road and Yate Lane from Lowndes County and cede ownership of the land under the rerouted Hightower Road alignment to Lowndes County. A new overflow parking lot would be constructed, paved, and properly painted to allow the parking of up to 500 vehicles. The existing Moody AFB boundary fence would be removed between Barretts Road and Yate Lane after the new Base boundary fence is constructed.

## **Alternative 2**

Alternative 2 would be similar to Alternative 1, except the Air Force would request Lowndes County to reroute Hightower Road from its current alignment between Barretts Road and Yate Lane to a new alignment within the Air Force-owned 24-acre property that is parallel to the existing Hightower Road alignment and at least the minimum 250 feet north of the HC-130 parking ramp required to meet force protection requirements. The Moody AFB security fence and 24-foot-wide boundary road would be realigned to follow the edge of the right-of-way of the rerouted Hightower Road. The Air Force would acquire ownership of the Hightower Road land, cede ownership of the land under the rerouted Hightower Road alignment to Lowndes County, construct a new overflow parking lot and remove the existing Moody AFB boundary fence as described under Alternative 1.

## **No Action Alternative**

No action means that an action would not take place, and the resulting environmental effects from taking no action would be compared with the effects of allowing the proposed activity to go forward. No action for this EA reflects the status quo, where Hightower Road would not be relocated, the Base security fence and boundary road would not be realigned, and the AFI 31-101 recommended force protection security distances for the HC-130 parking ramp would not be met.

## **Summary of Findings**

Potentially affected environmental resources were identified through communications with state and federal agencies and review of past environmental documentation. Specific environmental resources with the potential for environmental consequences include land use; noise; air quality; earth resources; water resources; biological resources; cultural resources; socioeconomics; environmental justice; infrastructure, transportation, and utilities; hazardous materials, Environmental Restoration Program (ERP), toxic substances; and health and safety.

There would be land use changes as Air Force-owned land would be ceded to Lowndes County for the relocation of Hightower Road and land currently owned by Lowndes County in the current Hightower Road alignment would be acquired by the Air Force. No impacts on land use would occur from the realignment of the Base boundary fence, boundary road, and construction of an overflow parking lot under Alternative 1 or 2.

Under Alternative 1, there would be minor direct temporary impacts from increased noise during construction activities. Minor permanent adverse impacts from noise on the 22 residences located within 50 to 100 feet north and west of the relocated Hightower Road would occur as a result of approximately 144 vehicles per day traveling on the relocated Hightower Road, which



would be located closer to these residential homes following relocation. No impacts from noise from the periodic use of the overflow parking lot are anticipated. Under Alternative 2, there would also be minor direct temporary impacts from increased noise during construction activities. However, no long-term noise impacts from vehicle travel on the relocated Hightower Road or the periodic use of the overflow parking lot are anticipated.

Increased short-term air emissions resulting from the construction activities would not be considered significant under Alternative 1 or 2. National Ambient Air Quality Standards thresholds would not be exceeded for any pollutant; therefore, no long-term impacts on air quality would occur. General conformity requirements do not apply to other pollutants, as the area is in attainment areas for those pollutants.

Impacts on topography and geology would be negligible. Short-term minor adverse impacts on soils would occur from construction activities and long-term minor adverse impacts on soils would occur under Alternative 1 or 2 from increased runoff from impervious surfaces.

Construction activities would cause a minor short-term increase in soil erosion and decrease in stormwater quality during construction. No long-term impacts on surface water or groundwater resources, wetlands, or floodplains would occur under Alternative 1 or 2.

Under Alternative 1, there would be minor permanent adverse impacts on vegetation with the loss of 6.2 acres of maintained grassland. Under Alternative 2, there would be minor permanent impacts on vegetation with the loss of 5.2 acres of maintained grassland. No significant impacts on wildlife, or threatened and endangered species would occur under Alternative 1 or 2.

There would be no effects on cultural resources listed or eligible for inclusion in the National Register of Historic Places. Neither Alternative 1 nor Alternative 2 would affect historic resources; therefore, no impacts are expected.

Short-term minor beneficial impacts from increased payroll tax revenue and the purchase of goods and materials during construction are anticipated under Alternative 1 or 2. No long-term impacts on socioeconomics would occur under either alternative. Therefore, no adverse impacts on income and employment, housing, or educational resources would occur.

No disproportionate impacts on minority populations or low-income communities surrounding Moody AFB are expected. The increase in noise impacts near some residential homes under Alternative 1 would result in a moderate impact; however, while there would be a minor long-term adverse noise impact to nearby residences, those impacts would not be disproportionate. No long-term noise impacts would occur to any nearby residences under Alternative 2, and no disproportionate impacts to minority or low-income populations or children are anticipated.

A minor beneficial impact on infrastructure would occur by meeting the HC-130 parking ramp recommended force protection distance. A minor indirect beneficial impact on the local community's infrastructure would occur under Alternative 1 or 2 through the paving of the relocated Hightower Road.

The construction of the relocated Hightower Road, Base boundary fence, boundary road, and overflow parking lot would only use small amounts of hazardous materials during construction activities and these would be handled and disposed of in accordance with Air Force, other federal, state, and local regulations. Therefore, no adverse impacts on hazardous materials and wastes, ERP, or toxic substances sites would occur under Alternative 1 or 2.

There would be a moderate beneficial impact on safety by meeting the force protection distance recommendations for the HC-130 parking ramp. There would be no adverse health and safety impacts under Alternative 1 or 2.

## Cumulative Impacts

The EA considered cumulative impacts that could result from the incremental impact of the proposed project when added to other past, present, or reasonably foreseeable future actions. No potentially significant cumulative impacts were identified for Moody AFB or Lowndes County, Georgia.

## Mitigation

The EA analysis concluded that the Proposed Action or its alternatives would not result in significant environmental impacts; therefore, no mitigation measures are required. Best management practices are described, and environmental commitments are recommended where applicable.

## Conclusion

***Finding of No Significant Impact.*** After review of the EA prepared in accordance with the requirements of NEPA; CEQ regulations; and 32 CFR 989, *Environmental Impact Analysis Process*, which is hereby incorporated by reference, I have determined that the proposed acquisition and relocation of a portion of Hightower Road, realignment of the Base security fence and boundary road, and the construction of an overflow parking lot at Moody AFB, Georgia, would not have a significant impact on the quality of the human or natural environment. Accordingly, an Environmental Impact Statement will not be prepared. This decision has been made after considering all submitted information, including a review of public and agency comments submitted during the 30-day public comment period, and considering a full range of practical alternatives that meet project requirements and are within the legal authority of the United States Air Force.

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DANIEL P. WALLS, Col, USAF  
Commander, 23d Wing

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DATE

Draft Environmental Assessment for  
*Security Enhancements at Moody Air Force Base*

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**GLOSSARY OF ABBREVIATIONS AND ACRONYMS**

23 WG	23d Wing
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
ACAM	Air Conformity Applicability Model
AFB	Air Force Base
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
Air Force	United States Air Force
APE	Area of Potential Effect
AST	aboveground storage tank
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
CEIE	Civil Engineer Squadron, Installation Management Flight, Environmental Management Element
CEQ	Council on Environmental Quality
CES	Civil Engineer Squadron
CFR	Code of Federal Regulations
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2e</sub>	carbon dioxide equivalent
dB	decibel
dBA	A-weighted decibel
DNL	day-night average
DoB	Dolthan loamy sand
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESOHC	Environmental Safety and Occupational Health Council
FC	federal candidate
FONSI	Finding of No Significant Impact
FT	federally threatened
FTSA	federally threatened due to similarity of appearance
GHG	greenhouse gases
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
$\text{mg}/\text{m}^3$	milligrams per cubic meter
N/A	not applicable
NAAQS	National Ambient Air Quality Standards

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NEPA	National Environmental Policy Act
NH <sub>3</sub>	ammonia
NHPA	National Historic Preservation Act
NIPRNet	nonclassified internet protocol router network
NOA	Notice of Availability
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
O <sub>3</sub>	ozone
PCB	polychlorinated biphenyl
Pb	lead
pCi/L	picocuries per liter
ppm	part(s) per million
PM <sub>2.5</sub>	particulate matter, less than 2.5 microns in diameter
PM <sub>10</sub>	particulate matter, less than 10 microns in diameter
PSD	Prevention of Significant Deterioration
PVC	polyvinyl chloride
ROI	Region of Influence
SE	state endangered
SHPO	State Historic Preservation Office
SIPRNET	secret internet protocol router network
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
SR	state rare
ST	state threatened
SWPPP	Stormwater Pollution Prevention Plan
TfA	Tifton loamy sand
US	United States
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound
VoIP	voice over internet protocol
VoSIP	voice over secure internet protocol

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## **1.0 PURPOSE OF AND NEED FOR ACTION**

### **1.1 INTRODUCTION**

The 23d Wing (23 WG) at Moody Air Force Base (AFB), Georgia, has determined that the recommended force protection distance for the HC-130 parking ramp is not provided by the existing Base boundary fence. The current mission of the 23 WG at Moody AFB is to organize, train, and equip the Flying Tigers to employ and execute the Global Precision Attack, Personnel Recovery, and Agile Combat Support service core functions to meet worldwide Combatant Commander requirements. The 23 WG organizes, trains, and employs combat-ready A-10C, HC-130J, HH-60W, and Guardian Angel Weapons System and consists of approximately 5,500 military and civilian personnel, including a geographically separated unit in Florida. The 23 WG comprises the following five Groups located at Moody AFB, Georgia:

- The 347th Rescue Group directs flying and maintenance of one of two active-duty Groups in the US Air Force (Air Force) dedicated to Personnel Recovery (Combat Search and Rescue).
- The 23d Fighter Group directs the flying operations for the Air Force's largest A-10C fighter Group, consisting of two combat-ready A-10 Thunderbolt II attack aircraft flying squadrons and an operations support squadron.
- The 23d Mission Support Group trains, equips, and deploys personnel support forces to build, protect, and sustain air bases worldwide for combat air operations.
- The 23d Medical Group provides outpatient medical, dental, occupational, environmental, and preventive healthcare services in support of installation personnel.
- The 23d Maintenance Group is responsible for the operation and quality of organization and intermediate-level maintenance and repair supporting combat-ready HC-130Js, HH-60Gs, and A-10Cs. The Group oversees the 23 WG's maintenance training program and ensures the workforce qualifications and capability for worldwide development of personnel and cargo.

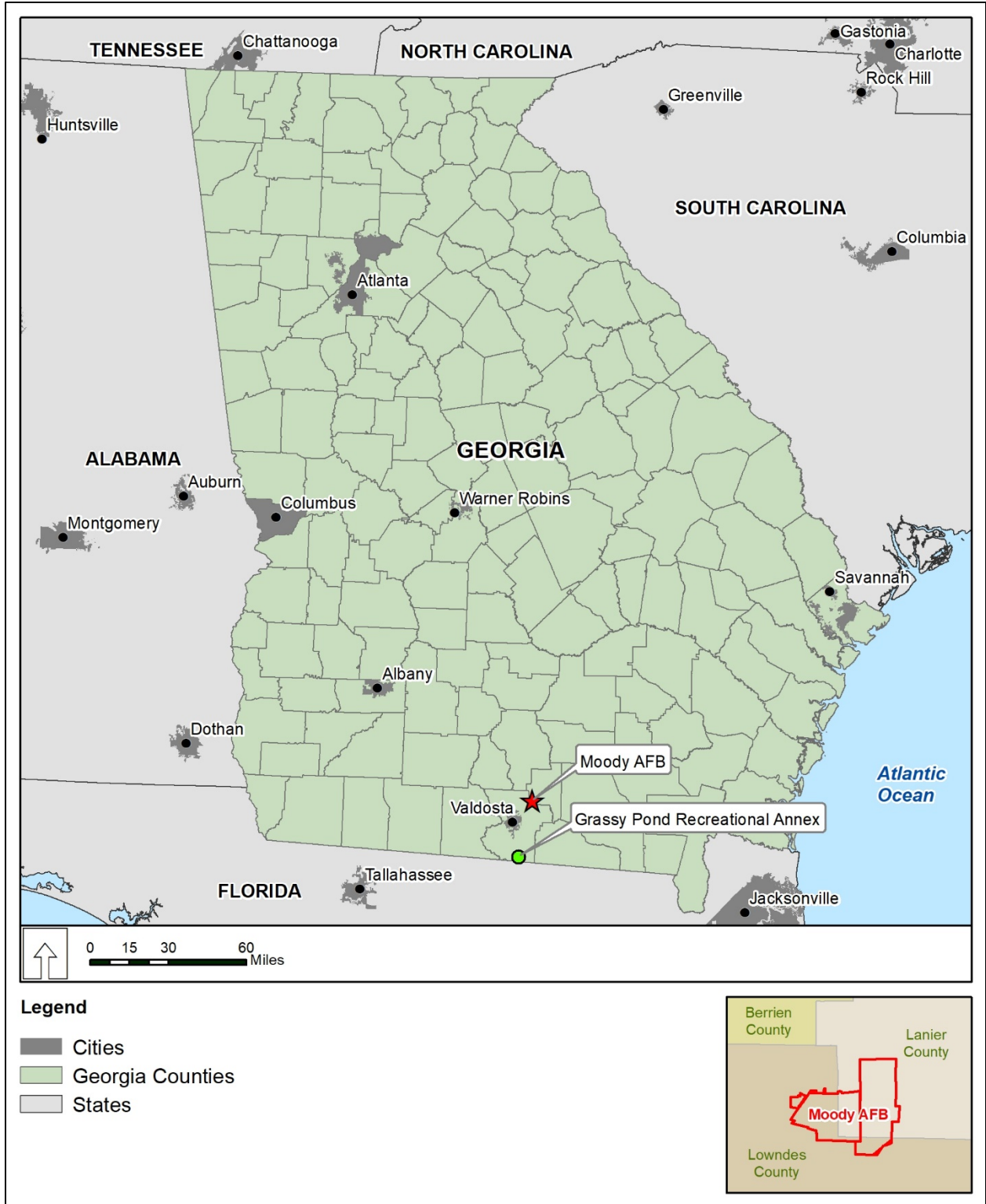
Moody AFB is in Lowndes and Lanier counties, approximately 10 miles northeast of the city of Valdosta, Georgia. Moody AFB includes the main Base (5,518 acres), the adjacent Grand Bay Range (5,874 acres), and the Grassy Pond Recreational Annex (489 acres), which is located 25 miles southwest of the main Base (Figure 1-1).

The Moody AFB HC-130 parking ramp is on the northwest side of Moody AFB. Further, Moody AFB owns a 24-acre property north of the HC-130 parking ramp and outside of the Moody AFB boundary fence (Figure 1-2). This Air Force-owned property is bisected by Lowndes County-owned Hightower Road, which is adjacent to the Moody AFB boundary fence. The HC-130 parking ramp has a restricted area boundary barrier, which delineates the restricted aircraft parking area. The Moody AFB boundary is delineated by a security fence and is clearly signed as a highly restricted area to prohibit public access. The current HC-130 parking ramp's restricted area boundary barrier is proximate to the Base boundary and does not meet the recommended force protection distances as described in Air Force Instruction (AFI) 31-101.

### **1.2 PURPOSE OF THE ACTION**

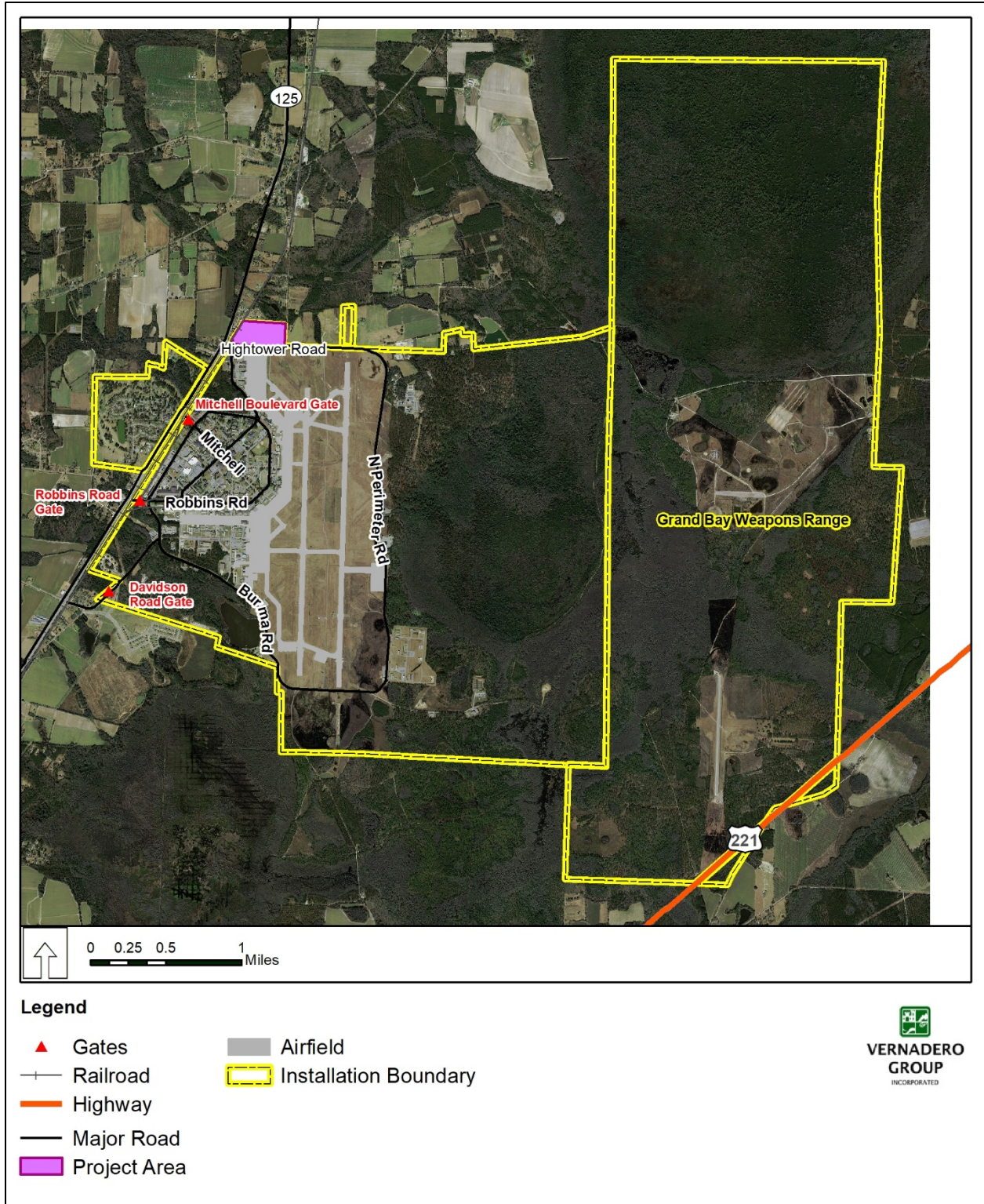
The purpose of the Proposed Action is to meet the force protection design recommendations for the HC-130 parking ramp at Moody AFB as described in AFI 31-101. A minimum distance of 250 feet between the restricted area boundary barrier and the Moody AFB boundary fence is necessary to meet the AFI 31-101 force protection design recommendations.

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**Figure 1-1. Location of Moody Air Force Base**

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**Figure 1-2. Location of the Security Enhancements at Moody Air Force Base Project Area**

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### **1.3 NEED FOR THE ACTION**

The Proposed Action is needed because the current HC-130 parking ramp does not meet the Air Force's recommended force protection distance between the restricted area boundary barrier and the Base boundary fence. This requires the acceptance of avoidable risk by Moody AFB.

### **1.4 SCOPE OF THE ENVIRONMENTAL ANALYSIS**

This Environmental Assessment (EA) analyzes the potential environmental consequences associated with providing the recommended force protection distances for the HC-130 parking ramp's restricted area boundary barrier as described in AFI 31-101.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321-4347), the Council on Environmental Quality (CEQ) Regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), and 32 CFR 989, et seq., *Environmental Impact Analysis Process*. NEPA is the basic national requirement for identifying environmental consequences of federal decisions. NEPA ensures that environmental information is available to the public, agencies, and the decision maker before decisions are made and before actions are taken.

Consistent with the CEQ regulations, the EA is organized into the following sections:

Chapter 1, Purpose and Need for the Action, includes an introduction, background description, location, purpose and need statement, scope of environmental analysis, decision to be made, interagency and intergovernmental coordination and consultations, applicable laws and environmental regulations, and a description of public and agency review of the EA.

Chapter 2, Description of the Proposed Action and Alternatives, includes a description of the Proposed Action, alternative selection standards, screening of implementation alternatives, alternatives eliminated from further consideration, a description of the selected alternatives, summary of potential environmental consequences, and mitigation and environmental commitments.

Chapter 3, Affected Environment, includes a description of the natural and human-made environments within and surrounding Moody AFB and Hightower Road that may be affected by the Proposed Action and alternatives.

Chapter 4, Environmental Consequences, includes definitions and discussions of direct and indirect impacts and environmental commitments.

Chapter 5, Cumulative Effects, considers the potential cumulative impacts on the environment that may result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions.

Chapter 6, List of Preparers, provides a list of the preparers of this EA.

Chapter 7, References, contains references for studies, data, and other resources used in the preparation of this EA.

Appendices, as required, provide relevant correspondence, studies, modeling results, and public review information.

NEPA, which is implemented through the CEQ regulations, requires federal agencies to consider alternatives to the Proposed Action and to analyze potential impacts of alternative actions. The potential impacts of the Proposed Action and its alternatives that are described in this document will be assessed in accordance with the Air Force's Environmental Impact Analysis Process (EIAP; 32 CFR 989), which requires that impacts to resources be analyzed in

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terms of their context, duration, and intensity. To help the public and decision makers understand the implications of impacts, they will be described in the short and long term, cumulatively, and within context. The expected geographic scope of any potential consequences is identified as the Region of Influence (ROI). The Moody AFB HC-130 parking ramp, the Air Force-owned 24-acre parcel north of the parking ramp, Hightower Road, and its environs are considered in determining the ROI for each resource. The following environmental resources are analyzed in this EA:

- Noise
- Safety
- Air Quality
- Biological Resources
- Water Resources
- Soils
- Land Use
- Socioeconomics
- Environmental Justice and Protection of Children
- Cultural Resources
- Hazardous Materials and Wastes, Toxic Substances, and Contaminated Sites
- Infrastructure, Transportation, and Utilities

## **1.5 DECISION TO BE MADE**

This EA evaluates the potential environmental consequences of implementing the Proposed Action to increase the distance between the HC-130 parking ramp's restricted area boundary barrier and the Base boundary to meet the recommended force protection distances. Based on the analysis in this EA, Moody AFB will make one of three decisions regarding the Proposed Action: 1) choose the alternative action that best meets the purpose of and need for this project and sign a Finding of No Significant Impact (FONSI), allowing implementation of the selected alternative; 2) initiate preparation of an Environmental Impact Statement (EIS) if it is determined that significant impacts would occur through implementation of the action alternatives; or 3) select the No Action Alternative, whereby the Proposed Action would not be implemented. As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed project and be available to inform decision makers of the potential environmental impacts.

## **1.6 INTERAGENCY/INTERGOVERNMENTAL COORDINATION AND CONSULTATIONS**

### **1.6.1 Interagency Coordination and Consultation**

The environmental analysis process, in compliance with NEPA guidance, includes public and agency review of information pertinent to the Proposed Action. Scoping is an early and open process for developing the breadth of issues to be addressed in an EA and for identifying significant concerns related to an action. Per the requirements of the Intergovernmental Cooperation Act of 1968 (42 USC § 4231[a]) and Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, federal, state, and local agencies with jurisdiction that could potentially be affected by the Proposed Action were notified during the development of this EA. Those Interagency and Intergovernmental Coordination for Environmental Planning letters and responses are included in **Appendix A**.

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### **1.6.2 Government-to-Government Consultation**

EO 13175, *Consultation and Coordination with Indian Tribal Governments*, 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 EO 13175, Department of Defense Instruction 4710.02, *Department of Defense Interactions with Federally Recognized Tribes*, and AFI 90-2002, *Air Force Interaction with Federally-Recognized Tribes*, federally recognized tribes that are historically affiliated with lands in the vicinity of the Proposed Action have been invited to consult on all proposed undertakings that have the potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation or the interagency coordination process, and it requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of other consultations. The Installation Commander is the point of contact for consultation with Native American tribes. However, the Installation Tribal Liaison Officer has been delegated authority to conduct consultation with Native American tribes on behalf of the Installation Commander. Government-to-government consultation documentation is included in **Appendix A**.

### **1.6.3 Other Agency Consultations**

Per the requirements of Section 7 of the Endangered Species Act, and implementing regulations (50 CFR 402), findings of effect and requests for concurrence will be submitted to the US Fish and Wildlife Service (USFWS). Compliance with Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations (36 CFR 800) will be accomplished through coordination with the Georgia State Historic Preservation Officer. Agency correspondence is included in **Appendix A**.

## **1.7 APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS**

Implementation of the Proposed Action would involve coordination with several organizations and agencies. Adherence to the requirements of specific laws, regulations, best management practices (BMPs), and necessary permits are described in detail in each resource section in **Chapter 3**.

### **1.7.1 National Environmental Policy Act**

NEPA requires that federal agencies consider the potential environmental consequences of proposed actions. The law's intent is to protect, restore, or enhance the environment through well-informed federal decisions. The CEQ was established under NEPA for the purpose of implementing and overseeing federal policies as they relate to this process. In 1978, the CEQ issued *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (CEQ 1978). These regulations specify that an EA be prepared to accomplish the following:

- Briefly provide sufficient analysis and evidence for determining whether to prepare an EIS or a FONSI.
- Aid in an agency's compliance with NEPA when no EIS is necessary.
- Facilitate preparation of an EIS when one is necessary.

Further, to comply with other relevant environmental requirements (e.g., the Endangered Species Act and NHPA) in addition to NEPA and to assess potential environmental impacts, the EIAP and decision-making process for the Proposed Action involves a thorough examination of environmental issues potentially affected by the Proposed Action.



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**1.7.2 The Environmental Impact Analysis Process**

The EIAP is the process by which the Air Force facilitates compliance with environmental regulations (32 CFR 989, *Environmental Impact Analysis Process*), including NEPA, which is the primary legislation affecting the agency's decision-making process.

**1.8 PUBLIC AND AGENCY REVIEW OF ENVIRONMENTAL ASSESSMENT**

A Notice of Availability (NOA) of the Draft EA and FONSI was published in *The Valdosta Daily Times* on 25 May 2019 and *The Lanier County News* on 24 May 2019 announcing the availability of the EA through 25 June 2019 for review. The NOA invited the public to review and comment on the Draft EA. The public and agency comments are provided in **Appendix B**.

Copies of the Draft EA and FONSI were also made available for review at the following locations:

- South Georgia Regional Library, 2906 Julia Drive, Valdosta, Georgia 31602
- Lanier County Library, 124 South Valdosta Road, Lakeland, Georgia 31635

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FORMAT PAGE

## **2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

### **2.1 PROPOSED ACTION**

The Proposed Action is to increase the distance between the HC-130 parking ramp's restricted area boundary barrier and the Base boundary to meet the recommended force protection distances as described by AFI 31-101. Currently the distance between the HC-130 parking ramp's restricted area boundary barrier and the Base boundary is approximately 120 feet (Figure 2-1). To meet the AFI 31-101 force protection recommendations, the minimum distance between the restricted area boundary barrier and the Base boundary would need to be 250 feet.

The alignment of the Lowndes County-owned Hightower Road is currently within the footprint of the minimum recommended force protection distance between the HC-130 parking ramp's restricted area boundary barrier and the Base boundary. Therefore, any relocation of the Base boundary security fence north of its current alignment would require the relocation of approximately 1,800 feet of Hightower Road. The Air Force owns the 24-acre parcel of land north of the Base boundary proximate to the HC-130 parking ramp's restricted area boundary barrier and north of the current alignment of Hightower Road (Figure 2-1). Therefore, the Proposed Action would require Lowndes County to reroute Hightower Road north of the recommended force protection distance from the HC-130 parking ramp's restricted area to allow the Base security fence to be realigned. Under the Proposed Action, the Air Force would acquire approximately 1,800 feet of the current Hightower Road property north of the Base boundary from Lowndes County, cede property for the newly rerouted Hightower Road to Lowndes County, and move the Moody AFB boundary security fence a minimum of 250 feet from the HC-130 parking ramp's restricted area boundary barrier. A boundary road would be constructed parallel to the Base boundary fence alignment on the interior of the new Base perimeter.

Hightower Road is a two-lane dirt road that connects the intersection of Northeast Cooper Road and Shiner Pond Road to Bemiss Road. A portion of Hightower Road is oriented east-west where it parallels the northwestern Moody AFB boundary (Photograph 2-1). The portion of Hightower Road between its intersections with Barretts Road and Yate Lane would require relocation under the Proposed Action.

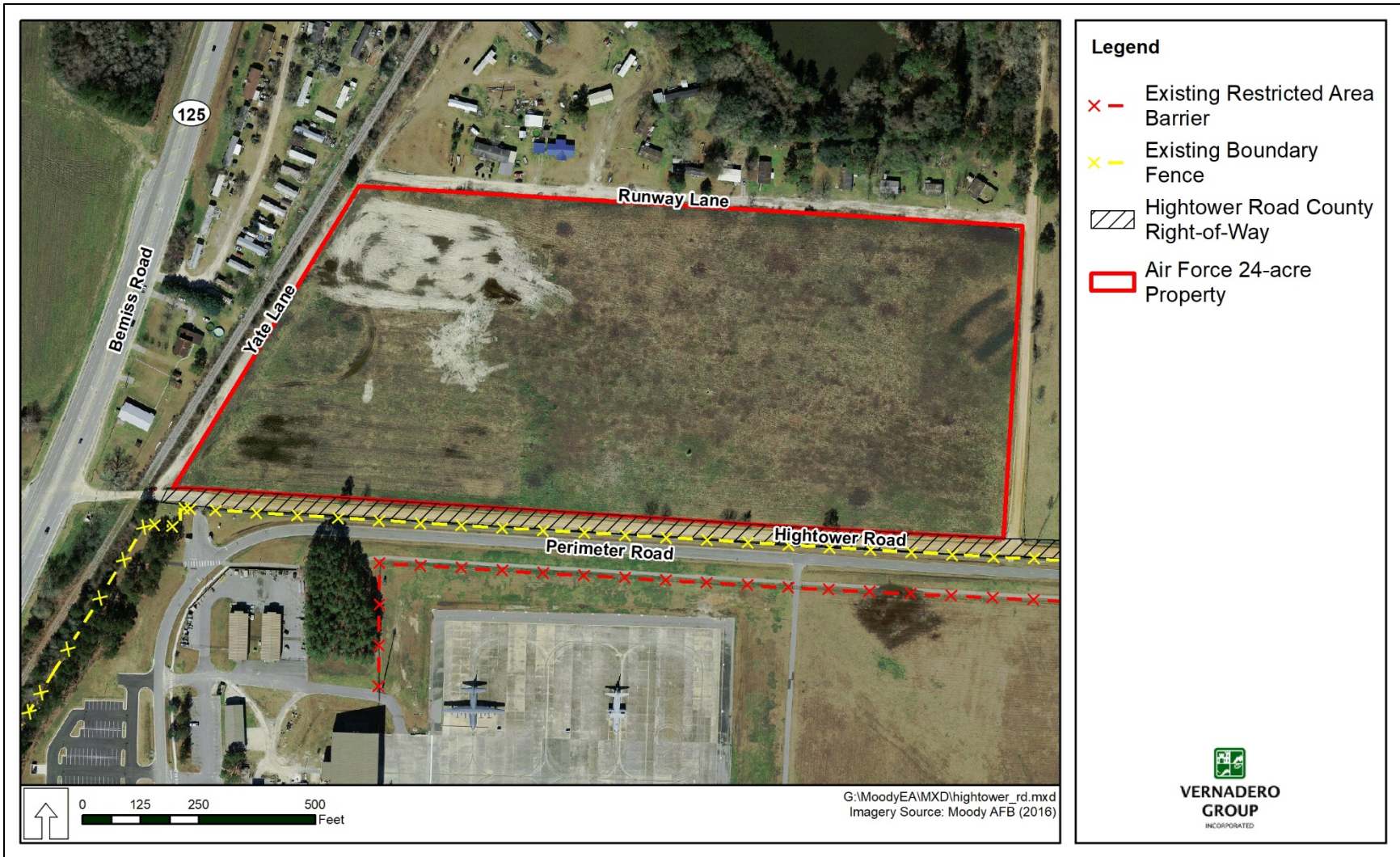


*Photograph 2-1. Hightower Road from West to East with the Moody Air Force Base Boundary Fence Located to the South*

Under the Proposed Action, with the relocation of approximately 1,800 feet of Hightower Road, the Base boundary would be moved northward between Barretts Road and Yate Lane and a new security fence would be installed. The old security fence would be removed, and the portion of the old Hightower Road that would be behind the newly realigned security fence would be abandoned. In addition to the relocation of Hightower Road and the Moody AFB boundary, a new paved parking lot would be constructed in the 24-acre parcel to provide Moody AFB with overflow parking.

The paving of Hightower Road and Barretts Road is planned by Lowndes County and funded by the Georgia Transportation Improvement Act. Therefore, Lowndes County anticipates that the relocated Hightower Road would be a two-lane paved road within a 60-foot right-of-way (Fletcher 2019). Open drainage ditches would be constructed within the right-of-way parallel to Hightower Road to manage stormwater flow.

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**Figure 2-1. Security Enhancements at Moody Air Force Base Project Area**

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Acquisition of the Hightower Road land from Lowndes County and ceding of Air Force land to Lowndes County is expected to occur in June 2020. Construction of the relocated Hightower Road, boundary fence, boundary road, and parking area would begin soon after the completion of the land swap.

Prior to construction, a construction laydown area and haul route would be established and coordinated between Lowndes County and Base Civil Engineering. Appropriate erosion and sediment controls would be implemented and maintained in effective operating conditions prior to and throughout all construction activities.

The new Hightower Road and parking area would be graded, and sediment and erosion controls would be installed. Standard construction practices would be employed (e.g., installation of a silt fence, storm drain protection, temporary sediment traps). Fugitive dust would be controlled by the use of standard construction practices. In all cases where construction disturbs the existing vegetation or ground surface, the contractor would revegetate the areas or restore the surface as directed by the Base and Lowndes County. All development activities would be performed in accordance with current antiterrorism/force protection guidelines.

## **2.2 SELECTION STANDARDS**

Selection standards were developed to determine alternatives for meeting the project's purpose and need. Therefore, the Proposed Action must achieve the following:

1. Ensure that the HC-130 restricted area barrier meets the AFI 31-101 recommended distance from the Moody AFB boundary.
2. Maximize the use of existing infrastructure and facilities.
3. Minimize adverse impacts on Moody AFB and Lowndes County operations and maintenance functions.
4. Be compatible with the Moody AFB Installation Development Plan (Moody AFB 2018) and minimize constraints on the flexibility of future development.

These selection standards were used to evaluate a set of preliminary alternatives and were carried forward for further detailed analysis in the EA. Of the alternatives evaluated, two met the project's purpose and need as well as these selection standards: 1) request Lowndes County to reroute Hightower Road around the 24-acre Air Force-owned property north of the HC-130 parking ramp and 2) request Lowndes County to reroute Hightower Road to the north the minimum distance (i.e., 250 feet) to meet the force protection requirements. Although the No Action Alternative will be analyzed, under the No Action Alternative the restricted area barrier would be left in place and Hightower Road and the Moody AFB boundary fence would not be relocated; therefore, the purpose and need would not be met.

## **2.3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION**

Four alternatives were considered but eliminated from further consideration because they did not meet the selection standards:

1. An alternative was considered that would move the HC-130 restricted area barrier farther into the interior of Moody AFB and away from the Moody AFB boundary to meet the minimum recommended force protection distances. However, this alternative was eliminated because the northernmost HC-130 parking spaces would no longer be usable. Therefore, this alternative did not meet selection standards 2 and 3.
2. An alternative was considered that would request Lowndes County to close 1,800 feet of Hightower Road north of the HC-130 parking ramp, allowing Moody AFB to relocate the Base boundary to meet the minimum recommended force protection distances. This

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alternative was eliminated from further consideration because a previous EA determined closing Hightower Road could potentially have significant impacts on residents on the east side of Hightower Road and on the southern section of Cooper Road.

3. Moving the HC-130 parking area to another location on Moody AFB was considered as an alternative. However, this alternative was eliminated from further consideration because it would not meet selection standards 2 and 3.
4. An alternative that evaluated the use of other enhancements such as visibility barriers to improve security at the HC-130 ramp was considered. However, this alternative was eliminated from further consideration as it does not meet the purpose and need for the Proposed Action to meet the recommended distances between the HC-130 restricted area barrier and the Moody AFB boundary, and it does not meet selection standard 1.

## **2.4 DETAILED DESCRIPTION OF THE ALTERNATIVES**

NEPA and the CEQ regulations mandate the consideration of reasonable implementation alternatives to meet the Proposed Action. “Reasonable alternatives” are those that also could be utilized to meet the purpose of and need for the 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 the Proposed Action.

Two alternatives are considered in this EA:

- Alternative 1. Request Lowndes County to reroute Hightower Road around the 24-acre Air Force-owned property to the north.
- Alternative 2. Request Lowndes County to relocate Hightower Road to the north the minimum distance to meet force protection recommendations.

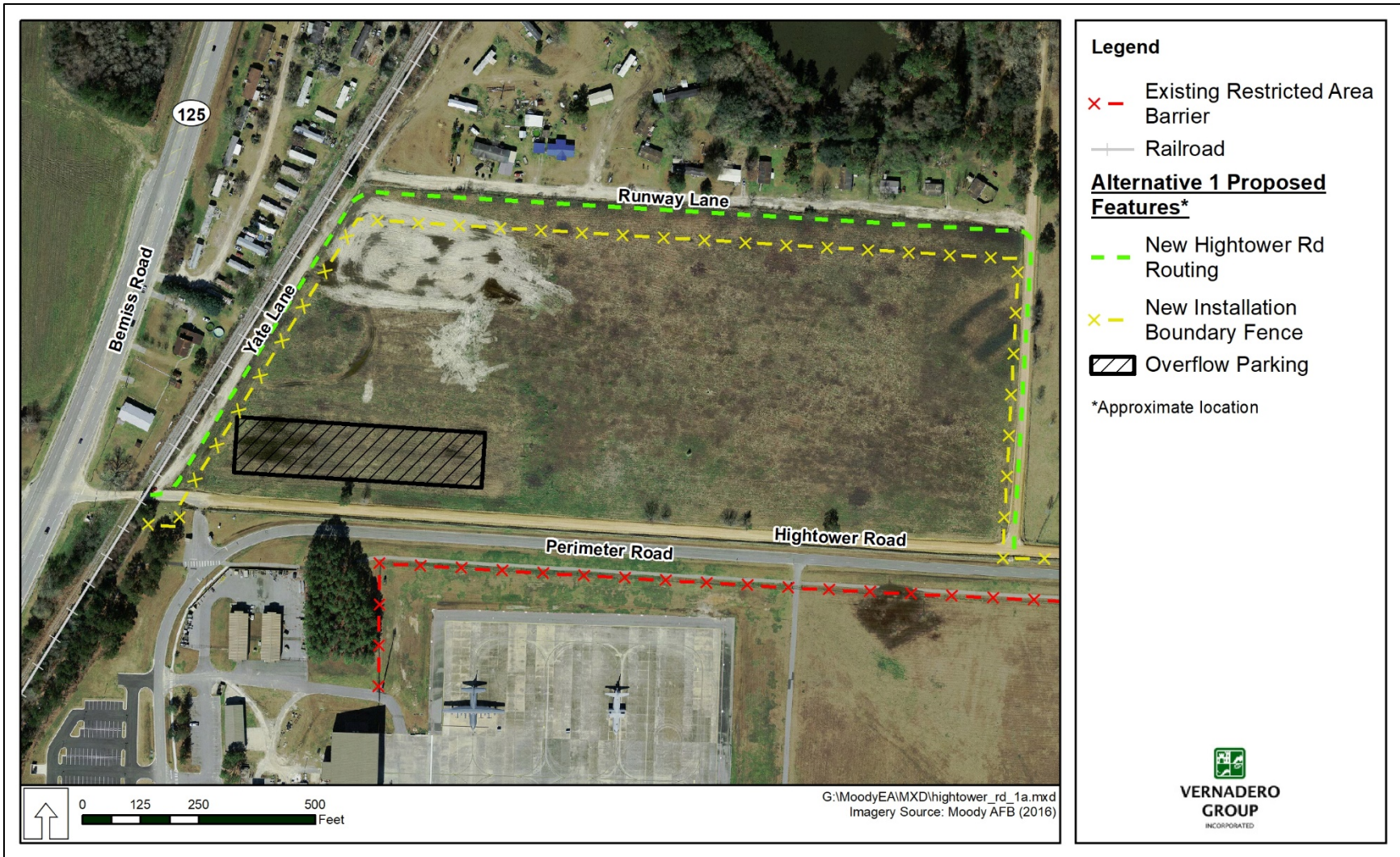
Alternatives 1 and 2 were found to meet the purpose of and need for the action and to satisfy the criteria set forth in the selection standards. A detailed description of each alternative is provided below. The No Action Alternative is described in Section 2.4.3.

### **2.4.1 Alternative 1: Reroute Hightower Road around the Air Force-Owned Property**

Under Alternative 1 (Figure 2-2), the Air Force would request Lowndes County to reroute Hightower Road from its current alignment between Barretts Road and Yate Lane to a new alignment along the north side of the Air Force-owned 24-acre property north of the HC-130 parking ramp. The Moody AFB boundary fence would be realigned to parallel the south side of the rerouted Hightower Road, and a new 24-foot-wide boundary road would be constructed on the interior of the boundary fence. The Air Force would acquire ownership of the land that composes Hightower Road between Barretts Road and Yate Lane from Lowndes County and cede ownership of the rerouted Hightower Road alignment to Lowndes County. A new overflow parking lot would be constructed, paved, and properly painted to allow the parking of up to 500 vehicles. The existing Moody AFB boundary fence would be removed between Barretts Road and Yate Lane after the new Base boundary fence is constructed.

Hightower Road would be reconstructed by Lowndes County as a two-lane paved road with an open drainage ditch on one side within a 60-foot right-of-way. The rerouted Hightower Road would continue to directly connect Barretts Road with Yate Lane and Bemiss Road and be located parallel to the privately owned Runway Lane. The 1,800 feet of the former Hightower Road that would remain behind the Moody AFB security fence would be abandoned in place. Moody AFB does not anticipate maintaining that abandoned portion of Hightower Road following the proposed relocation.

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**Figure 2-2. Location of Hightower Road and the Boundary Fence under Alternative 1**

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Alternative 1 would provide the necessary distances between the HC-130 parking ramp's restricted area barrier and the Moody AFB boundary fence and meets the AFI 31-101 recommended force protection requirements.

**2.4.2 Alternative 2: Reroute Hightower Road the Minimum Distance to Meet Force Protection Recommendations**

Under Alternative 2 (Figure 2-3), the Air Force would request Lowndes County to reroute Hightower Road from its current alignment between Barretts Road and Yate Lane to a new alignment within the Air Force-owned 24-acre property at the minimum distance north of the HC-130 parking ramp required to meet force protection requirements. The Moody AFB boundary fence and 24-foot-wide boundary road would be realigned to follow the edge of the right-of-way of the rerouted Hightower Road. The Air Force would acquire ownership of the land that composes Hightower Road between Barretts Road and Yate Lane from Lowndes County and cede ownership the rerouted Hightower Road alignment to Lowndes County. A new overflow parking lot would be constructed, paved, and properly painted to allow the parking of up to 500 vehicles, and this parking lot would be located outside of the Moody AFB boundary fence. The existing Moody AFB boundary fence would be removed between Barretts Road and Yate Lane after the new boundary fence is constructed.

Hightower Road would be reconstructed by Lowndes County as a two-lane paved road with an open drainage ditch on one side within a 60-foot right-of-way. The rerouted Hightower Road would continue to directly connect Barretts Road with Yate Lane and Bemiss Road. The 1,800 feet of the former Hightower Road that would remain behind the Moody AFB boundary fence would be improved and used as a boundary road on the interior of the new boundary fence alignment.

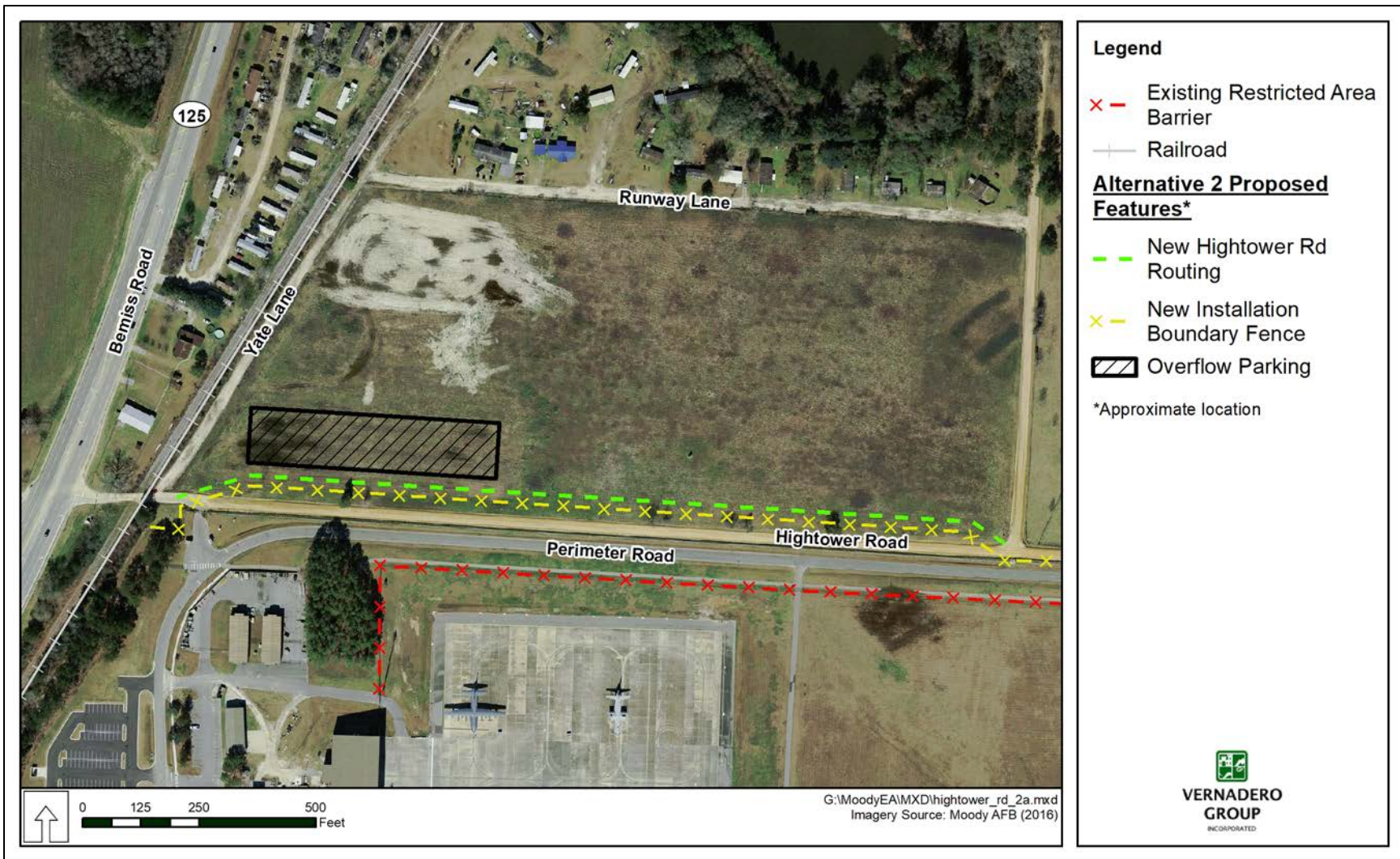
Alternative 2 would provide the necessary distances between the HC-130 parking ramp's restricted area barrier and the Moody AFB boundary fence and meet the AFI 31-101 recommended force protection requirements.

**2.4.3 No Action Alternative**

Analysis of the No Action Alternative provides a benchmark, enabling decision makers to compare the magnitude of the environmental effects of the Proposed Action. NEPA requires an EA to analyze the No Action Alternative. For this EA, the no action means that an action would not take place, and the resulting environmental effects from taking no action would be compared with the effects of allowing the proposed activity to go forward. Therefore, no action for this EA reflects the status quo, where the restricted area barrier would be left in place, Hightower Road would not be rerouted, the boundary fence would not be moved, and no overflow parking would be constructed. Under the No Action Alternative, Moody AFB would accept the risk of not meeting recommended force protection distances between the HC-130 parking ramp's restricted area boundary barrier and the Moody AFB boundary fence.



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**Figure 2-3. Location of Hightower Road and the Boundary Fence under Alternative 2**

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**2.5 SUMMARY OF POTENTIAL ENVIRONMENTAL CONSEQUENCES**

The potential impacts associated with Alternative 1, Alternative 2, and the No Action Alternative are summarized in Table 2-1. The information is based on information discussed in detail in Chapter 4 (Environmental Consequences) of the EA and includes a concise definition of the issues addressed and the potential environmental impacts associated with each alternative.

**Table 2-1. Summary of Environmental Consequences**

<b>Resource</b>	<b>Alternative 1: Reroute Hightower Road around the Air Force-Owned Property</b>	<b>Alternative 2: Reroute Hightower Road the Minimum Distance to Meet Force Protection Recommendations</b>	<b>No Action Alternative</b>
Land Use	The relocation of Hightower Road would change the land ownership of a portion of Air Force property. No visual impairments would occur.	The relocation of Hightower Road would change the land ownership of a portion of Air Force property. No visual impairments would occur.	No changes to existing land use. No visual impairments would occur.
Noise	Minor direct temporary impacts from increased noise during construction activities. Minor permanent adverse impacts from noise on the 22 residences located within 50 to 100 feet north and west of the relocated Hightower Road as a result of approximately 144 vehicles per day traveling on the relocated Hightower Road. No impacts from noise from the periodic use of the overflow parking lot are anticipated.	Minor direct temporary impacts from increased noise during construction activities. No noise impacts from the relocated Hightower Road or from periodic use of the overflow parking lot are anticipated.	No noise impacts.

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<b>Resource</b>	<b>Alternative 1: Reroute Hightower Road around the Air Force-Owned Property</b>	<b>Alternative 2: Reroute Hightower Road the Minimum Distance to Meet Force Protection Recommendations</b>	<b>No Action Alternative</b>
Air Quality	Short-term increase in air emissions during construction activities. NAAQS thresholds would not be exceeded for any pollutant, and no significant impacts to air quality are expected. General conformity requirements do not apply to other pollutants, as the area is in attainment areas for those pollutants.	Short-term increase in air emissions during construction activities. NAAQS thresholds would not be exceeded for any pollutant, and no significant impacts to air quality are expected. General conformity requirements do not apply to other pollutants, as the area is in attainment areas for those pollutants.	No impacts on air quality would occur.
Earth Resources	Impacts on topography and geology would be negligible. Short-term minor adverse impacts on soils would occur from construction activities. Long-term minor adverse impacts on soils would occur from increased runoff from impervious surfaces.	Impacts on topography and geology would be negligible. Short-term minor adverse impacts on soils would occur from construction activities. Long-term minor adverse impacts on soils would occur from increased runoff from impervious surfaces.	No impacts on earth resources would occur.
Water Resources	Minor short-term increase in soil erosion and decrease in stormwater quality during construction would occur. No long-term impacts on surface water or groundwater resources, wetlands, or floodplains are anticipated.	Minor short-term increase in soil erosion and decrease in stormwater quality during construction would occur. No long-term impacts on surface water or groundwater resources, wetlands, or floodplains are anticipated.	No impacts on surface water or groundwater resources, wetlands, or floodplains would occur.
Biological Resources	Permanent minor adverse impacts on vegetation with the loss of 6.2 acres of maintained grassland. Minor impacts would occur on wildlife with the loss of habitat. No impacts would occur for threatened and endangered species.	Permanent minor adverse impacts on vegetation with the loss of 5.2 acres of maintained grassland. Minor impacts would occur on wildlife with the loss of habitat. No impacts would occur for threatened and endangered species.	No impacts on biological resources would occur.

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<b>Resource</b>	<b>Alternative 1: Reroute Hightower Road around the Air Force-Owned Property</b>	<b>Alternative 2: Reroute Hightower Road the Minimum Distance to Meet Force Protection Recommendations</b>	<b>No Action Alternative</b>
Cultural Resources	No effects on cultural resources listed or eligible for inclusion in the NRHP.	No effects on cultural resources listed or eligible for inclusion in the NRHP.	No effects on cultural resources listed or eligible for inclusion in the NRHP.
Socioeconomics	A short-term minor beneficial impact from increased payroll tax revenue and the purchase of goods and materials during construction would occur. No long-term impacts on socioeconomics.	A short-term minor beneficial impact from increased payroll tax revenue and the purchase of goods and materials during construction would occur. No long-term impacts on socioeconomics.	No impacts on socioeconomics are anticipated.
Environmental Justice	No disproportionate impacts on minorities or low-income communities would occur.	No disproportionate impacts on minorities or low-income communities would occur.	No disproportionate impacts on minorities or low-income communities would occur.
Infrastructure, Transportation, and Utilities	A minor beneficial impact on infrastructure would occur by meeting the HC-130 parking ramp force protection distance recommendations. There would also be a minor indirect beneficial impact on the local community's infrastructure through the paving of the relocated Hightower Road.	A minor beneficial impact on infrastructure would occur by meeting the HC-130 parking ramp force protection distance recommendations. There would also be a minor indirect beneficial impact on the local community's infrastructure through the paving of the relocated Hightower Road.	A moderate adverse long-term impact on infrastructure would occur because a portion of the HC-130 parking ramp would not meet the force protection distance recommendation.
Hazardous Materials and Wastes, ERP, and Toxic Substances	No adverse impacts on hazardous materials and wastes, ERP sites, or toxic substances would occur.	No adverse impacts on hazardous materials and wastes, ERP sites, or toxic substances would occur.	No adverse impacts on hazardous materials and wastes, ERP sites, or toxic substances would occur.
Health and Safety	A moderate beneficial impact on safety would occur by meeting the force protection distance recommendations for the HC-130 parking ramp.	A moderate beneficial impact on safety would occur by meeting the force protection distance recommendations for the HC-130 parking ramp.	The recommended force protection distances for the HC-130 parking ramp would not be met which would cause long-term moderate adverse impacts on safety at Moody AFB.

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<b>Resource</b>	<b>Alternative 1: Reroute Hightower Road around the Air Force-Owned Property</b>	<b>Alternative 2: Reroute Hightower Road the Minimum Distance to Meet Force Protection Recommendations</b>	<b>No Action Alternative</b>
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**NAAQS** – National Ambient Air Quality Standards; **NRHP** – National Register of Historic Places;  
**ERP** – Environmental Restoration Program

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### **3.0 AFFECTED ENVIRONMENT**

This chapter describes the environment potentially affected by the Proposed Action at Moody AFB. NEPA requires that the analysis address those areas and the components of the environment with the potential to be affected; locations and resources with no potential to be affected need not be analyzed. The existing conditions of each relevant environmental resource are described to give the public and agency decision makers a meaningful point from which to compare potential future environmental, social, and economic effects.

Sections 3.1 through 3.12 provide an explanation or definition for each resource considered for detailed analysis in this EA and the baseline environment potentially affected by the Proposed Action at Moody AFB. The expected geographic scope of any potential consequences is identified as the ROI. For most resources in this chapter, the ROI is defined as the boundaries of Moody AFB. For some resources, such as socioeconomics and air quality, the ROI extends over a larger area.

The only resource area not carried forward for detailed analysis is airspace. There would be no interactions between airspace and the proposed Hightower Road and Moody AFB boundary fence relocation. Therefore, airspace is a resource area that is not carried forward for detailed analysis in this EA.

Each resource with the potential to be adversely affected by the Proposed Action is analyzed and discussed in Chapter 4, which addresses environmental consequences. Cumulative effects are discussed in Chapter 5.

#### **3.1 LAND USE**

##### **3.1.1 Definition of the Resource**

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activities occurring on a defined parcel of land. In many cases, land use descriptions are codified in local zoning laws. The following are the land use categories and the typical facilities associated with each category.

- Administrative – headquarters, security operations, offices
- Airfield pavements – runways, taxiways, aprons, overruns
- Airfield operations and maintenance – hangars, aircraft maintenance units, squadron operations
- Community commercial – commissary, base exchange, dining
- Community service – commissary, gym, recreation center, theater
- Housing - accompanied – family housing
- Housing - unaccompanied – airman housing, visitor housing, temporary lodging
- Industrial – base engineering, maintenance shops, warehouses
- Medical/dental – hospital, clinic, pharmacy
- Open space – conservation area, buffer space
- Outdoor recreation – ballfields, outdoor courts, golf course
- Training – classrooms, simulators

Land use planning ensures orderly growth and compatibility between nearby property parcels or land areas. Land use planning in the Air Force is guided by AFI 32-7062, *Comprehensive Planning*. This document sets forth the responsibilities and requirements for comprehensive planning and describes procedures for developing, implementing, and integrating an Installation Development Plan with Activity Management Plans. In addition, land use guidelines established by the US Department of Housing and Urban Development and based on findings of the

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Federal Interagency Committee on Noise are used to recommend acceptable levels of noise exposure for land use.

Recreational resources are often considered as part of land use. Recreational resources include federal, state, and local parks, trails, scenic areas, beaches, indoor and outdoor community recreation centers, and playgrounds. Recreation areas are primarily limited to running and bicycle trails, ballfields, swimming pools, bowling alleys, theatres, playgrounds for children, and gymnasium facilities.

Military airfield, training areas, military facilities, recreation complexes, and open space compose most of the visual environment at Moody AFB. Prominent visual features include aircraft, maintenance and support facilities, hangars, and office buildings.

Moody AFB is not located within a designated coastal zone; therefore, the land use regulations associated with the Coastal Zone Management Act do not apply. Transportation is included in the Infrastructure sections.

The ROI for this resource is the 24-acre Air Force-owned property and the portion of Hightower Road north of the HC-130 parking ramp between Barretts Road and Yate Lane.

### **3.1.2 Existing Conditions**

Moody AFB includes the main Base Administrative Area, the Grand Bay Range, and the Grassy Pond Recreational Annex. The 24-acre Air Force-owned property and Hightower Road are located north of the main Base Administrative Area (Figure 3-1).

The land use for the 24-acre property is airfield operations and maintenance (Moody AFB 2015a). However, the property is entirely composed of a former agricultural field that was used to grow row crops and is now maintained grassland; it is bordered by Runway Lane to the north, Barretts Road to the east, Hightower Road to the south, and Yate Lane to the west. No recreational uses exist within the parcel. Adjacent privately owned parcels are maintained as both residential and agricultural areas.

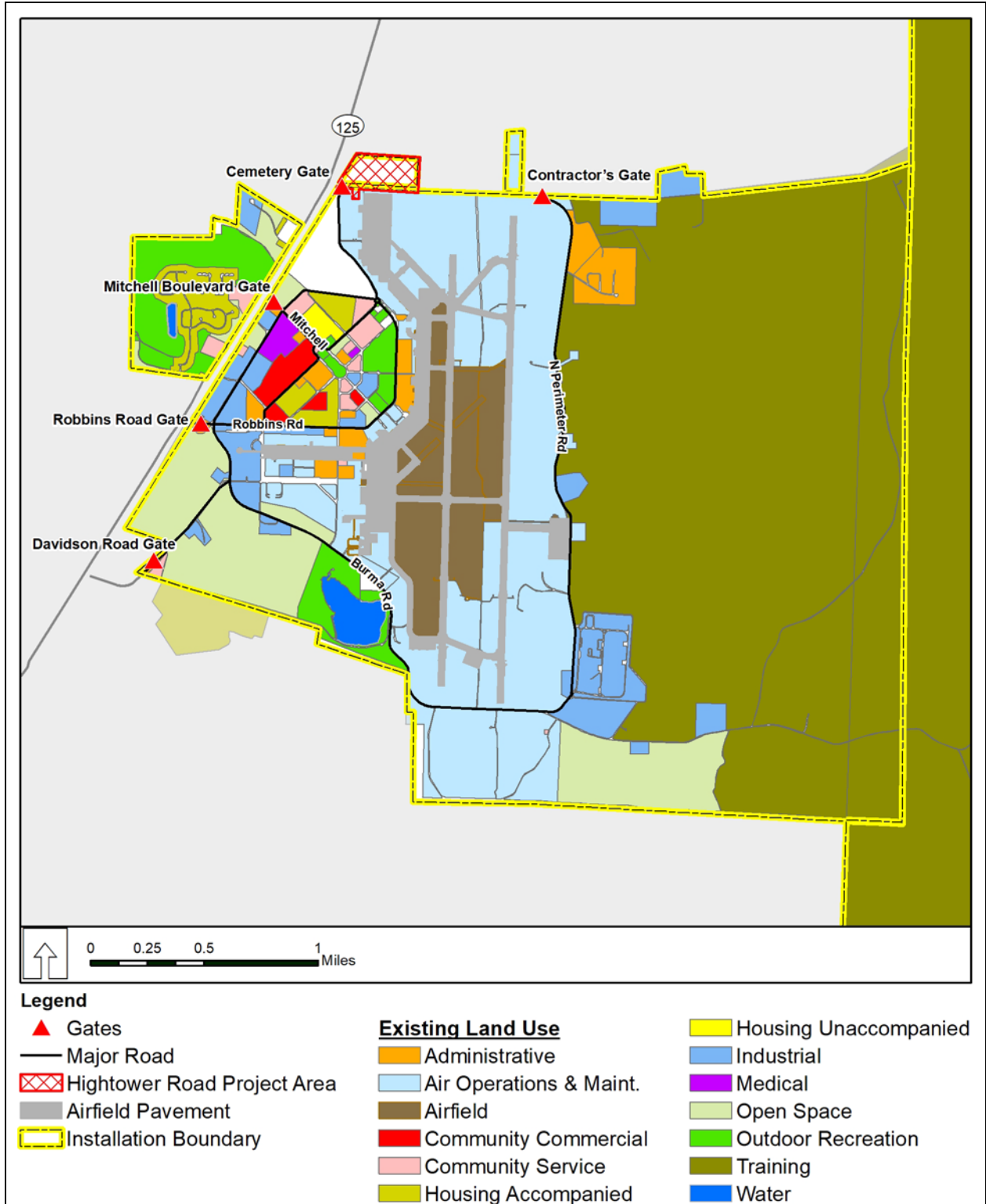
## **3.2 NOISE**

### **3.2.1 Definition of the Resource**

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Human response to noise varies according to the source type, characteristics of the noise source, distance between source and receptor, receptor sensitivity, and time of day. Noise (or sound-level pressures) interrelate and interact with other resource areas, principally land use and occupational health and safety, but they also influence biological and cultural resources.



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**Figure 3-1. Existing Land Use for Moody Air Force Base, Georgia**

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Sound is a series of vibrations (energy) transmitted through a medium (such as air or water) that are perceived by a receiver (e.g., humans, animals). It is measured by accounting for the energy level represented by the amplitude (volume) and frequency (pitch) of those vibrations and comparing that to a baseline standard. The unit to measure the intensity of sound is the decibel (dB). The dB is a logarithmic ratio of the increase in atmospheric pressure a sound event causes compared to a defined reference pressure, which happens to be the lowest detectible pressure recognized by the human ear. The sound pressure level represented by a given dB value is usually adjusted to make it more relevant to sounds that the human ear hears especially well; for example, an “A-weighted” decibel (dBA) is derived by emphasizing midrange frequencies to which the human ear responds especially well and deemphasizing the lower and higher range frequencies. In addition to weighting based on frequency, sound levels are further differentiated by factoring in the effect of time (duration), since sound levels normally vary in intensity and are not continuous.

Noise occurring at night typically constitutes a greater annoyance to receptors than the same noise occurring during daytime hours. Therefore, the day-night average (DNL) noise metric is used and incorporates a “penalty” for nighttime noise events to account for increased annoyance. DNL is the energy-averaged sound level measured over a 24-hour period, with a 10 dB penalty assigned (added) to noise events occurring between 10:00 p.m. and 7:00 a.m. The DNL metric has been adopted by most federal agencies including the Department of Defense as the common standard for assessing noise levels for compatibility with land uses, health and human safety, and effects on wildlife. The Air Force land use compatibility guidelines (relative to DNL values) are specified in Air Force Handbook 32-7084 *AICUZ Program Manager’s Handbook* (Air Force 1999). A 65 dBA DNL is typically used for planning purposes as the level for allowable noise impacts for activities such as construction. The US Environmental Protection Agency (USEPA) has identified a 55 dBA DNL as the level below which there are no adverse impacts (USEPA 1974).

The ROI for this resource is the 24-acre Air Force-owned property, the portion of Hightower Road located north of the HC-130 parking ramp, and nearby privately owned parcels.

### **3.2.2 Existing Conditions**

The noise associated with Moody AFB is dominated by aircraft operations, which include the A-29, A-10C, and HC-130 fixed-wing aircraft and HH-60 helicopters. Transient aircraft that use the airfield include aircraft such as C-17, KC-10, F-22, F-16, executive jets, helicopters, and various other military aircraft. In addition to these operations, day-to-day activities (including maintenance and shop activities; traffic; training exercises; heating, ventilation, and air conditioning systems; occasional construction; and other sources) also contribute to noise sources on Moody AFB.

The 24-acre property and the portion of Hightower Road proposed for relocation are located on the north side of Moody AFB, immediately north of the HC-130 parking ramp and 0.4 mile from the runway, and are not within the 65 to 70 dBA DNL airfield noise contours (Moody AFB 2015b). Since 1992, there has been a 91 percent reduction in the land area affected by noise levels of 65 dBA DNL or greater. The 24-acre property, Hightower Road, and nearby residential homes were within the 65 dBA DNL contour until 2013 (Moody AFB 2015b).

## **3.3 AIR QUALITY**

### **3.3.1 Definition of the Resource**

Under the authority of the Clean Air Act and subsequent regulations, the USEPA has divided the country into geographical regions known as Air Quality Control Regions to evaluate

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compliance with the National Ambient Air Quality Standards (NAAQS). The Air Quality Control Regions represent the ROI described in the air quality section.

**Criteria Pollutant**

In accordance with Clean Air Act requirements, the air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. Measurements of these “criteria pollutants” in ambient air are expressed in units of parts per million (ppm) or in units of micrograms per cubic meter. Regional air quality is a result not only of the types and quantities of atmospheric pollutants and pollutant sources in an area but also surface topography, the size of the “air basin,” and prevailing meteorological conditions.

The Clean Air Act directed the USEPA to develop, implement, and enforce strong environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, the USEPA developed numerical concentration-based standards, NAAQS, for pollutants that have been determined to impact human health and the environment and established both primary and secondary NAAQS under the provisions of the Clean Air Act. NAAQS are currently established for six criteria air pollutants: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), respirable particulate matter (including particulates equal to or less than 10 microns in diameter [PM<sub>10</sub>] and particulates equal to or less than 2.5 microns in diameter [PM<sub>2.5</sub>]), and lead (Pb). The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration necessary to protect vegetation, crops, and other public resources in addition to maintaining visibility standards. The primary and secondary NAAQS are presented in Table 3-1.

**Table 3-1. National Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Standard Value<sup>1</sup></b>		<b>Standard Type</b>
<b>Carbon Monoxide (CO)</b>			
8-hour average	9 ppm	(10 mg/m <sup>3</sup> )	Primary
1-hour average	35 ppm	(40 mg/m <sup>3</sup> )	Primary
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>			
Annual arithmetic mean	0.053 ppm	(100 µg/m <sup>3</sup> )	Primary and secondary
1-hour average <sup>2</sup>	0.100 ppm	(188 µg/m <sup>3</sup> )	Primary
<b>Ozone (O<sub>3</sub>)</b>			
8-hour average <sup>3</sup>	0.070 ppm	(137 µg/m <sup>3</sup> )	Primary and secondary
<b>Lead (Pb)</b>			
3-month average <sup>4</sup>		0.15 µg/m <sup>3</sup>	Primary and secondary
<b>Particulate &lt;10 Micrometers (PM<sub>10</sub>)</b>			
24-hour average <sup>5</sup>		150 µg/m <sup>3</sup>	Primary and secondary
<b>Particulate &lt;2.5 Micrometers (PM<sub>2.5</sub>)</b>			
Annual arithmetic mean <sup>5</sup>		12 µg/m <sup>3</sup>	Primary
Annual arithmetic mean <sup>5</sup>		15 µg/m <sup>3</sup>	Secondary
24-hour average <sup>5</sup>		35 µg/m <sup>3</sup>	Primary and secondary
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>			
1-hour average <sup>6</sup>	0.075 ppm	(196 µg/m <sup>3</sup> )	Primary
3-hour average <sup>6</sup>	0.5 ppm	(1,300 µg/m <sup>3</sup> )	Secondary

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Pollutant	Standard Value <sup>1</sup>	Standard Type
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Notes:

- 1 Parenthetical value is an approximately equivalent concentration for NO<sub>2</sub>, O<sub>3</sub>, and SO<sub>2</sub>.
- 2 In February 2010, the USEPA established a new 1-hour standard for NO<sub>2</sub> at a level of 0.100 ppm, based on the 3-year average of the 98th percentile of the yearly distribution concentration, to supplement the then-existing annual standard.
- 3 In October 2015, the USEPA revised the level of the 8-hour standard to 0.070 ppm, based on the annual fourth-highest daily maximum concentration, averaged over 3 years; the regulation became effective on 28 December 2015. The previous (2008) standard of 0.075 ppm remains in effect for some areas. A 1-hour standard no longer exists.
- 4 In November 2008, USEPA revised the primary lead standard to 0.15 µg/m<sup>3</sup>. USEPA revised the averaging time to a rolling 3-month average.
- 5 In October 2006, USEPA revised the level of the 24-hour PM<sub>2.5</sub> standard to 35 µg/m<sup>3</sup> and retained the level of the annual PM<sub>2.5</sub> standard at 15 µg/m<sup>3</sup>. In 2012, USEPA split standards for primary and secondary annual PM<sub>2.5</sub>. All are averaged over 3 years, with the 24-hour average determined at the 98th percentile for the 24-hour standard. USEPA retained the 24-hour primary standard and revoked the annual primary standard for PM<sub>10</sub>.
- 6 In 2012, the USEPA retained a secondary 3-hour standard, which is not to be exceeded more than once per year. In June 2010, USEPA established a new 1-hour SO<sub>2</sub> standard at a level of 75 parts per billion, based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.

**ppm** – part(s) per million; **mg/m<sup>3</sup>** – milligram(s) per cubic meter; **µg/m<sup>3</sup>** – microgram(s) per cubic meter; **USEPA** – United States Environmental Protection Agency

The criteria pollutant O<sub>3</sub> is not usually emitted directly into the air but is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants or “O<sub>3</sub> precursors.” These O<sub>3</sub> precursors consist primarily of nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) that are directly emitted from a wide range of emissions sources. For this reason, regulatory agencies limit atmospheric O<sub>3</sub> concentrations by controlling VOC pollutants (also identified as reactive organic gases) and NO<sub>x</sub>.

The USEPA has recognized that particulate matter emissions can have different health affects depending on particle size and, therefore, developed separate NAAQS for coarse particulate matter (PM<sub>10</sub>) and fine particulate matter (PM<sub>2.5</sub>). The pollutant PM<sub>2.5</sub> can be emitted from emission sources directly as very fine dust and/or liquid mist or formed secondarily in the atmosphere as condensable particulate matter typically forming nitrate and sulfate compounds. Secondary (indirect) emissions vary by region depending upon the predominant emission sources located there, and therefore so do which precursors are considered significant for PM<sub>2.5</sub> formation and identified for control.

The Clean Air Act and USEPA delegated responsibility for ensuring compliance with NAAQS to the states and local agencies. Therefore, each state must develop air pollutant control programs and promulgate regulations and rules that focus on meeting NAAQS and maintaining healthy ambient air quality levels. These programs are detailed in State Implementation Plans that must be developed by each state local regulatory agency and approved by USEPA. A State Implementation Plan is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS. Any changes to the compliance schedule or plan (e.g., new regulations, emissions budgets, controls) must be incorporated into the State Implementation Plan and approved by USEPA.

The Clean Air Act required that USEPA draft general conformity regulations that are applicable in nonattainment areas, or in designated maintenance areas (attainment areas that were reclassified from a previous nonattainment status and are required to prepare a maintenance

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plan for air quality). These regulations are designed to ensure that federal actions do not impede local efforts to achieve or maintain attainment with the NAAQS. The General Conformity Rule and the promulgated regulations found in 40 CFR 93 exempt certain federal actions from conformity determinations (e.g., contaminated site cleanup and natural disaster response activities). Other federal actions are assumed to conform if total indirect and direct project emissions are below *de minimis* levels presented in 40 CFR 93.153. The threshold levels (in tons of pollutant per year) depend upon the nonattainment status that USEPA has assigned to a region. Once the net change in nonattainment pollutants is calculated, the federal agency must compare them to the *de minimis* thresholds.

Title V of the Clean Air Act Amendments of 1990 requires state and local agencies to implement permitting programs for major stationary sources. A major stationary source is a facility (plant, base, activity, etc.) that has the potential to emit more than 100 tons annually of any one criteria air pollutant, 10 tons per year of a hazardous air pollutant, or 25 tons per year of any combination of hazardous air pollutants; however, lower pollutant-specific “major source” permitting thresholds apply in nonattainment areas. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be “significant” if a proposed project’s net emission increase meets or exceeds the rate of emissions listed in 40 CFR 52.21(b)(23)(i); or 1) a proposed project is within 10 kilometers of any Class I area (wilderness area greater than 5,000 acres or national park greater than 6,000 acres) and 2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 microgram per cubic meter or more [40 CFR 52.21(b)(23)(iii)]. PSD regulations also define ambient air increments, limiting the allowable increases to any area’s baseline air contaminant concentrations, based on the area’s designation as Class I, II, or III [40 CFR 52.21(c)].

### **Greenhouse Gases**

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere contribute to the earth’s temperature and are believed to contribute to global climate change. GHGs include water vapor, carbon dioxide (CO<sub>2</sub>), methane, nitrous oxide, O<sub>3</sub>, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth’s surface. The global warming potential of a particular gas provides a relative basis for calculating its carbon dioxide equivalent (CO<sub>2</sub>e), or the amount of CO<sub>2</sub> equivalent to the emissions of that gas. CO<sub>2</sub> has a global warming potential of 1 and is, therefore, the standard by which all other GHGs are measured.

On 13 May 2010, the USEPA issued the final GHG Tailoring Rule. This rule established thresholds for GHG emissions that define when permits under the PSD and Title V operating permit programs are required for new and existing industrial facilities. The Rule was implemented using a phased-in approach, effective January 2011. The salient features of the Rule are as follows:

- The Tailoring Rule generally defines a major source of GHGs as one that has potential to emit GHG emissions equal to or greater than 100,000 tons per year CO<sub>2</sub>e. An installation that is a major source and has not already applied for a Title V permit had to

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apply for a Title V permit by 1 July 2012, or within one year after having a potential to emit of at least 100,000 tons per year or more of GHGs as CO<sub>2e</sub>.

- An installation has to obtain a PSD permit and apply Best Available Control Technologies for GHGs if the potential to emit is 100,000 tons per year or more of CO<sub>2e</sub> for a new source (and for a modification, if the modification also results in a 75,000 tons per year increase or more in CO<sub>2e</sub>). A PSD permit and Best Available Control Technologies for GHGs also applies if an installation is already subject to PSD for non-GHG pollutants and has a potential to emit of 75,000 tons per year or more of CO<sub>2e</sub> (new sources) or an increase of 75,000 tons per year or more of CO<sub>2e</sub> for modifications.
- PSD and Best Available Control Technologies requirements apply if a source is an existing minor source for PSD, and the modification alone has actual or potential to emit GHG emissions equal to or greater than 100,000 tons per year CO<sub>2e</sub>.
- The USEPA had planned to propose rules for smaller sources of GHG (i.e., with less than 50,000 tons per year of GHG on a CO<sub>2e</sub> basis) by 30 April 2016. As of March 2019, however, no such rules have been promulgated or proposed. Until these rules are proposed, the USEPA cannot take action to make such sources subject to GHG regulation.

On 19 August 2015, the USEPA published regulations that removed several provisions pertaining to Step 2 of the PSD Tailoring Rule. Effectively, GHGs are no longer treated as an air pollutant for the specific purpose of determining whether a source (or modification) is required to obtain a PSD or Title V permit. In other words, a stationary source would not need to obtain a PSD or Title V permit solely because the source emits or has the potential to emit GHGs above the applicable major source thresholds (80 Federal Register 50199).

On 26 August 2016, the USEPA proposed regulations that revise provisions to determine whether a source must obtain a permit. In addition, the USEPA proposed a 75,000-tons-per-year CO<sub>2e</sub> Significant Emission Rate for GHGs. The Significant Emission Rate establishes a *de minimis* level below which Best Available Control Technologies are not required for this pollutant (81 Federal Register 81711). The Final Rule has not been promulgated.

In addition to the GHG Tailoring Rule in 2009, the USEPA promulgated a rule requiring sources to report their GHG emissions if they emit more than 25,000 metric tons or more of CO<sub>2e</sub> per year [40 CFR 98.2(a)(2)].

### **3.3.2 Existing Conditions**

#### **Climate**

The regional climate of Valdosta, Georgia, located less than 15 miles southwest of Moody AFB, is classified as a humid subtropical climate which is characterized by cool to mild winters and hot, humid summers. The warmest months are July and August, with average high and low temperatures of 91 degrees Fahrenheit and 71 degrees Fahrenheit, respectively. January is the coldest month with an average high temperature of 62 degrees Fahrenheit and average low temperature of 39 degrees Fahrenheit. The wettest month by average precipitation is June with an average of 8.0 inches of rain. The driest month is January with an average of 2.7 inches of precipitation. Valdosta has an annual average of 0.1 inch of snow, and accumulating snow is uncommon (Weatherbase 2019).

#### **Air Quality**

Moody AFB is located in the Southwest Georgia Intrastate Air Quality Control Region (40 CFR 81.238). The ROI for air quality is the Southwest Georgia Intrastate Air Quality Control Region.

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Each Air Quality Control Region has regulatory areas that are designated as an attainment area or nonattainment area for each of the criteria pollutants depending on whether it meets or fails to meet the NAAQS for the pollutant.

Ambient air quality for criteria pollutants are summarized in Table 3-2. Ambient air quality for the Southwest Georgia Intrastate Air Quality Control Region, is in attainment for the 8-hour O<sub>3</sub> NAAQS established in 2008 (75 parts per billion of ground-level ozone). The region is designated as an unclassifiable/attainment area for all other criteria pollutants. Unclassifiable areas are those areas that have not had ambient air monitoring and are assumed to be in attainment with NAAQS. Any of the pending attainment designations have no regulatory effect on the current analysis.

**Table 3-2. Federal Ambient Air Quality Standards and Status**

Air Pollutant	Averaging Time	Attainment Status
Nitrogen dioxide (NO <sub>2</sub> )	1-hour <sup>1</sup>	Unclassifiable/attainment
Sulfur dioxide (SO <sub>2</sub> )	1-hour <sup>1</sup>	Unclassifiable/attainment
Lead (Pb)	Calendar quarter	Attainment
	Rolling 3-month <sup>2</sup>	Unclassifiable/attainment
Particulate matter PM <sub>2.5</sub>	24-hour	Attainment
	Annual	Attainment
Ozone (O <sub>3</sub> ) <sup>3</sup>	8-hour	Unclassifiable/attainment
Carbon monoxide (CO)	8-hour	Unclassifiable/attainment
	1-hour	Unclassifiable/attainment

Source: USEPA 2016a, 2016b

Notes:

- 1 Standard established in 2010.
- 2 Standard established in 2008.
- 3 In October 2015, the USEPA changed the 8-hour NAAQS for ground-level ozone to 70 parts per billion.

Air quality is generally affected only locally by military and civilian vehicle emissions, particulate pollution from vehicle traffic, emissions from wastewater treatment plants, industrial sources, and construction activities. Mobile sources, such as vehicle and aircraft emissions, are generally not regulated and are not covered under existing stationary source permitting requirements.

The 2012 stationary source emission inventory for Moody AFB shows that the on-Base emission source categories include external and internal combustion sources such as boilers and heaters, various internal combustion engines, engine testing, general chemical use, solvent degreasing, surface coatings, fuel dispensing and loading, and miscellaneous activities (i.e., abrasive blasting, fuel cell maintenance, welding, and woodworking); and fugitive emissions such as firefighter training, prescribed burning, and wastewater treatment (Air Force 2017a).

Moody AFB operates under a Synthetic Minor Permit (No. 9711-185-0029-S-02-0), which imposes federally enforceable limits that restrict emissions to maintain a level below major source thresholds. This type of permit establishes practicable enforceable limitations for the operation of boilers/heaters, stationary engines/generators, engine test cells, general chemical use, solvent degreasing, surface coating operations, fuel dispensing/loading, and some miscellaneous activities on Moody AFB (Moody AFB 2014).

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An air quality impact assessment was prepared for this project and the analysis is discussed in Section 4.3 and provided in **Appendix C**.

### **3.4 EARTH RESOURCES**

#### **3.4.1 Definition of the Resource**

Earth resources are defined as the physiography, topography, geology, and soils of a given area. Physiography and topography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition. Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

The ROI for this resource is Moody AFB.

#### **3.4.2 Existing Conditions**

##### **Physiography and Topography**

Moody AFB is in the Tifton Upland District of the Lower Coastal Plain. The 24-acre Air Force-owned property and Hightower Road are situated in the Lakeland Flatwoods area, approximately 9 miles northeast of Valdosta, Georgia. The area is situated within the Coastal Terraces Region of the Atlantic Coastal Plain. The elevation of Air Force-owned property is approximately 239 feet above mean sea level (Moody AFB 2019).

##### **Geology**

Geologically, Moody AFB is located within the Georgia Lower Coastal Plain. The predominant landform in this area consists of moderately dissected, irregular plains of marine origin formed by the deposition of continental sediments onto the submerged, shallow continental shelf, which was later exposed when the sea receded from this area (Moody AFB 2018). Rock units formed during the Mesozoic and Cenozoic eras consist of Cretaceous marine sediments (sands and clays) and Tertiary marine deposits (siliceous strata with lignitic, sandy, and argillaceous deposits). The most important stratigraphic unit is the Suwannee limestone, which contains the upper portions of the Floridan aquifer. This layer ranges in thickness from approximately 200 to 250 feet and is usually less than 200 feet below ground surface. There is a moderate density of small to medium perennial streams and associated rivers; this dendritic drainage pattern has developed on this moderately dissected plain, largely without bedrock structural control because of the preponderance of undifferentiated sediments (Moody AFB 2018).

Moody AFB is underlain by sedimentary rocks of pre-Cretaceous through Quaternary age that consist of limestone, dolostone, clay, and sand that extend to a thickness of at least 5,000 feet. From oldest to youngest, the geological units in the site area are the Suwannee limestone of Oligocene age, the Hawthorne Group of Miocene age, the Miccosukee Formation of Pliocene age, and the undifferentiated sediments of Quaternary age. Unconsolidated and consolidated sediments are present at the surface in the Moody AFB region (IT Corporation 2000; Moody AFB 2001b, 2018).



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The most important geological unit is the Suwannee limestone, which contains the upper portions of the Floridan aquifer system. This layer ranges in thickness from approximately 200 to 250 feet and is usually less than 200 feet below the ground surface (Moody AFB 2001a, 2018).

## **Soils**

Soil types on the subject property are Tifton loamy sand (TfA) and Dothan loamy sand (DoB). TfA soils are deep, well-drained, moderately permeable soils with 0 to 2 percent slopes. Dothan soils are deep, well-drained soils that have moderate permeability in the upper part of the subsoil and moderately slow permeability in the lower part, with 1 to 5 percent slopes (US Department of Agriculture 1979). TfA and DoB have a high or medium potential for most nonfarm uses (US Department of Agriculture 1979).

## **3.5 WATER RESOURCES**

### **3.5.1 Definition of the Resource**

Water resources include surface waters, groundwater, and floodplains. Surface waters include all lakes, ponds, rivers, streams, impoundments, and wetlands within a defined area or watershed. Wetlands are transitional areas between terrestrial and aquatic systems with land covered by shallow surface water. Groundwater resources include water contained in soils, permeable and porous rock, or unconsolidated substrate. Floodplains are areas that are flooded periodically by the lateral overflow of surface water bodies.

Surface waters, as defined in 33 CFR 328.3, are regulated under Sections 401 and 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The Clean Water Act (33 USC § 1251 et seq.) regulates discharges of pollutants in surface waters of the US. Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into waters of the US, including wetlands. The US Army Corps of Engineers defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions” (Environmental Laboratory 1987). Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328). Federal protection of wetlands is also promulgated under EO 11990, *Protection of Wetlands*, the purpose of which is to reduce adverse impacts associated with the destruction or modification of wetlands. This order directs federal agencies to provide leadership in minimizing the destruction, loss, or degradation of wetlands.

The Clean Water Act provides the authority to establish water quality standards, control discharges into surface and subsurface waters (including groundwater), develop waste treatment management plans and practices, and issue permits for discharges. A National Pollutant Discharge Elimination System (NPDES) permit under Section 402 of the Clean Water Act is required for discharges into surface waters. The USEPA oversees the issuance of NPDES permits at federal facilities as well as water quality regulations (Section 401 of the Clean Water Act) for both surface and groundwater within states.

In Georgia, water resources are protected under Georgia Department of Natural Resources Environmental Protection Division. These programs are administered in accordance with the state’s stormwater management program and the state’s erosion and sedimentation control program (Georgia Department of Natural Resources 2016; Georgia Soil and Water Commission 2016) under the auspices of the Environmental Protection Division’s Watershed Protection Branch. Potential impacts to surface waters may result if a proposed action triggers permitting requirements under Section 401 of the Clean Water Act. The Environmental Protection Division

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requires a minimum 25-foot buffer on all state waters (intermittent or perennial streams) regardless of whether or not Clean Water Act Sections 404 or 401 are applicable.

Groundwater is water that occurs in the saturated zone beneath the earth's surface and includes underground streams and aquifers. It is an essential resource that functions to recharge surface water and can be used for drinking, irrigation, and industrial processes. Groundwater typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations. The susceptibility of aquifers to groundwater contamination relates to geology, depth to groundwater, infiltration rates, and solubility of contaminants. Groundwater resources are regulated on the federal level by the USEPA under the Safe Drinking Water Act, 42 USC Section 300f et seq. The USEPA's Sole Source Aquifer Program, authorized by the Safe Drinking Water Act, further protects aquifers that are designated as critical to water supply and makes any proposed federal or federal financially assisted project that has the potential to contaminate the aquifer subject to USEPA review.

Floodplains are areas of low-level ground along rivers, stream channels, or coastal waters that provide a broad area to inundate and temporarily store floodwaters. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body. Floodplains are subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated and mapped by the Federal Emergency Management Agency, which defines the 100-year (regulatory) floodplain. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety.

EO 11988, *Floodplain Management*, provides guidelines that agencies should carry out as part of their decision making on projects that have potential impacts to or within the floodplain. This EO 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 and indirect support of floodplain development wherever there is a practicable alternative.

The ROI for this resource is Moody AFB.

### **3.5.2 Existing Conditions**

#### **Surface Waters**

Moody AFB is within the Suwannee River Basin, which discharges to the northeastern Gulf of Mexico (Moody AFB 2018). Major drainages in this basin that affect Moody AFB include the Withlacoochee River to the west and the Alapaha River to the east. A major feature of this basin is the 13,000-acre Grand Bay Banks Lake wetland complex, which is partially within the Installation's boundary. The 1,255-acre Banks Lake is the only major body of water within this wetland complex. A smaller open water area in this wetland complex is the 65-acre Shiner Pond, which is along the central-northern boundary of Moody AFB. The wetland system is recharged primarily by precipitation falling within the catchment basin, although the bays may receive a portion of their recharge water from adjacent shallow groundwater sources. Recharge by precipitation occurs mainly from December through March, when rainfall is typically heavy and evapotranspiration is low. Water flow through the Grand Bay Banks Lake wetland complex is generally southeastern and southward although the northern portions drain to the northeast (Moody AFB 2018).

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Stormwater from the main Base area is discharged by a series of drainage ditches. Stormwater from the northwest portion of the airfield forms the headwaters of Beatty Creek, eventually draining through Cat Creek to the Withlacoochee River. Stormwater on the 24-acre parcel is drained by open storm drains that are parallel to adjacent roads.

Overall, there are approximately 5,500 acres of wetlands within the boundary of Moody AFB, with the majority of these within the Grand Bay Banks Lake wetland complex (Moody AFB 2018). In 2007, a wetland delineation was completed on the main Base that identified approximately 1,819 acres of wetlands (Moody AFB 2007). Moody AFB conducted another wetland delineation to identify wetlands associated with the Moody AFB Installation Development Plan's proposed project sites. The US Army Corps of Engineers concurred on the wetland delineation on 7 June 2017 (Moody AFB 2018). There are no wetlands or other surface waters contained within the boundaries of the 24-acre Air Force-owned property; however, potential wetlands have been identified off-Base, north of the 24-acre property (Moody AFB 2018).

### **Groundwater**

Groundwater near Moody AFB occurs within two major water-bearing zones, the surficial aquifer system and the Floridan aquifer system. The surficial aquifer is generally 10 to 20 feet below the ground surface. Water quality is generally good, and yields are usually less than 50 gallons per minute. The Floridan aquifer is the primary water-bearing system in the area. The Floridan aquifer provides a generally good quality and quantity of water for almost all local commercial, industrial, domestic, irrigation, and municipal use. The aquifer is typically encountered at a depth of 150 feet and is usually under artesian conditions (Moody AFB 2018).

### **Floodplains**

There are two areas designated as 100-year floodplains at Moody AFB and Grand Bay Weapons Range. One area is east of the runways and the other area is in the southern portion of Grand Bay Weapons Range. There are no designated 100-year floodplains within the boundaries of 24-acre Air Force-owned property, Hightower Road between Barretts Road and Yate Lane, or in the immediate surrounding area.

## **3.6 BIOLOGICAL RESOURCES**

### **3.6.1 Definition of the Resource**

Biological resources include native or invasive plants and animals; sensitive and protected floral and faunal species; and the habitats, such as wetlands, forests, and grasslands, in which they exist. Habitat can be defined as the resources and conditions in an area that support a defined suite of organisms. The following is a description of the primary federal statutes that form the regulatory framework for the evaluation of biological resources.

### **Endangered Species Act**

The Endangered Species Act of 1973 (16 USC § 1531 et seq.) established protection over and conservation of threatened and endangered species and the ecosystems upon which they depend. Sensitive and protected biological resources include plant and animal species listed as threatened, endangered, or special status by the USFWS and the National Marine Fisheries Service. Under the Endangered Species Act (16 USC § 1536), an "endangered species" is defined as any species in danger of extinction throughout all, or a large portion, of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. The USFWS maintains a list of species considered to be candidates for

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possible listing under the Endangered Species Act. The Endangered Species Act also allows the designation of geographic areas as critical habitat for threatened or endangered species. Although candidate species receive no statutory protection under the Endangered Species Act, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and may warrant protection under the Endangered Species Act.

### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act of 1918 makes it unlawful for anyone to take migratory birds or their parts, nests, or eggs unless permitted to do so by regulations. Per the Migratory Bird Treaty Act, “take” is defined as “pursue, hunt, shoot, wound, kill, trap, capture, or collect” (50 CFR 10.12). Migratory birds include nearly all species in the US, with the exception of some upland game birds and nonnative species.

EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires all federal agencies undertaking activities that may negatively impact migratory birds to follow a prescribed set of actions to further implement the Migratory Bird Treaty Act. EO 13186 directs federal agencies to develop a Memorandum of Understanding with the USFWS that promotes the conservation of migratory birds. On 5 September 2014, the DOD signed a five-year Memorandum of Understanding with the USFWS. In accordance with the Memorandum of Understanding, and to the extent possible per law and budgetary considerations, EO 13186 encourages agencies to implement a series of conservation measures aimed at reinforcing and strengthening the Migratory Bird Treaty Act.

The National Defense Authorization Act for Fiscal Year 2003 (Public Law 107-314, 116 Stat. 2458) provided the Secretary of the Interior the authority to prescribe regulations to exempt the armed forces from the incidental take of migratory birds during authorized military readiness activities. Congress defined military readiness activities as all training and operations of the US armed forces that relate to combat and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use.

In December 2017, the US Department of the Interior issued M-Opinion 37050, which concluded that the take of migratory birds from an activity is not prohibited by the Migratory Bird Treaty Act when the underlying purpose of that activity is not the take of a migratory bird. The USFWS interprets the M-Opinion to mean that the Migratory Bird Treaty Act’s prohibition on take does not apply when the take of birds, eggs, or nests occurs as a result of an activity, the purpose of which is not to take birds, eggs, or nests.

### **Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act of 1940 (16 USC § 668-668c) prohibits the “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” “Take” is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb,” and “disturb” is defined as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, injury to an eagle, a decrease in productivity by substantially interfering with the eagle’s normal breeding, feeding or sheltering behavior, or nest abandonment by substantially interfering with the eagle’s normal breeding, feeding or sheltering behavior.” The Bald and Golden Eagle Protection Act also prohibits activities around an active or inactive nest site that could result in an adverse impact on the eagle.

The ROI for this resource is the 24-acre Air Force-owned property and the portion of Hightower Road between Barretts Road and Yate Lane.

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### 3.6.2 Existing Conditions

The information presented in this section was gathered from Moody AFB's Integrated Natural Resources Management Plan (INRMP) (Moody AFB 2018). The status of federal and state-listed species was validated using the USFWS Information for Planning and Consultation system and Georgia Department of Natural Resources, Wildlife Resources Division listings.

#### Vegetation

Moody AFB is located within the Outer Coastal Plain Mixed Province of the lowland ecoregion (Bailey 1995). This province is dominated by temperate evergreen forest and laurel forest. The historic vegetative composition of Moody AFB consisted of upland areas dominated by longleaf pine forests, with mesic longleaf pine savannas on the main Base and wet-mesic longleaf pine savannas and wet mixed-pine savannas in the Grand Bay Weapons Range. The current vegetation composition on Moody AFB is primarily a result of land management practices and actions undertaken during the 1940s during the construction of the Installation. Currently, the unimproved areas of Moody AFB feature several distinct natural communities or ecosystems that have been shaped or modified primarily through human actions. Natural communities on Moody AFB include upland pine forests, pine flatwoods, and extensive areas composed of various wetland communities. A vast proportion of the upland habitat at Moody AFB has been converted to the Loblolly Pine Plantations community type (Moody AFB 2018). Traditionally, these areas were characterized as either longleaf or longleaf/slash pine flatwoods forest types, but were converted to pine plantations. The location of the 24-acre Air Force-owned property is within a former agricultural field that is now currently maintained as periodically mowed grassland (Photograph 3-1).



*Photograph 3-1. The 24-Acre Air Force-Owned Property Facing Southeast from Yate Lane*

As described in Section 3.5, wetlands cover approximately 5,500 acres (46 percent) of the Installation within the Grand Bay Banks Lake ecosystem. The Carolina bays are typically vegetated with a scrub-shrub cover type; wetter areas transition into a black gum-cypress swamp association with pockets of open water. The black gum-cypress swamp association is primarily vegetated with an overstory of these species, but contains significant numbers of red maples (*Acer rubrum*) and sweetbays (*Magnolia virginiana*). The understory vegetation is moderately dense and consists of heaths, redbay (*Persea palustris*), wax myrtle (*Myrica cerifera*), cinnamon fern (*Osmunda cinnamomea*), chain fern (*Woodwardia virginica*), and greenbrier (*Smilax* spp.). In the transition areas from wetlands to uplands, pond pine (*Pinus serotina*), slash pine (*Pinus elliotii*), and dense thickets of evergreen shrubs and palmetto (*Sabal palmetto*) become more predominant as the soils transition from hydric to mesic. The upland areas are composed predominantly of a pine forest type, established either through natural community succession or through artificial regeneration (i.e., pine plantations). There are no wetlands or jurisdictional waters of the US on the 24-acre Air Force-owned property.

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## **Wildlife**

Moody AFB is within the lower coastal plains and flatwoods section of the Southern Coastal Plain ecoregion (Bailey 1995), which supports a diverse complex of habitat which in turn supports a high diversity of faunal species. These habitats can be simplified and grouped into two main habitat types: Loblolly Pine Plantations community type and the Carolina Bay Swamp Complex.

Faunal communities common to the longleaf pine (*Pinus palustris*) upland forests and longleaf pine/slash pine flatwoods include larger species such as white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), bobcat (*Lynx rufus*), and gray fox (*Urocyon cinereoargenteus*). The small-mammal community consists of various small rodents, gray squirrel (*Sciurus carolinensis*), fox squirrel (*Sciurus niger*), and the eastern cottontail (*Sylvilagus floridanus*). Forest habitat intermingled with the wetlands offers habitat for a variety of amphibian species, including little grass frog (*Pseudacris ocularis*), squirrel tree frog (*Hyla squirella*), eastern spadefoot toad (*Scaphiopus holbrookii*). Common reptiles include the eastern box turtle (*Terrapene carolina*), five-lined skink (*Eumeces inexpectatus*), eastern glass lizard (*Ophisaurus ventralis*), eastern cottonmouth (*Agkistrodon piscivorus*), and gopher tortoise (*Gopherus polyphemus*) (Moody AFB 2018).

The wetland areas within the Carolina Bay Swamp Complex offer habitat to other mammal species such as beavers (*Castor canadensis*) and round-tailed muskrats (*Neofiber alleni*) as well as those previously discussed for the forest habitat. Water-dependent amphibians and reptiles in the area include pig frogs (*Rana grylio*), alligators (*Alligator mississippiensis*), snapping turtles (*Chelydra serpentina*), striped newt (*Notophthalmus viridescens*), tiger salamander (*Ambystoma tigrinum*), eastern cottonmouths, southern water snakes (*Nerodia rhombifer*), and southern bullfrogs (*Rana catesbeiana*) (Moody AFB 2018).

Common bird species are similar between the two main habitat types, with slight variations occurring with habitat-specific species. The cumulative list of common bird species on Moody AFB consists of several species of both resident and migratory songbirds, raptors, marsh birds, and waterfowl (Moody AFB 2018). Some shorebirds utilize the area during migration. Grand Bay contains a large rookery of heron, egret, and ibis, as well as a year-round resident population of Florida sandhill cranes (*Grus canadensis pratensis*).

## **Threatened and Endangered Species**

Currently, Moody AFB has 17 federally and/or state listed species that have the potential to occur on the Base; 7 are federally listed and 9 are state listed (Table 3-3). The Moody AFB INRMP, USFWS Information for Planning and Consultation System, and the Georgia Rare Element Natural Data Portal were reviewed for the most up-to-date information concerning federally and state threatened and endangered species on Moody AFB.

This list also contains information provided by the USFWS Georgia Ecological Services Field Office and the Georgia Department of Natural Resources, Wildlife Resources Division for species whose range or foraging areas are located near Moody AFB. No critical habitat is found on Moody AFB. The eastern indigo snake (*Drymarchon couperi*), wood stork (*Mycteria americana*), gopher tortoise (*Gopherus polyphemus*), and bald eagle (*Haliaeetus leucocephalus*) are the only sensitive species that are actively managed on Moody AFB because these species have the greatest likelihood to be affected by the military mission (Moody AFB 2018). Although the bald eagle was removed from the list of species protected under the Endangered Species Act in July 2007, it is protected under the Bald and Golden Eagle Protection Act.

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**Table 3-3. Federally and State Listed Species with the Potential to Occur on Moody Air Force Base**

Common Name	Scientific Name	Legal Status	Potential to Occur on 24-Acre Property
<b>Birds</b>			
Bachman's sparrow	<i>Peucaea aestivalis</i>	SR	None
Bald eagle	<i>Haliaeetus leucocephalus</i>	ST/BGEPA	None
Swallow-tailed kite	<i>Elanoides forficatus</i>	SR	Foraging only
Wood stork	<i>Mycteria americana</i>	FT, SE	None
<b>Amphibians</b>			
Frosted flatwoods salamander	<i>Ambystoma cingulatum</i>	FE	None
Striped newt	<i>Notophthalmus perstriatus</i>	FC	None
<b>Reptiles</b>			
American alligator	<i>Alligator mississippiensis</i>	FTSA, ST	None
Eastern indigo snake	<i>Drymarchon couperi</i>	FT, ST	None
Gopher tortoise	<i>Gopherus polyphemus</i>	FC, ST	None
Southern hognose snake	<i>Heterodon simus</i>	ST	None
Suwanee alligator snapping turtle	<i>Macrochelys suwanniensis</i>	ST	None
<b>Mammals</b>			
Round-tailed muskrat	<i>Neofiber alleni</i>	ST	None
<b>Mollusks</b>			
Suwanee moccasinshell	<i>Medionidus walkeri</i>	FT	None
<b>Fish</b>			
Alabama shad	<i>Alosa alabamae</i>	ST	None
Spotted bullhead	<i>Ameiurus serracanthus</i>	SR	None
Suwanee bass	<i>Micropterus notius</i>	SR	None
<b>Plants</b>			
Pond spice	<i>Litsea aestivalis</i>	SR	None

Source: Georgia Department of Natural Resources, Wildlife Resources Division 2019; Moody AFB 2018; USFWS 2019

**BGEPA** – Bald and Golden Eagle Protection Act; **FT** – federally threatened; **FTSA** – federally threatened due to similarity of appearance; **FC** – federal candidate; **SE** – state endangered; **ST** – state threatened; **SR** – state rare

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**Gopher Tortoise.** There are approximately 1,000 acres of gopher tortoise habitat on the installation. As of 30 September 2013, there were 319 marked gopher tortoise burrows in seven colonies on the Installation. Gopher tortoise management is completed through projects identified in the Moody AFB INRMP with concurrence by Georgia Department of Natural Resources and USFWS. Management activities include seasonal monitoring and surveys of known gopher tortoise populations, disease surveillance, gopher tortoise movement studies in relation to military activities, a gopher tortoise mark-recapture population demography study, habitat improvement/restoration, and pedestrian surveys of suitable gopher tortoise habitat are conducted annually to identify new gopher tortoise burrows.

**Eastern Indigo Snake.** Eastern indigo snakes use a wide habitat range throughout their annual life cycle, utilizing wetland edges in the summer where prey is more abundant and moving to dried upland habitat in the winter. Eastern indigo snakes typically use gopher tortoise burrows for nesting and as refuge in the winter and from intense summer heat. Three eastern indigo snakes were sighted in the Bemiss Field area of the Grand Bay Weapons Range in 1991 (Moody AFB 2018). No eastern indigo snakes were observed during two species-specific surveys conducted in 1995 and 2002. In an attempt to enhance the small population of eastern indigo snakes on the Installation, the Georgia Department of Natural Resources introduced two confiscated eastern indigo snakes to Grand Bay Weapons Range in 1995. Additional sightings of one adult and one juvenile occurred in 1996 in the Grand Bay Wildlife Management Area Campground on Grand Bay Weapons Range. Management efforts for the eastern indigo snake include surveys concurrent with gopher tortoise surveys of burrows with burrow cameras and burrow entrance cameras and searches of burrow entrances for eastern indigo snake skin sheds. All potential sightings of eastern indigo snakes are reported to Civil Engineer Squadron Environmental personnel, and the areas are immediately surveyed.

**Wood Stork.** Wood storks have been documented to occasionally forage in the Carolina Bays of the Grand Bay-Banks Lake ecosystem seasonally, but no colonies or roosting sites occur on Moody AFB. The closest known wood stork rookery occurs approximately 10 miles northwest of Moody AFB.

The other federally listed species documented on Moody AFB is the American alligator (*Alligator mississippiensis*). The American alligator has been documented in Mission Lake and Carolina bay swamps.

The frosted flatwoods salamander (*Ambystoma cingulatum*) typically occurs in forested habitat consisting of fire-maintained, open-canopied, flatwoods and savannas dominated by longleaf pine (*Pinus palustris*), with naturally occurring slash pine (*Pinus ellioti*) in wetter areas; however, they do occur on some slash and loblolly pine (*Pinus taeda*) plantation sites. Since 1990, only four sites in Georgia have had documented occurrences of flatwoods salamander, none of which were in Lanier or Lowndes counties. Striped newt (*Notophthalmus perstriatus*) require shallow, unpolluted vegetated ponds, preferring temporary ponds or bays for breeding. Adults typically occur in longleaf pine savannahs with a lush ground cover of grasses and forbs. There is no suitable habitat in the managed grassland of the 24-acre Air Force-owned property or on adjacent properties.

Besides those species that are federally listed, the state-listed species that have been documented on Moody AFB include the southern hognose snake (*Heterodon simus*), alligator snapping turtle (*Macrochelys suwanniensis*), bald eagle, and round-tailed muskrat (*Neofiber alleni*). Southern hognose snake is typically associated with longleaf pine and/or scrub oak with wire grass as a significant component of the ground cover. Alligator snapping turtles prefer streams and rivers in areas with undercut banks, log jams, and deep holes. Bald eagles use shallow freshwater or salt water for foraging, and nest and roost in forested areas. Round-tailed



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muskrats typically inhabit areas with grassy shallow ponds, marshes, and bogs, preferably with emergent sedges and floating-leaved vegetation. None of these habitats are present within the 24-acre Air Force-owned property. Further, installation surveys have not documented the presence of any of these species west of Perimeter Road and the airfield.

### **3.7 CULTURAL RESOURCES**

#### **3.7.1 Definition of the Resource**

Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture or community for scientific, traditional, religious, or other purposes. These resources are protected and identified under several federal laws and EOs. Cultural resources include the following subcategories:

- Archaeological (i.e., prehistoric or historic sites where human activity has left physical evidence of that activity but no structures remain standing)
- Architectural (i.e., buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance)
- Traditional cultural properties (resources of traditional, religious, or cultural significance to Native American tribes)

Significant cultural resources are those that have been listed on the National Register of Historic Places (NRHP), or determined to be eligible for listing. To be eligible for the NRHP, properties must be 50 years old and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. They must possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance and meet at least one of four criteria:

- Associated with events that have made a significant contribution to the broad patterns of our history (Criterion A)
- Associated with the lives of persons significant in our past (Criterion B)
- Embody distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C)
- Have yielded or be likely to yield information important in prehistory or history (Criterion D)

Properties that are less than 50 years old can be considered eligible for the NRHP under Criterion Consideration G if they possess exceptional historical importance. Those properties must also retain historic integrity and meet at least one of the four NRHP criteria (A, B, C, or D). The term “historic property” refers to national historic landmarks and to NRHP-listed and NRHP-eligible cultural resources.

Federal laws protecting cultural resources include the Archaeological and Historic Preservation Act of 1960 as amended, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, the Native American Graves Protection and Repatriation Act of 1990, and the NHPA, as amended through 2016, and associated regulations (36 CFR 800). The NHPA requires federal agencies to consider effects of federal undertakings on historic properties prior to making a decision or taking an action and to integrate historic preservation values into their decision-making process. Federal agencies fulfill this requirement by completing the Section 106 consultation process, as set forth in 36 CFR 800. Section 106 of the NHPA also requires agencies to consult with federally recognized Indian tribes with a vested interest in the undertaking.

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Section 106 of the NHPA requires all federal agencies to seek to avoid, minimize, or mitigate adverse effects on these properties (36 CFR 800.1[a]). For cultural resource analysis, the Area of Potential Effect (APE) is used as the ROI. APE is defined as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist” (36 CFR 800.16[d]), and thereby diminish their historic integrity. The APE for direct effects is the 24-acre Air Force-owned property and the portion of Hightower Road proposed for relocation (areas of direct disturbance). For architectural resources, the APE for indirect effects is a 0.5-mile buffer around the Proposed Action area. The total APE consists of the 24-acre property, the portion of Hightower Road proposed for relocation, and the buffer for indirect effects.

### **3.7.2 Existing Conditions**

Moody AFB was established in early 1942 as the wartime Moody Field Advanced Pilot Training School. Cultural resource surveys at Moody AFB have identified two NRHP-eligible archaeological sites at Moody AFB. Sites 9LW63 and 9LW71, both prehistoric artifact scatters, are located in the main Base Administrative Area east of the runway (Air Force 1996, Moody AFB 2011). Numerous surveys of World War II and Cold War era buildings and structures at Moody AFB have been undertaken since 1997. Only two structures have been determined to be eligible for inclusion in the NRHP. Facility 618, constructed in 1941, is a steel water tower with a 200,000-gallon capacity. It was determined eligible for inclusion in the NRHP in 1999 (Moody AFB 2011). Building 110 is a chapel built in 1971. Significant for its midcentury modern architectural design, the chapel was determined eligible for inclusion in the NRHP in May 2017. Both of these structures are more than 0.5 mile from the Proposed Action area.

No traditional cultural properties have been identified on Moody AFB. No federally recognized tribes have identified traditional cultural properties (refer to **Appendix B**).

An intensive archaeological survey of the 24-acre property north of Moody AFB was completed in May 2011. A total of 144 shovel tests were excavated during the intensive archaeological survey of the 24-acre property. The intensive archaeological survey of the property identified one isolated occurrence, a single chert secondary flake found in a transect shovel test. Subsequent delineation shovel testing of this positive shovel test failed to recover any additional archaeological material. No archaeological sites were recorded during the survey, and no additional archaeological work was recommended for the parcel (Moody AFB 2013).

No NRHP-eligible archaeological sites are within 24-acre property (Moody AFB 2013). No NRHP-eligible architectural properties are located within the construction footprint or the 0.5-mile buffer for indirect effects around the Proposed Action.

## **3.8 SOCIOECONOMICS**

### **3.8.1 Definition of the Resource**

Socioeconomics is the relationship between economics and social elements, such as population levels and economic activity. Several factors can be used as indicators of economic conditions for a geographic area, such as demographics, median household income, unemployment rates, percentage of families living below the poverty level, employment, and housing data. Data on employment identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on industrial, commercial, and other sectors of the economy provide baseline information about the economic health of a region.

Lowndes and Lanier counties, Georgia, along with the city of Valdosta, Georgia, make up the ROI for this resource.

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**3.8.2 Existing Conditions**

The populations of Lowndes and Lanier counties were 115,489 and 10,425, respectively, in the 2017 US census. These were a 5.7 and 3.5 percent increase, respectively from the 2010 US census population estimated for Lowndes and Lanier counties (US Census Bureau 2019). Further, the city of Valdosta increased in population by 2.4 percent during that same period. The state of Georgia’s population totaled 10,429,379 in 2017, which was a 7.6 percent increase over the 2010 US census population of the state. Although the population growth rates of Lowndes and Lanier counties were less than the growth rate for the state of Georgia, the rate of growth for these two counties was similar to that of the US (Table 3-4).

**Table 3-4. Population in the Moody Region of Influence as Compared to Georgia and the United States (2010 – 2017)**

Location	2010	2017	Percent Change
United States	308,758,105	325,719,178	5.5
Georgia	9,688,680	10,429,379	7.6
Valdosta	54,518	56,085	2.4
Lowndes County	109,233	115,489	5.7
Lanier County	10,074	10,425	3.5

Source: US Census Bureau 2019

The unemployment rates for Lowndes and Lanier counties were 5.2 and 5.7 percent, respectively, in 2016 (Bureau of Labor Statistics 2017). This was slightly higher than the unemployment rate for Georgia (5.4) and the US. (4.9).

In 2017, there were a total of 47,568 housing units in Lowndes County, with 24,830 of those being owner-occupied units (US Census Bureau 2019). Dormitories at Moody AFB are in 15 buildings with a total of 758 rooms. Military family housing is privatized at Moody AFB, with two projects (Hunt Military Communities and Balfour Beaty Communities) that own the family housing and are responsible for maintaining, repairing, constructing, and managing the communities. Moody AFB has 388 homes divided into two on-base and two off-base neighborhoods with adequate capacity for additional residents (Moody AFB 2015a). The Lowndes County School District has 11 schools, with 7 elementary schools, 3 middle schools, and 1 high school. The total enrollment in the Lowndes County School District is 10,557 students (Lowndes County Schools 2019). The Valdosta City School District has 8,390 students enrolled in 5 elementary schools, 2 middle schools, 2 high schools, and at the Horne Learning Center (Valdosta City Schools 2019).

At Moody AFB, 5,230 active and reserve duty military personnel are stationed and another 836 civilian personnel work there. The total annual payroll is estimated to be \$300 million and the total economic impact to the state of Georgia is estimated to be \$448 million (Moody AFB 2015a).

**3.9 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

**3.9.1 Definition of the Resource**

EOs direct federal agencies to address disproportionate environmental and human health effects in minority and low-income communities and to identify and assess environmental health and safety risks to children. EO 12898, *Federal Actions to Address Environmental Justice in*

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*Minority Populations and Low-Income Populations*, pertains to environmental justice issues and relates to various socioeconomic groups and disproportionate impacts that could be imposed on them. This EO requires that federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. EO 12898 was enacted to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, states that each federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

For the purposes of this EA, minority populations are defined as Alaska Natives and American Indians, Asians, Blacks or African-Americans, Native Hawaiians, and Pacific Islanders or persons of Hispanic origin (of any race); low-income populations include persons living below the poverty threshold as determined by the US Census Bureau; and youth populations are children under the age of 18 years.

The Environmental Justice ROI is Lanier and Lowndes counties, and the city of Valdosta, Georgia. An evaluation of minority and low-income populations in the ROI forms a baseline for the evaluation of the potential for disproportionate impacts on these populations from the Proposed Action.

### **3.9.2 Existing Conditions**

In 2017, the state of Georgia, Lowndes County, and the city of Valdosta had a higher percentage of population that identified as minorities than in the US as a whole (Table 3-5). However, the state of Georgia, Lowndes and Lanier counties, and the city of Valdosta had substantially lower percentage of population was of Hispanic or Latino origin compared to the US (US Census Bureau 2019). Of the minority population in the ROI and in the state of Georgia, a higher percentage identified as Black or African American than in the US.

Lowndes and Lanier counties and the city of Valdosta had a higher rate of poverty than Georgia and the US (Table 3-5). Further, a similar percentage of the population are children in the ROI as in Georgia and the US as a whole (Table 3-5) (US Census Bureau 2019).

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**Table 3-5. Total Population and Populations of Concern for Moody Air Force Base**

Location	Total Population	Percent Minority*	Percent Hispanic or Latino	Percent below Poverty	Percent Youth
United States	325,719,178	39.3	18.1	12.3	22.6
Georgia	10,429,379	47.9	9.6	14.9	24.1
Valdosta	56,085	58.9	5.0	32.2	22.1
Lowndes County	115,489	46.2	5.8	25.3	24.0
Lanier County	10,425	31.5	5.9	20.5	24.5

Source: US Census Bureau 2019

Note: Hispanic and Latino denote a place of origin and may be of any race, and percent youth are all persons under the age of 18.

\* Not White or representing more than one race and Hispanic or Latino in origin.

### **3.10 Infrastructure, Transportation, and Utilities**

#### **3.10.1 Definition of the Resource**

Infrastructure consists of the systems and structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as developed. The availability of infrastructure and its capacity to support more users and residential and commercial expansion are generally regarded as essential to the economic growth of an area. The infrastructure information was primarily obtained from the Moody AFB Installation Development Plan and provides a brief overview of each infrastructure component and comments on its existing general condition.

The infrastructure components include transportation, utilities, and solid waste management. Transportation is defined as the system of roadways, highways, and transit services that are in the vicinity of the Installation and could be reasonably expected to be potentially affected by the Proposed Action. Utilities include electrical, natural gas, liquid fuel, water supply, sanitary sewage/wastewater, and communications systems. Solid waste management primarily relates to the availability of landfills to support a population's residential, commercial, and industrial needs.

The ROI for this resource is Moody AFB and the nearby transportation and utility network.

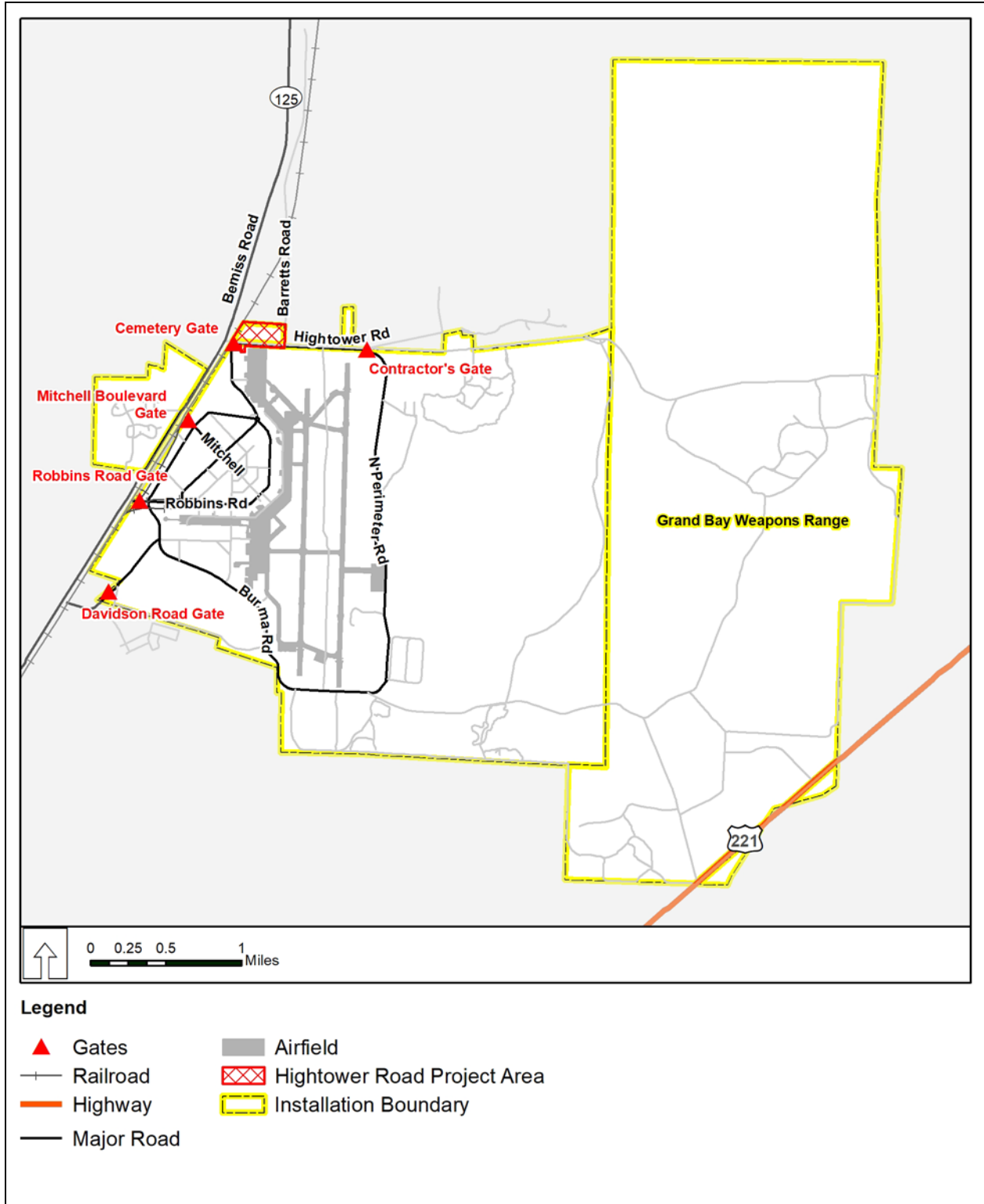
#### **3.10.2 Existing Conditions**

Unless otherwise noted, the existing conditions for infrastructure at Moody AFB were derived from the *Installation Development Plan for Moody Air Force Base* (Moody AFB 2015a).

#### **Transportation**

The area surrounding Moody AFB is rural. The primary access road to Moody AFB is Georgia State Route 125, which runs south to the city of Valdosta and connects to Interstate 75 (Figure 3-2). The Davidson Road Gate is the main gate for Moody AFB and opens onto Davidson Road, a connector to State Route 125, and Moody AFB's North Gate opens directly onto State Route 125. The North Gate is controlled by a traffic signal. The 39 miles of roads on Moody AFB are laid out in a wagon wheel design with a perimeter bounded by the arterials of Robbins Road, Savannah Street, and Georgia Street.

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**Figure 3-2. Transportation Network for Moody Air Force Base, Georgia**

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There are four operational public entry control facilities at Moody AFB (Figure 3-2). The Davidson Road Gate, which is located at the south end of the Base, is accessible by Davidson Road from State Route 125 and is used by Base personnel, visitors, and commercial vehicles. The visitor center is located at this gate, along with truck and automobile inspection areas. The Davidson Road Gate receives the majority of privately owned vehicle traffic, as most personnel live south of Moody AFB. The secondary public point of entry is the Mitchell Boulevard Gate, located to the north at the intersection of Mitchell Boulevard and State Route 125. The Robbins Road Gate has limited operating hours (1600 to 1800 hours on weekdays), and the Cemetery Gate is used only for special events, such as the Air Show. A fifth gate, the Contractor's Gate, is located farther east on Hightower Road, and is used on a limited basis to allow contractor vehicles access to the east side of the airfield.

Traffic flow is adequate, with some congestion peaks at gates at the beginning and end of the normal workday. Access control requirements implemented because of antiterrorism/force protection have increased the delays for access to Moody AFB through the gates. However, there are no major road capacity issues at Moody AFB (Moody AFB 2015a).

Traffic counts along Hightower Road were collected by Lowndes County in 2009. A total of 144 vehicles per day were recorded by the county on Hightower Road (Fletcher 2019).

### **Electrical System**

Electricity is provided to Moody AFB via two 115-kilovolt feeders that supply power from Georgia Transmission-owned substations located off the Base. A single, three-phase, 12-megavolt-ampere transformer steps the voltage down from 115 kilovolts to 12,470 volts for distribution throughout the Base via five primary circuits. These circuits are sized so that each can assume at least one additional circuit load. With some load shed, three circuits can assume the load of all five circuits even in the most heavily loaded season (Moody AFB 2015a).

Although there are two connections to the grid, the lone transformer acts as a single point of failure for the Base. Backup generation capacity is available for mission-critical buildings for three to seven days, and some of the larger buildings utilize generators for load shedding. It is estimated that in case of failure, a backup transformer would be in place in less than six hours.

Overall, the electrical distribution system is in good condition. The airfield lighting system is in excellent condition after recent projects to replace older distribution infrastructure. There is an ongoing project to move overhead lines underground for security, maintenance reduction, and weather mitigation. Distribution is currently estimated at 90 percent underground and 10 percent overhead. Other projects include light-emitting diodes for all exterior lighting, ramp pole lighting replacement, and lowering of light height. Solar shade parking is also being considered (Moody AFB 2015a).

### **Natural Gas**

Natural gas at Moody AFB is supplied through a contract managed by the Defense Energy Support Center and is distributed through approximately 10.6 miles of gas line on the main Base. In addition, when high regional demand reduces the availability of natural gas, a propane-air mix system is utilized to meet the thermal energy demands of the Base (Moody AFB 2015a).

Family housing gas distribution was privatized in 2004 and has approximately 5 miles of natural gas line. The facilities east of the flight line are currently served by individual propane tanks as there is no natural gas connection.

Gas is supplied to Moody AFB through the utility's regulator and metering station via an 8-inch-diameter buried polyvinyl chloride (PVC) line. System pressure is maintained at about 120

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pounds per square inch in winter and summer. The main Base consumes approximately 27.16 million thousand cubic feet annually, based on average consumption for fiscal years 2012 and 2013. Peak average consumption of approximately 7.98 million thousand cubic feet per month occurs in December, January, and February, and the average base gas demand of approximately 2.23 million thousand cubic feet per month occurs in June through September (Moody AFB 2015a).

Approximately 90 percent of the main lines in the Administrative Area are polyethylene plastic and in excellent condition. An engineering condition assessment conducted in the early 2000s verified that the gas mains on the Base are in adequate condition. The small remaining sections of steel pipe are planned to be replaced by polyethylene pipe in upcoming projects (Moody AFB 2015a).

### **Liquid Fuel**

Moody AFB's existing petroleum distribution system was developed to accommodate multiple flying missions, and since construction it has accommodated a variety of training and combat aircraft. JP-8 fuel storage consists of four steel aboveground storage tanks (ASTs) for jet fuel that total more than 30,000 barrels and were constructed in 1953, then upgraded for operational and environmental needs in 2006. A 5,000-gallon JP-8 tank was also built in 1977. The fill-stand system consists of four 600-gallon-per-minute pumps; four 600-gallon-per-minute filter separators; a combination of aboveground and underground piping; and pantograph issue points with isolation valves and ground prover systems. A JP-8 100 injector system was removed in early 2014.

The military service station was demolished and replaced with a modern four-tank/four fuel (motor gasoline, E-85, diesel, and biodiesel) facility. The Army/Air Force Exchange Service fueling station has three 12,000-gallon unleaded underground storage tanks (USTs) with six dual dispensing units (Moody AFB 2015a).

### **Water Supply System**

The abundant aquifer water supply is available year round and is currently accessed via three main wells operating at less than 50 percent capacity (estimated) and six secondary wells throughout the Base. The well water is made safe as a potable source by Moody AFB's nanofiltration plant, which removes organic carbon to eliminate the formation of trihalomethanes. Moody AFB can currently supply a maximum of approximately 750,000 gallons per day from the aquifer to meet peak demands. Moody AFB's estimated peak demand is approximately 230,000 gallons per day and average demand is 200,000 gallons per day. Nonpotable water byproducts of the filtration process are utilized for site irrigation, lowering the site's demand for potable water.

The water storage capacity of 11.4 million gallons and the main Base's distribution network of 10- and 12-inch-diameter pipes are generally considered adequate to meet existing needs and accommodate significant future growth. The original water distribution system was constructed in the 1950s. Throughout the history of the Base, portions of the original system have been replaced; however, some of the water lines still in use were installed in the 1970s or earlier. The distribution pipe is generally in adequate condition (Moody AFB 2015a).

### **Sanitary Sewer/Wastewater System**

The wastewater treatment facility and infrastructure were initially installed in the 1940s, and the facility underwent significant upgrades in 1995 and 2012. The upgrades increased the capacity of the system to 750,000 gallons per day, with additional space available in the facility for future



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capacity expansion if required. A recent project included the addition of a lift station. A NPDES permit was issued for the facility, allowing effluent discharge at an average rate of 0.75 million gallons per day with a maximum of 1.125 million gallons per day, equivalent to the capacity of the plant. Given an N-0 rating, the resource is capable of fully supporting the current mission of assigned units, organizations, and tenants with no workarounds, and offers additional capacity to meet potential future mission requirements (Moody AFB 2015a).

There are approximately 131,500 linear feet of sewer lines, composed mostly of cast-iron, PVC, and asbestos cement and supported by 27 lift stations. Wastewater collection infrastructure is in good condition; however, because all collection lines utilize a single lift station in the northwest portion of the Base (near Building 207), the system may suffer significant disruption if that station were to go offline. After treatment, the wastewater is discharged into Beatty Creek.

A few facilities on the Base are still using onsite wastewater treatment systems. There are two functional septic tanks at Moody AFB located at Building 1720 at the south end of the airfield and at Building 1501, a communications receiver building to the east of the airfield runways. In addition, there are two septic tanks at the Grassy Pond Recreation Area. There are eight wastewater collection tanks at Moody AFB that are associated primarily with industrial facilities.

Moody AFB has a successful ongoing sewer rehabilitation project to repair or replace degraded sections of pipe in addition to recent projects upgrading pump stations to meet Air Combat Command standards (Moody AFB 2015a).

### **Solid Waste Management**

The Veolia E. S. 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 of 1,500 tons per day and has a projected life expectancy of 32 years (Georgia Department of Community Affairs 2013). In addition, the Atkinson County Landfill and the Fitzgerald Landfill located in Ben Hill County, Georgia, are permitted to accept construction debris. Construction debris includes waste building materials and rubble resulting from construction activities. These landfills also accept tree trimmings and wood debris. The average daily tonnage and life expectancy for the Atkinson County Landfill is 105 tons per day for 21 years and for the Fitzgerald Landfill is 13 tons per day for 11 years (Georgia Department of Community Affairs 2013).

### **Communication System**

Moody AFB meets all radio frequency requirements for all very-high-frequency and high-frequency bands. Currently, the Base's fire alarm radio-controlled reporting system is operating on a temporary band until a permanent band can be assigned. Typically, requests for additional frequencies are approved within 90 days. Tactical land mobile radio, air-to-ground, point-to-point, navigational aid systems, nontactical land mobile radio, and long-haul communications all are capable of supporting the current mission of assigned units, organizations, and tenants with minimal workarounds (Moody AFB 2015a).

Moody AFB has expanded the use of fiber-optic cable significantly over the past few years, including a connection to the range. New buildings have voice-over-internet-protocol (or VoIP) systems, nonclassified internet protocol router networks (known as NIPRNet) for all workstations, and mass notification systems. Bandwidth on the secret internet protocol router network (i.e., SIPRNET) is being expanded, and voice-over-secure-internet-protocol (or VoSIP) systems are being installed. Uptime for the communications systems hovers right around 98 to 99 percent. The Communications Squadron is continually building infrastructure to improve connectivity throughout the Installation. There is sufficient capacity in the main communications

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hub for further expansion of the network, and projects are ongoing to further increase duct capacity.

Beyond the expansion of fiber-optic cable throughout the Base, projects focusing on improving network integrity and security have been prioritized and are currently under way. A key ongoing project is the creation of a redundant (secondary) path into the Base for outbound communications traffic. Moody AFB is advancing VoIP systems with a target of all communications through internet protocol network by 2020 (Moody AFB 2015a).

### **24-Acre Air Force-Owned Property**

The 24-acre Air Force-owned property is accessible via Hightower Road which borders the property to the south. Hightower Road provides local direct access from Bemiss Road and Shiner Pond Road for several residential properties, agricultural lands, and one business. There are no utilities providing services to the 24-acre Air Force-owned property, and the entire parcel is undeveloped.

## **3.11 HAZARDOUS MATERIALS AND WASTES, ENVIRONMENTAL RESTORATION PROGRAM, AND TOXIC SUBSTANCES**

### **3.11.1 Hazardous Materials and Wastes**

The Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act and the Toxic Substances Control Act, defines hazardous materials. Hazardous materials are defined as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, or incapacitating reversible illness, or that might pose a substantial threat to human health or the environment. The Occupational Safety and Health Administration (OSHA) is responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety under 29 CFR 1910. OSHA also includes the regulation of hazardous materials in the workplace and ensures appropriate training in their handling.

The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act, which was further amended by the Hazardous and Solid Waste amendments, defines hazardous wastes. Hazardous waste is defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes, that pose a substantial present or potential hazard to human health or the environment. In general, both hazardous materials and hazardous wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, might present substantial danger to public health and welfare or the environment when released or otherwise improperly managed.

Air Force Policy Directive (AFPD) 32-70 establishes the policy that the Air Force is committed to the following:

- Cleaning up environmental damage resulting from its past activities
- Meeting all environmental standards applicable to its present operations
- Planning its future activities to minimize environmental impacts
- Responsibly managing the irreplaceable natural and cultural resources it holds in public trust
- Eliminating pollution from its activities wherever possible

AFI 32-7044, *Storage Tank Compliance*, implements AFPD 32-70 and identifies compliance requirements for USTs, ASTs, and associated piping that store petroleum products and hazardous substances. Evaluation of hazardous materials and hazardous wastes focuses on

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USTs and ASTs as well as the storage, transport, and use of pesticides, fuels, oils, and lubricants. Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a Proposed Action. In addition to being a threat to humans, the improper release of hazardous materials and hazardous wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or hazardous wastes, the extent of contamination varies based on type of soil, topography, weather conditions, and water resources.

AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the Air Force. It applies to all Air Force personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities.

Through the Environmental Restoration Program (ERP) initiated in 1980, a subcomponent of the Defense ERP that became law under Superfund Amendments and Reauthorization Act (formerly the Installation Restoration Program), each Department of Defense installation is required to identify, investigate, and clean up hazardous waste disposal or release sites. Remedial activities for ERP sites follow the Hazardous and Solid Waste Amendment of 1984 under the Resource Conservation and Recovery Act Corrective Action Program. The ERP provides a uniform, thorough methodology to evaluate past disposal sites, control the migration of contaminants, minimize potential hazards to human health and the environment, and clean up contamination through a series of stages until it is decided that no further remedial action is warranted.

Description of ERP activities provides a useful gauge of the condition of soils, water resources, and other resources that might be affected by contaminants. It also aids in identification of properties and their usefulness for given purposes (e.g., to complete remediation, activities that are dependent on groundwater usage might be foreclosed where a groundwater contaminant plume remains).

Toxic substances might pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Included in this category are asbestos-containing materials, lead-based paint, radon, and polychlorinated biphenyls (PCBs). The presence of special hazards or controls over them might affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

**Asbestos.** AFI 32-1052, *Facility Asbestos Management*, provides the direction for asbestos management at Air Force installations. This instruction incorporates by reference applicable requirements of 29 CFR 669 et seq., 29 CFR 1910.1025, 29 CFR 1926.58, 40 CFR 61.3.80, Section 112 of the Clean Air Act, and other applicable AFIs and Department of Defense directives. AFI 32-1052 requires bases to develop an Asbestos Management Plan to maintain a permanent record of the status and condition of asbestos-containing materials in installation facilities, as well as documenting asbestos management efforts. In addition, the instruction requires installations to develop an Asbestos Operating Plan detailing how the installation accomplishes asbestos-related projects. Asbestos is regulated by the USEPA with the authority promulgated under OSHA, 29 USC § 669 et seq. Section 112 of the Clean Air Act regulates emissions of asbestos fibers to ambient air. USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

**Lead-Based Paint.** Human exposure to lead has been determined an adverse health risk by agencies such as OSHA and the USEPA. Sources of exposure to lead are dust, soils, and paint. In 1973, the Consumer Product Safety Commission established a maximum lead content in

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paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, under the Consumer Product Safety Act (Public Law 101-608, as implemented by 16 CFR 1303), the Consumer Product Safety Commission lowered the allowable lead level in paint to 0.06 percent (600 ppm). The Act also restricted the use of lead-based paint in nonindustrial facilities. The Department of Defense implemented a ban of lead-based paint use in 1978; therefore, it is possible that facilities constructed prior to or during 1978 may contain lead-based paint.

**Radon.** The US Surgeon General defines radon as an invisible, odorless, and tasteless gas, with no immediate health symptoms, that comes from the breakdown of naturally occurring uranium inside the earth (US Surgeon General 2005). Radon that is present in soil can enter a building through small spaces and openings, accumulating in enclosed areas such as basements. No federal or state standards are in place to regulate residential radon exposure at the present time, but guidelines were developed. Although 4.0 picocuries per liter (pCi/L) is considered an “action” limit, any reading over 2 pCi/L qualifies as a “consider action” limit. The USEPA and the US Surgeon General have evaluated the radon potential around the country to organize and assist building code officials in deciding whether radon-resistant features are applicable in new construction. Radon zones can range from 1 (high) to 3 (low).

**Polychlorinated Biphenyls.** PCBs are a group of chemical mixtures used as insulators in electrical equipment, such as transformers and fluorescent light ballasts. Chemicals classified as PCBs were widely manufactured and used in the US until they were banned in 1979. The disposal of PCBs is regulated under the federal Toxic Substances Control Act (15 USC § 2601, et seq., as implemented by 40 CFR 761), which banned the manufacture and distribution of PCBs, with the exception of PCBs used in enclosed systems. Per Air Force policy, all installations should have been PCB free as of 21 December 1998. In accordance with 40 CFR 761 and Air Force policy, both of which regulate all PCB articles, PCBs are regulated as follows:

- Less than 50 ppm – non-PCB (or PCB free)
- 50 ppm to 499 ppm – PCB contaminated
- 500 ppm and greater – PCB equipment (USEPA 2008)

The Toxic Substances Control Act regulates and the USEPA enforces the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment.

The ROI for this resource is Moody AFB.

### **3.11.2 Existing Conditions**

The information below was summarized from several documents, including management plans, material surveys by the Georgia Environmental Protection Division, other state of Georgia records, and related documentation.

#### **Hazardous Materials**

Hazardous and toxic material procurements at Moody AFB are approved and tracked by the Moody AFB 23d Civil Engineer Squadron, Installation Management Flight, Environmental Management Element (CES/CEIE), which has overall management responsibility of the installation environmental program. The Bioenvironmental Engineering Flight/Preventative Medicine supports and monitors environmental permits, hazardous materials, and hazardous waste storage, spill prevention and response, and participation in the Environmental Safety and Occupational Health Council (ESOHC) (Air Force 2016).

The ESOHC is a network of safety, environmental, and logistics experts who work with hazardous materials managers, unit environmental coordinators, and other hazardous materials

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users to ensure safe and compliant hazardous materials management throughout the Base. A privately contracted hazardous material pharmacy (HAZMART) ensures that only the smallest quantities of hazardous materials necessary to accomplish the mission are purchased and used. HAZMART is located at 4380B Alabama Road.

The 23d CES/CEIE maintains the Hazardous Waste Management Plan (Air Force 2016) as directed by AFI 32-7042, Waste Management, and complies with 40 CFR 260 to 272. This plan prescribes the roles and responsibilities of all members of the ESOHC with respect to the waste stream inventory, Waste Analysis Plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The Hazardous Waste Management Plan establishes the procedures to comply with applicable federal, state, and local standards for solid waste and hazardous waste management. The plan outlines procedures for transport, storage, and disposal of hazardous wastes.

Hazardous materials at Moody AFB are managed by the HAZMART. The Enterprise Environmental, Safety, and Occupational Health Management Information System tracks acquisition and inventory control of hazardous materials. Hazardous materials and petroleum products such as fuels, flammable solvents, paints, corrosives, pesticides, deicing fluid, refrigerants, and cleaners are used throughout Moody AFB for various functions, including aircraft maintenance; aircraft ground equipment maintenance; and ground vehicle, communications infrastructure, and facilities maintenance.

No hazardous materials are stored on the 24-acre Air Force-owned property.

### **Hazardous Waste**

Hazardous wastes generated at Moody AFB include flammable solvents, contaminated fuels and lubricants, paint/coating, stripping chemicals, oils, paint-related materials, mixed-solid waste, and other miscellaneous wastes. Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called “universal wastes,” and their associated regulatory requirements are specified in 40 CFR 273. Types of waste currently covered under the universal waste regulations include fluorescent light tubes, hazardous waste batteries, hazardous waste thermostats, and hazardous waste lamps.

Facilities at Moody AFB generate varying amounts of hazardous waste under all three generator sizes as defined by the USEPA (40 CFR 260.10): large-quantity generator, small-quantity generator, and conditionally exempt small-quantity generator. Moody AFB operates 49 satellite accumulation points on the west side of the airfield, and two satellite accumulation points at the Combat Arms Training and Maintenance ranges, where up to 55 gallons of “total regulated hazardous wastes” or up to 1 quart of “acutely hazardous wastes” are accumulated. The Installation operates one 90-day accumulation site, where hazardous waste accumulates before being transported off-Installation for ultimate disposal (Air Force 2016). None of the facilities in the ROI contain satellite accumulation points.

An inventory of ASTs and USTs is maintained at Moody AFB and includes the location, contents, capacity, containment measures, status, and installation dates (Air Force 2016). No USTs or ASTs are located within the project area.

### **Environmental Restoration Program/Military Munitions Response Program**

Moody AFB began its ERP in 1982 with environmental assessment and restoration activities and has 31 closed ERP sites and 1 closed Military Munitions Response Program site, none of which required remediation. An additional 11 ERP sites have ongoing corrective action and have Land Use Controls associated with them. One Military Munitions Response Program site,

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the former skeet range, has an ongoing investigation. Two active ERP sites are within 0.5 mile but outside of the 24-acre parcel:

- ST-12 – located west of the C-130 parking ramp and south of the 24-acre parcel
- LF-02 – located west of the C-130 parking ramp and south of the 24-acre parcel

No ERP sites are located within the 24-acre parcel.

### **Toxic Substances**

**Asbestos.** The 23d CES/CEIE has developed an Asbestos Management and Operating Plan for Moody AFB, which includes program administration, organizational roles and responsibilities, standard work practices, and documentation. There are no structures within the project area; therefore, asbestos-containing material surveys are not pertinent.

**Lead-Based Paint.** AFI 32-7042 requires installations to ensure that construction, renovation, or demolition involving lead-based materials are managed in accordance with applicable federal, state, and local transportation, occupational health treatment, storage, and disposal requirements. No buildings are located on the Air Force-owned property or along the portion of Hightower Road north of the HC-130 parking ramp.

**Radon.** The USEPA radon zone for Lowndes County, Georgia, is Zone 3 (low potential), with a predicted indoor average level less than 2 pCi/L (USEPA 2017).

**Polychlorinated Biphenyls.** Moody AFB has been considered PCB free since 1991 (Air Force 1991). All transformers with PCB concentrations over 500 ppm were removed, replaced, or refilled to below 50 ppm. The facility's Hazardous Waste Management Plan indicates that there are no known PCB materials at the Installation but notes that ballasts and starters from light fixtures could contain PCB-containing material. The disposal of these materials is regulated. If the ballasts are not plainly marked as "non-PCB," the material must be treated as PCB containing (or be tested and proven to be non-PCB containing). As facility repairs and demolition occur, the suspected ballasts are removed and disposed of properly. No PCB spills have been identified within the Installation. No buildings are located on the Air Force-owned property or along the portion of Hightower Road north of the HC-130 parking ramp.

## **3.12 HEALTH AND SAFETY**

### **3.12.1 Definition of the Resource**

A safe environment is necessary to prevent or reduce the potential for death, serious injury and illness, or property damage. Safety and human health issues address workers safety and health during construction, as well as employee safety during the daily operations of the facilities. Human health and safety for the purposes of this analysis are defined as occupational hazards associated with the construction and use of a new overflow parking lot, the realigned Hightower Road, the Base boundary fence, and the Base boundary road.

OSHA's program purpose is to protect personnel from occupational deaths, injuries, or illnesses; OSHA safety guidance published in the Department of Labor 29 series CFR governs general safety requirements relating to general industry practices (Section 1910), construction (Section 1926) and elements for federal employees (Section 1960). These standards include guidance for entry into areas in which a hazard may exist.

AFI 91-202, *Air Force Mishap Prevention Program*, and AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, implement AFD 91-2, *Safety Programs*. AFI 91-202 establishes mishap prevention program requirements, assigns responsibilities for program elements, and contains program management information. The purpose of the Air Force Mishap

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Prevention Program is to minimize loss of Air Force resources and to protect Air Force personnel from occupational deaths, injuries, or occupational illnesses by managing risks on and off duty. AFI 91-203 consolidates all Air Force Occupational Safety and Health standards and defines the Air Force's minimum safety, fire protection, and occupational health standards, and assigns responsibilities to individuals or functions to help Commanders manage their safety and health programs to ensure they comply with OSHA and Air Force guidance. These instructions apply to all Air Force activities.

The ROI for this resource is Moody AFB and surrounding environments.

### **3.12.2 Health and Safety**

Daily operations and maintenance operations conducted on Moody AFB are performed in accordance with applicable Air Force safety regulations, Air Force technical guidance, and the standards stipulated in Air Force Occupational Safety and Health requirements. Construction and demolition activities are common on Moody AFB and have associated inherent risks such as chemical (e.g., asbestos, lead, hazardous materials) and physical (e.g., noise propagation, falling, electrocution, collisions with equipment) sources. Companies and individuals contracted to perform construction activities on Air Force installations are responsible for adhering to OSHA requirements to mitigate these hazards. Industrial hygiene programs address exposure to hazardous materials, use of personal protective equipment, and the availability and use of safety data sheets, the latter of which are also the responsibility of construction contractors to provide to workers. Federal civilian and military personnel that have a need to enter areas under construction should be familiar with and adhere to OSHA and Air Force Occupational Safety and Health requirements, as well as applicable industrial hygiene programs. Individuals tasked to operate and maintain equipment, such as power generators, are responsible for following all applicable technical guidance, as well as adhering to established OSHA and Air Force safety guidelines.

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## 4.0 ENVIRONMENTAL CONSEQUENCES

This chapter presents an analysis of potential environmental consequences of the identified alternatives for the implementation of the Proposed Action to meet the force protection recommendations by realigning the Moody AFB boundary fence, Hightower Road, and construction of an overflow parking lot. The criteria for evaluating impacts and assumptions for the analyses are presented for each resource area. Evaluation criteria for most potential impacts were obtained from standard criteria; federal, state, or local agency guidelines and requirements; and/or legislative criteria. Impacts may be direct or indirect and are described in terms of type, context, duration, and intensity, which is consistent with the CEQ regulations. “Direct effects” are caused by an action and occur at the same time and place as the action. “Indirect effects” are caused by the action and occur later in time or are farther removed from the place of impact, but are reasonably foreseeable. The anticipated area of direct effects from Alternative 1, Alternative 2, and the No Action Alternative are provided in Table 4-1.

**Table 4-1. Anticipated Area of Direct Effects from the Alternative Actions and No Action Alternative**

<b>Proposed Action Feature</b>	<b>Alternative 1 (acres)</b>	<b>Alternative 2 (acres)</b>	<b>No Action Alternative (acres)</b>
Hightower Road realignment	1.61	0.99	0
Installation boundary fence realignment	0.14	0.09	0
Overflow parking area	3.00	3.00	0
Interior boundary road	1.40	1.04	0
Existing boundary fence removal	0.08	0.08	0
<b>Total</b>	<b>6.23</b>	<b>5.20</b>	<b>0</b>

Impacts are defined in general terms and are qualified as adverse or beneficial and as short term or long term. For the purposes of this EA, short-term impacts are generally considered those impacts that would have temporary effects. For example, air quality impacts from fugitive dust associated with construction would be considered short term as they would only last for the duration of the construction activities. Long-term impacts are generally considered those impacts that would result in permanent effects. For example, the loss of vegetation or the increase in traffic associated with the Proposed Action would be considered long term.

Impacts are defined as follow:

- Negligible – the impact is localized and not measurable or at the lowest level of detection
- Minor – the impact is localized and slight but detectable
- Moderate – the impact is readily apparent and appreciable
- Major – the impact is severely adverse or highly noticeable and considered to be significant

The existing conditions of each relevant resource were described in Chapter 3 to give the public and agency decision makers a meaningful point from which to compare potential future environmental, social, or economic effects. Cumulative effects are described in Chapter 5.

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## **4.1 LAND USE**

Potential impacts on land use are based on the level of land use sensitivity in areas potentially affected by the Proposed Action as well as compatibility of those actions with existing conditions. In general, a land use impact would be adverse if it met one of the following criteria:

- Is inconsistent or noncompliant with existing land use plans or policies.
- Precludes the viability of existing land use.
- Precludes continued use or occupation of an area.
- Is incompatible with adjacent land use to the extent that public health or safety is threatened.
- Conflicts with planning criteria established to ensure the safety and protection of human life and property.

Under the Proposed Action, the ownership of approximately 1,800 feet of the existing Hightower Road would be acquired by the Air Force and land for the new Hightower Road alignment would be ceded to Lowndes County. The Base boundary fence, boundary road, and overflow parking lot would be constructed on Air Force property and remain within the boundaries of Moody AFB.

### **4.1.1 Alternatives 1 and 2**

Except for the land ceded to Lowndes County for the relocation of Hightower Road, the land use designation for the 24-acre Air Force-owned property would remain as aircraft operations and maintenance. The change in land ownership for the new Hightower Road alignment would alter the land use designation for that portion of land currently owned by the Air Force and ceded to Lowndes County. Lowndes County-owned land along the current Hightower Road alignment acquired by the Air Force would be used by Moody AFB for air operations and maintenance.

The proposed acquisition and relocation of Hightower Road, the realignment of the Base boundary fence and boundary road, and construction and use of an overflow parking lot are compatible with Moody AFB's future land use plan (Moody AFB 2015a). Undeveloped maintained grassland would be developed; however, the current alignment of Hightower Road would be abandoned and remain undeveloped. There would be no impacts on visual resources as the existing Base boundary fence and Hightower Road would be relocated and not removed. No recreational uses would be affected by the Proposed Action. Therefore, there would be no adverse impacts on land use as a result of Alternative 1 or 2.

### **4.1.2 No Action Alternative**

Under the No Action Alternative, there would be no change to land use designations. However, the recommended force protection measures needed to meet the land use requirements for the HC-130 parking ramp would not be met. Land use for a portion of the HC-130 parking ramp for aircraft operations and maintenance could not be met as the force protection measures for this area would be inadequate. Therefore, under the No Action Alternative, there would be minor adverse impacts on land use for a portion of the HC-130 parking ramp.

## **4.2 NOISE**

Noise impact analysis typically evaluates potential changes to the existing noise environment that would result from implementation of the proposed or alternative actions. Potential changes in the noise environment can be beneficial (i.e., if the number of sensitive receptors exposed to unacceptable noise levels were reduced), negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased noise exposure to unacceptable noise levels).

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Off-Base sensitive noise receptors include two residential areas located approximately 50 to 100 feet to the north and west of the proposed road alignment. However, the 10 nearby residences (i.e., less than 200 feet from the perimeter of the Air Force-owned property) in the residential area to the north are separated from the proposed relocated Hightower Road by Runway Lane and the 12 residences to the west are separated from the proposed relocated Hightower Road by Yate Lane and the railroad. These sensitive noise receptors could experience noise temporary noise impacts from construction activities and permanent noise impacts from vehicle travel on Hightower Road.

#### **4.2.1 Alternative 1**

Noise associated with the operation of machinery on construction sites is typically short term, intermittent, and highly localized. The construction equipment that has the potential to generate loudest noise are jackhammers and other pneumatic tools that emit noise of 85 to 90 dBA at 50 feet (US Department of Transportation 2006). Most other equipment, including heavy machinery, typically emits noise in the 70 to 85 dBA range at 50 feet. It is important to note that the peak noise range for construction equipment does not consider the ability of sound to be reflected/absorbed by nearby objects, which would further reduce noise levels. Additionally, interior noise levels are typically reduced by at least 10 dBA and as much as 20 dBA due to the noise-level reduction properties of a building's construction materials (US Department of Transportation 2011).

At construction sites, standard measures would be taken to minimize the impact of additional noise. These recommended standard measures would be incorporated into construction plans:

- Limit the operation of heavy equipment and other noisy procedures to daylight hours whenever possible.
- Install and maintain effective mufflers on equipment.
- Locate equipment and vehicle staging areas as far from noise sensitive areas as possible.
- Limit unnecessary idling of equipment.

In addition, noise is generally attenuated as the distance from the source increases; sound levels measured from point sources usually decrease at a rate of 6 dBA each time the distance is doubled (US Department of Transportation 2006). For example, a point source that generates 85 dBA at 50 feet is reduced to 79 dBA at a distance of 100 feet and 73 dBA at 200 feet. Once construction is complete, the noise associated with these activities would cease. Therefore, with a 10 dBA attenuation due the properties of the residential buildings and a 10 dBA attenuation due to distance from the construction activities, it is estimated that noise levels from construction activities within nearby residences could be as high as 69 dBA during the Hightower Road construction activities. This would be a minor temporary adverse impact from construction noise during construction of Hightower Road. However, these noise levels would return to ambient conditions following the completion of construction.

Workers at construction sites would have the greatest potential to experience hearing loss from the noise generated during road, fence, and parking lot construction activities. Construction workers would be expected to use hearing protection and follow OSHA standards and procedures, and noise impacts to construction workers would be minimized.

Vehicle use on the relocated Hightower Road and along the Base boundary road would be similar to the vehicle use under existing conditions, and no new noise from vehicles would be generated. However, with the realignment of Hightower Road, the location of vehicle movement (which is estimated to be 144 vehicles per day) and its associated noise would change as vehicles traveling on Hightower Road would be closer to residential homes than with the current

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alignment of Hightower Road. Although passenger vehicles compose most of the vehicles present on Hightower Road, some light and medium truck traffic does occur on the road. However, these vehicles would move at a relatively slow speed, as the speed limit of the newly aligned road is anticipated to be 40 miles per hour. The average noise level of medium-sized trucks traveling 40 miles per hour at a distance of 50 feet is 78 dBA (Cowan 1993). Noise levels from vehicle movement would be reduced by 10 dBA due to the noise-reducing properties of the building materials in these residential homes (US Department of Transportation 2011). Therefore, the interior noise levels at the residential homes located nearest to Hightower Road (i.e., within 50 feet of the new road alignment), would experience noise levels of approximately 68 dBA as a result of the proposed Hightower Road relocation. Those residential homes located 100 feet from the proposed realigned Hightower Road would experience interior noise levels below 65 dBA. Therefore, there would be a minor permanent adverse impact from noise on the 22 residences located within 50 to 100 feet north and west of the proposed Hightower Road realignment.

Vehicle noise would also occur from the periodic use of the new overflow parking lot. However, the overflow parking lot would be farther than 200 feet from the nearest residence and even substantially farther from other residential homes north and west of the Air Force-owned property. Further, the use of the overflow parking lot would be sporadic and used primarily by passenger vehicles. Therefore, there would be no adverse noise impacts from vehicles use of the overflow parking lot.

#### **4.2.2 Alternative 2**

The sources of temporary noise from construction activities and permanent noise from vehicle use on the relocated Hightower Road and overflow parking lot would be the same as described under Alternative 1.

The proposed alignment of Hightower Road under Alternative 2 would be at a greater distance from the residential areas located to the north and west of the 24-acre Air Force-owned property than described by Alternative 1. The majority of the residences would be located at least 700 feet from the newly aligned Hightower Road. Therefore, noise from construction activities would be greatly attenuated due to distance from construction activities, to less than 65 dBA. Therefore, noise impacts from construction activities would be temporary and minor. Further, with the relocated Hightower Road located at least 700 feet from existing residences under Alternative 2, noise from vehicles traveling on Hightower Road would be greatly attenuated relative to Alternative 1 and would not differ substantially from the existing conditions. Therefore, there would be no adverse noise impacts from vehicle movement on the proposed realigned Hightower Road under Alternative 2.

Permanent noise impacts from periodic vehicle use of the overflow parking lot under Alternative 2 would be the same as described for Alternative 1.

#### **4.2.3 No Action**

There would be no noise impacts from the No Action Alternative.

### **4.3 AIR QUALITY**

The Clean Air Act Section 176(c), General Conformity, requires federal agencies to demonstrate that their proposed activities would conform to the applicable State Implementation Plans for attainment of the NAAQS. General conformity applies particularly to nonattainment and maintenance areas (40 CFR 51.853 [k]). 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

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severity of the nonattainment status of the region increases. For attainment areas, an impact analysis is required under NEPA regulations.

Ambient air quality for the Air Quality ROI is in attainment for the 8-hour O<sub>3</sub> NAAQS established in 2008 (75 parts per billion of ground-level ozone) (USEPA 2016a). The region is designated as unclassifiable/attainment areas for all other criteria pollutants. Therefore, no conformity analysis is required; however, an impact analysis is required under NEPA regulations. Emissions of each criteria pollutant and ozone precursors (VOCs and NO<sub>x</sub>) are assessed against the attainment area thresholds of 100 tons per year for each of those pollutants.

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 CEQ defines significance in terms of context and intensity in 40 CFR 1508.27. This requires that the significance of the action must be analyzed with respect to the setting of the Proposed Action and based relative to the severity of the impact. The CEQ NEPA regulations (40 CFR 1508.27[b]) provide 10 key factors to consider in determining an impact's intensity.

Emissions of each pollutant must first be compared against the *de minimis* thresholds of 100 tons per year each. If these thresholds are exceeded, additional impact analyses are required. Impacts are considered significant if the proposed alternative would increase ambient air pollution concentrations above any NAAQS or emissions exceed 10 percent of the Air Quality Control Region emissions.

The Air Conformity Applicability Model (ACAM) (version 5.0.12a) was used to provide emissions estimates for grading, trenching, and paving activities associated with the Proposed Action; no generators, tanks, architectural coating, employee commute, or comfort heat activities are anticipated. ACAM was developed by the Air Force (Air Force 2016a, 2016b); it provides estimated air emissions for each specific criteria pollutant and precursor pollutant as defined in the NAAQS. Details and assumptions of the model are discussed in **Appendix C**.

The air quality analysis focused on emissions associated with the proposed construction and demolition associated with the Proposed Action, and supporting activities that may cause air emissions.

#### **4.3.1 Alternatives 1 and 2**

Construction activities associated with Alternatives 1 and 2 would not result in significant short- or long-term impacts to air quality.

Under these alternatives, four main construction projects would be implemented (relocation of the Base's existing boundary fence, construction of a replacement Hightower Road along with a drainage ditch, construction of a new boundary road adjacent to the Base's security boundary fence line, and construction of a new overflow parking area). The only new air emissions associated with the Alternative 1 or 2 are emissions sources from construction activities.

Fugitive dust (particulate matter) from ground disturbance activities associated with the proposed action alternatives are of main concern; however, it is assumed that standard dust-reduction practices would be employed during this phase of construction. Uncontrolled fugitive dust emissions would be the highest during the initial site preparation phase, such as grading and trenching, and would vary depending on the prevailing weather conditions, level of activity, and the extent of land area to be prepared.

In addition to fugitive dust, criteria pollutant emissions and GHGs would be directly generated from the use of heavy-duty construction equipment and from construction vehicles and commuting workers traveling to and from the construction site. Both fugitive emissions and

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combustion-related emissions from these construction activities would cause temporary and localized increases in air emissions. The emissions would be short term and would last only for the duration of construction activities. No increase in long-term, operational emissions is anticipated. The steady state (or operational phase) of Alternative 1 or 2 produced no net increase for any of the pollutants associated with construction emissions.

The proposed action and alternatives would occur within an area that is in attainment with all NAAQS; therefore, the Proposed Action is not subject to General Conformity regulations and a General Conformity Applicability Analysis is not required.

An air quality impact assessment was conducted in accordance with the guidance in the Air Force Air Quality EIAP Guide and 32 CFR 989. Under Air Force guidance, a Net Change Emissions Assessment was performed that compared all net (increases and decreases caused by the federal action) direct and indirect emissions against General Conformity *de minimis* values as thresholds for nonattainment/maintenance areas and as indicators of air quality impact significance for attainment areas. While the Proposed Action alternatives will not be occurring within a nonattainment or maintenance area, the General Conformity *de minimis* (i.e., too trivial or minor to merit consideration) values (40 CFR 93.153) were used as conservative indicators of potential air quality significance. If these values represent *de minimis* emissions levels for nonattainment or maintenance areas, logically they would also represent emissions levels too trivial or minor to merit consideration in an attainment area; therefore, any net emissions below these significance indicators are consider too insignificant to pose a potential impact on air quality.

The Net Change Analysis was performed using the Air Force's ACAM for criteria pollutant (or their precursors) and GHGs. The results of the ACAM assessment for Alternatives 1 and 2 are summarized in Table 4-2 (see **Appendix C** for details). All estimated total annual emissions for each of the two alternatives are below the significance indicators; therefore, the emissions associated with the Proposed Action alternatives are too insignificant to pose a potential impact on air quality. Also, the nominal amount of GHG emissions would not likely contribute to climate change in any pronounced way, especially when the emissions are reviewed from a regional context.

As can be seen from Table 4-2, potential impacts to air quality from implementation of Alternative 2 would be slightly less than those described under the Alternative 1. This is due to a small decrease in the area proposed for paving and grading during road construction and boundary fence realignment.

**Table 4-2. Moody AFB Hightower Road Acquisition and Relocation: Total Annual Emissions for Alternatives 1 and 2**

Pollutant	Proposed Action Emissions (tons/year)		Air Quality Indicator	
	Alternative 1 Emissions	Alternative 2 Emissions	Threshold (tons/year)	Exceedance (Yes/No)
VOC	0.250	0.148	100	No
NO <sub>x</sub>	1.568	0.904	100	No
CO	1.317	0.807	100	No

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Pollutant	Proposed Action Emissions (tons/year)		Air Quality Indicator	
	Alternative 1 Emissions	Alternative 2 Emissions	Threshold (tons/year)	Exceedance (Yes/No)
SO <sub>x</sub>	0.003	0.002	100	No
PM <sub>10</sub>	5.651	4.668	100	No
PM <sub>2.5</sub>	0.073	0.044	100	No
Pb	0.000	0.000	25	No
NH <sub>3</sub>	0.001	0.000	100	No
CO <sub>2e</sub>	316.5	177.1	N/A	N/A

**VOC** – volatile organic compound; **NO<sub>x</sub>** – nitrogen oxides; **CO** – carbon monoxide; **SO<sub>x</sub>** – sulfur oxides; **PM<sub>10</sub>** – particulates ≤10 micrometers; **PM<sub>2.5</sub>** – particulates ≤2.5 micrometers; **Pb** – lead; **NH<sub>3</sub>** – ammonia; **CO<sub>2e</sub>** – carbon dioxide equivalent; **N/A** – not applicable

#### 4.3.2 No Action

Under the No Action Alternative, Hightower Road would not be relocated, the boundary fence would not be realigned, and no overflow parking lot would be constructed. No associated construction activities (such as paving, grading, or road construction) would occur; therefore, no impacts on air quality would occur.

#### 4.4 EARTH RESOURCES

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of the Proposed Action on geological resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

Effects on geology and soils would be adverse if they would alter the lithology, stratigraphy, or geological structure that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability or change the soil composition, structure, or function within the environment.

Adverse impacts would result if the following occur:

- Regional geology is affected.
- Soils classified as prime and unique farmland are affected.
- Affected soils are considered unsuitable for development.
- Road and parking lot construction are incompatible with the seismic risk status of the project area.

The Proposed Action includes ground-disturbing construction activities such as the relocation of Hightower Road, the realignment of the Base boundary fence and Base boundary road, and the creation of an overflow parking lot.

##### 4.4.1 Alternatives 1 and 2

Long-term, adverse, direct effects would be expected on the natural topography as a result of the relocation of Hightower Road, the Base boundary fence, and the Base boundary road.

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Modification of existing microtopography would occur as a result of grading, excavation, and filling to accommodate construction and existing Base boundary fence demolition activities. However, impacts would be expected to be negligible because the undeveloped land is already nearly level. The surficial geology of the 24-acre Air Force-owned parcel is level, and limited recountouring of the land would be required under Alternative 1 or 2; therefore, impacts on geology would be negligible under either alternative.

Short- and long-term, minor adverse impacts on soils would be expected from implementation of the Proposed Action. The primary short-term effects would occur during construction and demolition activities when vegetation is cleared and the earth is bare; however, even though soils have previously been disturbed in some areas during construction in the past, effects are expected to be moderate due to the percentage of trees covering the area. Removal of vegetation for construction would increase surface runoff. More surface runoff would indirectly impact downgradient areas. Appropriate sediment and erosion controls would be implemented and maintained prior to and throughout all phases to minimize these effects. Examples of erosion control and sediment control techniques include soil erosion control mats, silt fences, straw bales, diversion ditches, riprap channels, water bars, water spreaders, and sediment basins.

#### **4.4.2 No Action Alternative**

There would be no impacts on topography, geology, or soils under the No Action Alternative as the acquisition and relocation of Hightower Road would not occur and there would be no construction activities.

### **4.5 WATER RESOURCES**

Evaluation criteria for potential impacts on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. Adverse impacts to water resources would occur if the Proposed Action were to do any of the following:

- Reduce water availability or supply to existing users.
- Cause overdrafts of groundwater basins.
- Exceed safe annual yield of water supply sources.
- Affect water quality adversely.
- Endanger public health by creating or worsening health hazard conditions.
- Violate established laws or regulations adopted to protect water resources.

Potential impacts related to flood hazards can be significant if such actions are proposed in areas with high probabilities of flooding; however, any impacts can be mitigated through the use of design features to minimize the effects of flooding.

#### **4.5.1 Alternatives 1 and 2**

The primary concerns associated with the Proposed Action include effects on water quality during construction and the temporary and permanent conversion of existing pervious ground to impervious surfaces such as a road and a parking lot. The impervious surfaces have the potential of affecting the water quality through the discharge of pollutants into surface waters. Also, the impervious surfaces have the potential of increasing the surface water runoff into the storm drainage system, which could result in insufficient capacity and potentially lead to localized flooding.

There are no wetlands or other surface waters within the boundaries of the 24-acre Air Force-owned property. Construction activities could result in a minor, short-term increase in total suspended particulate matter (i.e., sedimentation) in nearby surface water. However, prior to



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construction, the contractor would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) to manage stormwater associated with the construction activity and work with the Base Environmental Office to ensure compliance with the Base's Stormwater Management Plan for pre- and post-construction activities. The SWPPP would include BMPs to minimize the potential for exposed soils or other contaminants from construction activities to reach surface waters. To minimize potential impacts, BMPs would be implemented during the construction period. Prior to the start of construction, silt fences, storm drain inlet and outlet protection, and other appropriate standard construction practices would be implemented. Filtration would control stormwater runoff and soil erosion from the site. The conversion of existing pervious ground to impervious surfaces would be minor and within the capacity of the storm drainage system. A new adequate drainage system would be installed along the new Hightower Road alignment. Therefore, with the implementation of stormwater BMPs, minor adverse impacts on surface waters are expected due to construction activities or the addition of impervious surfaces under Alternative 1 or 2.

Implementing Alternative 1 or 2 would not impact the groundwater table since construction activities are not expected to reach the depth of groundwater.

The proposed location of Hightower Road, the realigned Moody AFB boundary fence and boundary road, and proposed overflow parking lot are not within the 100-year floodplain; therefore, no impacts to the 100-year floodplain would be expected to occur from the implementation of Alternative 1 or 2.

#### **4.5.2 No Action Alternative**

There would be no impacts on water resources under the No Action Alternative as there would be no construction or ground-disturbing activities.

## **4.6 BIOLOGICAL RESOURCES**

To evaluate the potential impacts on the biological resources, the level of impact on biological resources is based on the following:

- Importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource
- Proportion of the resource that would be affected relative to its occurrence in the region
- Sensitivity of the resource to the proposed activities
- Duration of potential ecological ramifications

The impacts on biological resources are adverse if species or habitats of high concern are negatively affected over relatively large areas. Impacts are also considered adverse if disturbances cause reductions in population size or distribution of a species of high concern.

As a requirement under the Endangered Species Act, federal agencies must provide documentation that ensures that agency actions do not adversely affect the existence of any threatened or endangered species. The Endangered Species Act requires that all federal agencies avoid "taking" threatened or endangered species (which includes jeopardizing threatened or endangered species habitat). Section 7 of the Act establishes a consultation process with USFWS that ends with USFWS concurrence or a determination of the risk of jeopardy from a federal agency project.

The Proposed Action has the potential to impact biological resources through construction activities associated with the relocation of Hightower Road, the realignment of the Base boundary fence and boundary road, and the overflow parking lot.

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#### **4.6.1 Alternative 1**

##### **Vegetation**

Under Alternative 1, the construction of Hightower Road, the realigned Moody AFB boundary fence and boundary road, and the overflow parking lot would permanently impact 6.23 acres of maintained grassland. Before construction, the contractor would be required to implement preconstruction BMPs to limit the disturbance of soils, native plants, and animals. Upon completion of construction, the disturbed areas would be revegetated to stabilize the soil. Due to the lack of sensitive vegetation at the 24-acre Air Force-owned property, and with surrounding lands used for residential and agricultural purposes, the proposed construction and associated loss of the maintained grassland would result in a minor adverse impact on vegetation.

##### **Wildlife**

Construction activities associated with Alternative 1 would cause minor, short-term disturbance of wildlife, which may forage in the 24-acre Air Force-owned property. Further, the relocation of Hightower Road, realignment of the Base boundary fence and boundary road, and construction of the overflow parking lot would cause a minor, long-term adverse impact on wildlife. The wildlife species found on the Air Force-owned property are fairly common and well adapted to semi-urban settings. Some of these species would likely continue to utilize the project area for foraging and movement following project construction. However, some large mammal species, such as white-tailed deer, may be precluded or deterred by the realigned Base boundary fence from using the 24-acre Air Force-owned property for foraging. This would only constitute a minor adverse impact as similar habitat for foraging by large mammals such as agricultural lands, grasslands, and forest perimeters are in abundance in the vicinity of Moody AFB.

A BMP for vegetation clearing includes conducting any vegetation removal that could support breeding birds outside the primary nesting season for migratory birds, generally 1 April through 31 August for Georgia. When project activities cannot occur outside the bird nesting season, a survey would be conducted by a qualified biologist, prior to scheduled activity, to determine if active bird nests or breeding behaviors are detected within the area of impact. If nesting birds are detected, vegetation removal activities would be delayed until nestlings have fledged, or the nest fails, or breeding behaviors are no longer observed. If the activity must occur, active nests would be properly buffered to avoid take of adults, eggs, and nestling migratory birds.

##### **Threatened and Endangered Species**

None of the protected species that have been documented on Moody AFB have been identified within the area proposed for Hightower Road relocation, and the maintained grassland of the 24-acre Air Force-owned property does not have suitable habitat for any of the listed species with the potential to occur on the Base. Therefore, no adverse impacts on threatened and endangered species are expected under Alternative 1.

A no effect determination for all federally listed species has been made for the Proposed Action. A no effect determination means listed species would not be exposed to the action and its environmental consequences, and as such there would be no impacts, beneficial or adverse, to listed or proposed resources. The USFWS has provided concurrence with this no effect determination (**Appendix B**).

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#### **4.6.2 Alternative 2**

##### **Vegetation**

Under Alternative 2, the construction of Hightower Road, the realigned Moody AFB boundary fence and boundary road, and the overflow parking lot would permanently impact 5.20 acres of maintained grassland. Similar to Alternative 1, the proposed construction and associated loss of the maintained grassland would result in a minor adverse impact on vegetation.

##### **Wildlife**

Similar to Alternative 1, construction activities associated with Alternative 2 would cause minor, short-term disturbance of wildlife. However, the relocated Base boundary fence would be placed on the south side of the 24-acre Air Force-owned property and would not preclude wildlife from moving through and foraging on this land. Therefore, there would be no long-term adverse impacts on wildlife under Alternative 2. BMPs for breeding birds would be followed under Alternative 2 as described for Alternative 1.

##### **Threatened and Endangered Species**

Similar to Alternative 1, no adverse impacts on threatened and endangered species would occur under Alternative 2. A no effect determination for all federally listed species has been made for the Proposed Action. A no effect determination means listed species would not be exposed to the action and its environmental consequences, and as such there would be no impacts, beneficial or adverse, to listed or proposed resources. The USFWS has provided concurrence with this no effect determination (**Appendix B**).

#### **4.6.3 No Action Alternative**

Under the No Action Alternative there would be no impacts on vegetation, wildlife, or threatened and endangered species.

### **4.7 CULTURAL RESOURCES**

Section 106 of the NHPA requires all federal agencies to assess the effects of their undertakings on historic properties and seek to avoid, minimize or mitigate adverse effects on those properties [36 CFR 800.1(a)]. For cultural resource analysis, the APE is used as the ROI. APE is defined as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist” (36 CFR 800.16[d]), and thereby diminish their historic integrity.

Direct effects include alteration or damage during construction activities. Indirect effects include the introduction of visual, audible, or atmospheric elements that are out of character with a property or that alter its historic setting. Direct and indirect effects are considered adverse if a project would cause a change in the quality of a property that qualifies it for inclusion in the NRHP. The APE for direct effects is the proposed new alignment of the relocated Hightower Road, the realigned Moody AFB boundary fence and boundary road, the removal of the existing Base boundary fence, and the overflow parking lot (areas of direct disturbance). The APE for indirect effects includes buildings and structures located within a 0.5-mile buffer around the 24-acre Air Force-owned property.

#### **4.7.1 Alternatives 1 and 2**

Because the Proposed Action at Moody AFB would include construction and ground-disturbing activities, there is the potential for both direct and indirect effects on cultural resources within the respective APEs. To identify historic properties within the APE, a comprehensive review of

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cultural resource literature, including the Base's Integrated Cultural Resources Management Plan (ICRMP), was conducted.

No NRHP-eligible archaeological sites are within or adjacent to the 24-acre Air Force-owned property. No NRHP-eligible architectural properties are located within 24-acre Air Force-owned property or the 0.5-mile buffer for indirect effects around the property. Therefore, no effects on cultural resources that are listed on or eligible for inclusion in the NRHP are anticipated from the Proposed Action under Alternative 1 or 2 at Moody AFB. During the course of construction, if any archaeological resources or human remains were to be identified, work would cease and the Moody AFB Cultural Resources Manager would be notified immediately and action taken in accordance with the emergency discovery procedures outlined in the Moody AFB ICRMP.

Native American tribes were invited to comment on potential impacts of the Proposed Action during the preparation of this EA. Those letters and any responses received are included in **Appendices A and B**, respectively. The Georgia State Historic Preservation Officer has provided concurrence with the Air Force's finding of "no historic properties affected." Those letters and any responses received are included in **Appendices A and B**, respectively.

#### **4.7.2 No Action Alternative**

There would be no effect on any cultural resource under the No Action Alternative because there would be no construction or ground-disturbing activities.

### **4.8 SOCIOECONOMICS**

Consequences to socioeconomic resources were assessed in terms of the potential impacts on the local economy from the Proposed Action. The level of impacts associated with construction expenditure is assessed in terms of direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing, employment, and community resources). The magnitude of potential impacts can vary greatly, depending on the location of an action. For example, implementation of an action that creates 10 employment positions might be unnoticed in an urban area, but might have significant impacts in a rural region.

In addition, if potential socioeconomic changes resulting from other factors were to result in substantial shifts in population trends or in adverse effects on regional spending and earning patterns, they may be considered adverse.

#### **4.8.1 Alternatives 1 and 2**

The number of construction workers necessary to construct the relocated Hightower Road, the realigned Moody AFB boundary fence and boundary road, and the overflow parking lot would not be large enough to outstrip the supply of the industry under Alternative 1 or 2. The temporary increase of construction workers at Moody AFB would represent a small increase in the total persons working on the Installation. Increased employment associated with the construction of the relocated Hightower Road under Alternative 1 or 2 would provide a direct, short-term, minor, beneficial impact in Lowndes and Lanier counties through increased payroll tax revenue and the purchase of goods and materials.

#### **4.8.2 No Action Alternative**

There would be no impacts on socioeconomics of the region under the No Action Alternative as no construction would occur.

### **4.9 ENVIRONMENTAL JUSTICE**

Environmental justice analysis applies to potential disproportionate effects on minority, low-income, and youth populations. Environmental justice issues could occur if an adverse

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environmental or socioeconomic consequence to the human population fell disproportionately upon minority, low-income, or youth populations. Ethnicity and poverty status were examined and compared to state and national data to determine if these populations could be disproportionately affected by the Proposed Action.

#### **4.9.1 Alternative 1**

All construction activities under Alternative 1 would be temporary and any impacts to minority and low-income communities from the construction would cease when construction activities were completed. Therefore, there would be no disproportionate impacts on minority or low-income communities from construction.

The relocation of Hightower Road proximate to residential homes has the potential for disproportionate impacts. However, all of the residential structures are currently located along privately owned roads that would not be altered in any way by the relocation of Hightower Road; the paving of Hightower Road by Lowndes County would reduce dust during vehicle movement relative to the existing dirt road conditions of Hightower Road; and although there would be some increased noise in some residential homes from vehicular movement on the relocated Hightower Road, the noise levels are not significant. Therefore, there would be no disproportionate impacts on minorities or low-income communities as a result of Alternative 1.

The relocation of Hightower Road, realignment of the Moody AFB boundary fence and road, and the overflow parking lot would not impact children in the community, including those residing in the nearby residential homes along Runway Lane. The number of vehicles on Hightower Road would not increase under the Proposed Action, and Hightower Road would remain physically separated from nearby residential homes by the railroad and by the private roads of Runway Lane and Yate Lane.

#### **4.9.2 Alternative 2**

Similar to Alternative 1, under Alternative 2, there would be no disproportionate impacts on minorities and low-income communities or on safety of children as a result of the relocation of Hightower Road, realignment of the Moody AFB boundary fence and boundary road, and overflow parking lot.

#### **4.9.3 No Action Alternative**

Under the No Action Alternative there would be no relocation of Hightower Road, realignment of the Moody AFB boundary fence and boundary road, and overflow parking lot. Therefore, there would be no disproportionate impacts on minority or low-income communities or on children.

### **4.10 INFRASTRUCTURE**

Impacts on infrastructure from the Proposed Action are evaluated for their potential to disrupt or improve existing levels of service in the ROI, as well as generate additional requirements for energy or water consumption, and for impacts to resources such as sanitary sewer systems. The Proposed Action would result in an adverse impact to utilities or services if the project required more than the existing infrastructure could provide, or required services in conflict with adopted plans and policies for the area. The Proposed Action would result in transportation impacts if it resulted in a substantial increase in traffic generation, a substantial increase in the use of the connecting street systems or mass transit, or if onsite parking demand would not be met by projected supply.

Under the Proposed Action there would be no modification or use of Moody AFB's electric, natural gas, water/wastewater, solid waste management, or communication distribution

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systems. The Proposed Action would not change ingress or egress at gates at Moody AFB and would have no impact on the Base's internal transportation network.

#### **4.10.1 Alternatives 1 and 2**

Under Alternative 1 or 2, the relocated Hightower Road would be paved by Lowndes County, which would be a minor beneficial impact on infrastructure for the local Lowndes County community. The realignment of the Moody AFB boundary fence and boundary road under Alternative 1 or 2 would satisfy the AFI 31-101 force protection recommendations for the HC-130 parking ramp, which would be a minor beneficial impact on the Moody AFB infrastructure.

#### **4.10.2 No Action Alternative**

No relocation of Hightower Road and the Moody AFB boundary fence and road would occur under the No Action Alternative. This would result in a moderate, long-term adverse impact on infrastructure at Moody AFB because a portion of the HC-130 parking ramp would not meet the recommended force protection distance.

### **4.11 HAZARDOUS MATERIALS AND WASTES**

Impacts to hazardous materials management would be considered adverse if the federal action resulted in noncompliance with applicable federal and state regulations, or increased the amounts generated or procured beyond current waste management procedures and capacities at the Installation. Impacts on the ERP would be considered adverse if the federal action disturbed (or created) contaminated sites resulting in negative effects on human health or the environment.

Under the Proposed Action, small amounts of hazardous materials in the form of fuels, oils, and lubricants could be used in construction equipment.

#### **4.11.1 Alternatives 1 and 2**

Road, fence, and parking lot construction activities would use very small amounts of hazardous materials. With compliance with Department of Defense and Air Force requirements, no direct or indirect impacts are expected from the Proposed Action.

**Hazardous Materials and Wastes.** Existing procedures for centralized management of the procurement, handling, storage, and issuing of hazardous materials/hazardous wastes and toxic substances are adequate to handle the construction associated with the relocation of Hightower Road at Moody AFB. Under Alternative 1 or 2, all hazardous materials and hazardous waste would be handled, stored, and disposed of in accordance with federal, state, and local regulations and laws; therefore, no adverse impacts on hazardous materials and hazardous wastes are anticipated.

**ERP.** The 24-acre Air Force-owned property is not within an ERP site boundary and no adverse impacts are anticipated.

**Asbestos.** The 24-acre Air Force-owned property does not contain buildings and no asbestos-containing materials are proposed for use; therefore, no adverse impacts are anticipated.

**Lead-Based Paint.** As the 24-acre Air Force-owned property does not contain buildings and no lead-based paint or materials are proposed for use, there is no potential for lead-based paint in the project area, and no adverse impacts are anticipated.

**Radon.** No buildings or facilities are proposed under Alternative 1 or 2 that could be impacted by the presence of radon.

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**Polychlorinated Biphenyls.** No transformers with the potential for PCB contamination would be disturbed or added; therefore, no adverse impacts are anticipated.

#### **4.11.2 No Action Alternative**

Under the No Action Alternative, no construction would take place. Therefore, there would be no hazardous materials or wastes or toxic substances generated as a result of the No Action Alternative.

### **4.12 HEALTH AND SAFETY**

Impacts from the Proposed Action that pose a long-term risk to human health or safety are evaluated. Impacts would be considered significant if federal civilian, military, or contractor personnel did not comply with established OSHA and Air Force safety guidelines.

There are potential health and safety concerns with the Proposed Action during construction activities associated with the relocation of Hightower Road, realignment of the Moody AFB boundary fence and boundary road, and overflow parking lot. Long-term safety for Moody AFB assets and personnel would be provided by the location of the Base boundary fence under the Proposed Action.

#### **4.12.1 Alternative 1**

Under Alternative 1, the construction of Hightower Road, the Moody AFB boundary fence and boundary road, and overflow parking lot have the potential to generate effects on human health and safety due to activities associated with construction and day-to-day operations. Excavation and construction activities have inherent risks such as falls, collisions with equipment, stress, and strains. Similarly, day-to-day use of roads and parking lots also come with some specific risks to human safety. Implementing Alternative 1 is not expected to result in substantive adverse impacts to safety, as construction would comply with requirements outlined in OSHA Occupational Safety and Health Standards 29 CFR 1910 (General Industry) and 29 CFR 1926 (Construction), as well as industrial hygiene directives. Likewise, day-to-day use of roads and parking areas would not change substantially from the existing condition, and drivers on Moody AFB using the Base boundary road and overflow parking lot would be required to follow all Base driving laws and regulations. Further, the improved surface of Hightower Road would lead to improved safety for the local community using Hightower Road to access Bemiss Road. Therefore, there would be no adverse effect on health and safety from the implementation of Alternative 1.

The relocation of the Moody AFB boundary fence would meet the recommended force protection distances for the HC-130 parking ramp. The force protection recommendations are specifically in place to improve the safety of Air Force aircraft such as the HC-130 and the Air Force military and civilian personnel who maintain and operate these aircraft. Therefore, the implementation of Alternative 1 has a moderate beneficial impact on safety for Moody AFB.

#### **4.12.2 Alternative 2**

Impacts on health and safety from implementing Alternative 2 would be the same as those described for Alternative 1. There would be no adverse impact on health and safety under Alternative 2 and the relocated Moody AFB boundary fence would have a moderate beneficial impact on safety for Moody AFB.

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**4.12.3 No Action Alternative**

There would be no impacts on health and safety from construction activities under the No Action Alternative as no construction would occur. Under the No Action Alternative, the recommended force protection distances for the HC-130 parking ramp would not be met, which would cause long-term moderate adverse impacts on safety at Moody AFB.



## **5.0 CUMULATIVE EFFECTS, BEST MANAGEMENT PRACTICES, AND ADVERSE EFFECTS**

This chapter includes an analysis of the potential cumulative impacts by considering past, present, and reasonably foreseeable future actions; potential unavoidable adverse impacts; the relationship between short-term uses of resources and long-term productivity; and irreversible and irretrievable commitment of resources. BMPs are also summarized in this chapter.

### **5.1 CUMULATIVE EFFECTS**

This EA considers the effects of cumulative impacts as required in 40 CFR 1508.7 and concurrent actions as required in 40 CFR 1508.25[1]. A cumulative impact, as defined by the CEQ (40 CFR 1508.7) is the "...impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

An effort has been made to identify actions in the vicinity of the proposed Hightower Road acquisition and relocation project that are being considered or are in the planning phase at this time. To the extent that details regarding such actions exist and the actions have a potential to interact with the Proposed Action, these actions are included in this cumulative analysis. This approach enables decision makers to have the most current information available so they can evaluate the potential environmental consequences of the Proposed Action.

#### **5.1.1 Projects Identified for Cumulative Effects**

Past, present, and reasonably foreseeable actions by the Air Force on Moody AFB were considered. Recent past and ongoing military actions at Moody AFB were considered as part of the baseline or existing condition.

In addition, development activities outside the Base were considered. A variety of local housing and community development activities are ongoing and planned in Lowndes and Lanier counties. This includes proposed paving of other dirt roads in the vicinity of Hightower Road. These activities are consistent with applicable city, county, and regional comprehensive and development plans, including the Greater Lowndes 2030 Comprehensive Plan and 2040 Transportation Vision Plan. There are ample construction resources and transportation capacities near the Moody AFB, and there are no potential cumulative impacts associated with proposed regional improvement and development projects off the Base. A review of the available information from the following agencies and plans indicates there are no large projects near the Base that would have the potential to create cumulative impacts when combined with the Proposed Action:

- Valdosta Planning and Zoning
- Valdosta-Lowndes County Development Authority
- Lanier County Board of Commissioners
- Georgia Department of Transportation

Each Air Force project summarized in this section was reviewed to consider the implication of each action with the Proposed Action. Potential overlap in affected area and project timing were considered.

Moody AFB is an active military installation experiencing continuous evolution of mission and operational requirements. All construction projects must comply with land use controls, which include safety and environmental constraints. These controls are outlined in Air Force guidance

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and regulations and are further described the Base plans. Relevant BMPs are summarized in Section 5.2. The Base, like other major military installations, requires new construction, facility improvements, and infrastructure upgrades. Table 5-1 projects anticipated to occur on Moody AFB that may result in cumulative effects when combined with the Proposed Action.

**Table 5-1. Projects Identified for Cumulative Effects Analysis**

<b>Project Name</b>	<b>Project Summary</b>	<b>Anticipated Implementation</b>	<b>Potential Relevance to Proposed Action</b>
Construct Covered Physical Training Exercise Pads, and Cover Existing Pads	Project would provide additional venues for group physical fitness training that are adequate for use even during times of high heat and humidity, by constructing three additional exercise pads with covers and constructing covers for the existing three pads.	2019	Potential construction timeline overlap with the proposed project.
Pave Airfield Access Road	Project would provide all-weather access from Perimeter Road to airfield navigational aids and prevent foreign object damage potential from the current gravel roadbed.	2019	Potential construction timeline overlap with the proposed project.
Construct New Lift Station Building 1500	Project would provide adequate wastewater support to Building 1500. The facility is currently on a stand-alone septic system, which has reached the end of its expected life.	2019	Potential construction timeline overlap with the proposed project.
Demolish Buildings 751 and 799	Project would demolish Buildings 751 and 799 to eliminate maintenance and repair costs associated with an obsolete and unneeded facility.	2019	Potential demolition timeline overlap with the proposed project.
Demolish Building 4130	Project would demolish Building 4130 to eliminate maintenance and repair costs associated with an obsolete and unneeded facility and allow for construction of a facility that will meet the mission requirements of the occupant.	2019	Potential demolition timeline overlap with the proposed project.
Installation of Natural Gas Line	Project would install a natural gas line within the same utility alignment as the existing electrical and sewer alignment that runs through the graded portion of the Clear Zone (along the existing Burma Road).	2019	Potential construction timeline overlap with the proposed project.
Southwest Land Purchase Property EA	Project recently purchased 106.10 acres of privately-owned land located immediately adjacent to the southwestern boundary of Moody AFB. Project includes relocation of the Installation's perimeter fence line and the airfield security fence; realignment of Burma Road; clearing of trees; and continued monitoring of remedial actions.	2019	Potential timeline overlap with the proposed project.

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<b>Project Name</b>	<b>Project Summary</b>	<b>Anticipated Implementation</b>	<b>Potential Relevance to Proposed Action</b>
Construct Access Road at C-130 Ramp Area	Project would provide government vehicle access along the HC-130 parking apron that will reduce the inherent hazards associated with vehicles on the flight line, such as foreign object damage, and deconflict vehicle movement with aircraft movements.	2020	Construction would be proximate to the proposed project area.
Construct Photovoltaic Covered Car Ports	Project would construct solar car ports to enhance the energy security posture and energy resilience of the installation and meet the “clean source” goals of EO 13693, <i>Planning for Federal Sustainability in the Next Decade</i> , which establishes a 10 percent goal for fiscal year 2016 that increases to 25 percent by fiscal year 2025.	2020	Limited overlap with the proposed project.
Provide Solar Panels on Existing Roofs, Multiple Facilities	Project would construct photovoltaic solar arrays on existing facility roofs to enhance the energy security posture and energy resilience of the Installation and meet the “clean source” goals of EO 13693, <i>Planning for Federal Sustainability in the Next Decade</i> , which establishes a 10 percent goal for fiscal year 2016 that increases to 25 percent by fiscal year 2025.	2020	Limited overlap with the proposed project.
Construct Additional Parking at Golf Course	Project would provide needed additional parking for the golf course patrons, including patrons of the golf course, pro shop, and snack bar.	2021	Limited overlap with the proposed project.
Construct Jogging Trail along Stone Road, Davidson Gate/Stone Road intersection to Burma Road Traffic Circle	Project would construct a trail along the east side of Stone Road to reduce the number of traffic crossings and improve user safety.	2021	No overlap with the proposed project.
Construct Tracking Photovoltaic Panel Array	Project would construct standard arrays to enhance the energy security posture and energy resilience of the Installation and meet the “clean source” goals of EO 13693, <i>Planning for Federal Sustainability in the Next Decade</i> , which establishes a 10 percent goal for fiscal year 2016 that increases to 25 percent by fiscal year 2025.	2021	No overlap with the proposed project.

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<b>Project Name</b>	<b>Project Summary</b>	<b>Anticipated Implementation</b>	<b>Potential Relevance to Proposed Action</b>
Construct an Addition and Repair Interiors of 820th BDG Training Facility, Building 1532	Project would consolidate the 820 BDG training activities into a common area and efficiently utilize Base real property. Currently its main training area is on the east side of the runway, while an indoor weapons simulator is in the main Administrative Area, on the west side of the Base, in Building 783.	2021	No overlap with the proposed project.
Construct Addition and Make Interior Repairs to Base Education Office, Building 328	Project would provide a suitably sized education support office for assigned staff and sufficient storage and classroom space to meet installation needs.	2021	No overlap with the proposed project.
Demolish Building Paintball Facility	Project would demolish the existing paintball facility to eliminate maintenance and repair costs associated with an obsolete and unneeded facility that is not well sited to meet its need and purpose.	2021	No overlap with the proposed project.
Demolish Building 617	Project would demolish Building 617 to minimize maintenance and repair costs.	2022	No overlap with the proposed project.
Demolish Building 620	Project would demolish Building 621 to eliminate maintenance and repair costs associated with an obsolete and unneeded facility.	2022	No overlap with the proposed project.
Special Use Airspace Optimization	Project would create new Military Operations Areas to optimize the Moody AFB special use airspace to be a more realistic, effective and efficient training environment for Close Air Support and Combat Search and Rescue Operations.	2022	None; special use airspace optimization would not occur in the vicinity of the proposed project.

Source: Air Force 2017b, 2018

**EA** – Environmental Assessment; **AFB** – Air Force Base; **EO** – Executive Order

### 5.1.2 Cumulative Effects Analysis

The following analysis considers how projects identified in Table 5-1 could cumulatively result in potential environmental consequences in conjunction with the Proposed Action.

**Land Use.** Although other past, present, and reasonably foreseeable actions would require changes in land use designations, the Proposed Action would be consistent with long-term planning efforts and Moody AFB's future development plan. Some land use changes for reasonably foreseeable actions would impact open space, reducing some of these areas from Moody AFB. Therefore, due to the small reduction in areas designated for aircraft operations but currently used as open space as a result of the Proposed Action, direct, long-term, minor cumulative impacts on land use from the Proposed Action are anticipated.

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**Noise.** Construction projects are proposed during the same period as the Proposed Action. Because construction noise is localized to the construction sites and immediate area, no cumulative noise impacts are anticipated.

**Air Quality.** The Air Force proposes to conduct other construction projects during the same period as the Proposed Action. Refer to the Air Quality sections in Chapter 4 and to Appendix C for a detailed discussion of air quality impacts. Moody AFB is in attainment for all NAAQS. The Net Change Analysis performed using ACAM for criteria pollutants (or their precursors) and GHGs indicated the emissions associated with the Proposed Action are too insignificant to pose a potential impact on air quality.

**Geological Resources.** There are no significant impacts to geology from the Proposed Action nor the past, present, or reasonably foreseeable actions. Potential impacts to soils are localized to each project location and minimized through the use of BMPs; therefore, no cumulative impacts are anticipated associated with geology and soils.

**Water Resources.** The Proposed Action in conjunction with past, present, or reasonably foreseeable future actions is not expected to have impacts on floodplains or wetlands. Groundwater is not anticipated to be directly affected by the Proposed Action or cumulative actions. Implementing designs that incorporate stormwater controls in new construction activities will help reduce impacts to water resources in the vicinity of the project areas. Additionally, with the use of BMPs, any indirect impacts from nutrient enrichment of surface water from soil erosion and runoff, which would lead to water quality degradation, would be negligible.

**Biological Resources.** No significant cumulative effects on threatened and endangered species, habitats of concern, or other biological resources are anticipated in the project area or in conjunction with past, present, or reasonably foreseeable future actions. Moderate short- and long-term cumulative impacts to vegetation would occur as the various construction projects at Moody AFB would remove maintained grassland and landscaped areas. However, these do not provide any suitable wildlife habitat. Therefore, there would be no cumulative impacts on wildlife. No cumulative effects on threatened and endangered species are anticipated.

**Cultural Resources.** No cumulative effects on cultural resources that are listed on or eligible for the NRHP are anticipated from the Proposed Action in conjunction with past, present, or reasonably foreseeable future actions. During the course of construction, if any archaeological resources or human remains are identified, the Moody AFB Cultural Resources Manager would be notified immediately and action taken in accordance with the emergency discovery procedures outlined in the Moody AFB ICRMP.

**Socioeconomics and Environmental Justice.** The projects at Moody AFB presented in Table 5-1 could have construction time periods that overlap and could increase demand upon construction resources. However, Lowndes and Lanier counties and, regionally, south Georgia contain a pool of skilled construction labor and construction materials suppliers who would be expected to meet the demand. No cumulative adverse effects upon children would be anticipated from these various construction projects; no cumulative disproportionate impacts on minorities or low-income populations would occur. Therefore, no direct or indirect, adverse cumulative socioeconomic effects or disproportionate impacts are anticipated as a result of the Proposed Action in combination with other past, present, or reasonably foreseeable projects.

**Infrastructure.** The Proposed Action, in conjunction with the past, present, and reasonably foreseeable future actions, is not expected to have a significant impact on utility usage, sanitary and storm sewer systems, solid waste management, or communications, and therefore would not contribute to cumulative impacts to these resources. Construction activities could be

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expected to increase traffic congestion for short periods but would not be expected to have a significant cumulative impact on transportation in and around Moody AFB. The Proposed Action, in combination with other proposed future actions that involve the improvement to the transportation system near and on Moody AFB, would have a minor beneficial cumulative impact on infrastructure.

**Hazardous Materials and Waste.** No adverse cumulative effects associated with hazardous materials, hazardous wastes, ERP, and toxic substances are anticipated as a result of the Proposed Action in combination with other past, present, or reasonably foreseeable projects if BMPs are followed. It is anticipated that all hazardous materials associated with construction activities would be handled, stored, and disposed of in accordance with federal, state, and local regulations and laws. Existing procedures for the centralized management of the procurement, handling, storage, and issuing of these substances are adequate to handle the construction associated with the Proposed Action in conjunction with the projects described in Table 5-1.

**Health and Safety.** The Proposed Action would meet the recommended force protection distances for the C-130 parking ramp. Therefore, minor beneficial cumulative impacts on health or safety are anticipated as a result of the Proposed Action in combination with other past, present, or reasonably foreseeable projects.

**5.2 ENVIRONMENTAL PROTECTION MEASURES**

Environmental Commitments and BMPs are described in the environmental consequences discussion for each resource in **Chapter 4** and summarized in Table 5-2. Moody AFB follows applicable Air Force regulations and BMPs as well as federal, state, and local regulations and directives.

**Table 5-2. Summary of Best Management Practices Described in Chapter 4**

<b>Resource</b>	<b>Best Management Practice</b>
Noise	Limit the operation of heavy equipment and other noisy procedures to daylight hours whenever possible.
	Install and maintain effective mufflers on equipment.
	Locate equipment and vehicle staging areas as far from noise sensitive areas as possible.
	Limit unnecessary idling of equipment.
Air Quality	Before demolition and construction activities, implement fugitive dust control measures.
Geological Resources	Before demolition and construction activities, develop a detailed erosion and sedimentation control plan based on the requirements of the stormwater pollution prevention plan.
	During demolition and construction activities, implement erosion and siltation controls to prevent soil loss such as silt barriers and landscaping of unimproved areas.
	After demolition and construction activities have ceased, immediately reseed any exposed soil with grass, ground cover, and/or trees to reduce erosion of soil.
Water Resources	The Stormwater Pollution Protection Plan required by the project's General Construction Permit would include BMPs to minimize the potential for exposed soils or other contaminants from construction activities to reach surface waters. To minimize potential impacts, BMPs would be implemented during the construction period. Prior to the start of construction, silt fences, storm drain inlet and outlet protection, and other appropriate standard construction practices would be

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Resource	Best Management Practice
	implemented. Filtration would control stormwater runoff and soil erosion from the site. The contractor would revegetate the areas or restore the surface to prevent erosion after construction.
Biological Resources	Where construction disturbs the existing vegetation or ground surface, the contractor would revegetate the areas or restore the surface as directed by the Base. For trees that are preserved, maintain at least an 18-inch radius from its critical root zone when trenching or excavating soil to protect the root system; tunnel or bore at least 18 inches beneath this zone to install utility lines.  Conduct vegetation clearing operations outside the primary nesting season for migratory birds. When project activities cannot occur outside the bird nesting season, a survey would be conducted by a qualified biologist, prior to scheduled activity, to determine if active bird nests or breeding behaviors are detected within the area of impact. If nesting birds are detected, vegetation removal activities would be delayed until nestlings have fledged, or the nest fails, or breeding behaviors are no longer observed. If the activity must occur, active nests would be properly buffered to avoid take of adults, eggs, and nestling migratory birds.
Cultural Resources	During the course of construction, if any archaeological resources or human remains are identified, work would cease and the installation would within 48 hours notify the SHPO, the Advisory Council on Historic Preservation, and all American Indian tribes that might attach religious and cultural significance to the remains.
Hazardous Waste	Any contractors or Base personnel who bring hazardous materials to the site need to inspect their equipment and hazardous materials containers on a regular basis to reduce the likelihood of contamination. The Air Force has measures in place for hazardous materials handling, and those measures are strictly enforced and would be enforced during construction. See the Moody AFB Hazardous Waste Management Plan for instructions on emergency response procedures.  Any hazardous waste generated by the Proposed Action would be handled, stored, transported, disposed of, or recycled in accordance with the Moody AFB Hazardous Waste Management Plan.

**BMP** – best management practice; **SHPO** – State Historic Preservation Office

**5.3 COMPATIBILITY OF THE PROPOSED ACTION WITH ALTERNATIVES WITH THE OBJECTIVES OF FEDERAL, STATE, REGIONAL, AND LOCAL LAND USE PLANS AND POLICIES**

The Proposed Action and alternatives would occur on Air Force property and would not adversely affect federal, state, regional, or local land use plans and policies. The Air Force’s intention to cooperate with communities and other federal, state, and local agencies is expressed in the Interagency and Intergovernmental Coordination for Environmental Planning and government-to-government coordination.

**5.4 RELATIONSHIP OF THE SHORT-TERM USE OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY**

CEQ regulations (Section 1502.16) specify that analysis must address “...the relationship between short-term uses of man’s environment and the maintenance and enhancement of long-term productivity.” Attention should be given to impacts that narrow the range of beneficial uses of the environment in the long term or pose a long-term risk to human health or safety. This

**Draft Environmental Assessment for  
Security Enhancements at Moody Air Force Base**

section evaluates the short-term benefits of the proposed project compared to the long-term productivity derived from not pursuing the proposed or alternative actions.

Short-term effects on the environment are generally defined as a direct consequence of a project in its immediate vicinity. For example, short-term effects could include localized disruptions from construction. Environmental commitments and BMPs in place for construction activities would reduce potential impacts or disruptions. Under the Proposed Action, these short-term uses would have a negligible cumulative effect.

The proposed project would not significantly impact the long-term productivity of the land. As noted in Table 5-1, the construction durations of several projects could overlap, which could increase demands for construction resources. The regional pool of construction labor and materials would be expected to meet the demand. No adverse cumulative effects on long-term productivity or uses are anticipated.

## **5.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects result primarily from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action.

Most impacts anticipated from the Proposed Action are short term and temporary (such as air emissions from construction) or are longer lasting, but negligible (such as periodic parking of vehicles in the overflow parking lot). Construction would use materials (e.g., asphalt, road base) and energy (fuel) that would be irretrievably lost. Construction vehicle use would consume fuel, oil, and lubricants. None of the activities associated with the Proposed Action would be expected to significantly decrease the availability of minerals or petroleum resources or have cumulative environmental consequences.



**Draft Environmental Assessment for  
Security Enhancements at Moody Air Force Base**

**6.0 LIST OF PREPARERS**

The following individuals assisted in the preparation of this EA.

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Vernadero Group Inc.  
Professional Geologist  
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BS, Geology  
Years of Experience: 32  
Contribution: Hazardous Materials and  
Wastes, Earth Resources, Water Resources

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Information Technology & Services Director  
MA, Geography  
BA, Geography  
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Contribution GIS/Cartography

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Master of Environmental Planning  
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Contribution: Quality Control Review

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BS, Biology  
Years of Experience: 24  
Contribution: Project Management,  
Socioeconomics, Environmental Justice,  
Noise

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Security Enhancements at Moody Air Force Base**

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Security Enhancements at Moody Air Force Base**

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**APPENDIX A. INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING AND GOVERNMENT-TO-GOVERNMENT LETTERS**





Georgia Department of Community Affairs  
60 Executive Park South, NE  
Atlanta, GA 30329

Georgia Environmental Protection Division  
2 Martin Luther King Jr. Drive  
Suite 1152, East Tower  
Atlanta, GA 30334

Georgia Wildlife Resources Division  
2070 U.S. Hwy. 278, S.E.  
Social Circle, GA 30025

Georgia Historic Preservation Division  
Attn: Jennifer Dixon  
Jewett Center for Historic Preservation  
2610 GA Hwy 155, SW  
Stockbridge, GA 30281

Lowndes County Commission  
Chairman Slaughter  
327 N. Ashley St  
Valdosta, GA 31601

South Georgia Regional Planning Council  
327 West Savannah Ave  
Valdosta, GA 31601

Lowndes County Commission  
Joseph Pritchard  
County Manager  
327 N. Ashley St - 2nd Floor  
Valdosta, GA 31601

Lanier County Commission  
Courthouse, 100 Main St.  
Lakeland, GA 31635

U. S. Fish and Wildlife Service  
Georgia Ecological Services  
Attn: Gail Martinez  
4980 Wildlife Drive, NE  
Townsend, Georgia 31331

Lowndes County Planner  
Jason Davenport  
County Planner  
327 N. Ashley St - 2nd Floor  
Valdosta, GA 31601

Georgia Department of Transportation  
Engineering Division  
One Georgia Center  
600 West Peachtree NW – 25<sup>th</sup> Floor  
Atlanta, Georgia 30308





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

**17 JUL 2018**

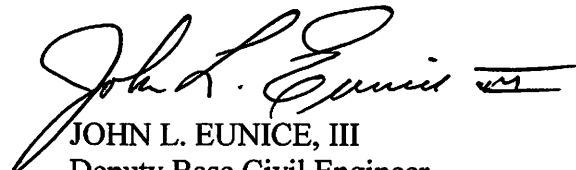
MEMORANDUM FOR FEDERAL, STATE, AND LOCAL PUBLIC AGENCIES

FROM: 23 CES/CD  
3485 Georgia Street  
Moody AFB, GA 31699-1707

SUBJECT: Proposed Security Enhancements at Moody AFB, GA

1. The United States Air Force is in the process of preparing an Environmental Assessment (EA) at Moody Air Force Base (AFB) (Attachment 1), Georgia (GA) to assess the potential environmental consequences associated with enhancing the security of an aircraft parking area on the north end of the main installation. Moody AFB is located in south central Georgia, north of the city of Valdosta in Lanier and Lowndes Counties.
2. The purpose of this proposed action is to make alterations to the north side of the base in order to meet force protection recommendations for the Moody AFB north aircraft parking ramp. The proposed action is needed because the current parking ramp does not comply with the recommended distance between the parking area boundary and the base boundary fence. This requires acceptance of avoidable risk.
3. Three alternatives are currently under consideration. Alternative 1a is to move Hightower Road to encircle the 25 acre Air Force owned parcel north of the current Hightower Road. Alternative 2a is to move Hightower Road a small distance to meet minimum separation requirements between the parking area boundary and the base boundary. The third alternative is the no action alternative. If no action is taken, the installation will continue to accept risk of not meeting recommended distances between the installation boundary and the restricted area barrier boundary.
4. The EA for the proposed action will be prepared in compliance with the National Environmental Policy Act of 1969, 42 United States Code (USC), the Council on Environmental Quality NEPA Regulations, 40 Code of Federal Regulations (CFR), and the Air Force's Environmental Impact Analysis Process, 32 CFR 989. As part of this EA, we request your assistance in identifying potential areas of environmental impact to be addressed in the study.
5. If you have any specific items of interest about the proposal, or subjects that you believe should be included in the analysis, please contact the EA Project Manager, at: 23 CES

Environmental Planner, 3485 Georgia Street, Moody AFB GA 31699, or by phone at (229) 257-5881 within 30 days of receipt of this letter.

  
JOHN L. EUNICE, III  
Deputy Base Civil Engineer

**3. Attachments:**

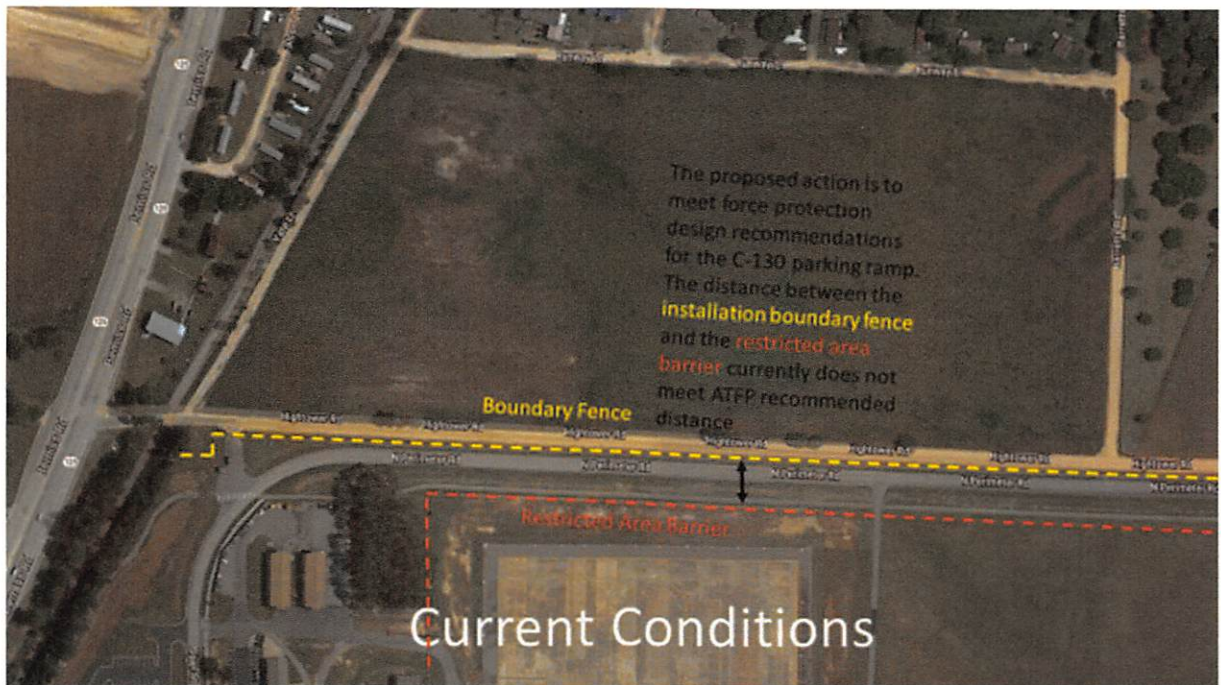
1. Location of Moody AFB, Georgia
2. Location of Proposed Project Area
3. Alternative 1 and Alternative 2 Map



Location of Moody Air Force Base



Location of Proposed Project Area



Current Boundary Fences



Alternative 1a – Reroute Hightower Road around North property



Alternative 2a – Reroute Hightower Road to meet minimum boundary distance requirements







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

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

11 FEB 2019

Chairman David Sickey  
Coushatta Tribe of Louisiana  
P.O. Box 10  
Elton, LA 70532

Dear Chairman Sickey

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act to assess the potential environmental impacts associated with an HC-130 parking ramp security modification. We would like to initiate government-to-government consultation regarding the proposed action and invite the Coushatta Tribe of Louisiana to review and comment on the proposed action pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Moody Air Force Base (AFB) is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties. The installation owns a 24-acre property north of the HC-130 parking ramp restricted area boundary barrier, which is outside of the Moody AFB boundary fence because the property is bisected by Lowndes County-owned Hightower Road (Attachment 1). A Phase I Intensive Cultural Resources Survey was completed on this property in 2011. No archeological sites were identified, and only one isolated chert flake was recorded within the entire area during this survey.

The HC-130 parking ramp restricted area boundary barrier is a barrier that delineates the restricted aircraft parking area. Currently, the distance between the HC-130 parking ramp restricted area boundary barrier and the Moody AFB boundary fence does not meet the recommended force protection distances as described in Air Force Instruction (AFI) 31-101. The Proposed Action is to relocate Hightower Road and the Moody AFB boundary fence into the northern edge of the 24-acre property owned by Moody AFB to provide recommended force protection distances for the HC-130 parking ramp restricted area boundary barrier, as described in AFI 31-101. The construction of a paved overflow parking lot on this parcel is also proposed.

Pursuant to Section 106 of the NHPA, and consistent with AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we request a response regarding your desire for potential further engagement in government-to-government consultation on this Proposed Action. We also ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects (Attachment 2) for this proposed

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undertaking. Additionally, the USAF requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis.

Regardless of whether the Tribe chooses to consult on this proposed project, the USAF will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains. Specifically, work on site would cease and the discovery immediately reported to the installation cultural resources manager, who would initiate the Section 106 process and notify tribes with interests in the area.

Please forward any written comments to Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699 or email to [gregory.lee.5@us.af.mil](mailto:gregory.lee.5@us.af.mil) within 30 days of receipt of this letter to ensure the USAF has sufficient time to fully consider them when preparing the Draft Environmental Assessment. If you need more than 30 days to review this letter and provide comments, or if you have any questions or concerns pertaining to this correspondence, Mr. Lee can be reached at (229) 257-5881. Thank you in advance for your assistance in this effort.

Sincerely

A handwritten signature in black ink that reads "Justin D. Demarco". The signature is written in a cursive style with a prominent initial "J".

JUSTIN D. DEMARCO, Colonel, USAF  
Installation Tribal Liaison Officer (ITLO)

**Attachments**

1. Figure 1 – Project Area Location
2. Figure 2 – Area of Potential Effects

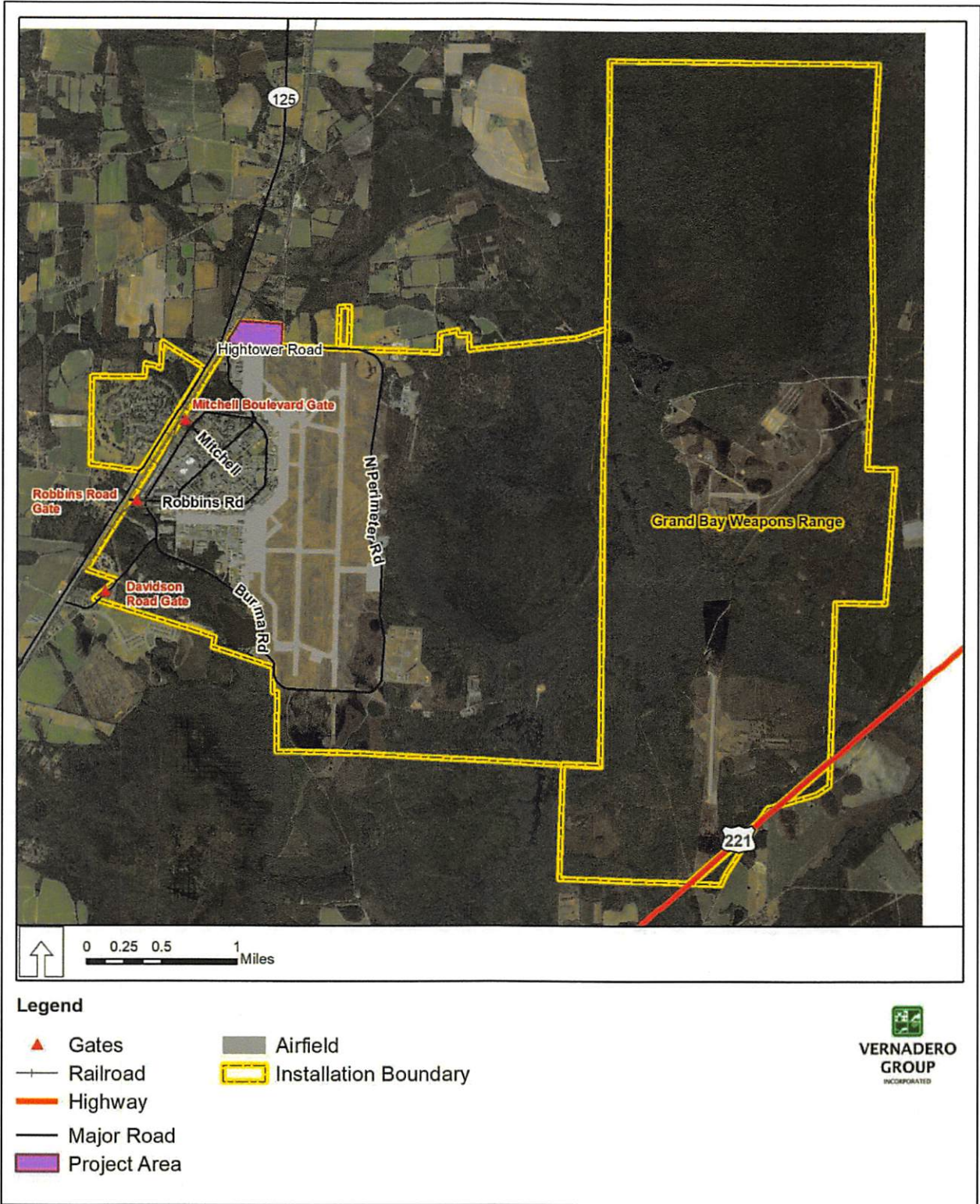
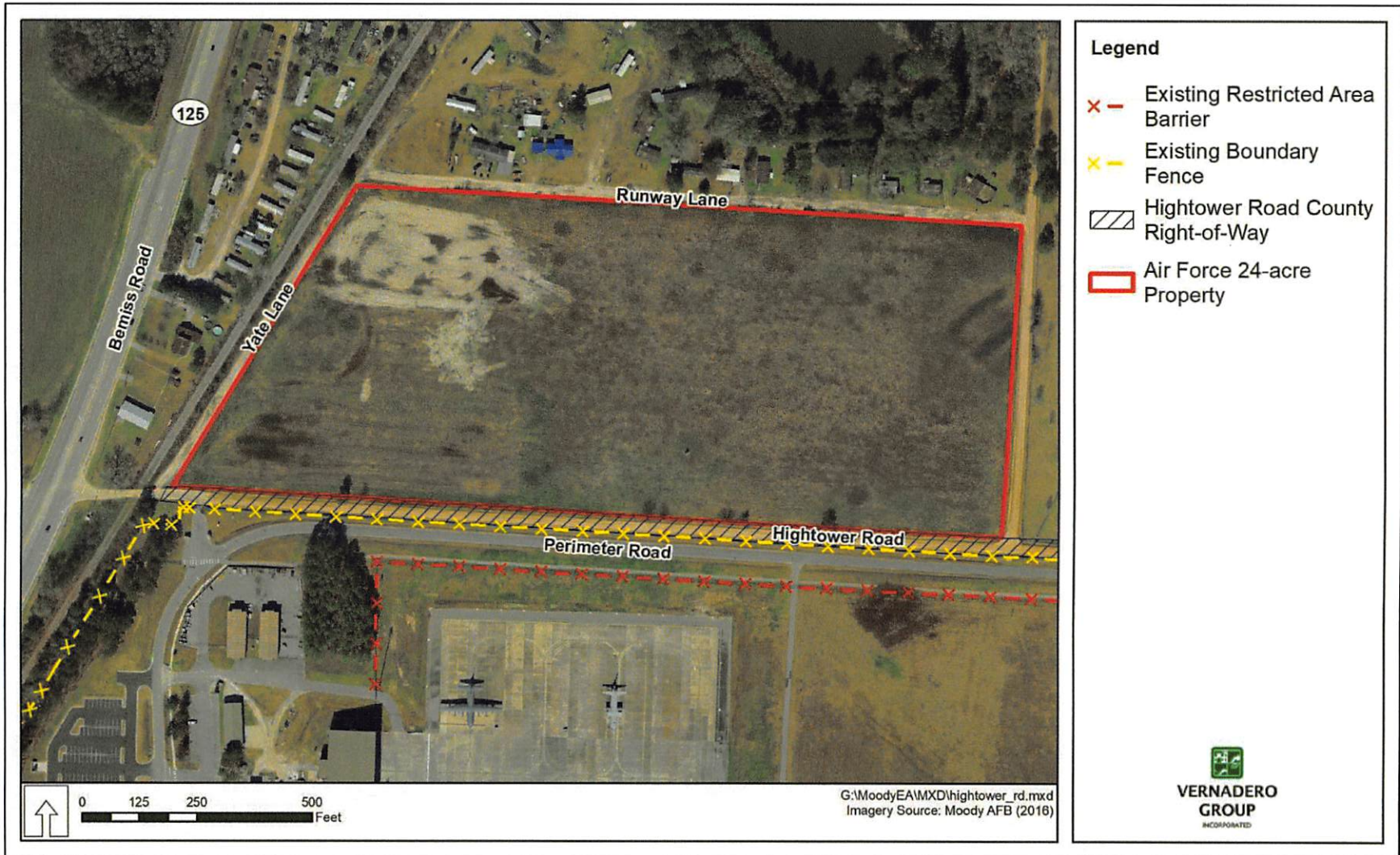


Figure 1. Project Area Location



**Figure 2. Area of Potential Effects**



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

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

11 FEB 2019

Chief Jeremiah Hobia  
Kialegee Tribal Town  
PO Box 332  
Wetumka, OK 74883

Dear Chief Hobia

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act to assess the potential environmental impacts associated with an HC-130 parking ramp security modification. We would like to initiate government-to-government consultation regarding the proposed action and invite the Kialegee Tribal Town to review and comment on the proposed action pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Moody Air Force Base (AFB) is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties. The installation owns a 24-acre property north of the HC-130 parking ramp restricted area boundary barrier, which is outside of the Moody AFB boundary fence because the property is bisected by Lowndes County-owned Hightower Road (Attachment 1). A Phase I Intensive Cultural Resources Survey was completed on this property in 2011. No archeological sites were identified, and only one isolated chert flake was recorded within the entire area during this survey.

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Pursuant to Section 106 of the NHPA, and consistent with AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we request a response regarding your desire for potential further engagement in government-to-government consultation on this Proposed Action. We also ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects (Attachment 2) for this proposed

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undertaking. Additionally, the USAF requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis.

Regardless of whether the Tribe chooses to consult on this proposed project, the USAF will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains. Specifically, work on site would cease and the discovery immediately reported to the installation cultural resources manager, who would initiate the Section 106 process and notify tribes with interests in the area.

Please forward any written comments to Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699 or email to [gregory.lee.5@us.af.mil](mailto:gregory.lee.5@us.af.mil) within 30 days of receipt of this letter to ensure the USAF has sufficient time to fully consider them when preparing the Draft Environmental Assessment. If you need more than 30 days to review this letter and provide comments, or if you have any questions or concerns pertaining to this correspondence, Mr. Lee can be reached at (229) 257-5881. Thank you in advance for your assistance in this effort.

Sincerely

A handwritten signature in black ink that reads "Justin Demarco". The signature is written in a cursive, flowing style.

JUSTIN D. DEMARCO, Colonel, USAF  
Installation Tribal Liaison Officer (ITLO)

**Attachments**

1. Figure 1 – Project Area Location
2. Figure 2 – Area of Potential Effects

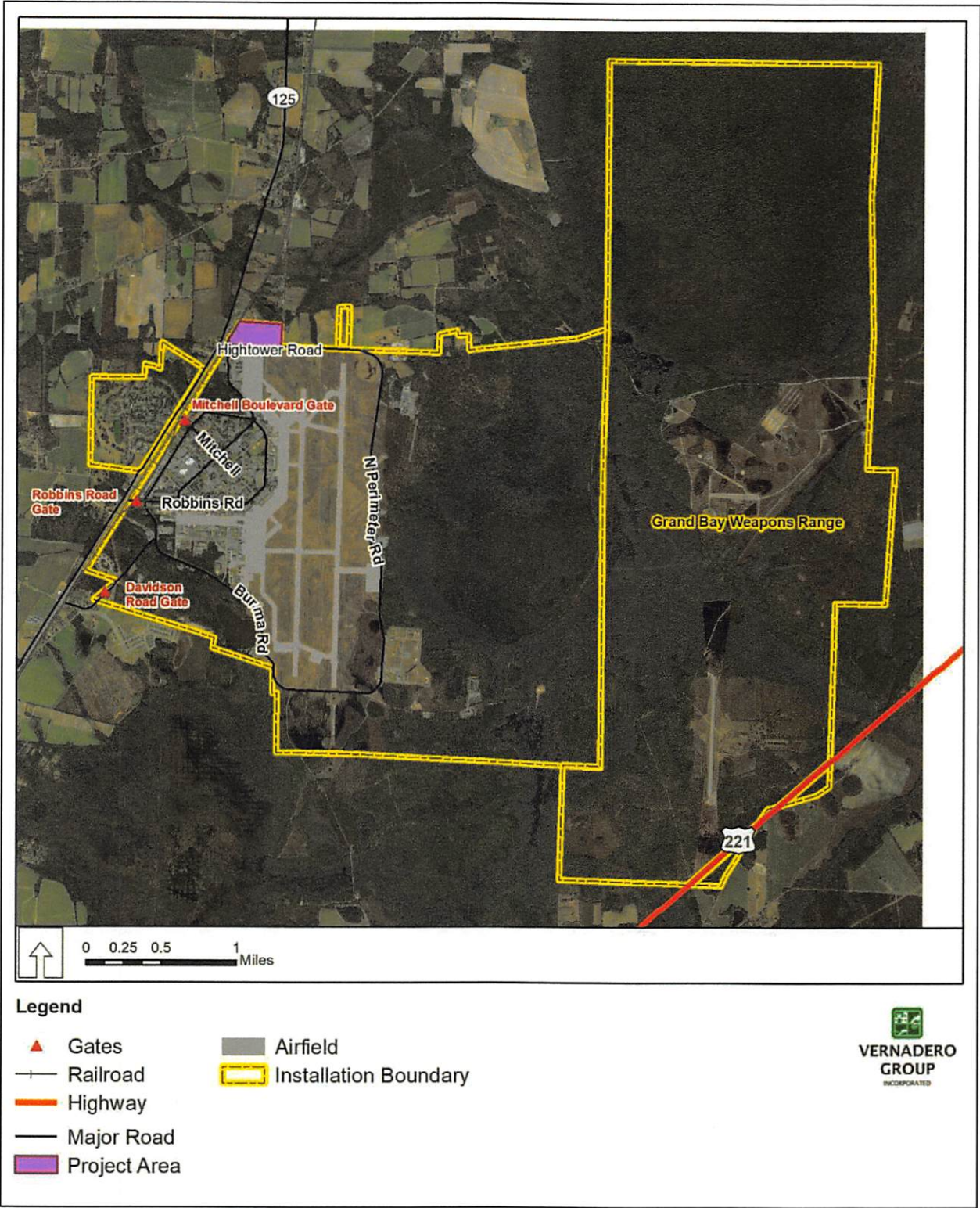


Figure 1. Project Area Location

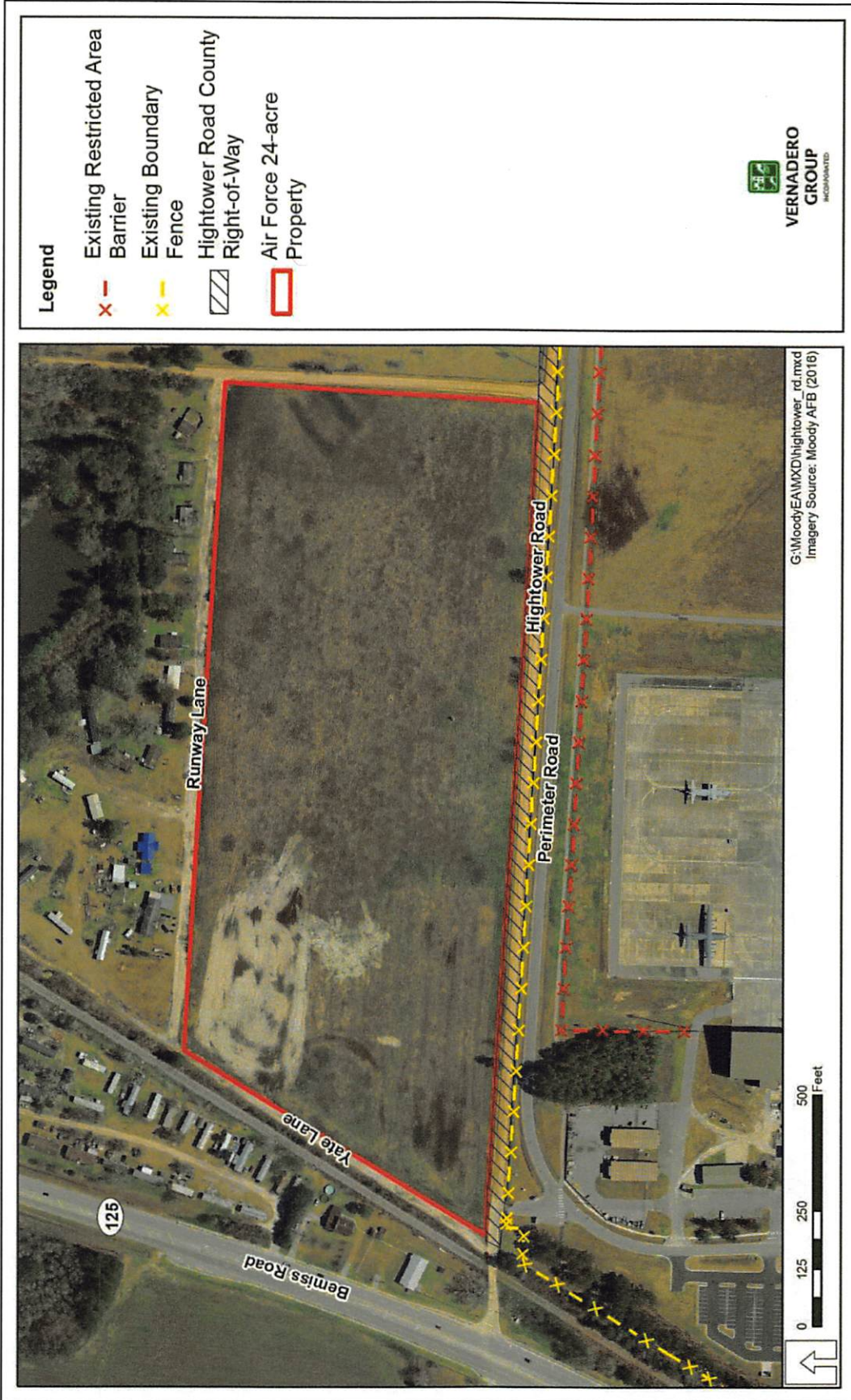


Figure 2. Area of Potential Effects





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

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

11 FEB 2019

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

Dear Chairwoman Tucker

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act to assess the potential environmental impacts associated with an HC-130 parking ramp security modification. We would like to initiate government-to-government consultation regarding the proposed action and invite the Muscogee Nation of Florida to review and comment on the proposed action pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Moody Air Force Base (AFB) is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties. The installation owns a 24-acre property north of the HC-130 parking ramp restricted area boundary barrier, which is outside of the Moody AFB boundary fence because the property is bisected by Lowndes County-owned Hightower Road (Attachment 1). A Phase I Intensive Cultural Resources Survey was completed on this property in 2011. No archeological sites were identified, and only one isolated chert flake was recorded within the entire area during this survey.

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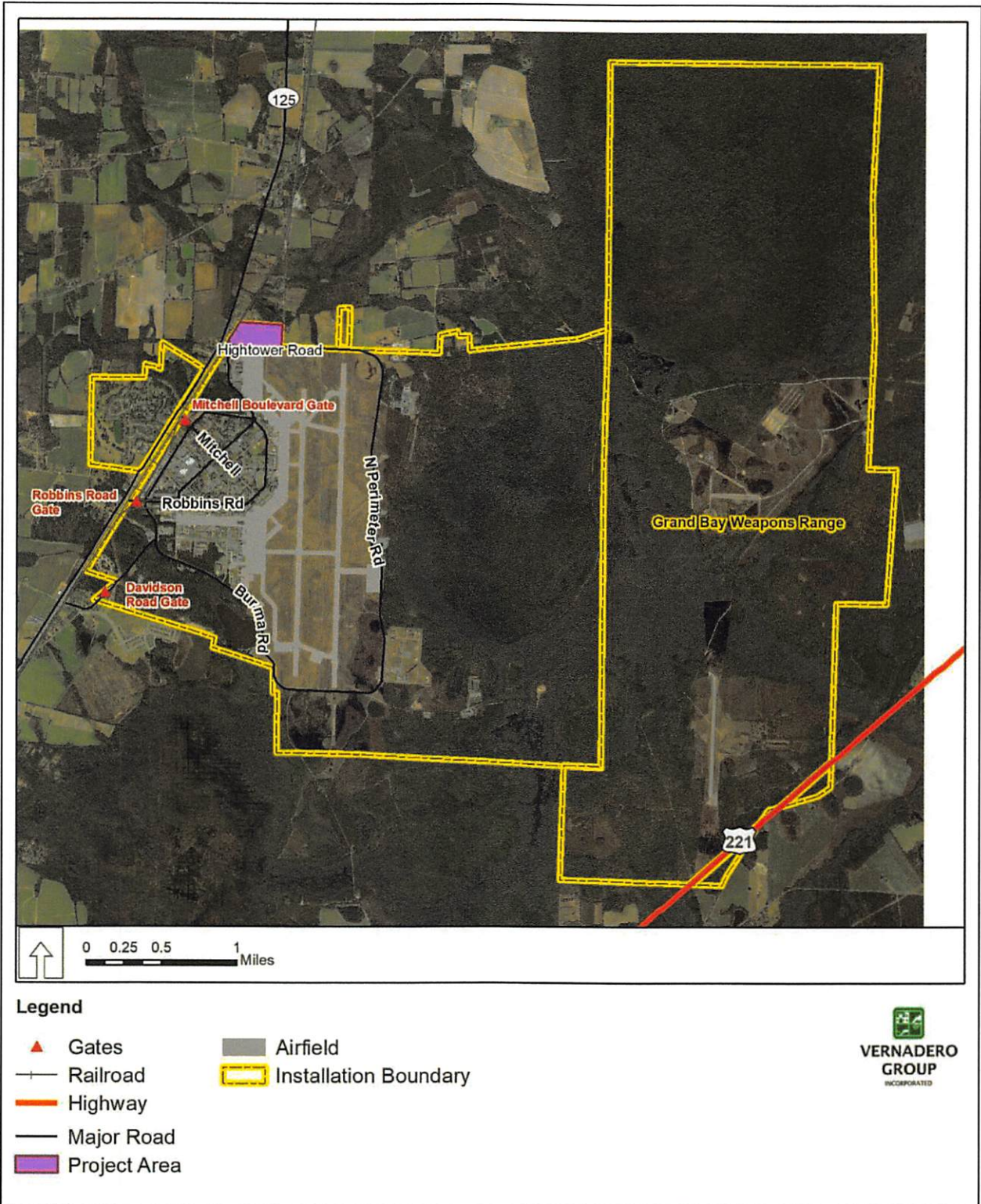
Sincerely

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JUSTIN D. DEMARCO, Colonel, USAF  
Installation Tribal Liaison Officer (ITLO)

**Attachments**

1. Figure 1 – Project Area Location
2. Figure 2 – Area of Potential Effects



**Figure 1. Project Area Location**

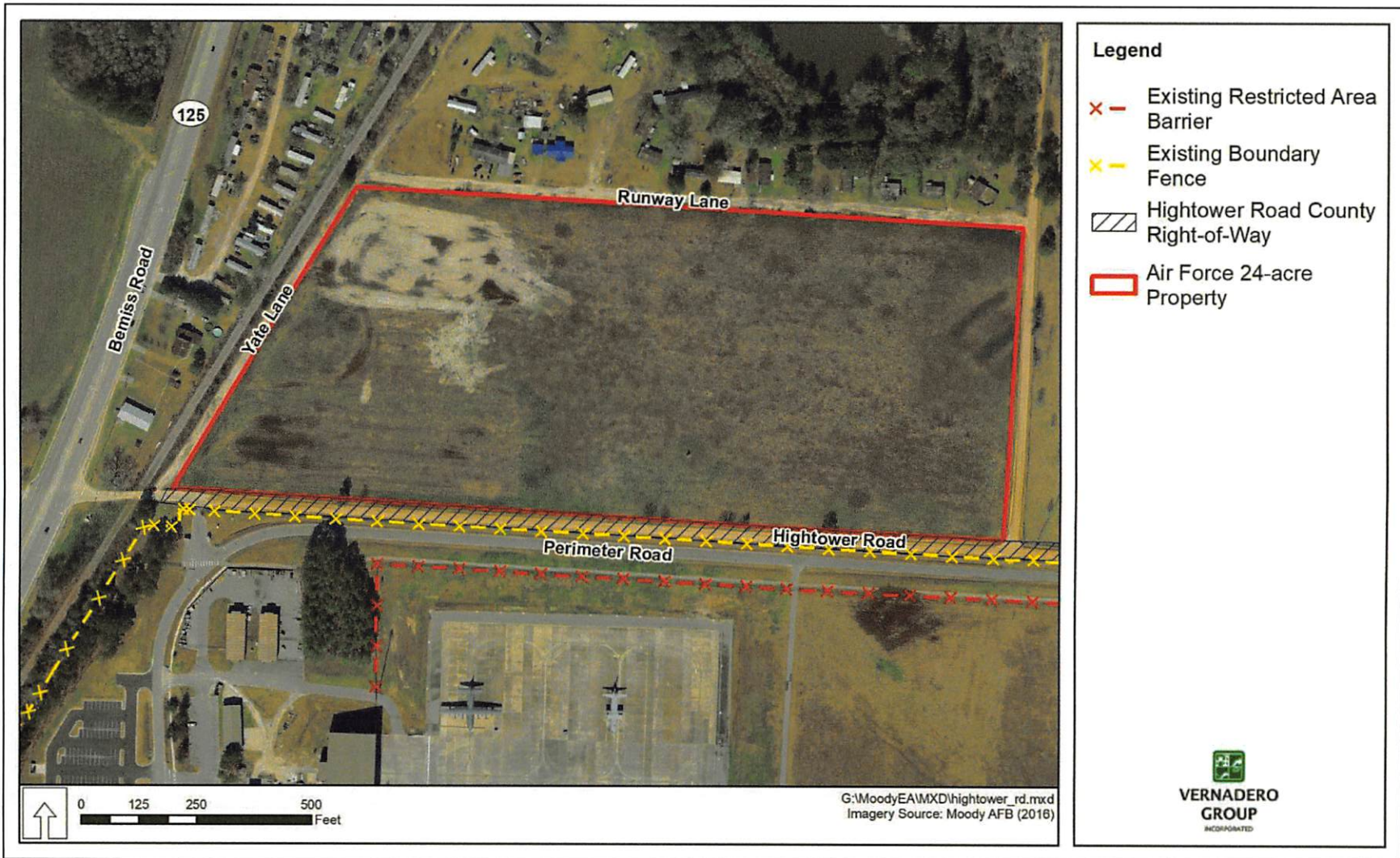


Figure 2. Area of Potential Effects



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

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

11 FEB 2019

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

Dear Principal Chief Floyd

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act to assess the potential environmental impacts associated with an HC-130 parking ramp security modification. We would like to initiate government-to-government consultation regarding the proposed action and invite the Muscogee (Creek) Nation to review and comment on the proposed action pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Moody Air Force Base (AFB) is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties. The installation owns a 24-acre property north of the HC-130 parking ramp restricted area boundary barrier, which is outside of the Moody AFB boundary fence because the property is bisected by Lowndes County-owned Hightower Road (Attachment 1). A Phase I Intensive Cultural Resources Survey was completed on this property in 2011. No archeological sites were identified, and only one isolated chert flake was recorded within the entire area during this survey.

The HC-130 parking ramp restricted area boundary barrier is a barrier that delineates the restricted aircraft parking area. Currently, the distance between the HC-130 parking ramp restricted area boundary barrier and the Moody AFB boundary fence does not meet the recommended force protection distances as described in Air Force Instruction (AFI) 31-101. The Proposed Action is to relocate Hightower Road and the Moody AFB boundary fence into the northern edge of the 24-acre property owned by Moody AFB to provide recommended force protection distances for the HC-130 parking ramp restricted area boundary barrier, as described in AFI 31-101. The construction of a paved overflow parking lot on this parcel is also proposed.

Pursuant to Section 106 of the NHPA, and consistent with AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we request a response regarding your desire for potential further engagement in government-to-government consultation on this Proposed Action. We also ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects (Attachment 2) for this proposed

*Global Power for America*

undertaking. Additionally, the USAF requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis.

Regardless of whether the Tribe chooses to consult on this proposed project, the USAF will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains. Specifically, work on site would cease and the discovery immediately reported to the installation cultural resources manager, who would initiate the Section 106 process and notify tribes with interests in the area.

Please forward any written comments to Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699 or email to [gregory.lee.5@us.af.mil](mailto:gregory.lee.5@us.af.mil) within 30 days of receipt of this letter to ensure the USAF has sufficient time to fully consider them when preparing the Draft Environmental Assessment. If you need more than 30 days to review this letter and provide comments, or if you have any questions or concerns pertaining to this correspondence, Mr. Lee can be reached at (229) 257-5881. Thank you in advance for your assistance in this effort.

Sincerely

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JUSTIN D. DEMARCO, Colonel, USAF  
Installation Tribal Liaison Officer (ITLO)

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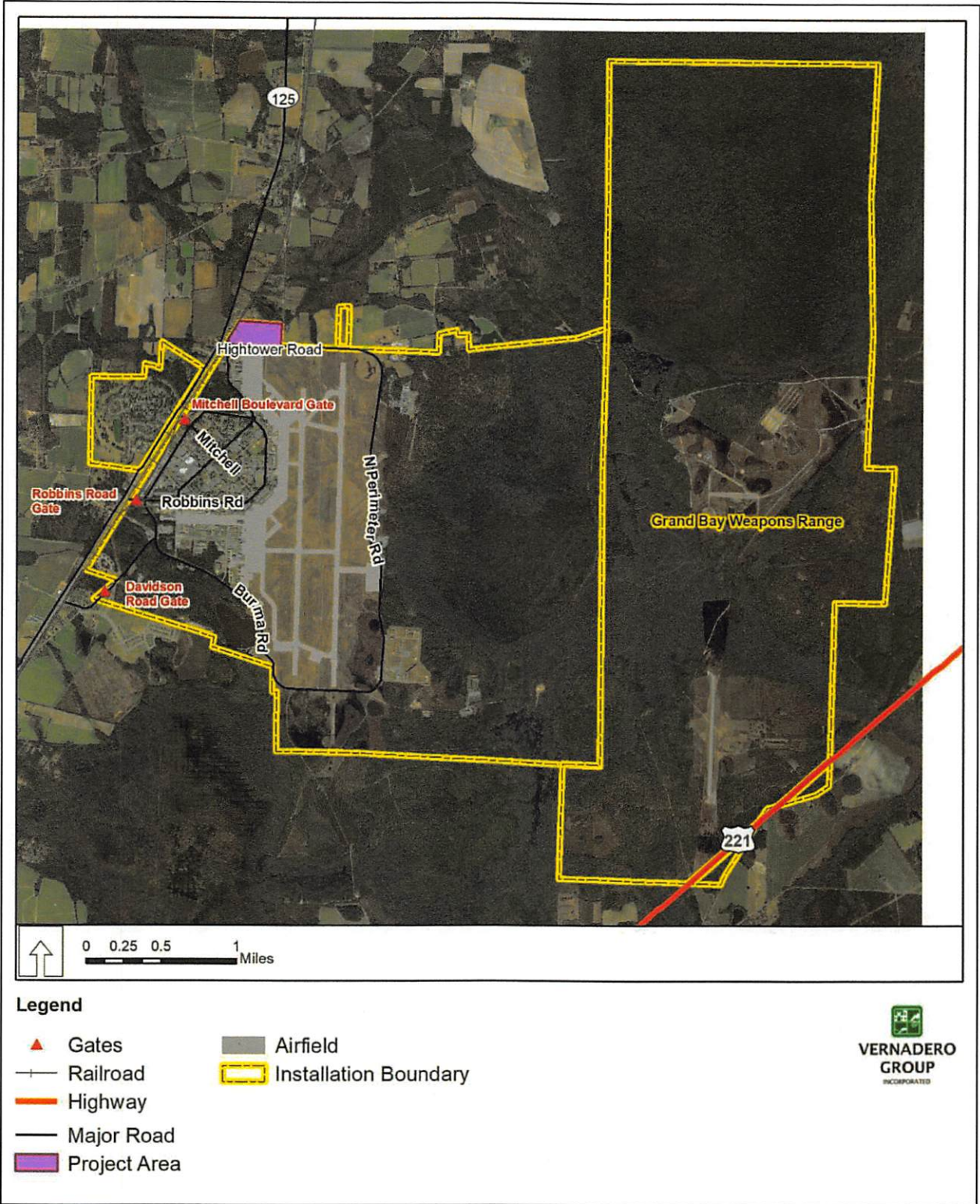


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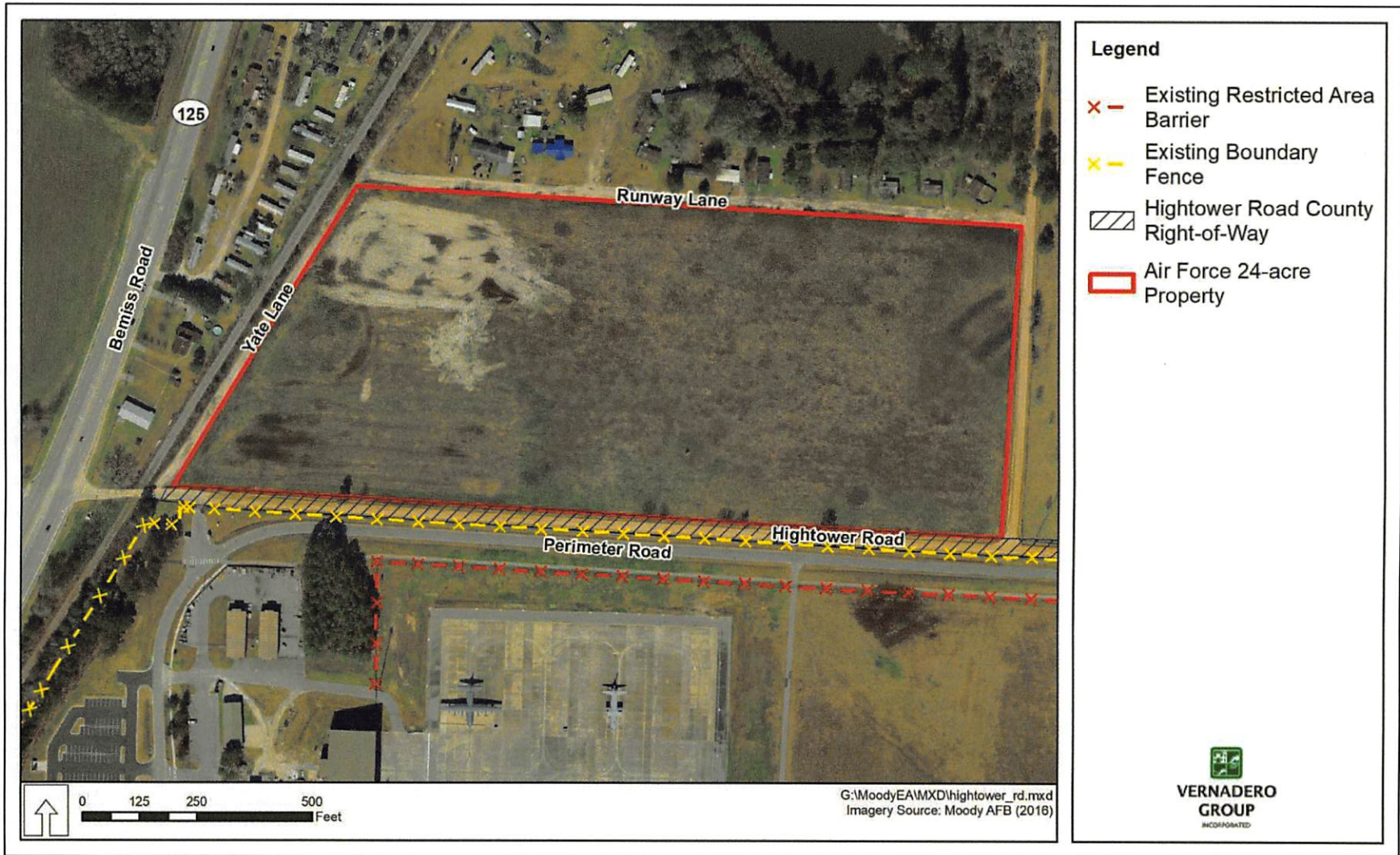


Figure 2. Area of Potential Effects





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HEADQUARTERS 23D WING (ACC)  
MOODY AIR FORCE BASE, GEORGIA

11 FEB 2019

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

Tribal Chair Stephanie Bryan  
Poarch Band of Creeks  
5811 Jack Springs Rd  
Altmore, AL 36502

Dear Tribal Chair Bryan

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act to assess the potential environmental impacts associated with an HC-130 parking ramp security modification. We would like to initiate government-to-government consultation regarding the proposed action and invite the Poarch Band of Creeks to review and comment on the proposed action pursuant to Section 106 of the National Historic Preservation Act (NHPA).

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Pursuant to Section 106 of the NHPA, and consistent with AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we request a response regarding your desire for potential further engagement in government-to-government consultation on this Proposed Action. We also ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects (Attachment 2) for this proposed

*Global Power for America*

undertaking. Additionally, the USAF requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis.

Regardless of whether the Tribe chooses to consult on this proposed project, the USAF will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains. Specifically, work on site would cease and the discovery immediately reported to the installation cultural resources manager, who would initiate the Section 106 process and notify tribes with interests in the area.

Please forward any written comments to Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699 or email to [gregory.lee.5@us.af.mil](mailto:gregory.lee.5@us.af.mil) within 30 days of receipt of this letter to ensure the USAF has sufficient time to fully consider them when preparing the Draft Environmental Assessment. If you need more than 30 days to review this letter and provide comments, or if you have any questions or concerns pertaining to this correspondence, Mr. Lee can be reached at (229) 257-5881. Thank you in advance for your assistance in this effort.

Sincerely

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JUSTIN D. DEMARCO, Colonel, USAF  
Installation Tribal Liaison Officer (ITLO)

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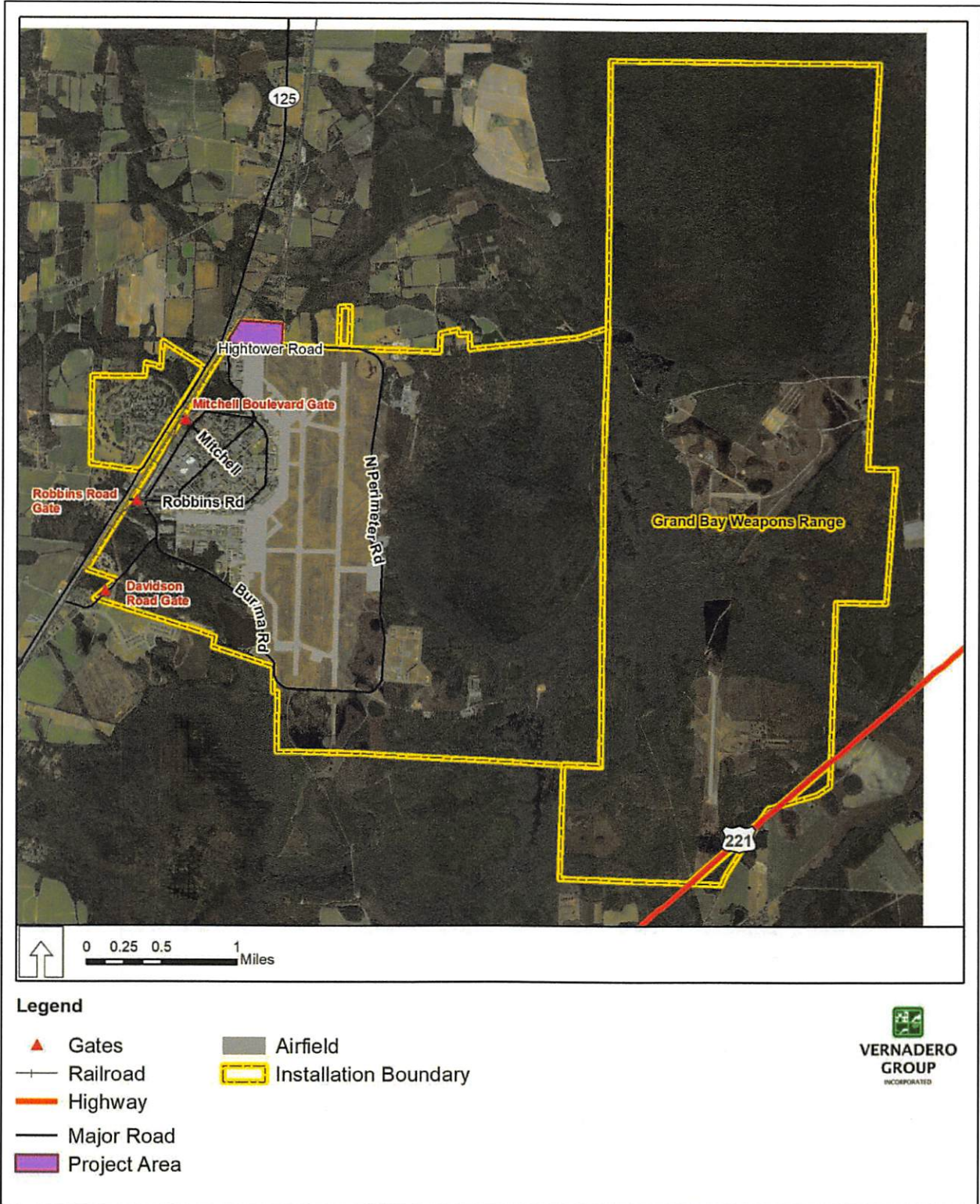


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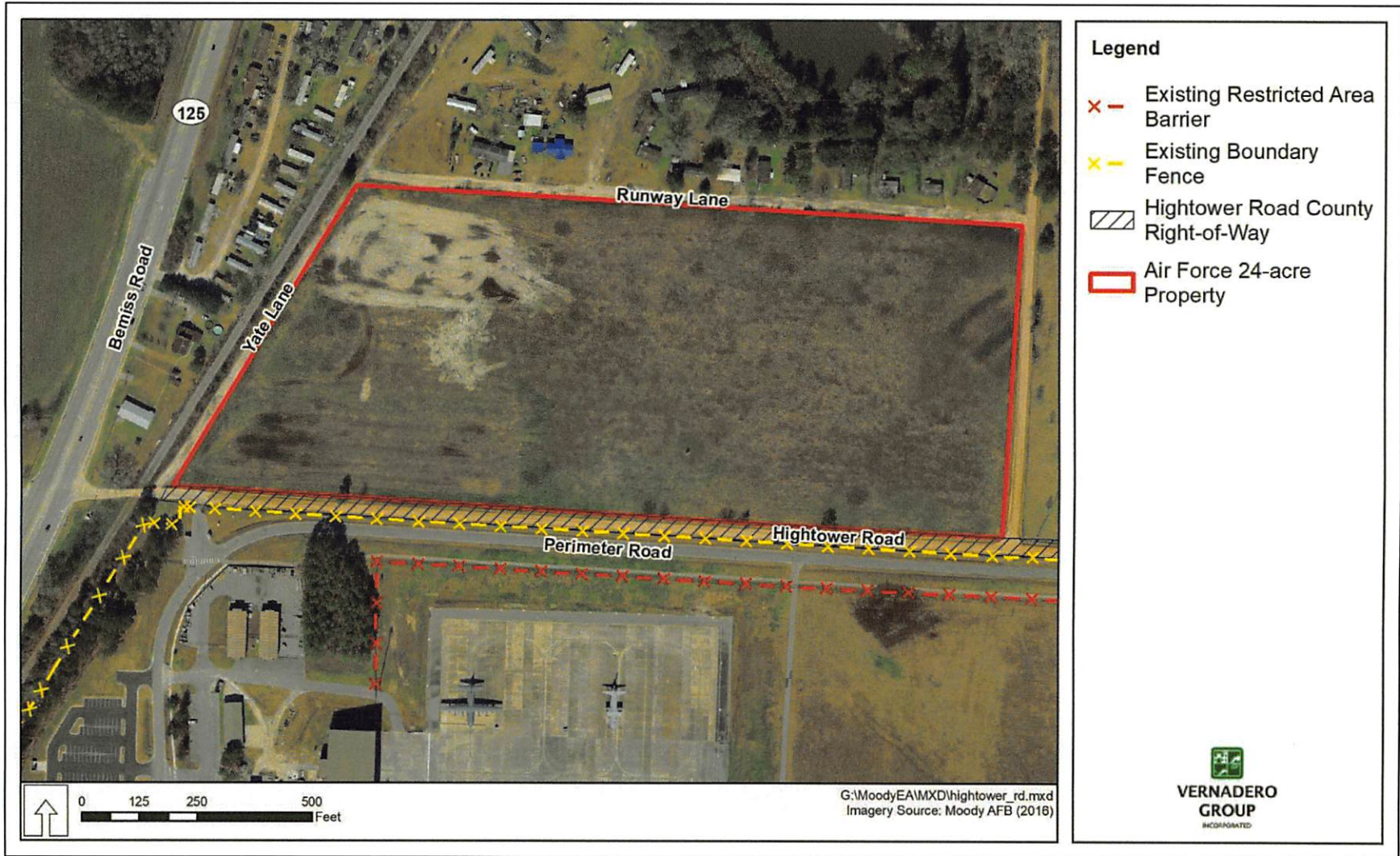


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11 FEB 2019

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23 Flying Tiger Way  
Bldg 105 Suite 1  
Moody AFB GA 31699

Principal Chief Leonard Harjo  
Seminole Nation of Oklahoma  
PO Box 1498  
Wewoka, OK 74884

Dear Principal Chief Harjo

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act to assess the potential environmental impacts associated with an HC-130 parking ramp security modification. We would like to initiate government-to-government consultation regarding the proposed action and invite the Seminole Nation of Oklahoma to review and comment on the proposed action pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Moody Air Force Base (AFB) is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties. The installation owns a 24-acre property north of the HC-130 parking ramp restricted area boundary barrier, which is outside of the Moody AFB boundary fence because the property is bisected by Lowndes County-owned Hightower Road (Attachment 1). A Phase I Intensive Cultural Resources Survey was completed on this property in 2011. No archeological sites were identified, and only one isolated chert flake was recorded within the entire area during this survey.

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Pursuant to Section 106 of the NHPA, and consistent with AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes*, we request a response regarding your desire for potential further engagement in government-to-government consultation on this Proposed Action. We also ask your assistance in identifying whether there are areas of historic, religious, or cultural significance within the area of potential effects (Attachment 2) for this proposed

*Global Power for America*

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Regardless of whether the Tribe chooses to consult on this proposed project, the USAF will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains. Specifically, work on site would cease and the discovery immediately reported to the installation cultural resources manager, who would initiate the Section 106 process and notify tribes with interests in the area.

Please forward any written comments to Mr. Gregory Lee, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699 or email to [gregory.lee.5@us.af.mil](mailto:gregory.lee.5@us.af.mil) within 30 days of receipt of this letter to ensure the USAF has sufficient time to fully consider them when preparing the Draft Environmental Assessment. If you need more than 30 days to review this letter and provide comments, or if you have any questions or concerns pertaining to this correspondence, Mr. Lee can be reached at (229) 257-5881. Thank you in advance for your assistance in this effort.

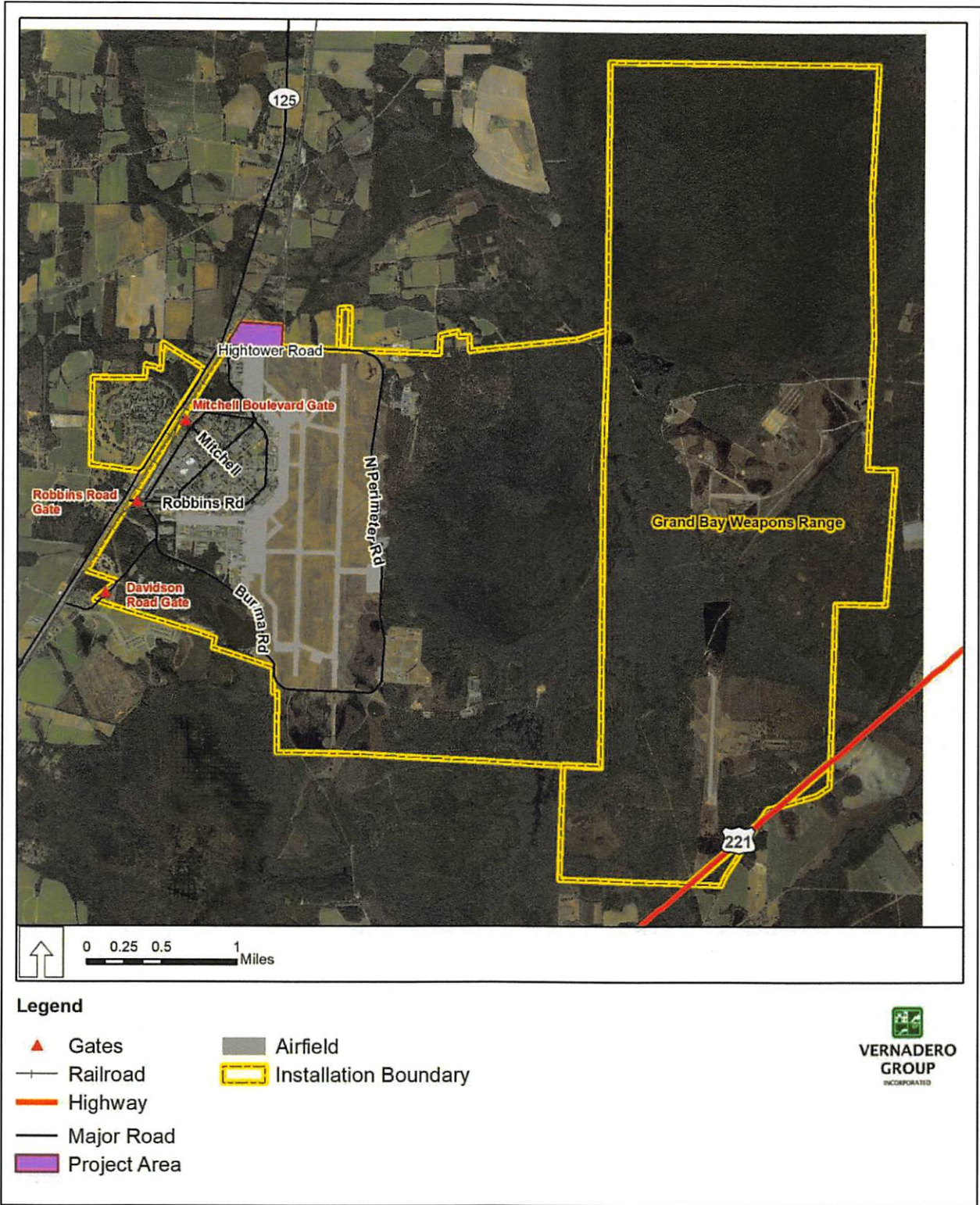
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Installation Tribal Liaison Officer (ITLO)

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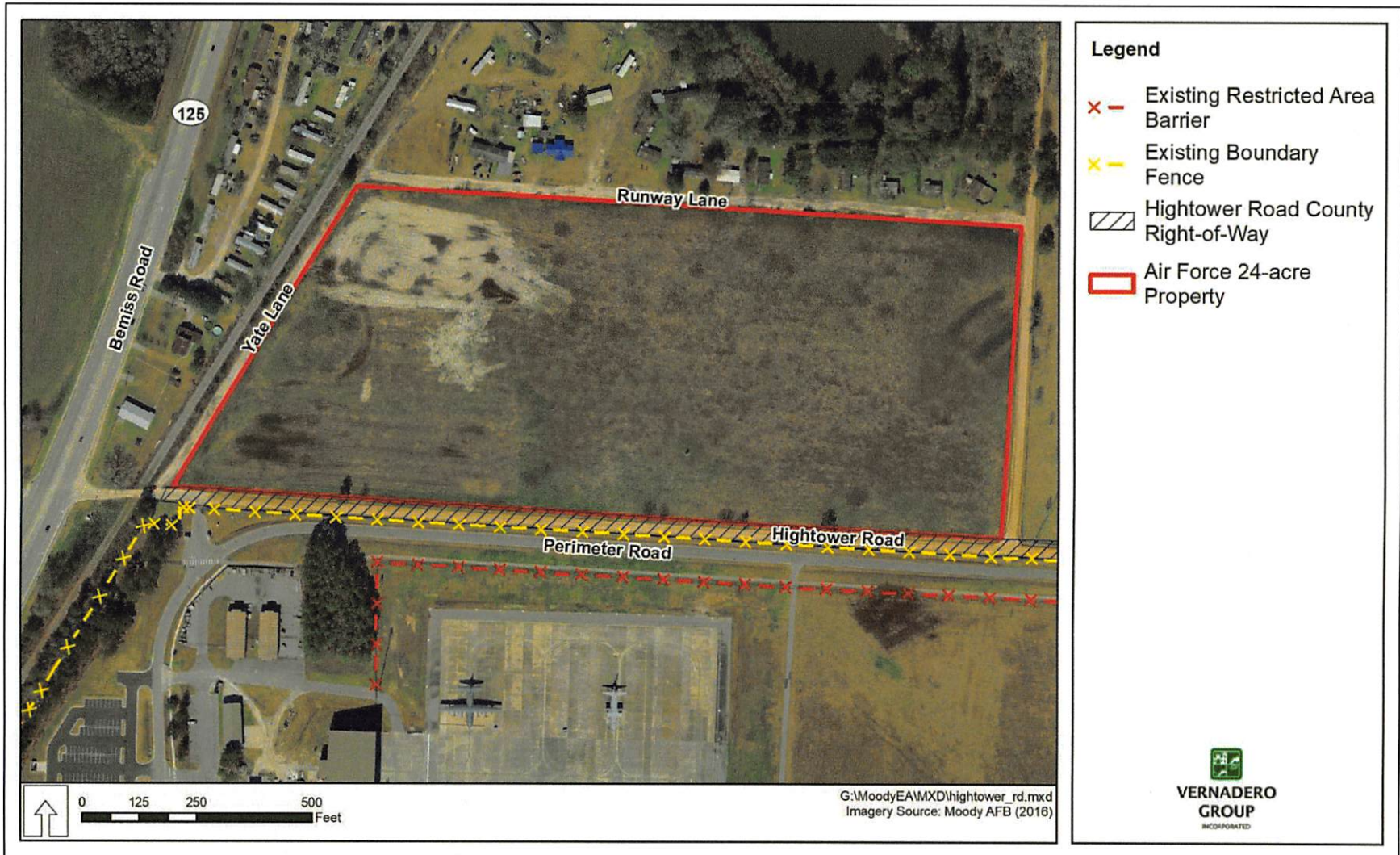


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23 WG/CV  
23 Flying Tiger Way  
Bldg 105 Suite 1  
Moody AFB GA 31699

11 FEB 2019

Town King Ryan Morrow  
Thlopthlocco Tribal Town  
PO Box 188  
Okemah, OK 74859

Dear Town King Morrow

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act to assess the potential environmental impacts associated with an HC-130 parking ramp security modification. We would like to initiate government-to-government consultation regarding the proposed action and invite the Thlopthlocco Tribal Town to review and comment on the proposed action pursuant to Section 106 of the National Historic Preservation Act (NHPA).

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Regardless of whether the Tribe chooses to consult on this proposed project, the USAF will comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains. Specifically, work on site would cease and the discovery immediately reported to the installation cultural resources manager, who would initiate the Section 106 process and notify tribes with interests in the area.

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JUSTIN D. DEMARCO, Colonel, USAF  
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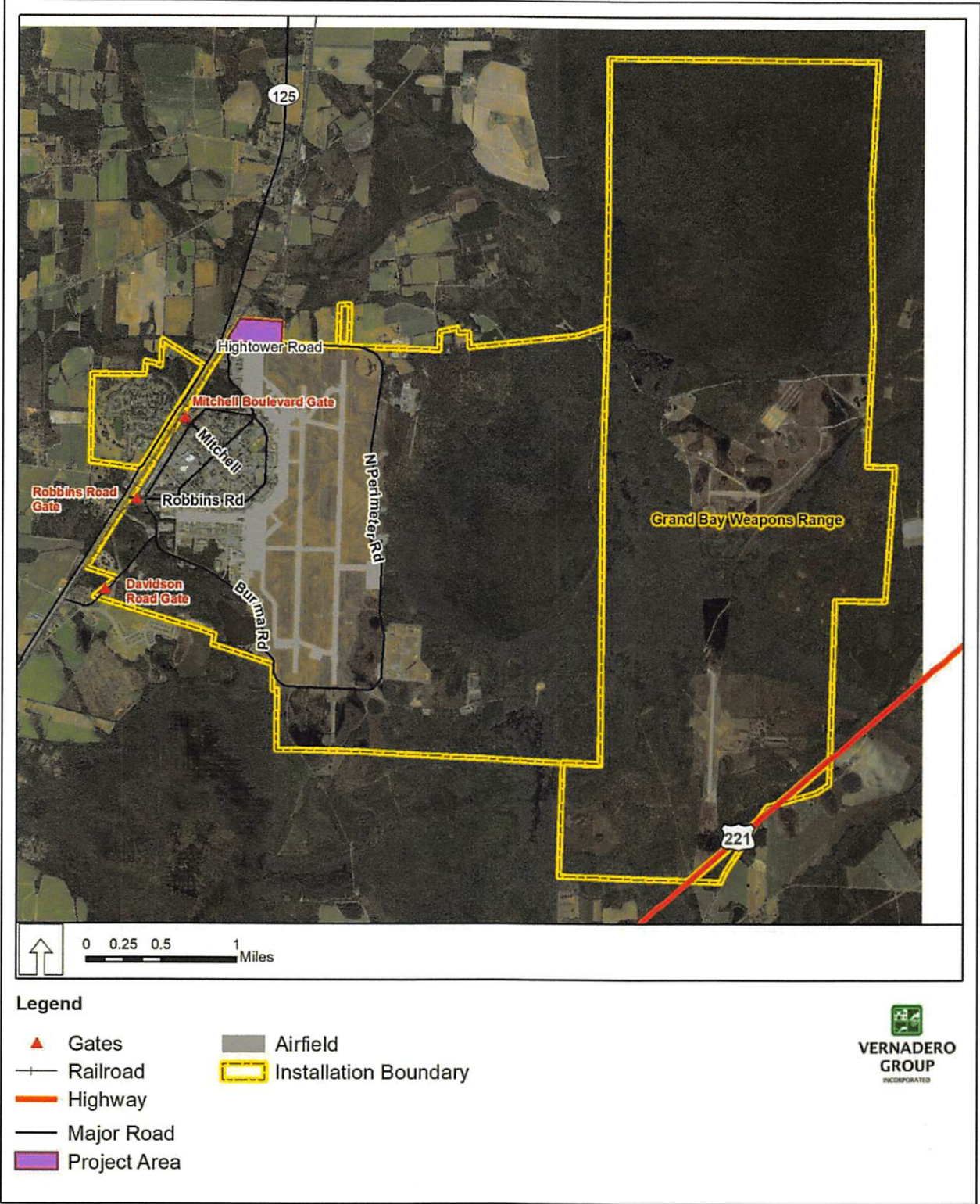


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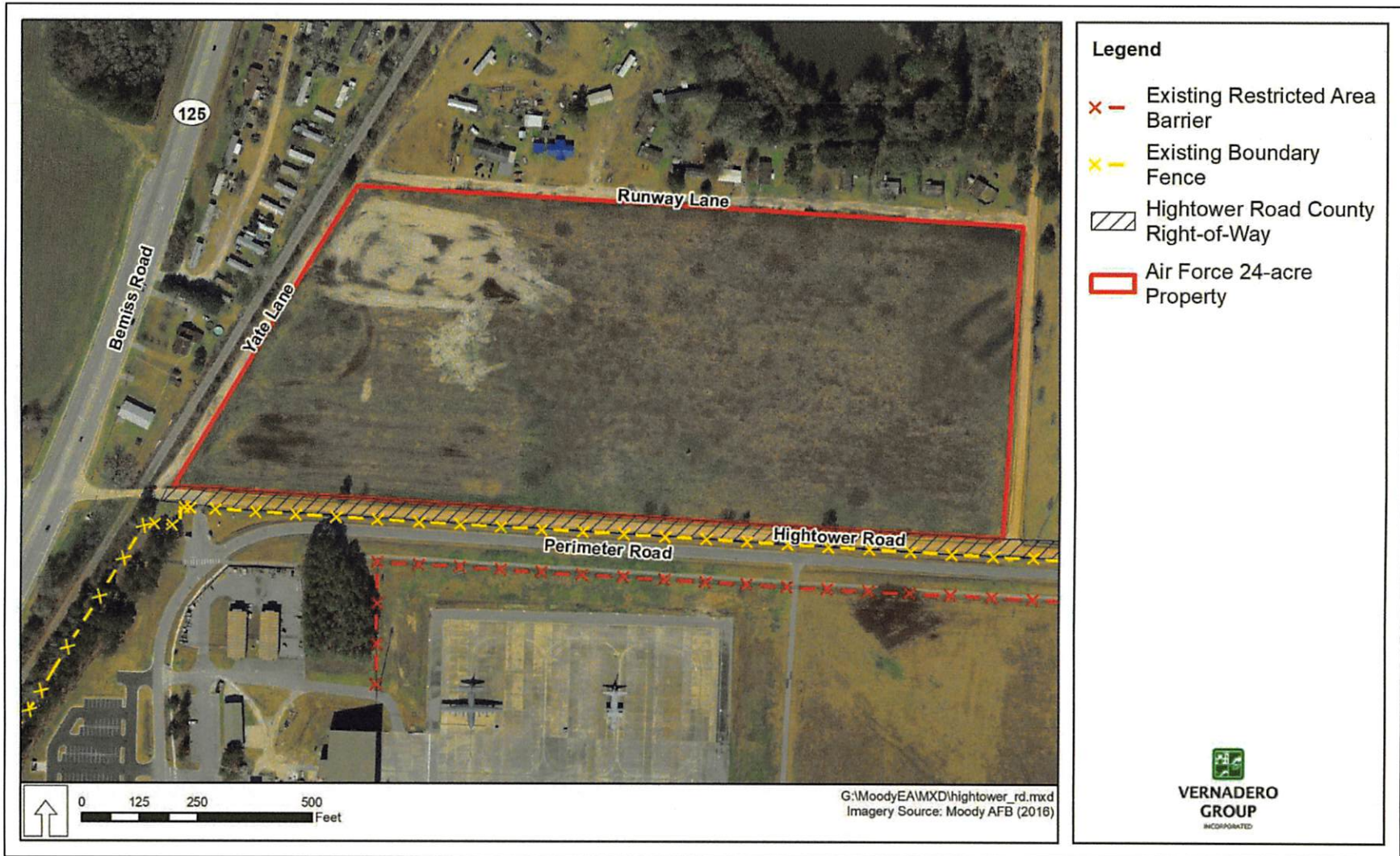


Figure 2. Area of Potential Effects

**APPENDIX B. AGENCY, GOVERNMENT-TO-GOVERNMENT, AND PUBLIC COMMENT  
LETTERS**



**From:** [Kassie Henry](#)  
**To:** [LEE, GREGORY W GS-12 USAF ACC 23 CES/CEIE](#)  
**Subject:** [Non-DoD Source] Moody Air Force Base EA  
**Date:** Tuesday, February 19, 2019 2:58:05 PM

---

Dear Mr. Lee,

Thank you for requesting our 106/EA determination. Based on the information provided, I do not believe that this project will have a negative impact on any archaeological, historic or cultural resources of the Coushatta people. Accordingly, we do not wish to consult further on this project. If any inadvertent discoveries are made in the course of this project, we expect to be contacted immediately and reserve the right to consult with you at that time.

Aliilamo (thank you),

Kassie Dawsey  
Section 106 Coordinator  
Coushatta Tribe of Louisiana  
P.O. Box 10  
Elton, LA 70532  
337-584-1560



# POARCH BAND OF CREEK INDIANS

5811 Jack Springs Road • Atmore, Alabama 36502

Tribal Offices: (251) 368-9136

[www.poarchcreekindians-nsn.gov](http://www.poarchcreekindians-nsn.gov)

March 28, 2019

Mr. Gregory Lee  
23 CES/CEIE  
3485 Georgia Street  
Moody AFB, GA 31699

Re: 2019-03-013: HC-130 Parking Ramp Security Modification

Dear Mr. Lee,

The Poarch Band of Creek Indians, Tribal Historic Preservation Office has received and reviewed the documentation submitted for the referenced project in *Lowndes County, Georgia*. Based upon the information submitted we concur with the determination of no effect.

Should implementation of the project result in an inadvertent discovery of any material remains of past human life or activities of archaeological interest, such as chipped stone tools, pottery, bone, historic crockery, glass, metal items or building materials, the project should be halted until evaluation and consultation is complete.

Thank you for the opportunity to comment on this project. We look forward to working with you in the future. Should further correspondence pertaining to the project be necessary, please reference the above file number when responding. If you have any questions, please do not hesitate to call 251-368-9136 extension 2072.

Sincerely,

Larry D. Haikey  
Tribal Historic Preservation Officer



## APPENDIX C. AIR QUALITY ANALYSIS



## Appendix C-1

### Air Conformity Applicability Analysis

#### AIR QUALITY

This appendix presents an overview of the Clean Air Act (CAA) and the state of Georgia air quality regulations. It also presents calculations, including the assumptions used for the air quality analyses presented in the Air Quality sections of this Environmental Assessment.

#### C.1 Air Quality Program Overview

To protect public health and welfare, the US 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 [CFR] 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 Air Protection Branch of the Georgia Environmental Protection Division oversees the state’s air pollution control program 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**.

Based on measured ambient air pollutant concentrations, the USEPA designates areas of the United States as having air quality better than (attainment) the NAAQS, worse than (nonattainment) the NAAQS, 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 until proven otherwise. Attainment areas can be further classified as “maintenance” areas, which are areas previously classified as nonattainment but where air pollutant concentrations have been successfully reduced to below the standard. Maintenance areas are under special maintenance plans and must operate under some of the nonattainment area plans to ensure compliance with the NAAQS.

Section 176(c) (1) of the CAA contains legislation that ensures Federal activities conform to relevant State Implementation Plans (SIP) and thus do not hamper local efforts to control air pollution. Conformity to a SIP is defined as conformity to a SIP’s purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards.

A general conformity analysis is required for areas of nonattainment or maintenance where a Federal action is proposed. The action can be shown to conform by demonstrating that the total direct and indirect emissions are below the *de minimis* levels (**Table C-2**), and/or showing that the proposed action emissions are within the State- or Tribe-approved budget of the facility as part of the SIP or Tribal Implementation Plan (USEPA 2010).

Direct emissions are those that occur as a direct result of the action. For example, emissions from new equipment that are a permanent component of the completed action (e.g. boilers, heaters, generators, paint booths, etc.) are considered direct emissions. Indirect emissions are those that occur at a later time or at a distance from the proposed action. For example, increased vehicular/commuter traffic because of the action is considered an indirect emission. Construction emissions must also be considered. For example, the emissions from vehicles and equipment used to clear and grade building sites, build new buildings, and construct new roads must be evaluated. These types of emissions are considered direct.

**Table C-1  
National Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Standard Value<sup>6</sup></b>		<b>Standard Type</b>
<b>Carbon Monoxide (CO)</b>			
8-hour average	9 ppm	(10 mg/m <sup>3</sup> )	Primary
1-hour average	35 ppm	(40 mg/m <sup>3</sup> )	Primary
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>			
Annual arithmetic mean	0.053 ppm	(100 µg/m <sup>3</sup> )	Primary and Secondary
1-hour average <sup>1</sup>	0.100 ppm	(188 µg/m <sup>3</sup> )	Primary
<b>Ozone (O<sub>3</sub>)</b>			
8-hour average <sup>2</sup>	0.070 ppm	(137 µg/m <sup>3</sup> )	Primary and Secondary
<b>Lead (Pb)</b>			
3-month average <sup>3</sup>		0.15 µg/m <sup>3</sup>	Primary and Secondary
<b>Particulate &lt;10 Micrometers (PM<sub>10</sub>)</b>			
24-hour average <sup>4</sup>		150 µg/m <sup>3</sup>	Primary and Secondary
<b>Particulate &lt;2.5 Micrometers (PM<sub>2.5</sub>)</b>			
Annual arithmetic mean <sup>4</sup>		12 µg/m <sup>3</sup>	Primary
Annual arithmetic mean <sup>4</sup>		15 µg/m <sup>3</sup>	Secondary
24-hour average <sup>4</sup>		35 µg/m <sup>3</sup>	Primary and Secondary
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>			
1-hour average <sup>5</sup>	0.075 ppm	(196 µg/m <sup>3</sup> )	Primary
3-hour average <sup>5</sup>	0.5 ppm	(1,300 µg/m <sup>3</sup> )	Secondary

Source: USEPA 2016

Notes:

- 1 In February 2010, the USEPA established a new 1-hour standard for NO<sub>2</sub> at a level of 0.100 ppm, based on the 3-year average of the 98th percentile of the yearly distribution concentration, to supplement the then-existing annual standard.
- 2 In October 2015, the USEPA revised the level of the 8-hour standard to 0.070 ppm, based on the annual 4th highest daily maximum concentration, averaged over 3 years; the regulation became effective on 28 December 2015. The previous (2008) standard of 0.075 ppm remains in effect for some areas. A 1-hour standard no longer exists.
- 3 In November 2008, USEPA revised the primary lead standard to 0.15 µg/m<sup>3</sup>. USEPA revised the averaging time to a rolling 3-month average.
- 4 In October 2006, USEPA revised the level of the 24-hour PM<sub>2.5</sub> standard to 35 µg/m<sup>3</sup> and retained the level of the annual PM<sub>2.5</sub> standard at 15 µg/m<sup>3</sup>. In 2012, USEPA split standards for primary & secondary annual PM<sub>2.5</sub>. All are averaged over 3 years, with the 24-hour average determined at the 98th percentile for the 24-hour standard. USEPA retained the 24-hour primary standard and revoked the annual primary standard for PM<sub>10</sub>.
- 5 In 2012, the USEPA retained a secondary 3-hour standard, which is not to be exceeded more than once per year. In June 2010, USEPA established a new 1-hour SO<sub>2</sub> standard at a level of 75 ppb, based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.
- 6 Parenthetical value is an approximately equivalent concentration for NO<sub>2</sub>, O<sub>3</sub>, and SO<sub>2</sub>.

µg/m<sup>3</sup> - microgram(s) per cubic meter; mg/m<sup>3</sup> - milligram(s) per cubic meter; ppb - part(s) per billion; ppm - part(s) per million; USEPA - United States Environmental Protection Agency

**Table C-2  
De Minimis Emission Thresholds in Attainment (Maintenance) Areas**

<b>Pollutant</b>	<b>Attainment Classification</b>	<b>Emission Threshold (tons/year)</b>
Ozone (NO <sub>x</sub> , SO <sub>2</sub> or NO <sub>2</sub> )	All maintenance areas	100
Ozone (VOCs)	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
CO	All maintenance areas	100
PM <sub>10</sub>	All maintenance areas	100
PM <sub>2.5</sub> Direct emissions, SO <sub>2</sub> , NO <sub>x</sub> (unless determined not to be a significant precursor), VOC and ammonia (if determined to be significant precursors)	All maintenance areas	100
Pb	All maintenance areas	25

Source: USEPA 2017

**CO** - carbon monoxide; **NO<sub>2</sub>** - nitrogen dioxide; **NO<sub>x</sub>** - nitrogen oxides; **PM<sub>2.5</sub>** - particulates ≤2.5 micrometers; **PM<sub>10</sub>** - particulates ≤10 micrometers; **Pb** - lead; **SO<sub>2</sub>** - sulfur dioxide; **VOC** - volatile organic compound

Each state is required to develop a 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.

In attainment areas, major new or modified stationary sources of air emissions on and in the area are subject to Prevention of Significant Deterioration (PSD) review to ensure that these sources are constructed without causing significant adverse deterioration of the clean air in the area. A major new source is defined as one that has the potential to emit any pollutant regulated under the CAA in amounts equal to or exceeding specific major source thresholds; that is, 100 or 250 tons/year based on the source's industrial category. These thresholds are applicable to stationary sources. A major modification is a physical change or change in the method of operation at an existing major source that causes a significant "net emissions increase" at that source of any regulated pollutant. **Table C-3** provides a tabular listing of the PSD significant emissions rate (SER) thresholds for selected criteria pollutants (USEPA 1990).

**Table C-3  
Criteria Pollutant Significant Emissions Rate Increases Under Prevention of Significant Deterioration Regulations**

Pollutant	Significant Emission Rate (ton/year)
PM <sub>10</sub>	15
PM <sub>2.5</sub>	10
Total Suspended Particulate (TSP)	25
SO <sub>2</sub>	40
NO <sub>x</sub>	40
Ozone (VOCs)	40
CO	100

Source: Title 40 CFR Part 52 Subpart A, §52.21

The goals of the PSD program are to (1) ensure economic growth while preserving existing air quality; (2) protect public health and welfare from adverse effects that might occur even at pollutant levels better than the NAAQS; and (3) preserve, protect, and enhance the air quality in areas of special natural recreational, scenic, or historic value, such as national parks and wilderness areas. Sources subject to PSD review are required by the CAA to obtain a permit before commencing construction. The permit process requires an extensive review of all other major sources within a 50-mile radius and all Class I areas within a 62-mile radius of the facility. Emissions from any new or modified source must be controlled using Best Available Control Technology. The air quality, in combination with other PSD sources in the area, must not exceed the maximum allowable incremental increase identified in **Table C-4**. National parks and wilderness areas are designated as Class I areas, where any appreciable deterioration in air quality is considered significant. Class II areas are those where moderate, well-controlled industrial growth could be permitted. Class III areas allow for greater industrial development. There are no Class I areas near Moody AFB.

**Table C-4  
Federal Allowable Pollutant Concentration Increases Under Prevention of Significant Deterioration Regulations**

Pollutant	Averaging Time	Maximum Allowable Concentration (µg/m <sup>3</sup> )		
		Class I	Class II	Class III
PM <sub>10</sub>	Annual	4	17	34
	24-hour	8	30	60
SO <sub>2</sub>	Annual	2	20	40
	24-hour	5	91	182
	3-hour	25	512	700
NO <sub>2</sub>	Annual	2.5	25	50

Source: Title 40 CFR Part 52 Subpart A, §52.21

µg/m<sup>3</sup> - microgram(s) per cubic meter; NO<sub>2</sub> - nitrogen dioxide; PM<sub>10</sub> - particulates ≤10 micrometers; SO<sub>2</sub> - sulfur dioxide

The Air Quality Monitoring Program monitors ambient air throughout the state. The purpose is to monitor, assess and provide information on statewide ambient air quality conditions and trends as specified by the state and Federal CAA. The Air Quality Monitoring Program works in conjunction with local air pollution agencies and some industries, measuring air quality throughout the states.

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 Assumptions

The following are assumptions were used in the air quality analysis for the proposed and alternative actions:

1. The start date of the project is assumed to be June 2020.
2. It is assumed that the dirt or soil removed during grading and trenching can be used for backfilling; in this case, no dirt or soil will need to be hauled off or on to the project site
3. It is assumed that the incremental emissions from the additional miles traveled due to the road rerouting is nominal and is not included in this analysis. It has been indicated by Moody AFB and Lowndes County that the existing road has very few users (average = 144 vehicles per day in 2009) and its current use is primarily for access to several nearby homes.
4. No demolition, building construction, or architectural coating activities are assumed.
5. No generators, tanks, or comfort heat emission sources are assumed for this project.
6. No grading is assumed for the current Hightower Road as it has been indicated that the road would be abandoned in place.

## C.3 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 the nonattainment status of the region increases. The Council on Environmental Quality (CEQ) defines significance in terms of context and intensity in 40 CFR 1508.27. This requires that the significance of the action be analyzed with respect to the setting of the proposed action and based relative to the severity of the impact. The CEQ NEPA regulations (40 CFR 1508.27(b)) provide 10 key factors to consider in determining an impact's intensity.

Emissions from the construction and demolition (C&D) were assessed against conformity standard *de minimis* thresholds of 100 tons per year for NO<sub>x</sub>, VOC and PM<sub>2.5</sub> as stipulated by 40 CFR 93. The remaining criteria pollutants are compared to respective county emissions, which are in attainment. Estimates of emissions are summarized in Chapter 4 of the Environmental Assessment. Detailed summary reports for each alternative are provided after each ACAM summary report. Each report includes a general description of the project, the calculations used to estimate emissions, and timeline assumptions made for each C&D activity of the project.

#### C.4 REFERENCES

US Environmental Protection Agency. 1990. Office of Air Quality Planning and Standards. *Draft New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Permitting*. October.

US Environmental Protection Agency. 2010. *40 CFR Parts 51 and 93, Revisions to the General Conformity Regulations*. 75 FR 14283, EPA-HQ-OAR-2006-0669; FRL-9131-7. 24 March.

US Environmental Protection Agency. 2016. *NAAQS Table*. <<https://www.epa.gov/criteria-air-pollutants/naaqs-table>>. 20 December.

US Environmental Protection Agency. 2017. *General Conformity: De Minimis Tables*. <<https://www.epa.gov/general-conformity/de-minimis-tables>>. 04 August.



Appendix C-2  
Air Conformity Applicability Model Reports

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA): ALTERNATIVE 1 (PROPOSED ACTION): Request Lowndes County to reroute Hightower Road around the 24-acre Air Force-owned property to the north.

**1. General Information:** The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** Moody AFB  
**State:** Georgia  
**County(s):** Lanier; Lowndes  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**b. Action Title:** ACQUISITION AND RELOCATION OF HIGHTOWER ROAD AT MOODY AFB, GEORGIA

**c. Project Number/s (if applicable):** N/A

**d. Projected Action Start Date:** June 2020

**e. Action Description:**

The Proposed Action is to increase the distance between the HC-130 parking ramp’s restricted area boundary barrier and the Base boundary to meet the recommended force protection distances as described by AFI 31-101.

- Alternative 1: Request Lowndes County to reroute Hightower Road around the 24-acre Air Force-owned property to the north.
- Alternative 2. Request Lowndes County to relocate Hightower Road to the north the minimum distance to meet force protection recommendations.

**f. Point of Contact:**

**Name:** Radhika Narayanan  
**Title:** Contractor  
**Organization:** Versar, LLC  
**Email:** rnarayanan@versar.com  
**Phone Number:** (757) 557-0810

**2. Air Impact Analysis:** Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

applicable  
 not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions.

“Air Quality Indicators” were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are USEPA General Conformity Rule (GCR) thresholds (*de minimis* levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement;

however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR *de minimis* threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons per year is used based on the GCR *de minimis* threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

**Analysis Summary:**

**2020**

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.250	100	No
NOx	1.568	100	No
CO	1.317	100	No
SOx	0.003	100	No
PM 10	5.651	100	No
PM 2.5	0.073	100	No
Pb	0.000	25	No
NH3	0.001	100	No
CO2e	316.5		

**2021 - (Steady State)**

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

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Radhika Narayanan, Contractor

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DATE

## 1. General Information

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### - Action Location

**Base:** Moody AFB  
**State:** Georgia  
**County(s):** Lanier; Lowndes  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

- **Action Title:** ACQUISITION AND RELOCATION OF HIGHTOWER ROAD AT MOODY AFB, GEORGIA

- **Project Number/s (if applicable):** N/A

- **Projected Action Start Date:** June 2020

### - Action Purpose and Need:

The purpose of the Proposed Action is to meet the force protection design recommendations for the HC-130 parking ramp at Moody AFB, Georgia, as described in AFI 31-101.

### - Action Description:

The Proposed Action is to increase the distance between the HC-130 parking ramp's restricted area boundary barrier and the Base boundary to meet the recommended force protection distances as described by AFI 31-101.

- Alternative 1: Request Lowndes County to reroute Hightower Road around the 24-acre Air Force-owned property to the north.
- Alternative 2: Request Lowndes County to relocate Hightower Road to the north the minimum distance to meet force protection recommendations.

### - Point of Contact

**Name:** Radhika Narayanan  
**Title:** Contractor  
**Organization:** Versar, LLC  
**Email:** rnarayanan@versar.com  
**Phone Number:** (757) 557-0810

### - Activity List:

	Activity Type	Activity Title
2.	Construction / Demolition	Request Lowndes County to reroute Hightower Road around the 24-acre Air Force-owned property

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

## 2. Construction / Demolition

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### 2.1 General Information & Timeline Assumptions

#### - Activity Location

**County:** Lanier; Lowndes  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

- **Action Title:** Request Lowndes County to reroute Hightower Road around the 24-acre Air Force-owned property

**- Activity Description:**

As part the Proposed Action (Alternative 1), the following is planned:

1. The Air Force would request Lowndes County to reroute the current Hightower Road to a new alignment along the north side base.
2. The current Moody AFB boundary fence would be realigned to parallel the south side of the rerouted Hightower Road.
3. A new 16-foot-wide boundary road would be constructed on the interior of the boundary fence.
4. The Air Force would acquire ownership of the land that composes Hightower Road between Barretts Road and Yate Lane from Lowndes County and cede ownership of the land under the rerouted Hightower Road alignment to Lowndes County.
5. A new overflow parking lot would be constructed, and paved to allow the parking of up to 500 vehicles.
6. The existing Moody AFB boundary fence would be removed between Barretts Road and Yates Lane after the new Base boundary fence is constructed.

The following are analyzed for the activities described above:

1. Grading: A total of 258,402 square feet of dirt/soil would be graded. Duration of grading would be two months and five days.
2. Trenching: A total of 9,359 square feet of dirt/soil would be trenched. Duration of trenching would be three days.
3. Paving: A total of 248,792 square feet of road and parking lot would be paved. Duration of paving would be two months.

**- Activity Start Date**

**Start Month:** 6  
**Start Month:** 2020

**- Activity End Date**

**Indefinite:** False  
**End Month:** 9  
**End Month:** 2020

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.249545
SO <sub>x</sub>	0.003197
NO <sub>x</sub>	1.568480
CO	1.316951
PM 10	5.650520

Pollutant	Total Emissions (TONs)
PM 2.5	0.072702
Pb	0.000000
NH <sub>3</sub>	0.000603
CO <sub>2</sub> e	316.5

**2.1 Site Grading Phase**

**2.1.1 Site Grading Phase Timeline Assumptions**

**- Phase Start Date**

**Start Month:** 6  
**Start Quarter:** 1  
**Start Year:** 2020

**- Phase Duration**

**Number of Month:** 2  
**Number of Days:** 5

**2.1.2 Site Grading Phase Assumptions**

**- General Site Grading Information**

Area of Site to be Graded (ft<sup>2</sup>): 258,402  
 Amount of Material to be Hauled On-Site (yd<sup>3</sup>): 0  
 Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 0

**- 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	2	8
Tractors/Loaders/Backhoes Composite	2	7

**- Vehicle Exhaust**

Average Hauling Truck Capacity (yd<sup>3</sup>): 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

**2.1.3 Site Grading Phase Emission Factor(s)**

**- Construction Exhaust Emission Factors (lb/hour) (default)**

Excavators Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0732	0.0013	0.4042	0.5124	0.0183	0.0183	0.0066	119.74
Graders Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0919	0.0014	0.5823	0.5765	0.0280	0.0280	0.0082	132.95
Other Construction Equipment Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0562	0.0012	0.3519	0.3508	0.0138	0.0138	0.0050	122.62
Rubber Tired Dozers Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.2117	0.0024	1.5772	0.8005	0.0630	0.0630	0.0191	239.56
Scrapers Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1913	0.0026	1.3434	0.7938	0.0540	0.0540	0.0172	262.91
Tractors/Loaders/Backhoes Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0436	0.0007	0.2744	0.3616	0.0134	0.0134	0.0039	66.897

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

**2.1.4 Site Grading Phase Formula(s)**

**- Fugitive Dust Emissions per Phase**

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10<sub>FD</sub>: 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<sub>POL</sub>: Construction Exhaust Emissions (TONs)  
 NE: Number of Equipment  
 WD: Number of Total Work Days (days)  
 H: Hours Worked per Day (hours)  
 EF<sub>POL</sub>: 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<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
 HA<sub>OnSite</sub>: Amount of Material to be Hauled On-Site (yd<sup>3</sup>)  
 HA<sub>OffSite</sub>: Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)  
 HC: Average Hauling Truck Capacity (yd<sup>3</sup>)  
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)  
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
 VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
 0.002205: Conversion Factor grams to pounds  
 EF<sub>POL</sub>: 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<sub>WT</sub>: 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

## 2.2 Trenching/Excavating Phase

### 2.2.1 Trenching / Excavating Phase Timeline Assumptions

#### - Phase Start Date

Start Month: 6  
 Start Quarter: 1  
 Start Year: 2020

#### - Phase Duration

Number of Month: 0  
 Number of Days: 3

### 2.2.2 Trenching / Excavating Phase Assumptions

#### - General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft<sup>2</sup>): 9,359  
 Amount of Material to be Hauled On-Site (yd<sup>3</sup>): 0  
 Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 0

#### - 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 Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

#### - Vehicle Exhaust

Average Hauling Truck Capacity (yd<sup>3</sup>): 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

**2.2.3 Trenching / Excavating Phase Emission Factor(s)**

**- Construction Exhaust Emission Factors (lb/hour) (default)**

<b>Excavators Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0732	0.0013	0.4042	0.5124	0.0183	0.0183	0.0066	119.74
<b>Graders Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0919	0.0014	0.5823	0.5765	0.0280	0.0280	0.0082	132.95
<b>Other Construction Equipment Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0562	0.0012	0.3519	0.3508	0.0138	0.0138	0.0050	122.62
<b>Rubber Tired Dozers Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.2117	0.0024	1.5772	0.8005	0.0630	0.0630	0.0191	239.56
<b>Scrapers Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1913	0.0026	1.3434	0.7938	0.0540	0.0540	0.0172	262.91
<b>Tractors/Loaders/Backhoes Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0436	0.0007	0.2744	0.3616	0.0134	0.0134	0.0039	66.897

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

**2.2.4 Trenching / Excavating Phase Formula(s)**

**- Fugitive Dust Emissions per Phase**

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10<sub>FD</sub>: 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<sub>POL</sub>: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF<sub>POL</sub>: 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<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
HA<sub>OnSite</sub>: Amount of Material to be Hauled On-Site (yd<sup>3</sup>)  
HA<sub>OffSite</sub>: Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)  
HC: Average Hauling Truck Capacity (yd<sup>3</sup>)  
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)  
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: 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<sub>WT</sub>: 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<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>VE</sub>: Worker Trips Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
VM: Worker Trips On Road Vehicle Mixture (%)  
2000: Conversion Factor pounds to tons

**2.3 Paving Phase**

**2.3.1 Paving Phase Timeline Assumptions**

**- Phase Start Date**

Start Month: 8  
Start Quarter: 1  
Start Year: 2020

**- Phase Duration**

Number of Months: 2  
Number of Days: 0

**2.3.2 Paving Phase Assumptions**

**- General Paving Information**

Paving Area (ft<sup>2</sup>): 248,792

**- 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
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6
Tractors/Loaders/Backhoes Composite	1	7

**- 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

**2.3.3 Paving Phase Emission Factor(s)**

**- Construction Exhaust Emission Factors (lb/hour) (default)**

Excavators Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0732	0.0013	0.4042	0.5124	0.0183	0.0183	0.0066	119.74
Graders Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0919	0.0014	0.5823	0.5765	0.0280	0.0280	0.0082	132.95
Other Construction Equipment Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0562	0.0012	0.3519	0.3508	0.0138	0.0138	0.0050	122.62
Rubber Tired Dozers Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.2117	0.0024	1.5772	0.8005	0.0630	0.0630	0.0191	239.56
Scrapers Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.1913	0.0026	1.3434	0.7938	0.0540	0.0540	0.0172	262.91
Tractors/Loaders/Backhoes Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0436	0.0007	0.2744	0.3616	0.0134	0.0134	0.0039	66.897

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469

LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

### 2.3.4 Paving Phase Formula(s)

#### - Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF<sub>POL</sub>: 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<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)

PA: Paving Area (ft<sup>2</sup>)

0.25: Thickness of Paving Area (ft)

(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd<sup>3</sup> / 27 ft<sup>3</sup>)

HC: Average Hauling Truck Capacity (yd<sup>3</sup>)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)

VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: 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<sub>WT</sub>: 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<sub>POL</sub>: Vehicle Emissions (TONs)

VMT<sub>VE</sub>: Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: 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<sub>P</sub>: Paving VOC Emissions (TONs)

2.62: Emission Factor (lb/acre)

PA: Paving Area (ft<sup>2</sup>)

43560: Conversion Factor square feet to acre (43560 ft<sup>2</sup> / acre) / acre)

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF CONFORMITY ANALYSIS (ROCA): ALTERNATIVE 2: Request Lowndes County to relocate Hightower Road to the north the minimum distance to meet force protection recommendations.

**1. General Information:** The Air Force’s Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

**a. Action Location:**

**Base:** Moody AFB  
**State:** Georgia  
**County(s):** Lowndes; Lanier  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**b. Action Title:** ACQUISITION AND RELOCATION OF HIGHTOWER ROAD AT MOODY AFB, GEORGIA

**c. Project Number/s (if applicable):** N/A

**d. Projected Action Start Date:** June 2020

**e. Action Description:**

The Proposed Action is to increase the distance between the HC-130 parking ramp’s restricted area boundary barrier and the Base boundary to meet the recommended force protection distances as described by AFI 31-101.

- Alternative 1: Request Lowndes County to reroute Hightower Road around the 24-acre Air Force-owned property to the north.
- Alternative 2. Request Lowndes County to relocate Hightower Road to the north the minimum distance to meet force protection recommendations.

**f. Point of Contact:**

**Name:** Radhika Narayanan  
**Title:** Contractor  
**Organization:** Versar, LLC  
**Email:** rnarayanan@versar.com  
**Phone Number:** (757) 557-0810

**2. Air Impact Analysis:** Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

applicable  
 not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the “worst-case” and “steady state” (net gain/loss upon action fully implemented) emissions.

“Air Quality Indicators” were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are USEPA General Conformity Rule (GCR) thresholds (*de minimis* levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR *de minimis* threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

**Analysis Summary:**

**2020**

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.148	100	No
NOx	0.904	100	No
CO	0.807	100	No
SOx	0.002	100	No
PM 10	4.668	100	No
PM 2.5	0.044	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	177.1		

**2021 - (Steady State)**

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

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Radhika Narayanan, Contractor

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DATE

## 1. General Information

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**- Action Location**

**Base:** Moody AFB  
**State:** Georgia  
**County(s):** Lowndes; Lanier  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**- Action Title:** ACQUISITION AND RELOCATION OF HIGHTOWER ROAD AT MOODY AFB, GEORGIA

**- Project Number/s (if applicable):** N/A

**- Projected Action Start Date:** June 2020

**- Action Purpose and Need:**

The purpose of the Proposed Action is to meet the force protection design recommendations for the HC-130 parking ramp at Moody AFB, Georgia, as described in AFI 31-101.

**- Action Description:**

The Proposed Action is to increase the distance between the HC-130 parking ramp's restricted area boundary barrier and the Base boundary to meet the recommended force protection distances as described by AFI 31-101.

- Alternative 1: Request Lowndes County to reroute Hightower Road around the 24-acre Air Force-owned property to the north.
- Alternative 2: Request Lowndes County to relocate Hightower Road to the north the minimum distance to meet force protection recommendations.

**- Point of Contact**

**Name:** Radhika Narayanan  
**Title:** Contractor  
**Organization:** Versar, LLC  
**Email:** rnarayanan@versar.com  
**Phone Number:** (757) 557-0810

**- Activity List:**

Activity Type		Activity Title
2.	Construction / Demolition	Request Lowndes County to relocate Hightower Road to the north the minimum required distance

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

## 2. Construction / Demolition

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### 2.1 General Information & Timeline Assumptions

**- Activity Location**

**County:** Lowndes; Lanier  
**Regulatory Area(s):** NOT IN A REGULATORY AREA

**- Activity Title:** Request Lowndes County to relocate Hightower Road to the north the minimum required distance

**- Activity Description:**

As part of this Alternative Action, the following is proposed:

1. The Air Force would request Lowndes County to reroute Hightower Road from its current alignment to a new alignment within the Air Force-owned 24-acre property at the minimum distance north of the HC-130 parking ramp required to meet force protection requirements.
2. The current Moody AFB boundary fence would be realigned to follow the edge of the right-of-way of the rerouted Hightower Road.
3. The Air Force would acquire ownership of the land that composes Hightower Road between Barretts Road and Yate Lane from Lowndes County and cede ownership of the land under the rerouted Hightower Road alignment to Lowndes County.
4. A new overflow parking lot, located outside of the Moody AFB boundary fence, would be constructed and paved to allow the parking of up to 500 vehicles.
5. The existing Moody AFB boundary fence would be removed between Barretts Road and Yate Lane after the new boundary fence is constructed.
6. The 1,800 feet of the former Hightower Road that would remain behind the Moody AFB boundary fence would be improved and used as a boundary road on the interior of the new boundary fence alignment.

The following are analyzed for the activities described above:

1. Grading: A total of 213,4756 square feet of dirt/soil would be graded. Duration of grading would be two months and five days.
2. Trenching: A total of 8,957 square feet of dirt/soil would be trenched. Duration of trenching would be three days.
3. Paving: A total of 206,128 square feet of road and parking lot would be paved. Duration of paving would be two months.

**- Activity Start Date**

**Start Month:** 6  
**Start Month:** 2020

**- Activity End Date**

**Indefinite:** False  
**End Month:** 9  
**End Month:** 2020

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.147887
SO <sub>x</sub>	0.001796
NO <sub>x</sub>	0.904185
CO	0.806857
PM 10	4.668188

Pollutant	Total Emissions (TONs)
PM 2.5	0.044194
Pb	0.000000
NH <sub>3</sub>	0.000448
CO <sub>2</sub> e	177.1

**2.1 Site Grading Phase**

**2.1.1 Site Grading Phase Timeline Assumptions**

**- Phase Start Date**

**Start Month:** 6  
**Start Quarter:** 1  
**Start Year:** 2020

**- Phase Duration**

**Number of Month:** 2  
**Number of Days:** 5



## 2.1.2 Site Grading Phase Assumptions

### - General Site Grading Information

Area of Site to be Graded (ft<sup>2</sup>): 213,756  
 Amount of Material to be Hauled On-Site (yd<sup>3</sup>): 0  
 Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 0

### - 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
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Tractors/Loaders/Backhoes Composite	2	7

### - Vehicle Exhaust

Average Hauling Truck Capacity (yd<sup>3</sup>): 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

## 2.1.3 Site Grading Phase Emission Factor(s)

### - Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0919	0.0014	0.5823	0.5765	0.0280	0.0280	0.0082	132.95
Other Construction Equipment Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0562	0.0012	0.3519	0.3508	0.0138	0.0138	0.0050	122.62
Rubber Tired Dozers Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.2117	0.0024	1.5772	0.8005	0.0630	0.0630	0.0191	239.56
Tractors/Loaders/Backhoes Composite								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0436	0.0007	0.2744	0.3616	0.0134	0.0134	0.0039	66.897

### - Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257

HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

#### 2.1.4 Site Grading Phase Formula(s)

##### - Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10<sub>FD</sub>: 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<sub>POL</sub>: Construction Exhaust Emissions (TONs)  
 NE: Number of Equipment  
 WD: Number of Total Work Days (days)  
 H: Hours Worked per Day (hours)  
 EF<sub>POL</sub>: 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<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
 HA<sub>OnSite</sub>: Amount of Material to be Hauled On-Site (yd<sup>3</sup>)  
 HA<sub>OffSite</sub>: Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)  
 HC: Average Hauling Truck Capacity (yd<sup>3</sup>)  
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)  
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
 VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
 0.002205: Conversion Factor grams to pounds  
 EF<sub>POL</sub>: 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<sub>WT</sub>: 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<sub>POL</sub>: Vehicle Emissions (TONs)  
 VMT<sub>WT</sub>: Worker Trips Vehicle Miles Travel (miles)  
 0.002205: Conversion Factor grams to pounds  
 EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)  
 VM: Worker Trips On Road Vehicle Mixture (%)  
 2000: Conversion Factor pounds to tons

## 2.2 Trenching/Excavating Phase

### 2.2.1 Trenching / Excavating Phase Timeline Assumptions

#### - Phase Start Date

Start Month: 6  
 Start Quarter: 1  
 Start Year: 2020

#### - Phase Duration

Number of Month: 0  
 Number of Days: 5

### 2.2.2 Trenching / Excavating Phase Assumptions

#### - General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft<sup>2</sup>): 8,957  
 Amount of Material to be Hauled On-Site (yd<sup>3</sup>): 0  
 Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 0

#### - 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 Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

#### - Vehicle Exhaust

Average Hauling Truck Capacity (yd<sup>3</sup>): 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

### 2.2.3 Trenching / Excavating Phase Emission Factor(s)

**- Construction Exhaust Emission Factors (lb/hour) (default)**

<b>Graders Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0919	0.0014	0.5823	0.5765	0.0280	0.0280	0.0082	132.95
<b>Other Construction Equipment Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0562	0.0012	0.3519	0.3508	0.0138	0.0138	0.0050	122.62
<b>Rubber Tired Dozers Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.2117	0.0024	1.5772	0.8005	0.0630	0.0630	0.0191	239.56
<b>Tractors/Loaders/Backhoes Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0436	0.0007	0.2744	0.3616	0.0134	0.0134	0.0039	66.897

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

**2.2.4 Trenching / Excavating Phase Formula(s)**

**- Fugitive Dust Emissions per Phase**

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10<sub>FD</sub>: 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<sub>POL</sub>: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF<sub>POL</sub>: 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<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)

HA<sub>OnSite</sub>: Amount of Material to be Hauled On-Site (yd<sup>3</sup>)

HA<sub>OffSite</sub>: Amount of Material to be Hauled Off-Site (yd<sup>3</sup>)

HC: Average Hauling Truck Capacity (yd<sup>3</sup>)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)

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

**2.3 Paving Phase**

**2.3.1 Paving Phase Timeline Assumptions**

**- Phase Start Date**

- Start Month:** 8
- Start Quarter:** 1
- Start Year:** 2020

**- Phase Duration**

- Number of Month:** 2
- Number of Days:** 0

**2.3.2 Paving Phase Assumptions**

**- General Paving Information**

- Paving Area (ft<sup>2</sup>):** 206,128

**- 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
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7

Paving Equipment Composite	2	6
Rollers Composite	1	7

**- 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

**2.3.3 Paving Phase Emission Factor(s)**

**- Construction Exhaust Emission Factors (lb/hour) (default)**

<b>Graders Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0919	0.0014	0.5823	0.5765	0.0280	0.0280	0.0082	132.95
<b>Other Construction Equipment Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0562	0.0012	0.3519	0.3508	0.0138	0.0138	0.0050	122.62
<b>Rubber Tired Dozers Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.2117	0.0024	1.5772	0.8005	0.0630	0.0630	0.0191	239.56
<b>Tractors/Loaders/Backhoes Composite</b>								
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	CH <sub>4</sub>	CO <sub>2e</sub>
Emission Factors	0.0436	0.0007	0.2744	0.3616	0.0134	0.0134	0.0039	66.897

**- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	Pb	NH <sub>3</sub>	CO <sub>2e</sub>
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

**2.3.4 Paving Phase Formula(s)**

**- Construction Exhaust Emissions per Phase**

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE<sub>POL</sub>: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF<sub>POL</sub>: 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<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
PA: Paving Area (ft<sup>2</sup>)  
0.25: Thickness of Paving Area (ft)  
(1 / 27): Conversion Factor cubic feet to cubic yards ( 1 yd<sup>3</sup> / 27 ft<sup>3</sup>)  
HC: Average Hauling Truck Capacity (yd<sup>3</sup>)  
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd<sup>3</sup>)  
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>VE</sub>: Vehicle Exhaust Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: 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<sub>WT</sub>: 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<sub>POL</sub>: Vehicle Emissions (TONs)  
VMT<sub>VE</sub>: Worker Trips Vehicle Miles Travel (miles)  
0.002205: Conversion Factor grams to pounds  
EF<sub>POL</sub>: 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<sub>P</sub>: Paving VOC Emissions (TONs)  
2.62: Emission Factor (lb/acre)  
PA: Paving Area (ft<sup>2</sup>)  
43560: Conversion Factor square feet to acre (43560 ft<sup>2</sup> / acre)<sup>2</sup> / acre)

