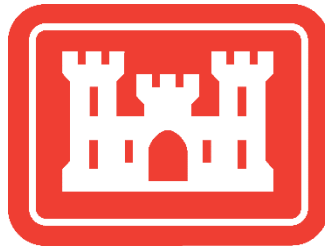


**DRAFT  
ENVIRONMENTAL ASSESSMENT  
FOR  
DEVELOPMENT OF ADDITIONAL HLZS AT  
MOODY AIR FORCE BASE, GEORGIA**

Prepared for:



**U.S. Army Corps of Engineers  
Savannah District  
and  
U.S. Air Force Civil Engineer Center**

**March 2024**

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**ACRONYMS AND ABBREVIATIONS**

%	Percent
%HA	Percent Highly Annoyed
µg/m <sup>3</sup>	micrograms per cubic meter
23 WG	23rd Wing
347 RQG	347th Rescue Group
ACAM	Air Conformity Applicability Model
AFB	Air Force Base
AGL	Above Ground Level
AR	Army Regulation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2e</sub>	Carbon Dioxide Equivalents
COC	Community of Comparison
CWA	Clean Water Act
DAF	Department of the Air Force
DOPAA	Description of Proposed Actions and Alternatives
dB	Decibels
dBA	A-weighted decibels
DNL	Day-Night Sound Level
DNL <sub>mr</sub>	Onset-Adjusted Monthly DNL
DoD	Department of Defense
EA	Environmental Assessment
EDGES	Effects Determination Guidance for Endangered & Threatened Species
EIAP	Environmental Impact Analysis Process
EO	Executive Order
EPD	Environmental Protection Division
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FR	Federal Register
ft	Feet
GADNR	Georgia Department of Natural Resources
GHG	Greenhouse Gas
GWP	Global Warming Potential
HLZ	Helicopter Landing Zone
Hz	Hertz
LATN	Low Altitude Training Navigation Area
L <sub>eq</sub>	Equivalent Sound Level
L <sub>max</sub>	Maximum Sound Level
mm	Millimeter
MOA	Military Operations Area

## DRAFT ENVIRONMENTAL ASSESSMENT

### Environmental Assessment Acronyms and Abbreviations

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MR_NMAP	MOA Range NOISEMAP
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO <sub>2</sub>	Nitrogen Dioxide
NOA	Notice of Availability
NWI	National Wetlands Inventory
O <sub>3</sub>	Ozone
Pb	Lead
PK 15[met]	Peak Level Exceeded Only 15% of the Time
PM <sub>10</sub>	Particulate Matter ≤ 10 micrometers
PM <sub>2.5</sub>	Particulate Matter ≤ 2.5 micrometers
ppb	Parts per Billion
ppm	Parts per Million
PR	Personnel Recovery
RNM	Rotorcraft Noise Model
ROI	Region of Influence
SARNAM	Small-Arms Noise Assessment Model
SEL	Sound Exposure Level
SO <sub>2</sub>	Sulphur Dioxide
SUA	Special Use Airspace
tpy	Tons Per Year
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

## 1.0 PURPOSE OF AND NEED FOR ACTION

### 1.1 INTRODUCTION

The 23d Wing (23 WG) and Environmental Division of the 23rd Civil Engineer Squadron (23 CES) at Moody Air Force Base (AFB), also referenced herein as the Base, has conducted this Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended; the President's Council on Environmental Quality (CEQ) Regulations Implementing NEPA (Title 40 Code of Federal Regulations [CFR] §§ 1500–1508), with the January 9, 2023, version of CEQ regulations being used, the *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change* (40 CFR Parts 1500–1508), 88 Federal Register (FR) 1196; and the Air Force NEPA regulations at 32 CFR Part 989, Environmental Impact Analysis Process (EIAP), which implements NEPA and CEQ regulations.

### 1.2 PROJECT LOCATION AND BACKGROUND

Moody AFB is an active Department of the Air Force (DAF) installation in south-central Georgia, seven miles northeast of Valdosta, Georgia (**Figure 1-1**). The installation occupies 11,594 acres of land and is bordered to the north and west by small farms and residences, to the east by the Grand Bay Range, and to the south by the Grand Bay Wildlife Management Area. Moody AFB is approximately 85 miles northeast of Tallahassee, Florida, and 120 miles northwest of Jacksonville, Florida.

From 1941 to 1975, Moody AFB served as a pilot training base. The base was named Moody Field under the Army Air Corps, and later became Moody Air Force Base under the Air Training Command after the DAF became an independent service in 1947. The 3550th Flying Training Wing operated at Moody until it was deactivated in 1973, with the 38th Flying Training Wing activated in its place. The 38th Flying Training Wing was inactivated in 1975 and the 347th Tactical Fighter Wing (347 TFW) was activated with transfer of the base to Tactical Air Command. The 347 TFW was re-designated the 347th Wing in 1994 as a composite wing under merger of Tactical Air Command and Strategic Air Command to Air Combat Command. In 2001 the base's primary mission changed to that of search and rescue with re-designation as the 347th Rescue Wing and realigned in 2003 under Air Force Special Operations Command. In 2006, the 23d Fighter Group "Flying Tigers" was assigned to Moody AFB when the base realigned back to Air Combat Command, and the Rescue Wing reverted back to the 347 Rescue Group (347 RQG) as a subordinate unit under the base's new host unit, the 23 WG.

Moody AFB's 23 WG supports the training, equipment, and deployment of personnel for the operation of combat-ready aircraft including the HH-60W Pave Hawk, HC-130J Combat King II, and A-10C Thunderbolt II. The HH-60W combat rescue helicopter first arrived at Moody AFB in November of 2020, replacing its predecessor, the HH-60G. The key mission of the HH-60W is that of personnel recovery in both day and night operations.

Typical training operations occurring at Helicopter Landing Zones (HLZs) consist of Personnel Recovery (PR)/Combat Search and Rescue (CSAR) Missions. Daily training for HH-60 PR/CSAR missions begins with flight at altitudes between 100 and 150 feet (ft) above ground level (AGL) when in route to the HLZ. Once the HLZ has been reached, between 30 minutes to two hours are spent conducting training activities, including pattern practice within a 2-mile radius. Following the

completion of pattern practice, the remaining time is spent hovering at different altitudes or resting stationary on the ground. Fifty percent (%) of training operations take place in nighttime conditions. Opposing force exercises may involve up to two ground vehicles and ten personnel setting up perimeters, and two personnel acting as survivors.

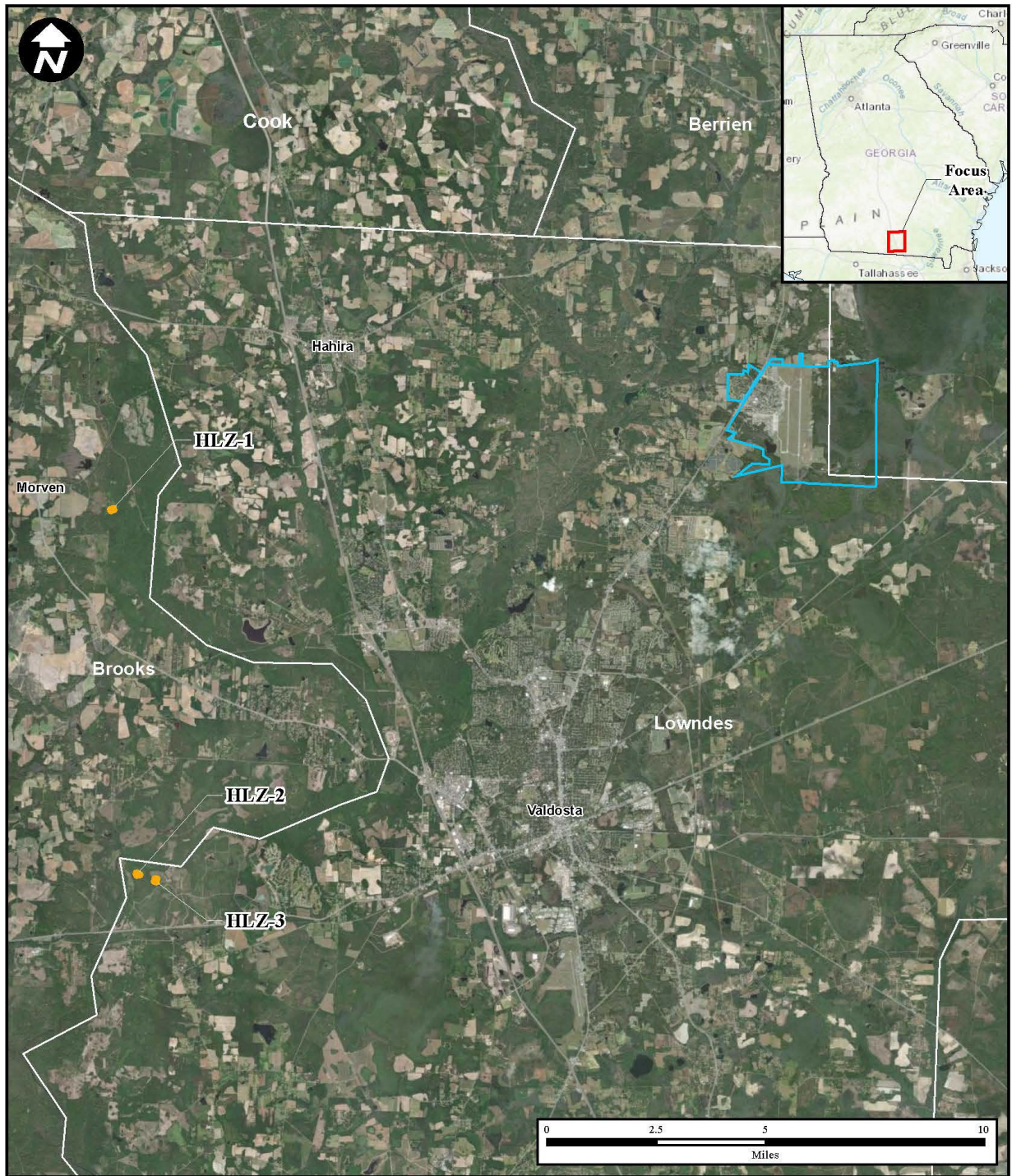
Training operations take place within the Moody Airspace Complex, which overlies Moody AFB and sections of southern Georgia and northern Florida. Training missions primarily utilize low-altitude airspace, with approximately 37,000 flight operations per year taking place within mid and low-altitude Military Operations Areas (MOAs) (Moody AFB, 2015). Low altitude training for these missions requires the use of Special Use Airspace (SUA), including the Moody 2 North, Moody 2 South, Corsair South MOAs, and restricted areas of the Grand Bay Range including R-3008A, R 3008B, and R-3008C. These SUAs provide the necessary conditions to support mission training requirements but are limited due to high utilization rates of up to 90%. A-10s utilize the same airspace that HH-60s and C-130s use for their helicopter air-to-air refueling exercises. Additionally, the Bemiss Field Drop Zone is used by both the HH-60 for landing and hovering operations and C-130 for personnel and equipment drops. While this airspace is being used by either aircraft, the A-10 is unable to conduct any air-to-ground close air support training.

### **1.3 PURPOSE OF THE ACTION**




The purpose of the proposed action is to address scheduling conflicts and increase range space by leasing land for the development of three HLZs within Moody AFB airspace. This will increase the ability of Attack and Rescue forces to prepare for major combat operations given extremely limited training and mission rehearsal areas and increased costs incurred by off-station/ Temporary Duty Travel requirements to adequately prepare for real world missions.

### **1.4 NEED FOR THE ACTION**

The proposed action is needed to alleviate recurring scheduling conflicts and provide more realistic and varied training areas for 347 RQG and 23 WG aircraft. The limited number of current HLZ training areas leads to deficits in training proficiency and currency, which in turn drives up the man hour costs when use of alternate training areas distant to Moody AFB and its airspace is required. New HLZs within Moody AFB airspace are required to properly simulate current mission realities and ensure comprehensive training.



**Legend**

-  Proposed HLZ
-  Moody AFB
-  County Boundary

**Figure 1-1**

**Location of Proposed HLZs**

Environmental Assessment  
Development of Additional HLZs  
Moody Air Force Base, Georgia



## 1.5 DECISIONS TO BE MADE

The decision to be made is the selection of an alternative for Moody AFB to support the development of HLZs near the base. This EA evaluates the potential environmental consequences of implementing the proposed action as described in **Section 2.1**, Proposed Actions.

Based on the analyses conducted in support of this EA, the DAF would 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) or Finding of No Practicable Alternative (FONPA) allowing implementation of the selected alternative;
2. Initiate preparation of an Environmental Impact Statement (EIS) if it is determined that significant impacts would occur as a result of 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 established by CEQ, preparation of an environmental document must precede final decisions regarding a federal action and be available to inform decision-makers of the potential environmental impacts. Moody AFB can also defer a decision and not pick any of the alternatives, in which case a FONSI would not be signed.

### 1.5.1 Issues Not Carried Forward for Detailed Analyses

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

#### Airspace

All proposed HLZs would be within the boundaries of the Corsair South MOA. The HLZs are located nearby numerous aviation navigation routes, including T-route 205 (T-205), Military Instrument Route 19 (IR-019), and civilian route Victor Airway 35, 159, and 198 (V-35, V-159, V-189). With the exception of IR-019, which is exclusively used by military aircraft, these routes do not intersect Corsair South MOA and do not pose an airspace hazard. Within the SUA, there would be no increases in flight operations to conflict with existing civilian, commercial, and military use of the regional airspace, and no changes to airspace designations would occur nor would new airspace be created. Further, given that compliance with all airspace management procedures would continue, infrequent operations at the HLZs would not result in any airspace conflicts. Pilots would continue to comply with Federal Aviation Administration (FAA) regulations and avoid congested areas of a city, town, or settlement or any open-air assembly of people by 1,000 ft above the highest obstacle within a horizontal radius of 2,000 ft of the aircraft. Outside congested areas, pilots would avoid persons, vessels, vehicles, or structures by 500 ft. There is no potential for impacts from the Proposed Action on airspace management and use. Potential safety conflicts with other users of this airspace are discussed in **Section 3.5**, Safety and Occupational Health. Consequently, the DAF has not identified airspace as an issue of concern and this resource area has not been carried forward for detailed analysis.

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### Hazardous Materials/Waste

The Proposed Action would not involve planned utilization of hazardous materials or the generation of hazardous wastes. Potential non-hazardous waste generated from HLZ operations include release from training munitions which include training rounds, smoke cartridges, chemical light sticks, and ground-burst simulators. Moody AFB personnel will collect all training munitions at the end of each exercise as detailed in **Section 2.1**. Military munitions, including training munitions, are not classified as a solid waste if they are used for their intended purpose (training), and are reclaimed, repaired, or reused (40 CFR § 266, Subpart M-Military Munitions [CFR, 2023b]). Munitions utilized as part of this proposed action fall into these categories and are therefore not considered solid waste. A material not defined as solid waste is not classified as a hazardous material, as defined in 40 CFR § 261.3, Definition of a Hazardous Waste (CFR, 2023a). Potential waste release may also occur from utilization of ground vehicles in exercises. Vehicles may occasionally leak petroleum-based compounds such as engine oil, transmission fluid, or gasoline/diesel. Leakage or accidental discharge of these compounds is anticipated to release minimal amounts of material to the proposed action areas. If releases were detected, cleanup by DAF personnel would ensure no further contamination to the surrounding environment through removal of the contaminated medium. Existing and ongoing conditions for the HLZ sites include logging operations responsible for the clearing of the HLZ sites and adjacent parcels utilize several ground vehicles and heavy equipment for hauling lumber and for slash cleanup. Releases from DAF ground vehicles would not exceed the baseline conditions created from vehicle and equipment leakage during logging operations. Hazardous materials use or generation of hazardous wastes is not anticipated at the HLZ properties, and there is no potential for impacts due to hazardous wastes. Therefore, this issue was not carried forward for further analysis.

### Cultural Resources

No ground-disturbance activities will be associated with the three HLZ's in Georgia (HLZ-1, HLZ-2, and HLZ-3), thus the proposed project would not affect archaeological or architectural resources. Additionally, all three sites have experienced periodic ground disturbance due to historic and ongoing agricultural and silvicultural activities (e.g., tillage, timbering, grading, planting, etc.); thus, the potential for any cultural resources is extremely low. According to a site file search using Georgia's Natural, Archaeological, and Historical Resources Geographic Information System (GNAHRGIS, 2023), no archaeological sites are located within a one-mile buffer of the proposed sites. There are no historic resources recorded within one-mile of the proposed HLZ-2 or HLZ-3 sites. However, one resource is recorded in the one-mile buffer of HLZ-1. Corinth Cemetery (Resource ID 101062) is located 0.98 mile to the northwest of HLZ-1, between Lawson Pond Road and Lawson Pond. Burial dates range from 1871 to 2021, and additional work would need to be done to determine the cemetery's eligibility for the National Register of Historic Places (NRHP). The proposed HLZ-1 would have no impacts on the cemetery. As a result, due to no expected ground disturbance activities, the DAF does not anticipate any impacts to cultural resources. Moody AFB will provide notification of the Proposed Action and requested concurrence on a finding of *no effect* to cultural resources from the Georgia State Historic Preservation Office (SHPO), as well as *no effect* to traditional cultural properties (TCPs) from seven tribes. Those tribes include the Muscogee (Creek) Nation, Poarch Band of Creeks, Coushatta Tribe of Louisiana, Kialegee Tribal Town, Thlopthlocco Tribal Town, Muscogee Nation of Florida, and the Seminole Nation of Oklahoma. Received responses from the SHPO and/or any tribes to the proposal will be included in the Final EA.



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## Earth Resources

There would be no construction or land-disturbance activities associated with the Proposed Action and thus no potential for geology impacts, topography changes, or soil erosion issues. The sites are previously cleared areas with herbaceous ground cover within active pine plantations and will be mowed quarterly to maintain the low herbaceous vegetation conditions. Soil units within the HLZs include Rains loamy sand (HLZ-1), Mascotte sand (HLZ-2), and Lakeland sand (HLZ-3). These soils all possess the lowest possible rating for soil compaction (Low) and soil erosion hazard (Slight). Existing herbaceous cover would further consolidate surficial soils. Any fugitive dust from rotor wash associated with helicopters, equipment movement, or other activities would not result in any soil displacement or erosion over and above fugitive dust resulting from normal planting and harvesting activities that utilize heavy equipment. Additionally, use requirements under the terms of the lease agreement do not permit impacts on soil productivity. There is no potential for impacts to geology, soils, or topography under the Proposed Action. Therefore, these resource areas have not been carried forward for detailed analysis.

## Utilities

There would be no new utility connections or increases in utility use associated with the Proposed Action and no impact to utility resources at Moody AFB or the surrounding community. As a result, this resource area was not carried forward for further analysis.

## Land Use

There would be no irreversible change in land use at the proposed HLZ parcels. The proposed HLZs consist of cleared parcels located adjacent to forested woodlands, which have been historically cleared for lumber. Land owners intentionally cleared these parcels for leasing to prospective clients. Development of the HLZs would not include construction or any modification to the parcel other than minor vegetation clearing. Presence of helicopters would be short-term and intermittent, and vegetation maintenance activities would be surficial and involve vehicle access only via pre-established roads. Should the DAF decommission an HLZ, property owners would either maintain the cleared lot, replant the parcel for lumber, or abandon maintenance of the parcel. All options would facilitate a quick return to either the original land use, or the property owner's desired land use. Therefore, there would be no impacts to land use and this resource area was not carried forward for further analysis.

## **1.6 INTERGOVERNMENTAL COORDINATION/CONSULTATIONS**

### **1.6.1 Interagency and Intergovernmental Coordinations and Consultations**

Federal, state, and local agencies with jurisdiction that could be affected by the Proposed Action will be consulted with during the development of this EA. In accordance with Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, scoping letters will be distributed to relevant Federal, state, and local agencies notifying them of the Proposed Action and requesting input on the scope of the EA. Copies of all correspondence with Federal, state, and local agencies will be included in **Appendix A**.

### **1.6.2 Government to Government Consultations**

The National Historic Preservation Act (NHPA), 54 United States Code (USC) § 306108 and its implementing regulations at 36 CFR Part 800, require an agency to consult with federally-

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recognized tribes who may have properties of cultural and religious significance affected by the project. To comply with legal mandates, federally recognized tribes that are affiliated historically with the Moody AFB geographic region were invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The Moody AFB point-of-contact for Native American tribes is the Installation Commander. The Moody AFB point-of-contact for consultation with the Tribal Historic Preservation Officer and the Advisory Council on Historic Preservation is the Cultural Resources Manager.

The Native American tribal governments that will be coordinated with regarding this action are listed in **Appendix A**.

### 1.6.3 Public, American Indian Tribe, and Agency Review of DOPAA

The DAF notified and invited comment on the Description of Proposed Actions and Alternatives (DOPAA) for the Draft EA from government agencies, local organizations, American Indian tribes, and interested private citizens. The DOPAA was made available for general review in public libraries in the communities potentially affected by the Proposed Action and online on the project website located at <https://www.jbcharleston.jb.mil/Library/>.

The DAF received input on the DOPAA from the Georgia Department of Community Affairs Historic Preservation Division (HPD) in a letter dated October 5, 2023. Georgia HPD acknowledged the proposed project and provided guidelines for pursuing NHPA Section 106 consultations if required. All other American Indian tribes and Agencies did not provide comment during the DOPAA scoping period. A complete record of responses is included in **Appendix A**. Input received on the DOPAA was used to prepare the Draft EA. Modifications to the DOPAA, incorporated as Chapters 1 and 2 of the Draft EA included factual corrections, additions to existing information, and improvements to the analyses presented in the DOPAA. The received comment did not result in substantive changes to the Proposed Action components or alternatives, or the associated environmental consequences of the Proposed Action.

## 1.7 PUBLIC AND AGENCY REVIEW OF EA

A Notice of Availability (NOA) of the Draft EA and FONSI was published in the Valdosta Daily Times on [DATE] announcing the availability of the EA for review. The publication of the NOA initiated a 30-day public review period. The NOA was also published in the *Valdosta Daily Times* on [DATE]. A copy of the Draft EA is available for review at the Willis L. Miller Library (2906 Julia Drive, Valdosta, Georgia 31602), and the Brooks County Public Library (404 Barwick Rd, Quitman, GA 31643). A copy of the Draft EA was also made available to agencies for review and comment. The NOA invites the public to review and comment on the Draft EA. The public and agency review period will end 30 days after the publication of the notice. At the closing of the public review period, applicable comments from the general public and interagency and intergovernmental coordination/consultation will be incorporated into the analysis of potential environmental impacts performed as part of the EA, where applicable, and included in **Appendix A** of the Final EA.

## 2.0 DETAILED DESCRIPTION OF THE ALTERNATIVES

This section describes the Proposed Action and the alternatives that the DAF is considering fulfilling the purpose of and need for the Proposed Action (refer to **Section 1.3** and **Section 1.4**). The NEPA process evaluates potential environmental consequences associated with the Proposed Action and its action alternatives carried forward for further analysis. In addition, CEQ Regulations for Implementing the Procedural Provisions of NEPA (Title 40 CFR Parts 1500–1508) specify that an EA must include a No-Action Alternative against which potential impacts can be compared. The No-Action Alternative would not satisfy the purpose of or need for the Proposed Action; however, it has been carried forward for analysis in accordance with CEQ regulations.

### 2.1 PROPOSED ACTION

The proposed action is to lease three parcels of land for the development of HLZs near Moody AFB. The DAF intends to use these parcels primarily for daily HH-60 personnel recovery and aircrew training.

A detailed description of HLZ training operations can be found in the following section. **Table 2-1** summarizes the HLZ details.

**Table 2-1: Proposed HLZ Details**

HLZ Name	County	Size (acres)	Location (Latitude / Longitude)	Parcel Number	Current Primary Land Use
HLZ-1	Brooks	2.3	30°56'1.05"N, 83°27'18.5"W	119 0006	Undeveloped
HLZ-2	Lowndes	2.0	30°48'45.7"N, 83°26'32.5"W	0016 001	Undeveloped
HLZ-3	Lowndes	2.5	30°48'39.5"N, 83°26'06.8"W	0016 001	Undeveloped

The 347 RQG would utilize these HLZs for PR training activities, and routing to a particular HLZ is mission-dependent and variable from one mission to the next. Typical PR training missions include day-to-day training and more elaborate once-per-month training events.

#### *Day-to-Day Training*

Day-to-day training involves typical flight training operations associated with tactical and remote training and fulfills the basic PR training requirements.

#### *Helicopter (HH-60) Operations:*

- There are typically two sorties (operational flights) per week. There may be up to six sorties per week at specific HLZs based on existing weather and mission needs. There are two HH-60s per sortie; sometimes the craft will split up, each going to different HLZs to practice.

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- En route from Moody AFB to a particular HLZ, helicopters would fly at 100 to 500 ft AGL, and 110-120 knots indicated airspeed (KIAS).
- Each helicopter would spend between 30 minutes and two hours conducting training activities before returning to the base.
- About 50% of the aircraft's time is spent flying patterns: 80% of that time consists of circling or other pattern work within approximately 1-mile radius of the HLZ; 20% of the time is spent running upwind/downwind patterns or other pattern work within a 2-mile radius of the HLZ.
- The remaining 50% of the aircraft's time is spent at the HLZ. About 80% of this time, the aircraft hovers (stationary) at different altitudes depending on the training activity for PR personnel: 75 ft AGL for practicing hover or rappel activities from the aircraft; between 45 and 35 ft AGL for fast ropes; and at 15 ft AGL for rope ladders. The remaining 20% of time at the HLZ, the aircraft is stationary on the ground with engines running and rotors turning.
- Night operations make up about 50% of total sorties, with approximately 20% occurring after 10:00 PM. Training is not typically conducted after midnight because the Moody AFB tower closes at 1:00 AM, and the aircraft need time to return to base. There is typically no flying on weekends or holidays.

### *Opposing Forces:*

- Activities include two ground vehicles and approximately ten personnel at each HLZ.
- Personnel set up perimeters around the HLZ as "opposing forces" while one or two personnel act as "survivors".
- To provide for more realistic training, personnel utilize training munitions to create a realistic combat experience. All remnants (casings, trash, etc.) are collected at the end of the training session, and no rounds are fired from aircraft because shell casings cannot be collected effectively. Expendables include:
  - Approximately 100 7.62-millimeter (mm) (M240) rounds per month
  - Approximately 500 5.56-mm (M4) rounds per month
  - Approximately four Mk-18 and one Mk-23 smoke cartridge per month
  - Chemical light sticks
  - Approximately two ground-burst simulators per exercise.
- Training activities may also include towable or inflatable full-sized mock-ups of threats as well as portable low power radar emitters, infrared/ultraviolet threat emitters, eye-safe laser spotting, and other visual threat representation equipment. For realism and other simulated operational requirements, the threat setup areas would generally be on or within one mile of the exercise area on the side of roads, rights of way, or other approved areas.

**2.1.1 HLZ-1**

HLZ-1 is an approximately 2.3 acre parcel located 12.3 miles northwest of Valdosta, Georgia. The parcel lies 15 miles west of Moody AFB. The parcel is located 1.7 miles east of State Route 133. The area has been recently maintained, with ground cover consisting of recently planted cover grasses. Surrounding trees in adjacent parcels are of uniform height and approximately 30 to 50 ft tall. A wooden hunting blind is located in the southwest corner, facing a deer feeder stand found along the northern border (Photos 1 and 2). HLZ-1 is shown in **Figure 2-1**.



Photo 1: HLZ-1 facing east



Photo 2: HLZ-1 hunting blind facing south

**2.1.2 HLZ-2**

HLZ-2 is an approximately 2.0 acre parcel located 8 miles west of Valdosta, Georgia, and 17 miles southwest of Moody AFB. The parcel is located 1.25 miles north of U.S. Route 221. Ground cover consists of recently planted cover grasses (Photos 3 and 4). Surrounding trees in adjacent parcels are of uniform height and approximately 30 to 40 ft tall. A 30-gallon deer feeder is located along the northwestern border of the site. HLZ-2 is shown in **Figure 2-2**.



Photo 3: HLZ-2 facing north



Photo 4: HLZ-2 deer feeder facing east

**2.1.3 HLZ-3**

HLZ-3 is an approximately 2.5 acre parcel located 8 miles west of Valdosta, Georgia, and 17 miles southwest of Moody AFB. The parcel is located 1.1 miles north of U.S. Route 221. Ground cover consists of recently planted cover grasses (Photos 5 and 6). Surrounding trees in adjacent parcels to the east, west, and south are of uniform height and approximately 30 ft tall, with the exception of select trees extending upwards of 40 to 50 ft. The parcel to the north contains low-lying shrubs with dispersed oak and pine trees approximately 30 ft tall. HLZ-3 is shown in **Figure 2-2**.



Photo 5: HLZ-3 facing north



Photo 6: HLZ-3 facing southeast











## 2.2 SELECTION STANDARDS

The NEPA and the CEQ regulations mandate the consideration of reasonable action alternatives to accomplish the Proposed Action. “Reasonable alternatives” are those that also could be utilized to meet the purpose of and need for the proposed action. Selection standards are used to help determine feasibility of each action alternative, including potential facilities requirements and the extent to which each action alternative would fulfill the purpose and need for the Proposed Actions. The following selection standards are used to identify reasonable alternatives for analysis in the EA:

1. Airspace
  - Tall objects in the vicinity of a potential alternative are considered hazardous obstructions to air navigation under 14 CFR Part 77. Tall objects or obstructions, such as trees, must not penetrate the imaginary surfaces (3-dimensional planes sloping out and up from all sides and ends of a heliport) surrounding the HLZ. The potential alternative must not contain obstructions that would violate imaginary surface regulations outlined in 14 CFR Part 77.23, *Imaginary Surfaces for Heliports* (CFR, 2023c).
  - A potential alternative must be located in currently established Moody AFB MOAs that allow low altitude aircraft training and drops. If the alternative is not located in current MOAs, a Notice to Air Missions (NOTAM) must be entered through the FAA’s Special Use Airspace Management System to activate a permanent Special Use Airspace (FAA, 2024).
2. Size
  - A potential alternative must provide sufficient surface area to allow up to two HH-60s to hover and land at the HLZ. A cleared area with dimensions greater than 100 ft by 200 ft is required.
3. Compatibility
  - A potential alternative must not be in a location that would create recreational use conflicts with nearby landowners. Landowners must be able to effectively coordinate land uses (i.e., hunting activities) with the DAF to avoid such conflicts.
  - Wood stork rookeries and bald eagle nests must be avoided by one lateral mile per existing consultation agreements with United States Fish and Wildlife Service (USFWS).
4. Proximity
  - A potential alternative must minimize delays to training associated with aircraft travel to and from the Moody AFB airfield to the HLZ. The maximum distance between Moody AFB and the proposed HLZ shall not exceed 50 miles.
  - A potential alternative must be located at least one mile from nearby residences to reduce the public’s exposure to excessive noise.
5. Accessibility
  - A potential alternative must be in a location where severe weather conditions would not substantially disrupt access to training areas by support vehicles. Access roads to the HLZ must not be prone to tree falls or frequent ponding that would inhibit entry to the HLZ.

6. Safety

- A potential alternative must meet foreign object debris safety standards and be located near emergency services.

**2.3 SCREENING OF ALTERNATIVES**

The following potential alternatives that might meet the purpose and need for the selection of HLZs were considered:

- Alternative 1: Action Alternative – Under the action alternative, the proposed HLZ properties would be used as training areas by Moody AFB. The HLZ-1, HLZ-2, and HLZ-3 properties would be leased by the property owners.
- No-Action Alternative – None of the proposed action HLZ sites would be leased for usage by Moody AFB. The properties would remain in the possession of their respective owners.

The selection standards described in **Section 2.2** were applied to these alternatives to determine which alternative(s) could meet the HLZ requirements and would fulfill the purpose and need for the action. **Table 2-2** provides a comparison of the alternatives to the selection standards.

**Table 2-2: Selection Standards**

Helicopter Landing Zone Site Alternatives		Selection Standards					
		Airspace	Size	Compatibility	Proximity	Accessibility	Safety
HLZ-1	Alternative 1	Yes	Yes	Yes	Yes	Yes	Yes
	No-Action	No	No	No	No	No	No
HLZ-2	Alternative 1	Yes	Yes	Yes	Yes	Yes	Yes
	No-Action	No	No	No	No	No	No
HLZ-3	Alternative 1	Yes	Yes	Yes	Yes	Yes	Yes
	No-Action	No	No	No	No	No	No

**2.4 DETAILED DESCRIPTION OF THE ALTERNATIVES**

The DAF has identified two alternatives that may meet requirements for the proposed action: the Action Alternative and No-Action Alternative. The following sections provide descriptions of the two alternatives.

**2.4.1 Alternative 1: Action Alternative**

The proposed action would lease up to three parcels for use as HLZs for Moody AFB aircraft and personnel training operations. The DAF would notify parcel landowners of intent to lease and begin correspondence with nearby residences to communicate the intended uses. Site development would be limited to the clearing of vegetation and debris. Daily training sorties would involve HH-60 hovering and pattern work as part of personnel recovery exercises.

Should a parcel not meet selection standards or be determined unavailable due to landowner lack of interest, that parcel would be removed from consideration for use as an HLZ.

### 2.4.2 No Action Alternative

87 FR 23453-23470 requires consideration of the No-Action Alternative. In addition, the CEQ recommends inclusion of the No-Action Alternative in NEPA documents to assess any environmental consequences that may occur if the Proposed Action is not implemented. The No-Action Alternative provides the environmental baseline against which the proposed action and the Action Alternative can be evaluated.

Under the No-Action Alternative, the DAF would not enter into agreements with the property owners to lease the proposed parcels. None of the currently proposed parcels would be utilized for the training exercises outlined in **Section 1.2**. The DAF would continue to experience scheduling conflicts and lack of space in current HLZ areas. Training proficiency and currency would continue to be lost, increasing man hour costs over time.

## 2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED

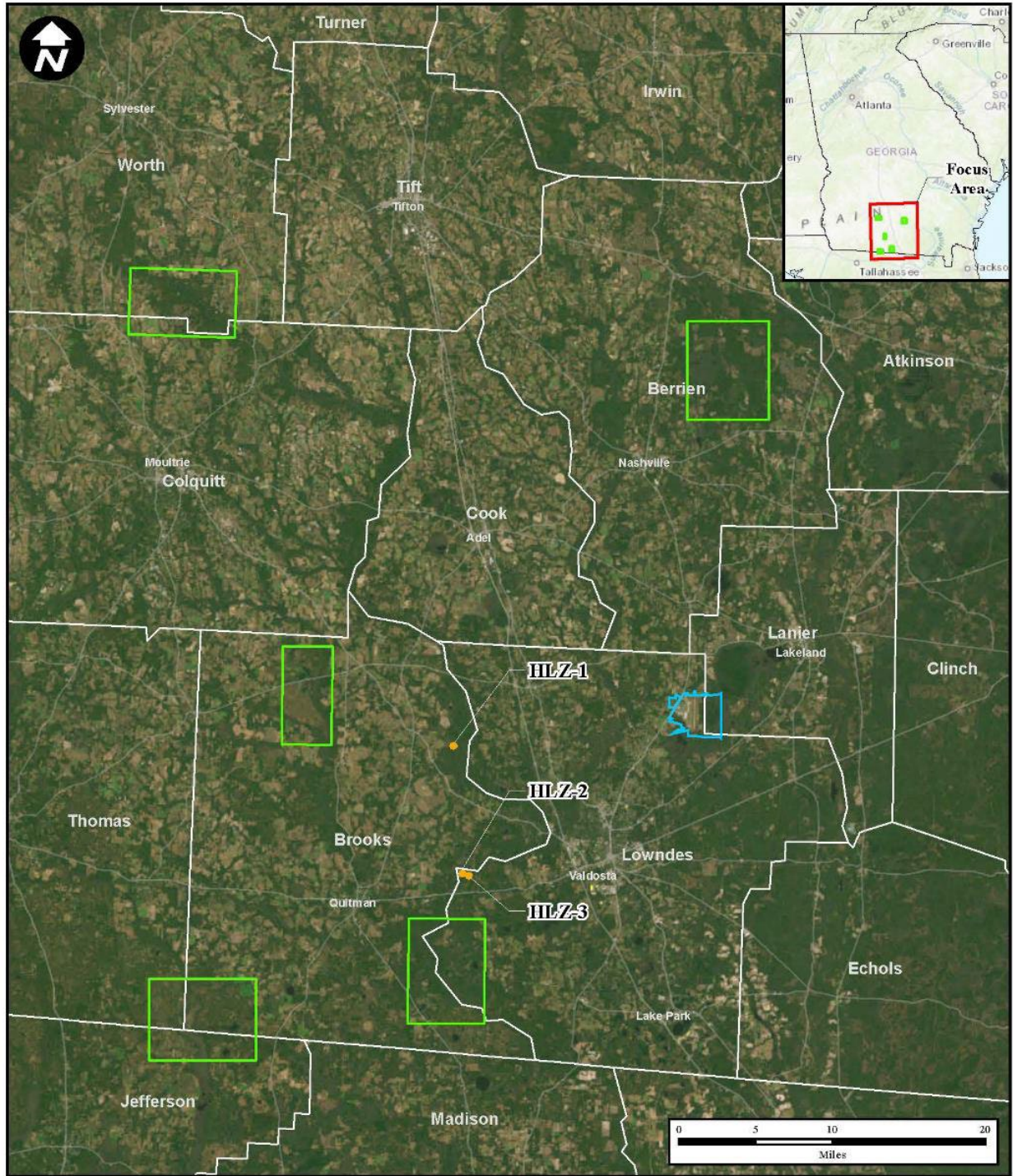
The proposed HLZs were identified by the 347 RQG via a screening process wherein several users conducted flyovers of the areas surrounding Moody AFB. HLZ selection criteria included close proximity to Moody AFB, area size sufficient to allow for training, area topography (relatively flat with no apparent wetlands), no structures (i.e., homes) and obstructions (towers, trees, power lines, etc.), the apparent availability and compatible land use, and whether landowners were amenable to use by the military under lease agreements.

The 347 RQG surveyed five regions ranging from 19,000 to 24,000 acres near Moody AFB to determine if they had the desired geographic and physical attributes for HLZs (**Figure 2-3**). These regions were found to have potentially viable HLZs, but after Moody AFB contacted the landowners to assess their interest and availability of land, it was determined that the alternate locations were not available due to lack of interest from the landowners. Therefore, although the alternate locations met some or most of the desired selection criteria, they were not carried forward for evaluation due to their lack of availability to Moody AFB. Consequently, only the proposed HLZ alternatives in this EA were carried forward for evaluation due to their suitability, availability, and meeting all selection criteria.

DRAFT ENVIRONMENTAL ASSESSMENT

Environmental Assessment  
Alternatives Considered but Eliminated

Development of Additional HLZs  
Moody AFB, Georgia



- Legend**
- Proposed HLZ
  - Alternate Locations Eliminated from Consideration
  - Moody AFB
  - County Boundary

**Figure 2-3**  
**Alternatives Considered but Eliminated**

Environmental Assessment  
Development of Additional HLZs  
Moody Air Force Base, Georgia

### 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The Region of Influence (ROI) for the Proposed Action includes the individual HLZ and their flight paths from Moody AFB, Georgia, unless otherwise specified below for a particular resource area where a resource would have a different ROI.

#### 3.1 SCOPE OF THE ANALYSIS

This chapter describes the current conditions of the environmental resources, either man-made or natural, that would be affected by implementing the Alternative 1 or the No Action Alternative.

#### 3.2 NOISE

##### 3.2.1 Definition of the Resource

Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as unwanted sound or, more specifically, as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying (FICON, 1992). Human response to noise can vary according to the type and characteristics of the noise source, the distance between the noise source and the receptor, the sensitivity of the receptor, and the time of day.

Due to the wide range in sound levels, sound is expressed in decibels (dB), a unit of measure based on a logarithmic scale. As a general rule, a 3-dB change is necessary for noise increases to be noticeable to humans (Bies and Hansen, 1988). A 10-dB increase in noise level corresponds to a 100% increase (or doubling) in perceived loudness. Sound measurement is further refined by using an A-weighted decibel (dBA) scale that emphasizes the range of sound frequencies that are most audible to the human ear (i.e., between 1,000 and 8,000 cycles per second). Sound frequency is measured in terms of hertz (Hz), and the normal human ear can detect sounds ranging from approximately 20 to 15,000 Hz. However, because all sounds in this wide range of frequencies are not heard equally well by the human ear, which is most sensitive to frequencies in the 1,000 to 4,000 Hz range, the very high and very low frequencies are adjusted to approximate the human ear’s lower sensitivity to those frequencies. This is called “A-weighting” and is commonly used in measurement of community environmental noise. Unless otherwise noted, all decibel measurements presented in the following noise analysis are dBA. Sounds encountered in daily life and their sound levels are provided in **Table 3-1**.

**Table 3-1: Common Sounds and Their Levels**

Outdoor	Sound Level (dBA)	Indoor
Jet flyover at 1,000 ft	100	Rock band
Gas lawnmower at 3 ft	90	Food blender at 3 ft
Downtown (large city)	80	Garbage disposal
Heavy traffic at 150 ft	70	Vacuum cleaner at 10 ft
Normal conversation	60	Normal speech at 3 ft
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room

Source: Harris, 1998  
dBA = A-weighted decibel



These common sounds are typically associated with steady noise levels, although few noises are, in fact, constant; therefore, additional noise metrics have been developed to describe noise including:

- Sound Exposure Level (SEL) - SEL is a measure of the total energy of an acoustic event. It represents the level of a one-second-long constant sound that would generate the same energy as the actual time-varying noise event such as an aircraft overflight. SEL provides a measure of the net effect of a single acoustic event, but it does not directly represent the sound level at any given time.
- Day-Night Sound Level (DNL) - DNL is the average sound energy in a 24-hour period with penalty added to the nighttime levels. Because of the potential to be particularly intrusive, noise events occurring between 10:00 p.m. and 7:00 a.m. are assessed as a 10 dB penalty when calculating DNL. DNL is a useful descriptor for aircraft noise because: (1) it averages ongoing yet intermittent noise, and (2) it measures total sound energy over a 24-hour period. DNL provides a measure of the overall acoustical environment, but as with SEL, it does not directly represent the sound level at any given time.
- Maximum Sound Level ( $L_{max}$ ) -  $L_{max}$  is the maximum sound level of an acoustic event in decibels (e.g., when an aircraft is directly overhead).
- Equivalent Sound Level ( $L_{eq}$ ) -  $L_{eq}$  is the steady-state sound level in decibels averaged over a specified period of time.  $L_{eq}$  is equivalent to the DNL without the added nighttime penalty.
- Onset-Adjusted Monthly DNL ( $DNL_{mr}$ ) is the average sound energy in a 24-hour period with a 10 dB penalty added to the nighttime levels, and up to an additional 11 dB penalty for acoustical events with onset rates greater than 15 dB per second, such as high-speed jets operating near the ground.  $DNL_{mr}$  is assessed for the month with the highest number of events, and as with DNL and SEL, it does not directly represent the sound level at any given time. Because of the penalties for rapid onset,  $DNL_{mr}$  is always equal to or greater than DNL.
- Percent Highly Annoyed (%HA). The concept of long-term annoyance is used to account for all negative aspects of noise, including activity interference such as speech interference and sleep disturbance for nighttime activities, and is the basis for determining impacts due to aircraft noise associated with military and civilian aircraft operations. DNL and  $DNL_{mr}$  are highly correlated with and used to determine the %HA (see **Table 3-2**). It is not possible to accurately predict the exact annoyance responses to aircraft noise exposure in any specific community, and %HA is not designed to be used to determine exactly how many or which individuals may be annoyed by aircraft noise. It is reported as the change in the percent of population expected to be highly annoyed, and individuals or populations identified as highly annoyed are for reference purposes to assist in determining the potential for effects.

**Table 3-2: Relationship between Annoyance and Day-Night Sound Level**

dBA DNL	% Highly Annoyed
35	0.2%
40	0.4%
45	0.8%
50	1.7%
55	3.3%
60	6.5%
65	12.3%
70	22.1%
75	36.5%
80	53.7%

Source: DAF 2016

- Peak Level Exceeded Only 15% of the Time (PK 15[met]). The PK 15[met] metric is a peak sound level with no frequency-weighting that is commonly used for banging or clapping noises such as gunfire. How well these noises carry (i.e., propagate) through the atmosphere depends on weather (i.e., meteorological) conditions. On days that are favorable to sound propagation, noise levels received at a certain distance may be much higher than on days less favorable. PK 15[met] accounts for the variability reporting the noise level exceeded on only 15 percent of days.

**Regulatory Overview**

The Noise Control Act of 1972 directs federal agencies to comply with applicable federal, state, and local noise control regulations. The Noise Control Act specifically exempts both aircraft operations and military training activities from state and local noise ordinances. There are no federal, state, or local noise regulations directly applicable to the area under the airspace potentially affected by the Proposed Action. The DAF’s land use guidelines for noise exposure are outlined in Air Force Instruction 32-1015, *Integrated Installation Planning*. **Table 3-3** provides a general overview of recommended noise limits from aircraft operations for land use planning purposes. These recommended noise limits are consistent with FAA criteria (FAA, 2015). Detailed guidelines for the compatibility of various land uses with noise exposure levels are included in **Appendix B**.

**Table 3-3: Recommended Noise Limits for Land Use Planning**

General Level of Noise	Percent Highly Annoyed	Aircraft Noise (DNL)	General Recommended Uses
Low	<13%	< 65 dBA	Noise-sensitive land uses acceptable
Moderate	13%-37%	65-75 dBA	Noise-sensitive land uses normally not recommended
High	>37%	> 75 dBA	Noise-sensitive land uses not recommended

Source: DAF 2016, FAA 2015

DNL = day-night sound level; dBA = A-weighted decibel

The U.S. Army is the Department of Defense (DoD) service with the lead role in setting munitions noise policy and has established land use recommendations based on munitions noise levels near training ranges. Army Regulation (AR) 200-1, Environmental Protection and Enhancement, Chapter 14, *Operational Noise* translates noise exposure on communities into Noise Zones (Army, 2007). Regulation guidelines state that for land use planning purposes, noise-sensitive land uses range from acceptable to not compatible within the Noise Zones. **Table 3-4** lists the noise limits as shown in AR 200-1.

**Table 3-4: US Army Noise Limits for Noise Zones**

Noise Zone	Noise Limits			Noise-Sensitive Land Use
	Aviation ADNL (dB)	Impulsive CDNL (dB)	Small Arms dB Peak	
LUPZ	60 - 65	57 - 62	n/a	Generally Compatible
I	< 65	< 62	< 87	Generally Compatible
II	65 - 75	62 - 70	87 - 104	Generally Not Compatible
III	> 75	> 70	> 104	Not Compatible

Source: Army, 2007

Legend: dB = decibel, ADNL = A-weighted Day-Night Level, CDNL = C-weighted Day-Night Level, LUPZ = Land Use Planning Zone

Average noise levels may be the best tool for long-term land use planning, but they may not adequately assess the probability of community annoyance. As recommended in AR 200-1, supplemental metrics to identify where noise from aviation overflights, demolition activity, and large caliber weapons may periodically reach levels high enough to generate complaints. In many instances, Noise Zones will indicate land use compatibility; however, noise complaints from impulsive noise, often referred to as blast noise, typically are attributable to a specific event rather than annual average noise levels. Peak levels are useful for estimating the risk of receiving a noise complaint from blast noise, as they correlate with the receiver’s perception of noise levels. **Table 3-5** lists the Army’s Complaint Risk Guidelines.

**Table 3-5: Complaint Risk Guidelines (Blast Noise)**

Perceptibility	dB Peak	Risk of Receiving Noise Complaints
May be Audible	< 115	Low
Noticeable, Distinct	115 - 130	Moderate
Very Loud, May Startle	> 130	High

\*Perceptibility is subjective. The classifications are based on how a typical person might describe the event.

Source: Army, 2007

### 3.2.2 Existing Conditions

Background noise levels ( $L_{eq}$  and DNL) were estimated for the areas below the Corsair South MOA and the low-altitude training and navigation area (LATN) that overlaps the Corsair South MOA using the techniques specified in the *American National Standard Institute - Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-term measurements with an observer present* (ANSI, 2013). **Table 3-6** outlines the overall sound levels (i.e., DNL) in the areas beneath the Corsair South MOA; however, while mostly rural and remote, there are several small towns and villages. These towns would be relatively quiet, and background



sound levels without aircraft would not normally exceed 52 dBA  $L_{eq}$  in the daytime, or 44 dBA  $L_{eq}$  at night (DAF, 2023). Background levels would be less than this in rural areas, and appreciably less in remote areas.

**Table 3-6: Estimated Background Sound Levels**

Land Use Category	Leq [dBA]		
	DNL [dBA]	Daytime	Nighttime
Normal suburban residential	52	50	44
Quiet suburban residential	47	45	39
Rural residential	42	40	34
Rural/Remote	<42	<40	<34

Source: DAF 2023; ANSI 2013.

When aircraft training operations are not being conducted in the Corsair South MOA, the areas surrounding the proposed HLZs are rural and generally quiet. Noise levels in a rural setting typically range between 35 and 44 dB (USEPA, 1974). However, during deer hunting season in particular, gunfire is a noticeable part of the sound environment in rural areas.

**Overall Aircraft Noise**

The MOA Range NOISEMAP (MR\_NMAP) (v3.0) noise model, part of the DAF NOISEMAP computer suite, was used to predict noise levels ( $DNL_{mr}$ ) associated with aircraft operations beneath the existing the Corsair South MOA and LATN where existing daily operations occur (Moody AFB, 2023). The parameters considered in the modeling include aircraft type, airspeed, power settings, aircraft operations, vertical training profiles, and the time spent within each airspace block. MR\_NMAP is the DoD- and FAA-approved noise model for aircraft operations beneath Special Use Airspace (Moody AFB 2023; FAA 2015). Operational data for the aircraft operations were taken from environmental documentation in support of the Moody Airspace Complex. **Appendix B** contains the operational data for the Corsair South MOA and LATN input to MR\_NMAP.

Existing overall sound levels beneath the Corsair South MOA were calculated to be 37.3  $DNL_{mr}$ . The anticipated percentage highly annoyed is 0.3% (DAF 2016, Moody AFB 2023). Calculations for these aircraft activities included 347 RSQ HLZ operations.

**Individual Overflight Noise**

The sole use of DNL and land use compatibility does not fully describe the nature and effects from aircraft noise because they are used for planning purposes and do not consider other effects such as hearing loss, sleep and speech interference, and structural damage. This is particularly true for airspace actions that have medium intensity effects over large geographical areas, as opposed to high intensity effects over a smaller area (e.g., noise near an airport or air installation). Both the DAF and the FAA encourage the inclusion of supplemental noise metrics in the assessment of noise from airspace actions (DAF, 2016; FAA, 2015). MR\_NMAP was also used to calculate  $L_{max}$  and SEL for individual overflights.

Although operational noise levels are often too low to result in incompatibility with existing land uses, noise from individual overflights generate distinct acoustical events. **Table 3-7** outlines the  $L_{max}$  and SEL for existing individual aircraft overflights for the primary and secondary users of the existing Corsair South MOA. Typical overflights in the lower-altitude portions of the existing

Corsair South MOA are clearly audible and sometimes loud to individuals on the ground. These overflights are brief, intermittent, distributed through the airspace, and normally do not occur repeatedly at any one location over a short duration. Individual overflights would be neither loud enough nor frequent enough to highly annoy an appreciable percentage of the population or to generate areas of incompatible land use underneath the Corsair South MOA.

**Table 3-7: Sound Levels for Individual Overflights**

Altitude (ft)	Primary Aircraft (Typical Overflights)							
	L <sub>max</sub> (dBA) <sup>a</sup>				SEL (dBA) <sup>b</sup>			
	A-29	A-10	H-60	C-130	A-29	A-10	H-60	C-130
500 <sup>c</sup>	<b>82.7</b>	<b>96.0</b>	<b>84.2</b>	<b>91.5</b>	84.6	94.5	90.5	96.2
1,000	<b>75.5</b>	<b>87.8</b>	<b>77.5</b>	<b>84.4</b>	79.2	88.1	85.6	90.9
2,000	68.0	<b>77.7</b>	70.3	<b>76.7</b>	73.6	79.8	80.2	85.0
4,000	60.2	64.2	62.3	68.3	67.5	68.1	74.0	78.4
8,000	51.5	48.4	53.1	59.1	60.6	54.0	66.6	71.1
23,000	37.8	34.7	38.1	45.7	49.3	42.7	54.0	60.0

Source: DAF, 2023

Notes: <sup>a</sup> L<sub>max</sub> is the maximum sound level during an individual overflight. Overflights that exceed 75 dBA L<sub>max</sub> (bolded values) could interfere with speech. <sup>b</sup> SEL is the sound level if the entire overflight was compressed into one second and does not represent the actual noise at any given time. <sup>c</sup> Noise model does not provide an output for sound levels of individual overflights at an altitude of 100 ft AGL.

dBA - A-weighted decibel; L<sub>max</sub> - maximum sound level; SEL - sound exposure level

### Noise Sensitive Receptors

In 1974, the USEPA provided information suggesting continuous and long-term noise levels in excess of 65 dBA DNL are unacceptable for noise sensitive receptors such as residences, schools, churches, hospitals, wildlife areas, parks, historical sites, and cultural sites. The proposed HLZs are located within rural areas dominated by forested timber land and are generally unpopulated. There are no sensitive receptors located directly adjacent to the proposed HLZs, but several receptors can be found in surrounding areas.

Sensitive noise receptors nearby HLZ-1 include a cemetery approximately 4,800 feet north and a residence approximately 1.0 miles west. The nearest school is located 2.6 miles west in the City of Morven. All other sensitive receptors (hospitals, wildlife areas, parks, etc.) are located over 2.6 miles from HLZ-1. Nearby sensitive receptors to HLZ-2 and HLZ-3 include residential areas approximately 1.25 miles south and 1.0 miles west, and two churches located over 1.15 miles south. The closest school, Westside Elementary, is located approximately 6.0 miles east of both HLZs in the City of Valdosta. All other sensitive receptors (hospitals, wildlife areas, parks, etc.) are located over 6.0 miles from HLZ-2 and HLZ-3.

### 3.2.3 Environmental Consequences

Noise impact analyses typically evaluate potential changes to the existing noise environment that would result from the implementation of an action. These potential changes may be beneficial if they reduce the number of sensitive receptors exposed to unacceptable noise levels. Conversely, impacts may be significant if they result in an introduction of unacceptable noise levels or

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increased exposure to unacceptable noise levels for sensitive receptors. Noise associated with an action is compared with existing noise conditions to determine the magnitude of potential impacts.

CEQ states that significance should be determined based on context and intensity. For the noise environment, a significant impact could be determined based on an increase in sound exposure (e.g., larger population of sensitive receptors being exposed to higher noise levels), a change to the type of noise (e.g., a different type of aircraft with a different noise signature), or new sensitive receptors being exposed to new noise sources (e.g., new aircraft noise introduced to an area that has never experienced aircraft noise) when compared to the existing conditions.

Public annoyance is the most common impact associated with exposure to elevated noise levels and is the most severe category of noise impact expected to occur under the Proposed Action.

As described in **Section 3.2**, annoyance due to aircraft noise can be predicted based on the DNL. When subjected to DNL of 65 dB, approximately 12% of persons so exposed will be “highly annoyed” by the noise. At levels below 55 dB, the percentage of annoyance is correspondingly lower (less than 3%). The percentage of people annoyed by noise never drops to zero (some people are annoyed by any noise), but at levels below 55 dB, it is reduced enough to be essentially negligible.

Based on numerous sociological surveys and recommendations of federal interagency councils, the most common benchmark referred to is 65 dB DNL. This threshold is often used to determine residential land use compatibility around airports, highways, or other transportation corridors. Two other average noise levels are also useful:

- DNL of 55 dB was identified by the United States Environmental Protection Agency (USEPA) as a level “. . . requisite to protect the public health and welfare with an adequate margin of safety” (USEPA, 1974). Noise may be heard, but there is no risk to public health or welfare.
- A DNL of 75 dB is a threshold above which effects other than annoyance may occur. It is well below levels at which hearing damage is a known risk (OSHA, 1983). However, it is also a level above which some adverse health effects cannot be categorically discounted.

The U.S. Army is the DoD service with the lead role in setting munitions noise policy and has established land use recommendations based on munitions noise levels near training ranges. AR 200-1 discourages noise-sensitive land uses such as residential in locations where small-arms firing noise exceeds 87 dB and strongly discourages noise-sensitive land uses where levels exceed 104 dB PK 15[met]. The same regulation discourages noise-sensitive land uses such as residential where large-arms noise levels exceed 115 dB and strongly discourages noise-sensitive land uses where large-arms noise exceeds 130 dB PK 15[met]. It should be noted that these recommendations are associated with military training ranges that are frequently utilized. According to the Occupational Safety and Health Administration (OSHA), exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level to avoid damage to hearing (OSHA, 1983).

Values for the primary noise metric  $DNL_{mr}$  and the supplemental noise metric  $L_{max}$  were calculated using the programs Rotorcraft Noise Model (RNM) and MR\_NMAP. RNM was used for instances where the aircraft location is well-defined, while MR\_NMAP was used to calculate noise levels

generated by aircraft maneuvering in highly variable patterns near the HLZ. For this analysis, the  $DNL_{mr}$  metric was calculated for an average operational day, meaning that noise energy was averaged only over those days on which aircraft would use the HLZs. Values for munitions PK 15[met] noise levels were calculated using Small-Arms Noise Assessment Model (SARNAM) for small arms noise and BNOISE2 for explosives noise.

3.2.3.1 Proposed Action

As described in **Section 2.1**, training would typically occur twice per week at each proposed HLZ and would typically involve two HH-60 aircraft operating at the HLZ for between 30 minutes and two hours. Roughly half the training time at the HLZ would be spent with the helicopter stationary at various altitudes while the crew practices quick-rope and other skills. The other half of the time would be spent making practice approaches to the HLZ. About 40% of pattern training time would be spent flying patterns in which the aircraft stay within 1 mile of the HLZ, and the remainder of the time would be spent flying patterns up to 2 miles distant from the HLZ. HH-60 and other military aircraft have been operating from Moody AFB for several years, and many residents under the Corsair South MOA and LATN have heard their overflights at some point.

Noise levels would remain as described in **Section 3.2** as aircraft operations remain constant and only the proposed HLZ areas would experience an infrequent increase in noise resulting from aircraft operations.

Noise levels generated by an HH-60 while it is stationary (either hovering or with engines running on the ground) are listed in **Table 3-8**. As described in **Section 2.1**, stationary time is spent at 75, 45, 35, 15, or 0 ft AGL, depending on the type of training being conducted. Helicopter noise levels have strong “directionality.” This means that the noise level experienced depends heavily on the direction the aircraft is pointing relative to the listener. Noise levels in **Table 3-8** were calculated at the direction of highest noise level, which was found to be 140 degrees to the right of the nose of the aircraft.

**Table 3-8: HH-60 Stationary Maximum Noise Levels ( $L_{max}$ )**

Lateral Distance (ft)	$L_{max}$ at Altitude (ft AGL)				
	0	15	35	45	75
1,000	58	68	70	70	69
2,000	50	55	60	61	62
4,000	42	43	46	47	50
8,000	33	32	31	32	34

Source: RNM; used median monthly average acoustic propagation conditions (67° F and 69% relative humidity), Moody AFB, 2013  
AGL = above ground level;  $L_{max}$  = maximum sound level; RNM = Rotorcraft Noise Model

Night training is critically important to mission success in modern warfare, and about 50% of training events would occur after dark. Although late-night flights are avoided to the extent practicable, about 20% of total training events would take place after 10:00 PM. As described in **Section 3.2**, the time-averaged noise metric DNL includes a “penalty” of 10 dB for events that occur during the late-night period after 10:00 PM and before 7:00 AM.

DNL at various distances from the HLZs calculated for the estimated 104 days per year on which training could occur are listed in **Table 3-9**. Noise levels were calculated as if all stationary operations would occur at a single location within the HLZ. Because stationary helicopter training operations would occur at various locations within the HLZ, actual DNL at specified distances from the HLZ would be slightly less than values listed in **Table 3-8**. The values listed in **Table 3-9** incorporate noise generated during day-to-day and opposing force exercises by aircraft at the HLZs plus baseline training operations in existing special use airspace units.

**Table 3-9: DNL at Various Distances from the Training Event**

Distance (ft)	DNL (dB)
1,000	61
2,000	57
4,000	55
8,000	49

Source: Moody AFB, 2013  
dB = decibel; ft = feet

Approximately 100 blank 7.62-mm (M240) and 500 5.56-mm (M4) rounds would be fired per opposing force exercise. Blank rounds do not fire a bullet and are quieter than live rounds. Noise levels generated by gunfire are very dependent on the direction of the listener relative to the line of fire. Although the loudest position relative to the gun is directly in front of the gun, during opposing force exercise, gunfire would be directed toward the center of the HLZ and away from any noise-sensitive locations outside the HLZ. Gunfire noise levels listed in **Table 3-10** are for a location perpendicular to the line of fire using the noise metric PK 15[met].

**Table 3-10: Small Arms Peak Noise Levels**

Munitions	Peak Noise Level (dB PK 15[met]) at Distance in Ft:		
	1,000	3,000	6,000
5.56-mm blank	80	67	58
7.62-mm blank	102	89	80

Source: Moody AFB, 2013; SARNAM  
dB = decibel; PK 15[met] = peak level exceeded only 15 percent of the time

Approximately four Mk-18 and one Mk-23 smoke cartridges would be expended per opposing force exercise, but these are relatively quiet. Approximately two ground-burst simulators would be used during each exercise. **Table 3-11** lists the peak noise levels at varying distances from the detonation of explosives.

**Table 3-11: Explosives Peak Noise Levels**

Munitions	Peak Noise Level (dB PK 15[met]) at Distance in Ft <sub>1</sub>		
	1,000	3,000	6,000
Ground-burst Simulator (M115A2) Modeled as TNT .063Kg (.139lb)	139	125	96

Source: Moody AFB, 2013; BNOISE2  
dB = decibel; PK 15[met] = peak level exceeded only 15 percent of the time

**Figure 3-1** to **Figure 3-2** show areas surrounding the HLZs where noise would exceed lower threshold values (i.e., 65 dB DNL aircraft noise, 87 PK 15[met] small-arms noise, 115 dB PK 15[met] large-arms noise). **Table 3-12** lists aircraft and munitions noise levels at the closest structure to each HLZ. Distance to the closest structure was determined by examining aerial photos. In all cases, the closest structure appears to be an inhabited residence. Outdoor aircraft time-averaged noise levels and hover noise levels were calculated for the worst-case scenario under which all hover operations would take place at the HLZ boundary point closest to the structure. Individual overflight noise levels would be variable depending on the specific path followed by the aircraft (see **Table 3-9** for overflight noise levels at various distances). Peak munitions noise levels were calculated for munitions firing at the HLZ boundary point closest to the structure. For guns, noise levels were calculated for firing at a 90-degree angle relative to the structure.

To summarize, assumptions used in calculating noise levels shown in **Table 3-12** yield the highest noise levels that would potentially occur under normal circumstances. Most events would be substantially less loud. Also, people indoors would benefit from outdoor-to-indoor noise attenuation provided by the structure. Indoor noise levels are typically 15 to 25 dB less than outdoor noise levels, with the exact difference depending on characteristics of the structure.

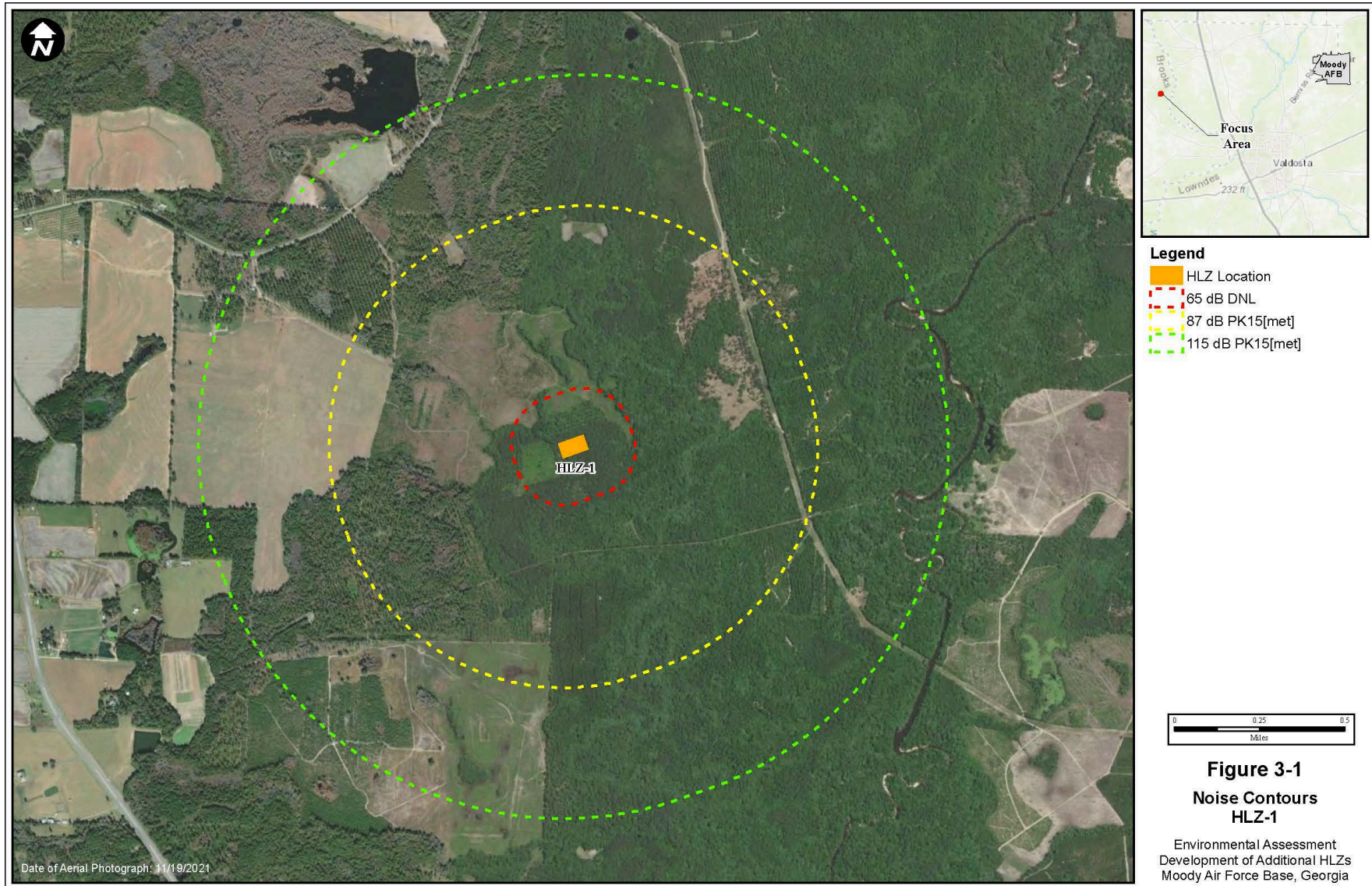
**Table 3-12: Aircraft and Munitions Noise Levels at Closest Structure**

HLZ	Distance to Closest Structure (ft)	DNL (dB)	Small-Arms PK 15[met] <sub>2</sub>	Large-Arms PK 15[met]
HLZ-1	5,350	<65	83	104
HLZ-2	5,420	<65	83	103
HLZ-3	4,350	<65	86	112

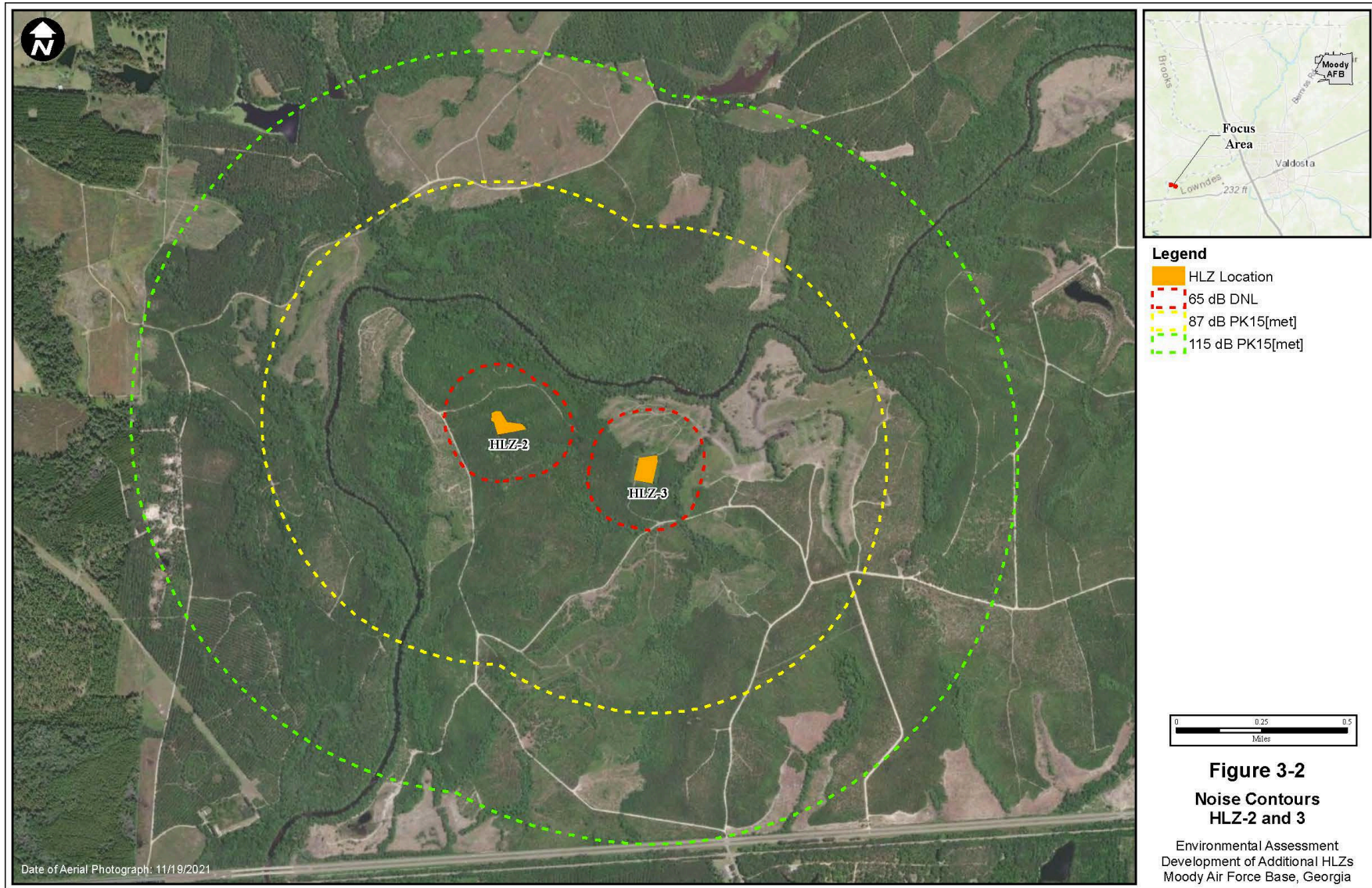
dB = decibel; DNL = adjusted monthly day-night average sound level; GBS = ground-burst simulators; n/a = not applicable; PK 15[met] = peak level exceeded only 15 percent of the time; SARNAM (7.62-mm munitions were modeled for small-arms PK 15[met], which is the louder of the small-arms munitions fired at the HLZs)

Noise generated by aircraft training at the HLZs would be noticeable at nearby locations and could disrupt activities, including conversation, watching television, and sleeping, and may be considered annoying. The HLZs are located in rural areas and only a small number of structures are located nearby. The closest sensitive receptor to any of the HLZs is located approximately 4,350 ft from the center of HLZ-3; the DNL at this residence would be below 65 dB. Residences located farther from the HLZ than the distances shown in **Table 3-12** would experience fewer











overflights and lower time-averaged aircraft noise levels. All other sensitive receptors detailed in **Section 3.2.2** are located outside the 65 dB noise contours shown in **Figure 3-1** and **3-2**. In addition to being located outside the 65 dB noise contours, sound attenuation provided by the heavily forested environment surrounding the proposed HLZs would further reduce transmission of noise to sensitive receptors. Therefore, no impacts are expected to noise sensitive receptors from implementation of the Proposed Action.

Noise generated by firing of blank rounds and simulated explosives would also be very noticeable during opposing force exercises at nearby locations and could also result in activity interference and annoyance. Residences within about 1,000 ft of the small-arms munitions firing could be exposed to peak noise levels at which residential use is strongly discouraged per Army regulations. Also, residences within about 3,600 ft of the small-arms firing could be exposed to noise levels at which residential use is discouraged. Gunfire noise would be similar to that generated by civilian gun use in the area currently. Simulated artillery peak noise could generate noise levels at which residences are strongly discouraged at distances of about 5,600 ft, while residences within about 2,000 ft could be exposed to noise levels at which residences are discouraged. Ground-burst simulators would not be used at HLZs where residences are located within 1,000 ft of the HLZ boundary. Peak noise levels would not exceed 140 dB at any residence, and no damage to hearing would be expected.

Army land use recommendations based on peak noise level are generally intended to be used in areas near military munitions training ranges. Munitions training noise near the proposed HLZs would be temporary, occurring sporadically while opposing force exercise is under way and ending when the training is completed. Exercises would occur on average once per month, distributed among all Moody AFB HLZs.

As noted previously, approximately 100 of the louder 7.62-mm blank rounds and 500 of the smaller and less loud 5.56-mm rounds would be fired per opposing force exercise. In an average year with 12 exercises, 1200 7.62-mm rounds and 6,000 5.56-mm rounds would be fired. On average, two ground-burst simulators would be used per exercise (24 per average year with 12 exercises). These numbers of munitions fired are far below the amounts fired at an active military munitions training range. Furthermore, as discussed in **Section 2.1**, as part of the Proposed Action, landowners and nearby residences would be notified when exercises are scheduled (i.e., when personnel would be on the ground). Specific guidance would be included in the land use agreement.

Overall, HLZ training noise associated at proposed HLZ locations could be expected to be annoying to certain nearby residents. However, an increase in operations is not occurring and only new HLZs are proposed which would reduce daily training and opposing force exercise associated noise at previously established HLZs. No sensitive receptors would experience noise greater than 65 dB DNL and the percentage of those Highly Annoyed is not anticipated to increase. As a result, noise impacts would be negligible and not significant at proposed HLZs.

#### 3.2.3.2 No Action Alternative

Under the No Action Alternative, the proposed HLZs would not be established, and no training operations be conducted at the locations identified. There would be no change to noise levels and no noise impacts as a result of the No Action Alternative.

### 3.3 AIR QUALITY

#### 3.3.1 Definition of the Resource

##### 3.3.1.1 Ambient Air Quality Standards

Section 108 of the Clean Air Act (CAA) requires that the USEPA establish National Ambient Air Quality Standards (NAAQS) for six common air pollutants (known as criteria air pollutants): carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), Ozone (O<sub>3</sub>), sulfur dioxide (SO<sub>2</sub>), and particulate matter, which includes particulate matter with a diameter less than or equal to 2.5 micrometers (PM<sub>2.5</sub>) and particulate matter with a diameter less than or equal to 10 micrometers (PM<sub>10</sub>). The NAAQS are standards to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly, as well as to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Because different pollutants have different effects, the NAAQS are also different. Some pollutants have standards for both long-term and short-term averaging times. Short-term NAAQS (1-, 8-, and 24-hour averages) have been established for pollutants contributing to acute, or short-term, health effects, while long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards that are more stringent than those established under the federal program. **Table 3-13** provides the ambient air quality standards set forth by the Georgia Air Protection Branch.

**Table 3-13: Ambient Air Quality Standards <sup>1</sup>**

Criteria Pollutant	Averaging Time	Level <sup>2</sup>	Form
SO <sub>2</sub>	1 hour	75 ppb	99 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years
	3 hours	0.5 ppm	Not to be exceeded more than once per year
PM <sub>10</sub>	24 hours	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
PM <sub>2.5</sub>	24 hours	35 µg/m <sup>3</sup>	98 <sup>th</sup> percentile, averaged over 3 years
	Annual	12.0 µg/m <sup>3</sup>	Annual mean, averaged over 3 years
CO	1 hour	35 ppm	Not to be exceeded more than once per year
	8 hours	9 ppm	
O <sub>3</sub>	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Pb	Rolling 3-month average	0.15 µg/m <sup>3</sup>	Not to be exceeded
NO <sub>2</sub>	1 hour	100 ppb	98 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Annual	53 ppb	Annual mean

<sup>1</sup> Georgia Rule 391-3-1.02(4).

<sup>2</sup> ppb = parts per billion  
ppm = parts per million  
µg/m<sup>3</sup> = micrograms per cubic meter

### 3.3.1.2 Greenhouse Gases and Climate Change

Greenhouse Gas (GHGs) produced by fossil-fuel combustion are primarily carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and NO<sub>2</sub>. These three GHGs represent more than 97% of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO<sub>2</sub> equivalents (CO<sub>2e</sub>). CO<sub>2e</sub> accounts for the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO<sub>2</sub>.

CEQ's NEPA Guidance on Consideration of GHG Emissions and Climate Change provides guidance regarding NEPA air quality assessments (CEQ, 2023). This document recommends that agencies quantify a Proposed Action's projected direct and indirect GHG emissions. GHG emission estimates have been prepared using the Air Conformity Applicability Model (ACAM) as well as Excel spreadsheets that have been developed to address air emission sources not included in ACAM.

In addition, the effects of climate change on the proposed actions and/or the environment (per Section 6.4 of the Air Quality EIAP Guide) should be included to address and document that an informed decision-making process was followed. For smaller projects (i.e., actions generating less than 75,000 short tons per year CO<sub>2e</sub>), discussion of two subjective qualitative assessments should be minimal, where the two subjective assessments are:

1. Impact of climate change on the proposed action; and
2. Impact of climate change on the environmental impacts of the proposed action.

Therefore, based on the two CEQ requirements and the suggested discussion related to the effects of climate change, the air emissions associated with each proposed action are calculated by the ACAM and Excel spreadsheets. The results are described in **Section 3.3.3**, Environmental Consequences.

### **3.3.2 Existing Conditions**

Moody AFB is located within Lowndes County, under the jurisdiction of Georgia Department of Natural Resources' (GADNR) Environmental Protection Division (EPD), which publishes statewide air quality and permitting regulations. Lowndes County is currently designated by the USEPA as an *attainment* area for CO, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and Pb (USEPA, 2022).

#### HLZ-1

This site is in Brooks County, Georgia, under the jurisdiction of EPD, which publishes statewide air quality and permitting regulations. Brooks County is currently designated by the USEPA as an *attainment* area for CO, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and Pb (USEPA, 2022). No stationary sources of air emissions are currently present at the site and mobile sources of air emissions are limited to periodic mowing activities.

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### HLZ-2

This site is in Lowndes County, Georgia, under the jurisdiction of EPD, which publishes statewide air quality and permitting regulations. Lowndes County is currently designated by the USEPA as an *attainment* area for CO, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and Pb (USEPA, 2022). No stationary sources of air emissions are currently present at the site and mobile sources of air emissions are limited to periodic mowing activities.

### HLZ-3

This site is also in Lowndes County, Georgia. The county is designated by the USEPA as an *attainment* area for CO, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and Pb (USEPA, 2022). No stationary sources of air emissions are currently present at the site and mobile sources of air emissions are limited to periodic mowing activities.

## **3.3.3 Environmental Consequences**

### Criteria Pollutants

The CAAA of 1990 requires that all federal agency activities conform to the applicable State Implementation Plan (SIP) with respect to achieving and maintaining attainment of NAAQS and addressing potential air quality impacts. As described in Section 3.3.2, *Existing Conditions*, Moody AFB and the three parcels of land for the development of HLZs are each located in areas currently designated by the USEPA as being in *attainment* with all NAAQS criteria pollutants (USEPA, 2022).

For criteria pollutants, the insignificance indicators are the 250 tons per year (tpy) Prevention of Significant Deterioration (PSD) major source threshold and 25 tpy for lead for actions occurring in areas that are in *attainment* with all NAAQS criteria pollutants. These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to Level II, Air Quality Quantitative Assessment, Insignificance Indicators. To evaluate GHG emissions, air emission estimates for the proposed actions were calculated using ACAM and Excel spreadsheets.

### Greenhouse Gases

For GHG, the DAF has adopted the Prevention of Significant Deterioration (PSD) threshold of 75,000 tpy of CO<sub>2e</sub> (or 68,039 metric ton per year [mtpy]) as an indicator or “threshold of insignificance” for NEPA air quality impacts in all areas (AFCEC/CZTQ, 2023). As with criteria pollutants, this indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant. Actions with a net change in GHG (CO<sub>2e</sub>) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. To evaluate GHG emissions, air emission estimates for the proposed actions were calculated using ACAM and Excel spreadsheets in terms of CO<sub>2e</sub>.

A Relative Significance Assessment was then conducted for GHG. This assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (global, national, and regional) and the degree (intensity) of the proposed action’s effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice

against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, on a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

Finally, the effects of climate change on the proposed actions were considered as directed in Section 6.4 of the Air Quality EIAP Guide (DAF, 2016c). As with the GHG analysis, actions resulting in less than 75,000 tpy CO<sub>2e</sub> of GHG emissions have been considered *de minimis* (too trivial or minor to merit consideration) and not significant enough to warrant further NEPA analysis.

### 3.3.3.1 Proposed Action

#### HLZ-1

The proposed action for HLZ-1 would include construction of the landing zone, day-to-day helicopter (HH-60) training sorties, and occasional training operations. Day-to-day training activities would consist of an average of two sorties per week and occur 52 weeks per year. Each sortie would include two aircraft that would travel between Moody AFB and the HLZ at 100 to 500 ft AGL and an air speed of 110 KIAS. Each sortie would also have a duration of two hours at the HLZ including:

- 50% of time flying patterns within 2 miles of the HLZ,
- 40% of time hovering over the HLZ, and
- 10% of time running on ground.

Air pollutant emissions including CO, nitrogen oxides (NO<sub>x</sub>), PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, volatile organic compounds (VOCs), and CO<sub>2</sub> would be associated with ground clearing activities and HH-60 operations. ACAM was used to quantify potential air emissions from helicopters, ground vehicles, munitions usage, and ground clearing activities. Because ACAM does not include emission factors for helicopters, potential air emissions associated with the helicopter operations were quantified using Excel spreadsheets and air emission factors obtained from the *Air Emissions Guide for Air Force Mobile Sources* (DAF, 2020). Because the flight altitude is below the atmospheric mixing level (approximately 3,000 ft), air emissions from HH-60 operations during

transit to and from the HLZ were included in the potential air emission calculations. Details regarding these calculations are presented in **Appendices C and D**.

In addition to the day-to-day HH-60 training sorties, HLZ-1 would also be used for occasional training involving HH-60 helicopters, ground vehicles, munitions usage, and personnel to act as opposing forces. Occasional training activities would occur one time per month, 12 months per year. Each activity would include a single sortie involving two HH-60 aircraft similar to the day-to-day helicopter training sorties described above. Occasional training would also include two ground vehicles that would travel between Moody AFB and HLZ-1, and the use of munitions, as described in **Section 2.1**.

Air emissions from the proposed action are summarized in **Table 3-14**. None of the estimated annual net emissions associated with this action are above the insignificance indicators. Therefore, there would be no significant impacts to air quality from criteria pollutants. The action will not cause or contribute to an exceedance on one or more NAAQSs.

The relative significance of the GHG emissions is summarized in **Table 3-15**. This table provides a relative comparison of the proposed action’s net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period. As indicated in the table, GHG emissions from the proposed action will be trivial relative to the GHG emissions projected at the state and U.S. level. Therefore, only long-term, negligible impacts are anticipated from greenhouse gases.

**Table 3-14: Air Quality Impacts from Proposed Action**

Description	Air Pollutant Emissions (tons per year)						
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC	CO <sub>2e</sub>
HLZ-1	2.63	2.54	1.32	0.29	0.26	0.04	797
HLZ-2	2.63	2.55	1.19	0.29	0.26	0.04	799
HLZ-3	2.63	2.56	1.41	0.29	0.26	0.04	800
Total	7.88	7.66	3.92	0.87	0.77	0.11	2,396
Insignificance Indicator	250	250	250	250	250	250	75,000
Exceedance?	No	No	No	No	No	No	No

**Table 3-15: Relative Significance of the GHG Emissions from the Proposed Action**

Year	Locale	CO <sub>2e</sub> Emissions (mtons/yr)
2024-2035	State Total	1,615,903,327
2024-2035	U.S. Total	61,962,981,580
2024-2035	Proposed Action	2,173
Percent of State Totals		0.0001345%
Percent of U.S. Totals		0.0000035%

HLZ-2

The proposed action for HLZ-2 is identical to that associated with the HLZ-1 as described in **Section 3.3.3.1**. Potential air emissions associated with these operations were quantified using engineering analyses and details regarding these calculations are presented in **Appendices C and D**.

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### HLZ-3

The proposed action for HLZ-3 is identical to that associated with the HLZ-1 as described in **Section 3.3.3.1**. Potential air emissions associated with these operations were quantified using engineering analyses and details regarding these calculations are presented in **Appendices C and D**.

#### 3.3.3.2 No Action Alternative

Under the No-Action Alternative, air quality within the project area would remain unchanged because the proposed action would not be implemented.

### **3.4 WATER RESOURCES**

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

##### 3.4.1.1 Surface Waters and Water Quality

Surface water resources comprise lakes, rivers, and streams and are important for ecological, economic, recreational, aesthetic, and human health reasons. Waters of the U.S. are protected by the Clean Water Act and include wetlands and streams that meet certain criteria as defined in 80 FR 37054 and subsequent regulations. Surface water features in the vicinity of the sites consist of wetlands, ponds, lakes, and perennial and intermittent streams. **Figures 3-3 through 3-4** illustrate the surface waters within and in close proximity to the proposed sites.

##### 3.4.1.2 Floodplains

Floodplains, as defined by the Federal Emergency Management Agency (FEMA), are those areas that are susceptible to being inundated by floodwaters from any source. Flooding potential is evaluated by FEMA, which defines 100-year floodplains as areas having a 1% chance of inundation by a flood event in a given year. Executive Order 11988, Floodplain Management, requires federal agencies to determine whether a proposed action would occur within a floodplain and directs federal agencies to avoid floodplains to the maximum extent possible wherever there is a practicable alternative. The Proposed Action does not include any construction, addition of impervious services, or other actions that would adversely affect floodplains, so a FONPA is not required.

A review of the FEMA National Flood Insurance Program Flood Insurance Rate Map indicates that portions of the Proposed Action areas are located within designated 100-year floodplains. **Figures 3-5 and 3-6** illustrate designated floodplain areas within and in close proximity to the proposed sites.

##### 3.4.1.3 Wetlands

Wetlands are defined by the United States Army Corps of Engineers (USACE) and USEPA as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 CFR 328.3[b]). Wetlands provide a variety of functions, including groundwater recharge and discharge; flood flow alteration; sediment

stabilization; sediment and toxicant retention; nutrient removal and transformation; support of aquatic and terrestrial diversity and abundance; and uniqueness.

Wetlands (and other surface waters) within the study area could potentially be regulated by the USACE as Waters of the U.S., in accordance with the Federal Clean Water Act (CWA) (33 USC Section 1251 et seq.), Section 10 of the Rivers and Harbors Act of 1899 (RHA) (33 USC Section 403), and the USACE regulations, guidance, and applicable manual. Jurisdictional wetlands are those subject to regulatory authority under Section 404 of the CWA, with review by GADNR for potential impacts to water quality under Section 401 of the CWA.

Moody AFB has not conducted jurisdictional waters delineations for the three HLZ sites. For planning purposes, this EA uses the USFWS National Wetlands Inventory (NWI) maps to indicate potential wetlands within or near the HLZ sites. Wetlands are classified according to the USFWS NWI on the basis of vegetation type, topography, and hydrologic regime. Additionally, wetland scientists conducted a field reconnaissance in January 2023 as a part of the EA preparation and assessed site wetlands based on the NWI maps. **Figures 3-7** and **3-8** illustrate NWI wetland areas within and in close proximity to the proposed sites. The Proposed Action does not include any construction, occupancy, or other actions that would adversely affect wetlands, so EO 11990 requirement to avoid is not applicable and a FONPA is not required.

### 3.4.2 Existing Conditions

#### 3.4.2.1 Surface Waters and Water Quality

##### HLZ-1

The Site HLZ-1 topographic map (showing surface water features) is shown on **Figure 3-3**. No streams, ponds, or lakes are shown within the site or in the immediate project vicinity. The closest surface water is Slaughter Creek, ranging from approximately 0.25 to 0.40 mile to the east of the site. Biologists conducted a site reconnaissance in January 2023 and did not identify any potential waters within the site area. Mapping shows potential wetlands located along the western boundary of the site. Potential wetland areas within or near the site are described in **Section 3.4.2.3** on wetlands, below.

##### HLZ-2

The Site HLZ-2 topographic map (showing surface water features) is shown in **Figure 3-4**. No streams, ponds, or lakes are shown within the site or in the immediate project vicinity. The closest surface water is the Withlacoochee River, ranging from approximately 0.20 to 0.30 mile to the north of the site. Biologists conducted a site reconnaissance in January 2023 and did not identify any potential waters within or adjacent to the site area. Mapping shows potential wetlands located approximately 0.05 mile to the south, and approximately 0.15 mile to the north associated with the Withlacoochee River. Potential wetland areas within or near the site are described in **Section 3.4.2.3** on wetlands.

##### HLZ-3

The Site HLZ-3 topographic map (showing surface water features) is shown in **Figure 3-4**. No streams, ponds, or lakes are shown within the site or in the immediate project vicinity. The closest surface water is an unnamed tributary to the Withlacoochee River, located approximately 0.10 mile to the east of the site, while the Withlacoochee River is located approximately 0.20 mile to



the north of the site. Biologists conducted a site reconnaissance in January 2023 and did not identify any potential waters within the site area. Mapping shows potential wetlands located approximately 0.03 mile to the north and approximately 0.05 mile to the east of the site. Potential wetland areas within or near the site are described in **Section 3.4.2.3** on wetlands.

#### 3.4.2.2 Floodplains

##### HLZ-1

Floodplains in the vicinity of Site HLZ-1 are shown on **Figure 3-5**. The site is located within the designated 100-year floodplain associated with Slaughter Creek. Slaughter Creek is located approximately 0.25 to 0.40 mile to the east of the site.

##### HLZ-2

Floodplains in the vicinity of Site HLZ-2 are shown on **Figure 3-6**. No designated 100-year floodplain areas are located within the site.

##### HLZ-3

Floodplains in the vicinity of Site HLZ-3 are shown on **Figure 3-6**. No designated 100-year floodplain areas are located within the site.

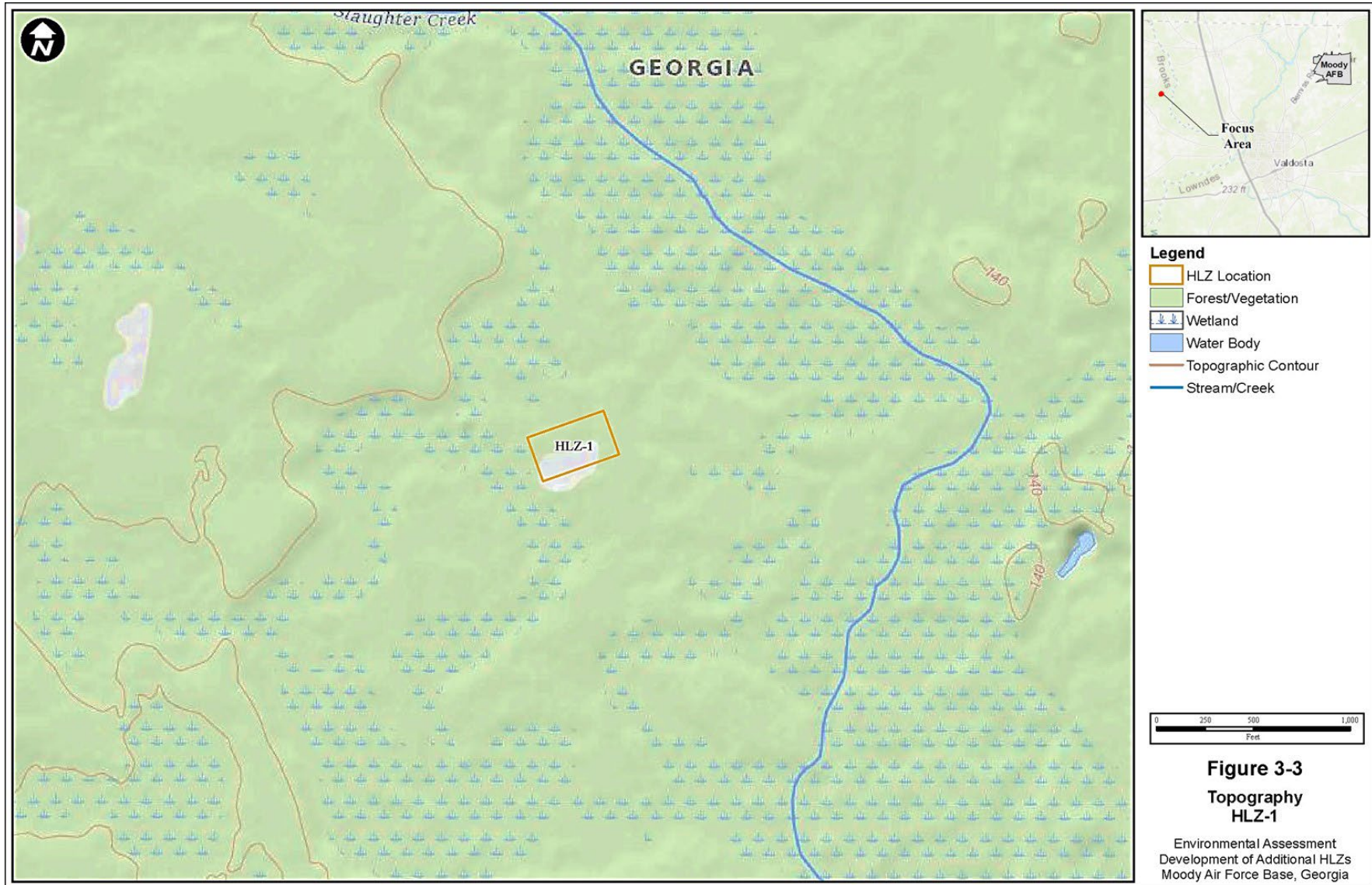
#### 3.4.2.3 Wetlands

##### HLZ-1

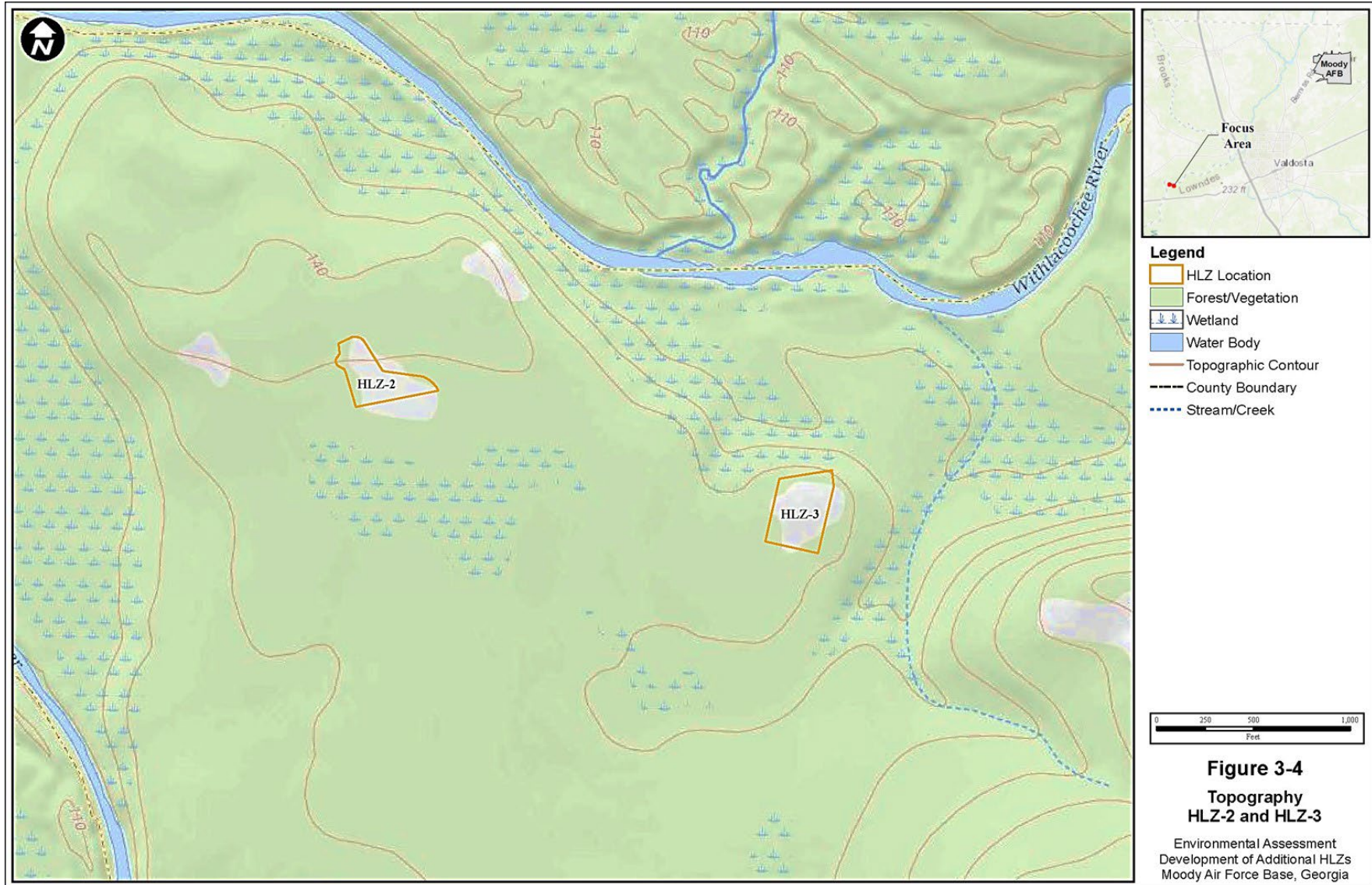
Wetlands in the vicinity of Site HLZ-1 are shown on **Figure 3-7**. The NWI map indicates potential wetland areas within the western edge of the site. These potential areas are depicted as palustrine forested wetlands that are temporarily flooded. Biologists conducted a site reconnaissance in January 2023. Wetlands were observed offsite to the northwest, but no obvious wetland areas were observed within HLZ-1 during the site reconnaissance.

##### HLZ-2

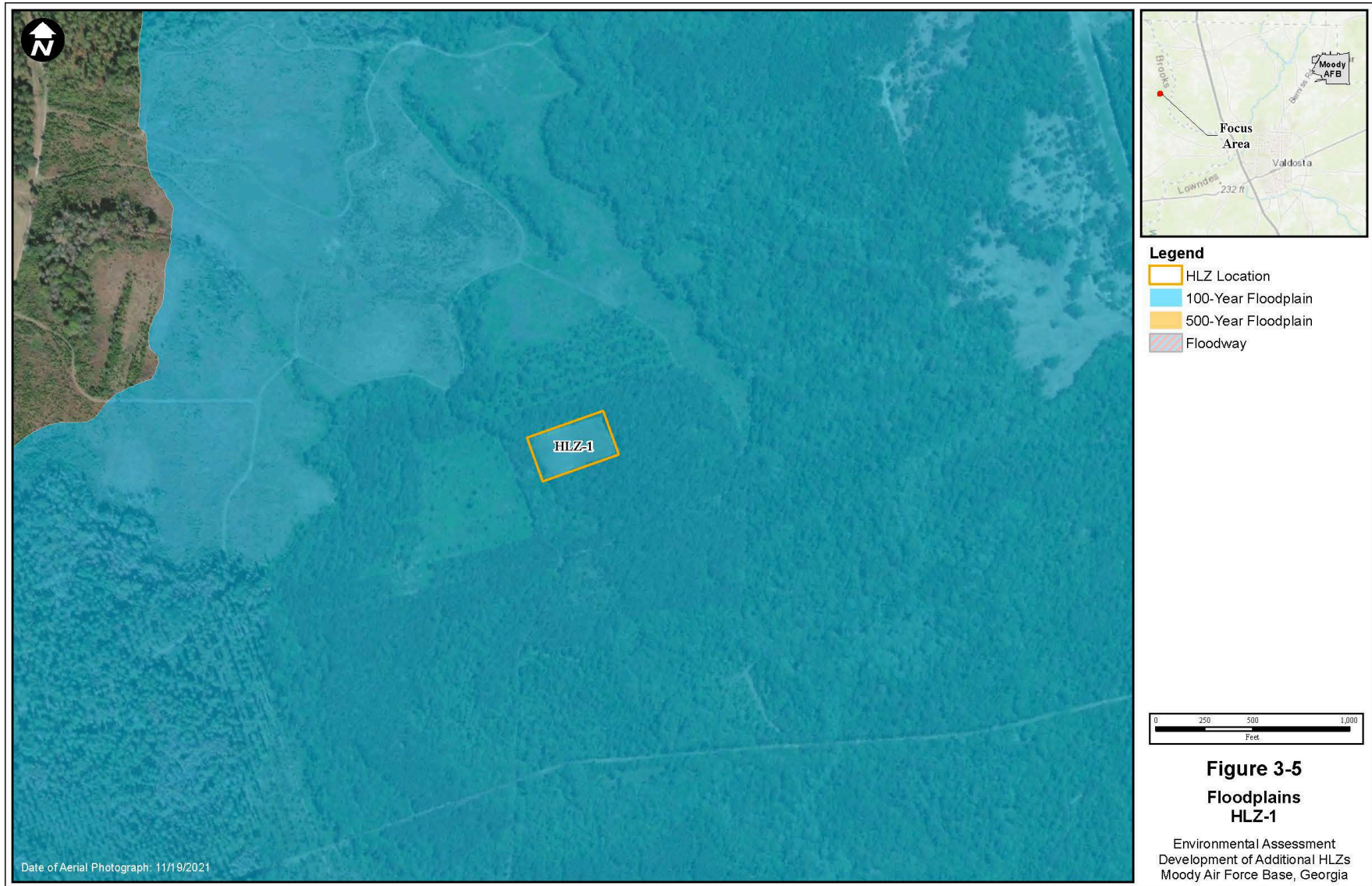
Wetlands in the vicinity of Site HLZ-2 are shown on **Figure 3-8**. The NWI map indicates potential wetlands located offsite approximately 0.05 mile to the south and approximately 0.15 mile to the north. These potential areas are depicted as palustrine forested wetlands that are temporarily flooded. Biologists conducted a site reconnaissance in January 2023, but no obvious wetland areas were observed within HLZ-2 during the reconnaissance.























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### HLZ-3

Wetlands in the vicinity of Site HLZ-3 are shown on **Figure 3-8**. The NWI map indicates potential wetlands located offsite approximately 0.03 mile to the north and approximately 0.05 mile to the east of the site. These potential areas are depicted as palustrine forested wetlands that are temporarily flooded. Biologists conducted a site reconnaissance in January 2023, but no obvious wetland areas were observed within HLZ-3 during the reconnaissance.

### **3.4.3 Environmental Consequences**

#### 3.4.3.1 Surface Waters and Water Quality

The significance of potential impacts to water resources is based on water availability, water quality, and use. An impact to water resources would be significant if it would:

- reduce water availability or quality or interfere with the supply of existing users,
- adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions,
- threaten or damage unique hydrologic characteristics, or
- violate laws or regulations that have been established to protect or manage water resources of an area.

##### 3.4.3.1.1 *Proposed Action*

### HLZ-1

Site HLZ-1 does not contain surface waters, so the use of the site as a HLZ would not impact surface waters or water quality.

### HLZ-2

Site HLZ-2 does not contain surface waters, so the use of the site as a HLZ would not impact surface waters or water quality.

### HLZ-3

Site HLZ-3 does not contain surface waters, so the use of the site as a HLZ would not impact surface waters or water quality.

##### 3.4.3.1.2 *No Action Alternative*

Under the No-Action Alternative, surface waters and water quality within the project area would remain unchanged because the proposed action would not be implemented.

#### 3.4.3.2 Floodplains

Evaluation criteria for potential impacts to floodplains include endangerment of public health by creating or worsening health hazard conditions or violating established laws or regulations adopted to protect floodplains. Potential impacts related to flood hazards can be significant if such actions are proposed in areas with high probabilities of flooding; however, impacts can be mitigated through the use of design features to minimize the effects of flooding.



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#### 3.4.3.2.1 *Proposed Action*

##### HLZ-1

Site HLZ-1 is located within the designated 100-year floodplain associated with Slaughter Creek. However, the proposed action does not require any ground modifications or surface construction to use the site as an HLZ. Training activities located within the 100-year floodplain would not alter floodplain hydrology (e.g., capacity or function) or cause induced flooding in areas not currently located within the floodplain. Thus, there would be no impact to the 100-year floodplain.

##### HLZ-2

No designated 100-year floodplain areas are located within HLZ-2, so the use of the site would not impact floodplains.

##### HLZ-3

No designated 100-year floodplain areas are located within HLZ-3, so the use of the site would not impact floodplains.

#### 3.4.3.2.2 *No Action Alternative*

Under the No-Action Alternative, floodplains within the project area would remain unchanged because the proposed action would not be implemented.

#### 3.4.3.3 Wetlands

Significance of potential impacts to wetlands is based on impacts to wetland functions and values. An impact to wetlands would be significant if it reduced wetland function and/or required Section 404 authorization for impacts.

##### 3.4.3.3.1 *Proposed Action*

##### HLZ-1

The NWI map indicates potential wetland areas within the western edge of the site, but no wetland areas were observed within HLZ-1 during the January 2023 reconnaissance. The property owner will maintain the cleared areas within the HLZ boundary and will avoid additional clearing of the offsite wetland areas. No impacts to wetlands would be expected. Wetlands would be avoided by landing aircraft and exercises as they are located offsite, and no wetlands were observed within the HLZ.

##### HLZ-2

No potential jurisdictional wetlands are located within HLZ-2, so the use of the site would not impact wetland functions or values.

##### HLZ-3

No potential jurisdictional wetlands are located within HLZ-3, so the use of the site would not impact wetland functions or values.

##### 3.4.3.3.2 *No Action Alternative*

Under the No-Action Alternative, wetlands within the project area would remain unchanged because the proposed action would not be implemented.

### 3.5 SAFETY AND OCCUPATIONAL HEALTH

#### 3.5.1 Definition of the Resource

This section addresses flight and ground safety associated with activities conducted by Moody AFB as they relate to the Proposed Action. Flight safety analysis primarily examines potential aircraft accidents that may occur as a result of mid-air collisions. Ground safety analysis evaluates potential safety impacts of ground based-training activities at proposed HLZ sites. The following aspects of safety were eliminated from detailed analysis and are not discussed further.

*Explosives Safety* - Munitions used as part of proposed activities would be limited to smoke generators, ground-burst simulators, and small-caliber blank ammunition. These munitions are routinely employed at Moody AFB, are used safely at the existing HLZ, and would continue to be managed/used according to established safety procedures. There would be no changes to existing quantity-distance arcs or explosive safety zones at the installation, and there would be no activities associated with the Proposed Action that could be impacted by existing quantity-distance arcs.

*Bird/Wildlife Aircraft Strike Hazards* - Bird/wildlife aircraft strikes constitute a safety concern because of the potential for damage to aircraft or injury to aircrews or local populations if an aircraft crash should occur. There would be no change in aircraft types or an increase in the number of flight operations at Moody AFB associated with proposed activities. Additionally, all operations would continue to be performed within the current airspace environment and there would be no change in aircraft operating heights AGL except when they land in the HLZs. Height is a major component in assessing bird-aircraft strike hazard (BASH) risk, and since the aircraft are basically operating within normal AGL restrictions, there should be no greater risk under the Proposed Action. Consequently, no significant changes to the potential for BASH incidents would be anticipated.

*Ground Transportation* - Proposed activities include the transport over local roadways of vehicles and personnel to HLZs. All vehicular transportation would be accomplished in accordance with established traffic laws and safety requirements, including DAF Instruction 91-207, U.S. Air Force Traffic Safety Program.

The ROI for safety includes local areas within the flight pattern of installation aircraft as these relate to proposed activities, as well as HLZs and the immediate surrounding areas.

#### 3.5.2 Existing Conditions

##### Flight Safety

It is impossible to predict when and if an aircraft accident may occur. Major considerations in any accident are loss of life and damage to property. The probability of an aircraft crashing into a populated area is extremely low, but it cannot be totally discounted. Several factors are relevant in the case of Moody AFB. The region around the base primarily consists of rural or natural areas. Military pilots are instructed to avoid direct overflight of population centers at very low altitudes. In addition, the limited amount of time the aircraft is over any specific geographic area limits the probability that a disabled aircraft would crash into a populated area.

A Class A mishap is a mishap resulting in loss of life, permanent total disability, a total cost in excess of \$2 million, destruction of an aircraft, or damage to an aircraft beyond economical repair.

HH-60 aircraft have experienced four Class A mishaps within the last ten years; however, none were directly associated with Moody AFB (DAF, 2021).

A near miss Hazardous Air Traffic Reports (HATRs) is generally considered to be any circumstance in flight where the distance separating two aircraft is considered by either pilot to have constituted a hazardous situation involving a risk of collision.

For purposes of this EA, the primary concern for mid-air collisions or near misses would be associated with low-flying military aircraft and privately owned aircraft (primarily crop dusters) operating around proposed HLZ. There are no active agricultural parcels within one mile of HLZ-2 and HLZ-3, or within half a mile of HLZ-1, so crop duster hazards would be minimized.

### **Ground Safety**

Moody AFB currently conducts similar HLZ training activities described in the Proposed Action on a routine basis. These training operations are performed in accordance with applicable DAF safety regulations, published DAF technical orders, and standards prescribed by DAF Occupational Safety and Health requirements.

In case of a training mishap or other emergency (such as a fire), the Moody AFB fire department is available to respond. The unit has a sufficient number of trained and qualified personnel, and it possesses all equipment necessary to respond to accidents and fires. Additionally, Moody AFB has agreements with local fire departments should additional resources be required.

### **Ground Transportation**

Highway routes in the vicinity of the proposed actions include Interstate 75, U.S. Route 84, and State Routes 122, 125, 133, 221. The majority of traffic from Moody AFB to HLZ-1 would occur along State Route 122, with most traffic to HLZ-2 and HLZ-3 occurring along U.S. Route 221.

Ground transportation to the HLZs is serviced by a network of roadways for vehicular transportation of personnel. These areas are served by a network of existing paved and unpaved roads and parking areas. Transit to the HLZs requires the use of unpaved, sandy or dirt covered logging roads, therefore an offroad-capable vehicle may be required depending on weather conditions.

### **3.5.3 Environmental Consequences**

This section addresses the potential for the Proposed Action to increase flight and ground safety risks, as well as the DAF's capability to manage these risks. Impacts to aircraft and public safety would be considered significant if the ability to provide for safe operation of aircraft is diminished or uncontrollable safety hazards are introduced to risk military personnel, the public, or property.

#### **3.5.3.1 Proposed Action**

##### **Flight Safety**

Under the Proposed Action, there would be no change in the types of aircraft operating at Moody AFB, and the number of flight sorties would not increase. Additionally, all flight operations would continue to be performed within the current airspace environment. Consequently, no significant changes to potential for aircraft mishaps would be anticipated.

As discussed in **Section 3.5.2**, crop dusting occurs in the region, with crop duster aircraft operating from some airports near Moody AFB. Although these operations are not common, there is a potential for mid-air collisions or near misses associated with low-flying crop dusters and military aircraft, such as helicopters. There have been four near miss HATRs filed at Moody AFB during the last 10 years; however, none of these were associated with crop dusters (Goldsworthy, 2013).

The most advanced piece of mid-air collision avoidance equipment in the cockpit is the human eye. Since the number one cause of mid-air collisions is the failure to “see and avoid,” efficient use of visual techniques and knowledge of the eye’s limitations are crucial in helping to avoid collisions.

Crop dusters most commonly operate through a series of multiple low-passes above the target crop, with cross country transit limited to direct to-and-from flight from the airport of origin to the crop. Large acreage farms typically use crop-dusters to maximize efficiency in the application of pesticides. Upon review of aerial images and nearby property records, there are no significant agricultural operations within one mile of the subject properties (qPublic, 2023). The closest tower-operated airport to the HLZs is the Valdosta Regional Airport, located over 14 miles from HLZ-1, and 9 miles from HLZ-2 and HLZ-3. The Quitman-Brooks County Airport is located 8 and 11 miles from HLZ-2/HLZ3, and HLZ-1, respectively. A private airstrip is located 4 miles east of HLZ-1. Lack of proximity to higher traffic airports such as Valdosta Regional and Quitman-Brooks reduces the risk of encounter with crop dusters and other private aircraft (SkyVector, 2024).

To minimize the potential for mid-air collisions or near misses, Moody AFB would continue to implement its Mid-Air Collision Avoidance (MACA) Program, with a particular emphasis on local crop duster operations. This program is designed to help increase military pilot awareness of the training airspace and activities. Additionally, the MACA Program informs local airports with known crop duster operations of airspace, HLZ locations, and low-level flight areas.

### **Ground Safety**

*Pyrotechnics Use* - Ground-burst simulators and smoke cartridges would be employed as part of the proposed activities. Ground-burst simulators replicate the detonation of artillery and mortar projectiles or artillery-type rockets. They typically produce a high-pitched whistle that lasts two to four seconds, then detonate with a loud report and brilliant flash. Smoke cartridges are used by ground soldiers to signal aircraft. They are designed to produce a smoke cloud that lasts up to 30 seconds. The devices operate by burning and/or detonating a small pyrotechnic charge. Safety procedures are currently in place to prevent potential injuries associated with loud noises or with flying debris generated during detonation of these devices. The use of ground-burst simulators and smoke cartridges could also have an impact on ground safety in the form of an increased wildfire risk. To minimize the potential for fire, the use of these devices would be prohibited during high-risk fire days (e.g., very dry conditions and days with high winds). The Moody AFB fire department or local fire departments would be available to respond in case of fire caused by pyrotechnic devices.

*Air Drops* - Training operations may require the dropping of sandbags, water barrels, or rubber-containing barrels by aircraft to the HLZ area. To avoid the potential for injury to personnel on the ground, positive two-way communication would be established and maintained between the pilot

and personnel on the ground prior to any drops. Ground personnel directing aircraft to targets would also ensure that all personnel are well clear of the area and that target descriptions are clear and understood by the pilots.

### Ground Transportation

Proposed HLZ activities include the transportation of vehicles and personnel to HLZs via local roadways. All vehicular transportation would be accomplished in accordance with established traffic laws and safety requirements, including DAF Instruction 91-207, *The Traffic Safety Program*. Therefore, no safety impacts are anticipated from ground transportation.

### Safety Summary

The operations described are routinely conducted in and around Moody AFB at other HLZs. The Proposed Action would not negatively affect the ability to provide for safe operation of aircraft nor would it result in uncontrollable safety hazards to military personnel, the public, or property. Implementation of established procedures, including those presented above, would ensure that activities associated with the Proposed Action would not result in significant impacts to safety.

#### 3.5.3.2 No Action Alternative

Under the No Action Alternative, additional HLZs would not be acquired; however, current HLZ training operations at Moody AFB would continue. Consequently, no impacts other than those associated with current operations would be expected.

## 3.6 BIOLOGICAL/NATURAL RESOURCES

### 3.6.1 Definition of the Resource

Biological resources consist of vegetation, habitats, and animal species (wildlife and domestic species) that occur on and near the proposed HLZs, potentially including special status species. Special status species are defined as those plant and animal species listed as threatened or endangered or proposed as such by the USFWS and GADNR. The Federal Endangered Species Act of 1973 protects listed species against killing, harming, harassing, or any action that may damage their habitat.

### 3.6.2 Existing Conditions

The proposed HLZs occur in a regional setting consisting of forested natural areas and cleared, open parcels. Generally, the three HLZ sites, as identified in **Section 2.1**, are surrounded by larger tracts in various stages of silviculture development, without surface waters occurring within the site boundaries.

#### HLZ-1

HLZ-1 is an approximately 2.3-acre parcel located 12.3 miles northwest of Valdosta, Georgia. The parcel lies 15 miles west of Moody AFB. The area is cleared and has been recently maintained, with recently sown winter ground cover consisting of low planted herbaceous cover or row crops (e.g., food plot) at the time of the January 2023 reconnaissance. Adjacent parcels consist of active silviculture and are dominated by loblolly pine (*Pinus taeda*), with components of wax myrtle



(*Morella cerifera*), cabbage palmetto (*Sabal palmetto*), sweetgum (*Liquidambar styraciflua*), and greenbriers (*Smilax* spp.). The potential wetland area along the western property boundary included young loblolly pine with components of giant cane (*Arundinaria gigantea*).

Various wildlife species considered typical of south-central Georgia are expected to occur on or adjacent to HLZ-1. Areas of the site that are currently open and cleared of mature forest are anticipated to support a small number of species on a regular basis; including, but not limited to, rodents, rabbits, reptiles, and bird species. Other species may use these open portions temporarily while transiting between areas that contain early successional growth and old growth forests and areas of various silviculture developmental stages. Species that use the forest edge habitat, such as white-tailed deer (*Odocoileus virginianus*), feral hogs (*Sus scrofa*), and black bear (*Ursus americanus*), may forage within these areas. The proposed HLZ is surrounded by parcels that contain more mature forest, which are anticipated to contain a larger number of species and diversity of wildlife. Representative wildlife species that may occur in the area are listed in **Table 3-16**. Note that this species list is not exhaustive. No domestic livestock are known to be in the vicinity of HLZ-1.

**Table 3-16: Representative Wildlife Species Potentially Occurring on or in the Vicinity of the HLZs**

Species Common Name	Species Scientific Name
<b>Mammals</b>	
Coyote	<i>Canis latrans</i>
Eastern Cottontail Rabbit	<i>Sylvilagus floridanus</i>
Gray Squirrel	<i>Sciurus carolinensis</i>
Raccoon	<i>Procyon lotor</i>
Red Fox	<i>Vulpes vulpes</i>
Striped Skunk	<i>Mephitis mephitis</i>
White-tailed Deer	<i>Odocoileus virginianus</i>
<b>Birds</b>	
American Crow	<i>Corvus brachyrhynchos</i>
Bobwhite Quail	<i>Colinus virginianus</i>
Dove	<i>Zenaida macroura</i>
Wild Turkey	<i>Meleagris gallopavo</i>
<b>Reptiles</b>	
Black Racer Snake	<i>Coluber constrictor</i>
Coachwhip Snake	<i>Masticophis flagellum</i>
Common Garter Snake	<i>Thamnophis sirtalis</i>
Green Anole Lizard	<i>Anolis carolinensis</i>

Source: GADNR 2015.

Special status species are species that are federally- or state-listed as threatened, endangered, rare, or unusual. Species with the potential to occur within the HLZ-1 vicinity, based on species lists obtained from USFWS and GADNR (**Appendix E**), are included below in **Table 3-17**. It should be noted that USFWS species lists indicate that there are no Critical Habitat designations within HLZ-1.

Table 3-17: Special Status Species Potentially Occurring on or in the Vicinity of the HLZs.

Common Name	Scientific Name	Species Status	Listed Species		
			HLZ-1	HLZ-2	HLZ-3
<b>Birds</b>					
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BGEPA, ST	✓	✗	✓
Swallow-tailed Kite	<i>Elanoides forficatus</i>	SR	✓	✓	✗
Wood Stork	<i>Mycteria americana</i>	T, ST	✓	✓	✓
<b>Reptiles</b>					
Eastern Indigo Snake	<i>Drymarchon couperi</i>	T, ST	✓	✓	✓
Gopher Tortoise	<i>Gopherus polyphemus</i>	ST	✗	✓	✓
Suwannee Alligator Snapping Turtle	<i>Macrochelys suwanniensis</i>	PT, ST	✓	✓	✓
<b>Fish</b>					
Spotted Bullhead	<i>Ameiurus serrachanthus</i>	SR	✗	✓	✗
Suwannee Bass	<i>Micropterus notius</i>	SR	✗	✓	✗
<b>Insects</b>					
Monarch Butterfly	<i>Danaus plexippus</i>	C	✓	✓	✓
<b>Plants</b>					
Pondspice	<i>Litsea aestivalis</i>	SR	✗	✓	✗
Yellow Flytrap	<i>Sarracenia flava</i>	SU	✓	✓	✗

Sources: GADNR, 2023; USFWS, 2023.

BGEPA = Bald and Golden Eagle Protection Act; C = Federal Candidate Species; PT = Proposed as Federally Threatened; SR = State Rare; ST = State Threatened; SU = State Unusual; T = Federally Threatened; ✗ = Not Listed for the HLZ; ✓ = Listed for the HLZ.

A site reconnaissance of the HLZ sites was conducted on January 23, 2023. No threatened or endangered species or species of concern were observed within the project areas. The proposed HLZs are areas actively maintained and are currently cleared of overstory and midstory vegetation (e.g., maintained pastures/food plots that are plowed and planted). Therefore, although special status species may be found in the general vicinity or the periphery of the HLZs, occurrence within the HLZ is considered occasional and transitory.

As previously stated, the proposed HLZs are surrounded by larger tracts in various stages of silviculture development, while the HLZs themselves are cleared, open parcels (e.g., actively maintained pastures/food plots); no surface waters occur within the proposed HLZ sites. As a result, suitable habitats for many of the species do not occur within the Proposed Action areas. The following species are not anticipated to occur within the HLZs due to a lack of suitable habitat:

- Bald eagle – No suitable nesting trees or foraging habitats occur within HLZ-1;
- Swallow-tailed kite – The maintained upland HLZ sites do not represent suitable nesting or foraging habitat for the species that utilizes riparian and wetland habitats;
- Wood stork – HLZ-1 is located within one of the 13-mile radius wood stork core foraging areas (WCFA) as indicated in the USACE/USFWS Effects Determination Guidance for Endangered & Threatened Species (EDGES) guidance for wood storks in Georgia. However, the maintained upland HLZ site does not represent suitable nesting or foraging habitat for the species;
- Eastern indigo snake – Soils at HLZ-1 consist of Rains loamy sandy, which is not listed as a suitable soil for eastern indigo snake/gopher tortoise by USACE and USFWS in their EDGES. No gopher tortoises or burrows were observed onsite or in the vicinity during the January 2023 reconnaissance. GADNR does not indicate any documented

occurrence of the eastern indigo snakes within the USGS topographic quarter quadrangle for HLZ-1. Eastern indigo snakes are not anticipated to occur within the HLZ-1 vicinity.

- Suwannee alligator snapping turtle – No surface waters occur within the proposed HLZ;
- Monarch butterfly – the maintained nature of the HLZ sites do not represent suitable habitat. The site is maintained (i.e., mowed) so that herbaceous communities do not reach suitable maturity to become potential foraging habitat (i.e., goldenrods, asters, etc.) or breeding habitat (i.e., milkweeds); and
- Yellow flytrap – the upland HLZ site does not represent suitable habitat for the species that utilizes wet savannas, seepage slopes, and pond cypress swamps.

### HLZ-2

The HLZ-2 site is an approximately 2.0-acre parcel located 8 miles west of Valdosta, Georgia. The parcel lies 17 miles southwest of Moody AFB. The area is cleared and has been recently maintained, with recently sown winter ground cover consisting of low planted herbaceous cover or row crops (e.g., food plot) at the time of the January 2023 reconnaissance. The remaining herbaceous cover included broomsedge bluestem (*Andropogon virginicus*), dogfennel (*Eupatorium capillifolium*), and wild strawberry (*Fragaria* sp.). Adjacent parcels consist of active silviculture and are dominated by loblolly pine and slash pine (*Pinus elliotii*), with components of water oak (*Quercus nigra*), turkey oak (*Q. laevis*), live oak (*Q. virginiana*), wax myrtle, and cabbage palmetto. Observed wildlife/signs included white-tailed deer tracks, a nine-banded armadillo (*Dasypus novemcinctus*), and an inactive gopher tortoise burrow.

Various wildlife species considered typical of south-central Georgia are expected to occur on or adjacent to HLZ-2. Areas of the site that are currently open and cleared of mature forest are anticipated to support a small number of common species on a regular basis, while other species may use these open portions temporarily while transiting between areas that contain forested habitats. Representative wildlife species that may occur in the area are listed in **Table 3-16**. Note that this species list is not exhaustive. No domestic livestock are known to be in the vicinity of HLZ-2.

Special status species with the potential to occur within the HLZ-2 vicinity, based on species lists obtained from USFWS and GADNR (**Appendix E**), are included in **Table 3-17**. It should be noted that USFWS species lists indicate that there are no Critical Habitat designations within HLZ-2. A site reconnaissance of HLZ-2 was conducted on January 23, 2023. No threatened or endangered species or species of concern were observed within HLZ-2. The proposed HLZ areas are actively maintained and are currently cleared of overstory and midstory vegetation (e.g., maintained pastures/food plots that are plowed and planted). Therefore, although special status species may be found in the general vicinity or the periphery of HLZ-2, occurrence within the HLZ is considered occasional and transitory.

As previously stated, HLZ-2 is surrounded by larger tracts in various stages of silviculture development, while the HLZ is a cleared, open parcel (e.g., actively maintained pastures/food plots); no surface waters occur within HLZ-2. As a result, suitable habitats for many of the species do not occur within HLZ-2. The following species are not anticipated to occur within HLZ-2 due to a lack of suitable habitat:

- Swallow-tailed kite – The maintained upland does not represent suitable nesting or foraging habitat for the species that utilizes riparian and wetland habitats;
- Wood stork – HLZ-2 is located within one of the 13-mile radius WCFA as indicated in the EDGES guidance. However, the maintained upland HLZ site does not represent suitable nesting or foraging habitat for the species;
- Suwannee alligator snapping turtle, spotted bullhead, and Suwannee bass – No surface waters occur within HLZ-2;
- Monarch butterfly – the maintained nature of the HLZ site does not represent suitable habitat. The site is maintained (i.e., mowed) so that herbaceous communities do not reach suitable maturity to become potential foraging habitat or breeding habitat;
- Pondspice – the upland HLZ site does not represent suitable habitat for the species that utilizes swamps, cypress ponds, sandhill depression ponds, and Carolina bays; and
- Yellow flytrap – the upland HLZ site does not represent suitable habitat for the species that utilizes wet savannas, seepage slopes, and pond cypress swamps.

Soils at HLZ-2 consist of Mascotte sand, which is not listed as a suitable soil for eastern indigo snake/gopher tortoise by USACE and USFWS. However, an inactive gopher tortoise burrow was observed in the southwest corner of the site during the January 2023 reconnaissance, while two inactive burrows were also observed offsite along forest roads in the vicinity of HLZ-2. However, burrow locations may change over time, so although inactive burrows were noted, individual burrow locations are likely different. As a result, gopher tortoise and eastern indigo snake may occur in the vicinity of HLZ-2. It should also be noted that GADNR does not indicate any documented occurrence of the eastern indigo snakes within the USGS topographic quarter quadrangle for HLZ-2.

### HLZ-3

HLZ-3 site is an approximately 2.5-acre parcel located 8 miles west of Valdosta, Georgia. The parcel lies 17 miles southwest of Moody AFB. The area is cleared and has been recently maintained, with recently sown winter ground cover consisting of low planted herbaceous cover or row crops (e.g., food plot) at the time of the January 2023 reconnaissance. The remaining herbaceous cover included broomsedge bluestem, dogfennel, and wild strawberry. Adjacent parcels consist of active silviculture and are dominated by loblolly pine and water oak, with components of live oak and wax myrtle. Observed wildlife include white-tailed deer tracks, and an eastern cottontail rabbit (*Sylvilagus floridanus*).

Various wildlife species considered typical of south-central Georgia are expected to occur on or adjacent to HLZ-3. Areas of the site that are currently open and cleared of mature forest are anticipated to support a small number of common species on a regular basis, while other species may use these open portions temporarily while transiting between areas that contain forested habitats. Representative wildlife species that may occur in the area are listed in **Table 3-16**. Note that this species list is not exhaustive. No domestic livestock are known to be in the vicinity of HLZ-3.

Special status species with the potential to occur within the HLZ-3 vicinity, based on species lists obtained from USFWS and GADNR (**Appendix E**), are included above in **Table 3-17**. It should be noted that USFWS species lists indicate that there are no Critical Habitat designations within HLZ-3. A site reconnaissance of HLZ-3 was conducted on January 23, 2023. No threatened or

endangered species or species of concern were observed within HLZ-3. The proposed HLZ areas are actively maintained and are currently cleared of overstory and midstory vegetation (e.g., maintained pastures/food plots that are plowed and planted). Therefore, although special status species may be found in the general vicinity or the periphery of HLZ-3, occurrence within the HLZ is considered occasional and transitory.

As previously stated, the HLZ-3 is surrounded by larger tracts in various stages of silviculture development, while the HLZ is a cleared, open parcel (e.g., actively maintained pastures/food plots); no surface waters occur within HLZ-3. As a result, suitable habitats for many of the species do not occur within HLZ-3. The following species are not anticipated to occur within HLZ-3 due to a lack of suitable habitat:

- Bald eagle – No suitable nesting trees or foraging habitats occur within HLZ-3;
- Wood stork – HLZ-3 is located within one of the 13-mile radius WCFA as indicated in the EDGES guidance. However, the maintained upland HLZ site does not represent suitable nesting or foraging habitat for the species;
- Suwannee alligator snapping turtle – No surface waters occur within HLZ-3; and
- Monarch butterfly – the maintained nature of the HLZ site does not represent suitable habitat. The site is maintained (i.e., mowed) so that herbaceous communities do not reach suitable maturity to become potential foraging habitat or breeding habitat.

Soils at HLZ-3 consist of Lakeland sand, which are classified as “best” suitability for use by gopher tortoise and eastern indigo snake in the USACE/USFWS EDGES guidance. No gopher tortoises or burrows were observed onsite during the January 2023 reconnaissance; however, two inactive burrows were observed offsite along forest roads in the vicinity of HLZ-3. However, burrow locations may change over time, so although inactive burrows were noted, individual burrow locations are likely different. As a result, gopher tortoise and eastern indigo snake may occur in the vicinity of HLZ-3. It should also be noted that GADNR does not indicate any documented occurrence of the eastern indigo snakes within the USGS topographic quarter quadrangle for HLZ-3.

### 3.6.3 Environmental Consequences

Impacts are evaluated for vegetation, wildlife species, and protected species. Activities would not affect aquatic habitats. The methodology begins with identification of areas where resource occurrence overlaps the direct and indirect project footprint. The animal and plant resources potentially affected are identified based on habitat type and previous documented occurrence. Impacts are evaluated for significance based on the potential for long-term effects resulting from ground activities and air training. The greatest potential for impacts would result from noise, including aircraft overflights, small arms use, and ground-burst simulator use.



3.6.3.1 Proposed Action

HLZ-1

Overall, there would be no significant adverse impacts to wildlife or protected species. Consultation with the USFWS is pending. Concurrence from the USFWS is anticipated due to the analysis of potential impacts to wildlife as presented in this EA demonstrated “no effect” on federally listed species, due to a lack of suitable habitats, with the exception of eastern indigo snake and gopher tortoise, which has a “may affect, not likely to adversely affect” determination (Table 3-18).

**Table 3-18: Special Status Species Determinations for the Proposed Action.**

Common Name	Scientific Name	Potential Effect		
		HLZ-1	HLZ-2	HLZ-3
Bald Eagle	<i>Haliaeetus leucocephalus</i>	NE	--	NE
Swallow-tailed Kite	<i>Elanoides forficatus</i>	NE	NE	--
Wood Stork	<i>Mycteria americana</i>	NE	NE	NE
Eastern Indigo Snake	<i>Drymarchon couperi</i>	NE	NLAA	NLAA
Gopher Tortoise	<i>Gopherus polyphemus</i>	--	NLAA	NLAA
Suwannee Alligator Snapping Turtle	<i>Macrochelys suwanniensis</i>	NE	NE	NE
Spotted Bullhead	<i>Ameiurus serrachanthus</i>	--	NE	--
Suwannee Bass	<i>Micropterus notius</i>	--	NE	--
Monarch Butterfly	<i>Danaus plexippus</i>	NE	NE	NE
Pondspice	<i>Litsea aestivalis</i>	--	NE	--
Yellow Flytrap	<i>Sarracenia flava</i>	NE	NE	--

Sources: GADNR, 2023; USFWS, 2023.

NE = No Effect; NLAA = Not Likely to Adversely Affect; -- = Not Applicable.

As stated previously, inactive gopher tortoise burrows were noted in the vicinity of HLZ-2 and HLZ-3, while no burrows or suitable soils were noted in the vicinity of HLZ-1. Therefore, although eastern indigo snakes may be found in the general vicinity, or the periphery of HLZ-2 and HLZ-3, potential occurrence within the HLZ-2 and HLZ-3 is considered occasional and transitory. In addition, the likelihood of occurrence is low, as GADNR does not indicate documented occurrences of the eastern indigo snake within the USGS topographic quarter quadrangles for HLZ-1, HLZ-2 or HLZ-3. No gopher tortoise burrows are anticipated to occur within the maintained areas of the HLZs. Should tortoises or active burrows be observed within an HLZ, Moody AFB would survey and coordinate with GADNR to relocate captured gopher tortoise either to state-owned property or to private property with conservation easements.

There would be no construction, tree clearing, or other substantial ground disturbance associated with the Proposed Action, and thus no effect to vegetation due to these activities. Potential impacts to vegetation would be limited to quarterly mowing by the property owner, helicopter rotor wash, movement and placement of personnel and equipment during training events, and helicopter landings. These events would likely result in only minimal, temporary damage to vegetation. Training involving ground activities would occur infrequently at any given HLZ, and helicopter touchdowns would occur within mowed and maintained areas.

Wildlife could be affected by ground activities, rotor wash, visual perception of aircraft, and noise associated with aircraft overflights and munitions use. Ground training would involve a relatively small number of people (approximately 10), so the presence and movement of personnel and equipment would result in only minor and temporary disturbance to animal species located near the activities.

Rotor wash could damage wildlife such as birds or bird nests if present at areas where helicopter landings or low-altitude hovering occurs. However, the number of individuals affected would likely be small and would result in no overall significant effects to populations. In addition, wildlife would likely leave areas near the landing point when noise from an approaching or departing aircraft occurred.

Short-term startle effects due to visual sightings of aircraft could cause temporary displacement of individuals inhabiting areas surrounding the HLZs. However, animal species would likely habituate to aircraft presence over time, given the ongoing tempo of day-to-day training. Long-term reactions or significant behavior modifications are not expected from visual aircraft sightings.

Animal species, including wildlife and protected species, could be affected by noise associated with aircraft overflights, helicopter landings, and munitions use. The potential effects of aircraft overflight on animals have been investigated to varying degrees, depending on the species. A substantial literature synthesis report was compiled and published in 1988 as a cooperative effort between the USFWS and the Air Force Engineering and Services Center at Tyndall AFB, Florida (Manci et al., 1988). A review of available literature of the effects of aircraft noise on domestic animals (among other types of animals) was provided by NoiseQuest (NoiseQuest, 2013). The following information is derived from these sources, except where otherwise noted.

Animal response to aircraft noise is influenced by variables such as aircraft size, speed, proximity, and engine noise level, among others. In addition, response may differ according to aircraft type (fixed-wing versus rotor-wing). Noise effects may be categorized as primary, secondary, and tertiary. Primary effects include direct physical auditory impacts such as eardrum rupture and hearing threshold shifts. Secondary effects include stress, behavioral changes, and decreased ability to perform functions such as obtaining food. Tertiary effects include population decline and habitat destruction. Stress and associated behavioral changes may be among the more commonly observed effects of noise. A sudden or unfamiliar sound may act as an alarm, activating the sympathetic nervous system and triggering short-term physiological reactions (fight-or-flight response). These reactions cause energy reserves to be used, may interrupt important behaviors, and may result in injury (trampling, etc.). Conversely, wildlife may become habituated to repeated noise and show no observable response over time. While birds, small mammals, and reptiles may experience noise and associated effects to varying degrees, such species occurrences are expected to be insignificant based on the condition of the HLZs (i.e., disturbed and maintained cleared areas) and the extent of use under the Proposed Action. Domestic livestock near HLZ locations would be a concern, but no livestock are known to be located near the proposed HLZs.

Sound levels below 90 dB usually result in substantially less adverse behavior. Similar to the discussion of animals in general, the 90 dB noise level may be considered a reasonable indicator of potential effects. Noise levels produced by aircraft at various altitudes and distances from the source, as well as by munitions, are presented in **Section 3.2.3**. In the following subsections, these noise levels are evaluated in the context of biological noise receptors located on and near the HLZs. Noise receptors include wildlife species. It may be assumed that a greater number and diversity of

wildlife species could occur in natural, wooded areas as compared to more developed or cleared sites. The proposed HLZ sites have wooded habitat located directly adjacent to the sites.

### **Aircraft Use**

Noise produced by aircraft overflights and helicopter hovering would likely disturb wildlife on the HLZs and the nearby vicinity. The potential for impacts due to overflights would be greater than that associated with hovering. Birds may react by exhibiting a startle response. Based on previous studies and depending on the species and type of activity at the time of exposure, response could range from simply looking toward the aircraft to flushing (and associated energy expenditure) or other effects such as interruptions of nesting or breeding and abandonment of young. Raptors would probably have the least potential for behavioral reactions, while waterfowl and some passerines would be more likely to be affected.

To minimize potential impacts to protected species and/or sensitive habitats and per existing consultation agreements with USFWS, wood stork rookeries and bald eagle nests would be avoided by 1 lateral mile. No bald eagle nests or wood stork rookeries are known to occur within or in the immediate vicinity of the HLZs. The three HLZ sites are located within a WCFA; however, the HLZs do not represent suitable foraging habitat for wood storks.

Low-level flights would likely disturb or cause a startle reaction in mammal species. Although the effects on some comparatively large mammals specifically found in the area (e.g., white-tailed deer, Florida black bears, etc.) are uncertain, it may be assumed that noise levels greater than 90 dB would cause at least some behavioral reaction such as freezing or fleeing. Various effects, including startle effects and potential changes in habitat use, could occur in smaller mammal predators such as coyotes and foxes. Although effects to small mammals such as squirrels, mice, and rats have been suggested at noise levels from 69 to 115 dBA, based on discussion provided in DAF (2001), the effects are likely to be small.

In general, although wildlife species may exhibit startle or escape responses to aircraft overflight, these responses are not necessarily detrimental long-term to a species, nor is reaction to aircraft noise alone enough to imply adverse effect. Animals react to a variety of external stimuli. Most affected individuals would likely resume normal activities soon after training events are completed. Low-level aircraft flight noise is not expected to significantly affect the overall health or viability of wildlife populations.

### **Munitions Use / Ground Training**

Wildlife could also be disturbed by noise produced during small arms fire and the use of ground-burst simulators. Individuals could be startled by the firing of 5.56-mm and 7.62-mm inert rounds, with reactions similar to those described for overflight noise. The 7.62-mm rounds would be the more impactful of the two sizes, producing noise levels of 102 dB at 1,000 ft from the firing point. However, most animals in the immediate vicinity of ground training operations would be aware of human presence and may move some distance away before munitions were fired, thus exposing fewer individuals to noise effects. Ground-burst simulators would produce substantially greater noise levels, potentially resulting in physiological harm (hearing effects) or behavioral effects. Although it is assumed that the simulators would be placed in open areas, where species numbers would be smaller compared to natural areas, noise would propagate for some distance, with the 96 dB level extending for 6,000 ft. This would potentially affect wildlife occurring well outside the HLZ boundaries.

Several factors could limit the degree of potential noise-related impacts to wildlife species. First, the training tempo would not be intense. Assuming that day-to-day training occurs twice per week (although up to six times per week is possible), helicopters would typically operate at and near the HLZs for about one to four hours per week. Large force training exercises would add to the noise and human presence at the HLZs, but these activities would occur only twice per month on average. In addition, training exercises would rotate through different HLZs. Such a schedule reduces the likelihood that any given individual animal would be regularly exposed to substantial noise levels.

### Impact Summary

Individuals may become habituated to training-related noise. In many studies, various species have demonstrated habituation to some degree. A substantial amount of hunting occurs in the areas in applicable seasons, so that gunfire is not a novel stimulus for at least some individuals. The likelihood of impacts would be reduced by the presumed tendency for at least some animals to move away from human presence and activity before loud noises occur.

In summary, anthropogenic noise would likely disturb wildlife species, resulting in various startle effects. Ground-burst simulator use could result in physiological effects such as hearing threshold shift if an animal were located near the noise source. Although it is possible that some individuals would avoid the HLZ long-term, in general, effects are expected to be temporary and not detrimental to overall animal populations. Large areas of similar habitat are available outside the affected area. Based on the significance thresholds identified in **Section 3.6.3.1**, there would be no significant impacts to biological resources at any of the HLZs associated with implementation of the Proposed Action.

### HLZ-2

Overall, there would be no significant adverse impacts to wildlife or protected species. Consultation with the USFWS is pending. Concurrence from the USFWS is anticipated due to the analysis of potential impacts to wildlife as presented in this EA demonstrated “no effect” on federally listed species, due to a lack of suitable habitats, with the exception of eastern indigo snake and gopher tortoise, which has a “may affect, not likely to adversely affect” determination (**Table 3-18**).

As stated previously, inactive gopher tortoise burrows were noted in the vicinity of HLZ-2. Therefore, although eastern indigo snakes may be found in the general vicinity, or the periphery of HLZ-2, potential occurrence within HLZ-2 is considered occasional and transitory. In addition, the likelihood of occurrence is low, as GADNR does not indicate documented occurrences of the eastern indigo snake within the USGS topographic quarter quadrangles for HLZ-2. No gopher tortoise burrows are anticipated to occur within the maintained area of the HLZ. Should tortoises or active burrows be observed within the HLZ, Moody AFB would survey and coordinate with GADNR to relocate captured gopher tortoise either to state-owned property or to private property with conservation easements.

The potential impacts to vegetation and wildlife from the Proposed Action at HLZ-2, including aircraft usage, munitions usage, and ground training and would be the same as those described above for HLZ-1.

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### HLZ-3

Overall, there would be no significant adverse impacts to wildlife or protected species. Consultation with the USFWS is pending. Concurrence from the USFWS is anticipated due to the analysis of potential impacts to wildlife as presented in this EA demonstrated “no effect” on federally listed species, due to a lack of suitable habitats, with the exception of eastern indigo snake and gopher tortoise, which has a “may affect, not likely to adversely affect” determination (**Table 3-18**).

As stated previously, inactive gopher tortoise burrows were noted in the vicinity of HLZ-3. Therefore, although eastern indigo snakes may be found in the general vicinity, or the periphery of HLZ-3, potential occurrence within HLZ-3 is considered occasional and transitory. In addition, the likelihood of occurrence is low, as GADNR does not indicate documented occurrences of the eastern indigo snake within the USGS topographic quarter quadrangles for HLZ-3. No gopher tortoise burrows are anticipated to occur within the maintained areas of the HLZ. Should tortoises or active burrows be observed within the HLZ, Moody AFB would survey and coordinate with GADNR to relocate captured gopher tortoise either to state-owned property or to private property with conservation easements.

The potential impacts to vegetation and wildlife from the Proposed Action at HLZ-3, including aircraft usage, munitions usage, and ground training and would be the same as those described above for HLZ-1.

#### 3.6.3.2 No Action Alternative

Under the No Action Alternative, the HLZs would not be established. There would be no associated impacts to vegetation, wildlife, or protected species. There would be no change relative to existing conditions, and thus no significant impacts to biological resources as a result of the No Action Alternative.

## **3.7 SOCIOECONOMIC RESOURCES/ENVIRONMENTAL JUSTICE**

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

#### **Socioeconomics**

Socioeconomic resources typically consider population, income, employment, housing, and community services. This section discusses the socioeconomic resources that have the potential to be impacted by activities associated with the Proposed Action occurring on and surrounding the HLZs. No new personnel or construction activities that would impact population, employment, or housing are anticipated as part of the Proposed Action.

#### **Environmental Justice**

Concern that certain disadvantaged communities may bear a disproportionate share of adverse health and environmental effects compared with the general population led to the enactment in 1994 of EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This EO directs federal agencies to address disproportionate environmental and human-health effects in minority and low-income communities. A wide range of demographic descriptors were evaluated using the EPA’s Environmental Justice Screening and Mapping Tool, EJScreen, to represent the “social vulnerability” characteristics of a

disadvantaged population. EJScreen uses demographic factors as general indicators of a community's potential susceptibility to the types of environmental factors included in this screening tool. The "Demographic Index" in EJScreen is created by averaging the percentages of the two demographic indicators that were explicitly named in EO 12898, low-income and minority.

In addition, 32 CFR 989, Environmental Impact Analysis Process, addresses the need for consideration of environmental justice issues in compliance with NEPA. EO 12898 applies to federal agencies conducting activities that could substantially affect human health or the environment.

The evaluation of environmental justice is designed to:

- Focus attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities with the goal of achieving environmental justice.
- Foster nondiscrimination in federal programs that may substantially affect human health or the environment.
- Give minority communities and low-income communities greater opportunities for public participation in, and access to, public information on matters relating to human health and the environment.

Environmental justice analysis also addresses the protection of children, as required by EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, issued in 1997 to identify and address issues that affect children. According to the EO, all federal agencies must assign a high priority to addressing health and safety risks to children, to coordinating research priorities on children's health, and to ensuring that their standards take into account special risks to children. The EO states "...'environmental health risks and safety risks' mean risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to)". Concerns about environmental justice and protection of children related to aircraft training and munitions usage typically include exposure to noise, pollutants, other hazardous materials, and safety hazards.

### 3.7.2 Existing Conditions

#### Socioeconomics

The three proposed HLZs are located on privately owned land in rural areas within Brooks and Lowndes Counties in Georgia. These two counties comprise the ROI. **Table 3-19** describes select socioeconomic features of the subject counties and state.



**Table 3-19: Georgia Socioeconomic Data**

County	Population	Median Household Income	Civilian Labor Force	Total Employment	Unemployment Rate (2021)
Brooks County	16,253	\$39,770	54.4%	1,986	7%
Lowndes County	119,739	\$48,703	56.4%	40,985	6%
Georgia <sup>1</sup>	68,634	\$65,030	62.9%	25,373	6%
United States <sup>2</sup>	106,041	\$69,021	63.1%	40,836	6%

Source: USCB, 2023; USEPA, 2023

Note: 1 – Average Georgia County; 2 – Average U.S. County

The areas surrounding the HLZs are considered rural and low density. The parcels in which the HLZs are located, and the majority of the adjoining parcels, are classified as either conservation or agricultural. None of the HLZ parcels are classified as residential.

**Environmental Justice**

**Table 3-20** lists the Demographic Index, percentage low-income and youth populations, and per capita income against the community of comparison (COC) results. The COC values represent the percentages of minority and low-income populations within a geographic extent representing the ROI. Locations where the area of concern (AOC) percentages are greater than the COC percentages are identified as having potential environmental justice concerns. Typically, countywide percentages have been used for the AOC and statewide percentages for the COC. As indicated in **Table 3-19** and **3-20**, all of the counties have a higher demographic index than state averages (more minority and low income), and a lower per capita income.

**Table 3-20: Georgia Environmental Justice Data**

County	Population	Demographic Index	Low Income	Youth	Per Capita Income
Brooks County	16,253	48%	51%	21.1%	\$27,821
Lowndes County	119,739	45%	44%	24.3%	\$25,033
Georgia <sup>1</sup>	68,634	41%	34%	23.0%	\$34,516
United States <sup>2</sup>	106,041	35%	31%	21.7%	\$37,638

Source: USCB, 2023; USEPA, 2023

Note: 1 – Average Georgia County; 2 – Average U.S. County

**3.7.3 Environmental Consequences**

Impacts are evaluated for socioeconomic resources and environmental justice. Impacts are evaluated for significance based on the potential for long-term effects resulting from ground activities and air training. The greatest potential for impacts would result from noise, including aircraft overflights, small arms use, and ground-burst simulator use. As well as loss of agricultural land.

### 3.7.3.1 Proposed Action

#### **Socioeconomics**

Implementation of the Proposed Action components would not disrupt or divide established communities. Additionally, there would be no impacts to the socioeconomics of the region surrounding the HLZs, as no significant developments would take place. No populations (minority, low-income, or otherwise) would be disproportionately impacted. Therefore, no significant direct or impacts are expected to local or regional socioeconomics.

#### **Environmental Justice**

Noise impacts from the Proposed Action would not affect known minority or low-income populations as the parcels in which the HLZs are located, and the majority of the adjoining parcels, are not located near noise-sensitive receptors. Additionally, vegetation surrounding the HLZs provides natural sound attenuation, further decreasing the potential for noise-related impacts. Given that no minority or low-income populations would have access to or be within the HLZ properties, minority or low-income populations would not be disproportionately impacted by the Proposed Action, and there would be no significant impacts to environmental justice.

### 3.7.3.2 No Action Alternative

Under the No Action Alternative, the HLZs would not be established. There would be no associated impacts to the socioeconomics resources or environmental justice of the region. There would be no change relative to existing conditions, and thus no significant impacts as a result of the No Action Alternative.

## **3.8 CUMULATIVE EFFECTS**

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

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

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

### 3.8.1 Relevant Past, Present, and Foreseeable Future Actions

Since there are no construction or land disturbing activities associated with the Proposed Action, actions most relevant to the cumulative impact analysis are associated with continued use of the proposed parcels by current landowners. Past, present, and reasonably foreseeable actions at these locations are generally continued use under current circumstances, which consist of silvicultural and recreational activities by the respective landowners.

### 3.8.2 Magnitude and Significance of Cumulative Effects

#### Noise

Noise levels beneath special use training airspace have increased slightly in recent years as a result of increases in sortie-operations tempo. This increase and resulting noise impacts are described in the EA Addressing the Expansion of Sortie-Operations at Moody AFB, GA (DAF, 2012). Within the context of the special use training airspace, there would be no increase in sorties under the Proposed Action or associated overall increases in noise associated with the Proposed Action. Therefore, implementation of the Proposed Action would not incrementally contribute to the noise environment associated with other past, present, or reasonably foreseeable future actions within the ROI and no cumulative impacts have been identified.

#### Air Quality

Estimated emissions generated by the Proposed Action would be minor and below regulatory thresholds and would not contribute significantly to adverse cumulative effects on air quality. No past, present, or reasonably foreseeable projects have been identified that would have substantial cumulative effects on air quality when combined with the Proposed Action. Therefore, cumulative effects on air quality would be minor. No significant impacts would occur.

#### Water Resources

No significant cumulative impacts to water resources are expected because the Proposed Action will not significantly impact these resources. When combined with past, present, and future projects, adverse cumulative impacts are not expected because avoidance, minimization, and mitigation measures would be employed for each project as directed by state and federal regulations.

#### Safety and Occupational Health

There would be no appreciable safety-related impacts associated with the Proposed Action; potential safety impacts are similar to those currently associated with training activities occurring within the ROI, and there would be no overall increase in training operations. Implementation of the Proposed Action would not incrementally contribute to safety impacts associated with other past, present, or reasonably foreseeable future actions within the ROI. Consequently, no cumulative impacts have been identified.

#### Biological/Natural Resources

There would be no significant cumulative impacts to biological resources resulting from the proposed actions. Establishment of three new HLZs would not result in new training scenarios or increase the amount of training conducted by Moody AFB. Similar training occurs under existing conditions at other HLZs. The new HLZ would be established only to allow more realistic training and to alleviate scheduling conflicts. Although specific locations would differ, the types of

biological resources potentially affected would be similar to those associated with current training. Implementation of the Proposed Action would not incrementally contribute to impacts associated with other past, present, or reasonably foreseeable future actions within the ROI, such as hunting or agricultural use, and no cumulative impacts to biological resources have been identified.

**Socioeconomic Resources/Environmental Justice**

No impacts to socioeconomic resources or environmental justice areas of concern have been identified. Therefore, implementation of the Proposed Action would not incrementally contribute to socioeconomic/environmental justice impacts associated with other past, present, or reasonably foreseeable future actions within the ROI and no cumulative impacts have been identified.

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**4.0 LIST OF PREPARERS**

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Serena Scott Nicklaus Engineering, Inc.	B.A. Political Science, B.A. Sustainability Studies M.P.S. Coastal Zone Management	Project Scientist	4



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DRAFT ENVIRONMENTAL ASSESSMENT

Environmental Assessment  
Persons and Agencies Consulted/Coordinated

Development of Additional HLZs  
Moody AFB, Georgia

5.0 PERSONS AND AGENCIES CONSULTED/COORDINATED

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Gregory Lee	Moody AFB Natural/Cultural Resources Manager
MSgt John Rosenberg	347 OSS/OSK Tactics Superintendent
Maj Dirksen	347 OSS/OSK HH-60 Pilot
Lt Col Cuddy	347 OSS/OSK Commander
Ron Durbin	23 CES/CEIAP
Stevie Wells	23 CES/CEIAP
Landowner 1	Lowndes County HLZ-1 Landowner
Landowner 2	Lowndes County HLZ-2 Landowner
Landowner 3	Lowndes County HLZ-3 Landowner
U.S. Fish and Wildlife Service, Georgia	
Georgia Environmental Protection Division	
Georgia Wildlife Resources Division	
Georgia Department of Community Affairs	
Georgia Department of Transportation	
South Georgia Regional Planning Council	
Brooks County Commission, District 2	
Brook County Planning and Zoning, District 2	
Brooks County Commission, District 5	
Brook County Planning and Zoning, District 5	
Brooks County Commission, County Administrator	
Lowndes County Commission County Manager	
Lowndes County Commission Chairman	
Lowndes County Planner	
Seminole Nation of Oklahoma	
Coushatta Tribe of Louisiana	
Muscogee Nation of Florida	
Kialegee Tribal Town	
Thlopthlocco Tribal Town	
Muscogee (Creek) Nation	
Poarch Band of Creek Indians	

**DRAFT ENVIRONMENTAL ASSESSMENT**

**Environmental Assessment  
Persons and Agencies Consulted/Coordinated**

**Development of Additional HLZs  
Moody AFB, Georgia**

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Environmental Assessment  
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Moody AFB, Georgia

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**APPENDICES**



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**Environmental Assessment  
Appendix A**

**Development of Additional HLZs  
Moody AFB, Georgia**

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**APPENDIX A: PUBLIC, TRIBAL, AND AGENCY REVIEWS,  
COMMENTS, AND CONSULTATIONS**

## Tribal Coordination

**ENVIRONMENTAL ASSESSMENT**

**Environmental Assessment  
Appendix A**

**Development of Additional HLZs  
Moody AFB, Georgia**

<b>Name/Title/Organization</b>	<b>Comments</b>
<p><b>The Muscogee (Creek) Nation</b> David Hill, Principal Chief Corain Lowe-Zepeda, THPO</p>	<p>Request for tribal consultation sent to the Muscogee (Creek) Nation via certified mail (DATE) and via email (DATE), including letter signed by Installation Commander.</p>
<p><b>Poarch Band of Creeks</b> Stephanie Bryan, Tribal Chair Larry Haikey, THPO</p>	<p>Request for tribal consultation sent to Poarch Band of Creeks via certified mail (DATE) and via email (DATE), including letter signed by Installation Commander.</p>
<p><b>Coushatta Tribe of Louisiana</b> David Sickey, Chairman Linda Langley, THPO</p>	<p>Request for tribal consultation sent to Coushatta Tribe of Louisiana via certified mail (DATE) and via email (DATE), including letter signed by Installation Commander.</p>
<p><b>Kialegee Tribal Town</b> Brian Givens, Mekko David Cook, Cultural Preservation Officer</p>	<p>Request for tribal consultation sent to Kialegee Tribal Town via certified mail (DATE) and via email (DATE), including letter signed by Installation Commander.</p>
<p><b>Thlopthlocco Tribal Town</b> Ryan Morrow, Town King (Mekko) David Frank, THPO</p>	<p>Request for tribal consultation sent to Thlopthlocco Tribal Town via certified mail (DATE) and via email (DATE), including letter signed by Installation Commander.</p>
<p><b>Muscogee Nation of Florida</b> Ms. Ann Denson Tucker, Chairwoman</p>	<p>Request for tribal consultation sent to Muscogee Nation of Florida via certified mail (DATE) and via email (DATE), including letter signed by Installation Commander.</p>
<p><b>Seminole Nation of Oklahoma</b> Ben Yahola, THPO</p>	<p>Request for tribal consultation sent to Seminole Nation of Oklahoma via certified mail (DATE) and via email (DATE), including letter signed by Installation Commander.</p>



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

Colonel Paul E. Sheets  
Commander  
23d Wing  
23 Flying Tiger Way  
Bldg 105, Suite 1  
Moody AFB GA 31699

Chairwoman Ann Denson Tucker  
Muscogee Nation of Florida  
278 Church Road  
Bruce FL 32455

Dear Chairwoman Tucker

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Sincerely



PAUL E. SHEETS, Colonel, USAF  
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HEADQUARTERS 23D WING (ACC)  
MOODY AIR FORCE BASE GEORGIA

Colonel Paul E. Sheets  
Commander  
23d Wing  
23 Flying Tiger Way  
Bldg 105, Suite 1  
Moody AFB GA 31699

Principal Chief David Hill  
Muscogee (Creek) Nation  
P.O. Box 580  
Okmulgee OK 74447

Dear Principal Chief Hill

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MOODY AIR FORCE BASE GEORGIA

Colonel Paul E. Sheets  
Commander  
23d Wing  
23 Flying Tiger Way  
Bldg 105, Suite 1  
Moody AFB GA 31699

Chairman Jonathan Cernek  
Coushatta Tribe of Louisiana  
P.O. Box 818  
Elton LA 70532

Dear Chairman Cernek

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Colonel Paul E. Sheets  
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23 Flying Tiger Way  
Bldg 105, Suite 1  
Moody AFB GA 31699

Principal Chief Lewis Johnson  
Seminole Nation of Oklahoma  
P.O. Box 1498  
Wewoka OK 74884

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Bldg 105, Suite 1  
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Town King Ryan Morrow  
Thlopthlocco Tribal Town  
P.O. Box 188  
Okemah OK 74859

Dear Town King Morrow

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23 Flying Tiger Way  
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Moody AFB GA 31699

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

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Commander  
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23 Flying Tiger Way  
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Moody AFB GA 31699

Town King Brian Givens  
Kialegee Tribal Town  
P.O. Box 332  
Wetumka, OK 74884

Dear Town King Givens

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*Attack • Rescue • Prevail ~ Tigers Lead!*

Pursuant to Section 106 of the NHPA, and consistent with Air Force Instruction 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 areas of potential effects for this proposed undertaking. Additionally, the DAF 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 DAF 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. Lorence Busker at 23 CES/CEIE, 3485 Georgia Street, Moody AFB GA 31699 or via email to [lorence.busker@us.af.mil](mailto:lorence.busker@us.af.mil) within 30 days of receipt of this letter to ensure the DAF has sufficient time to fully consider them when preparing the Draft EA. 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. Busker can be reached at (229) 257-2396. Thank you in advance for your assistance in this effort.

Sincerely



PAUL E. SHEETS, Colonel, USAF  
Commander

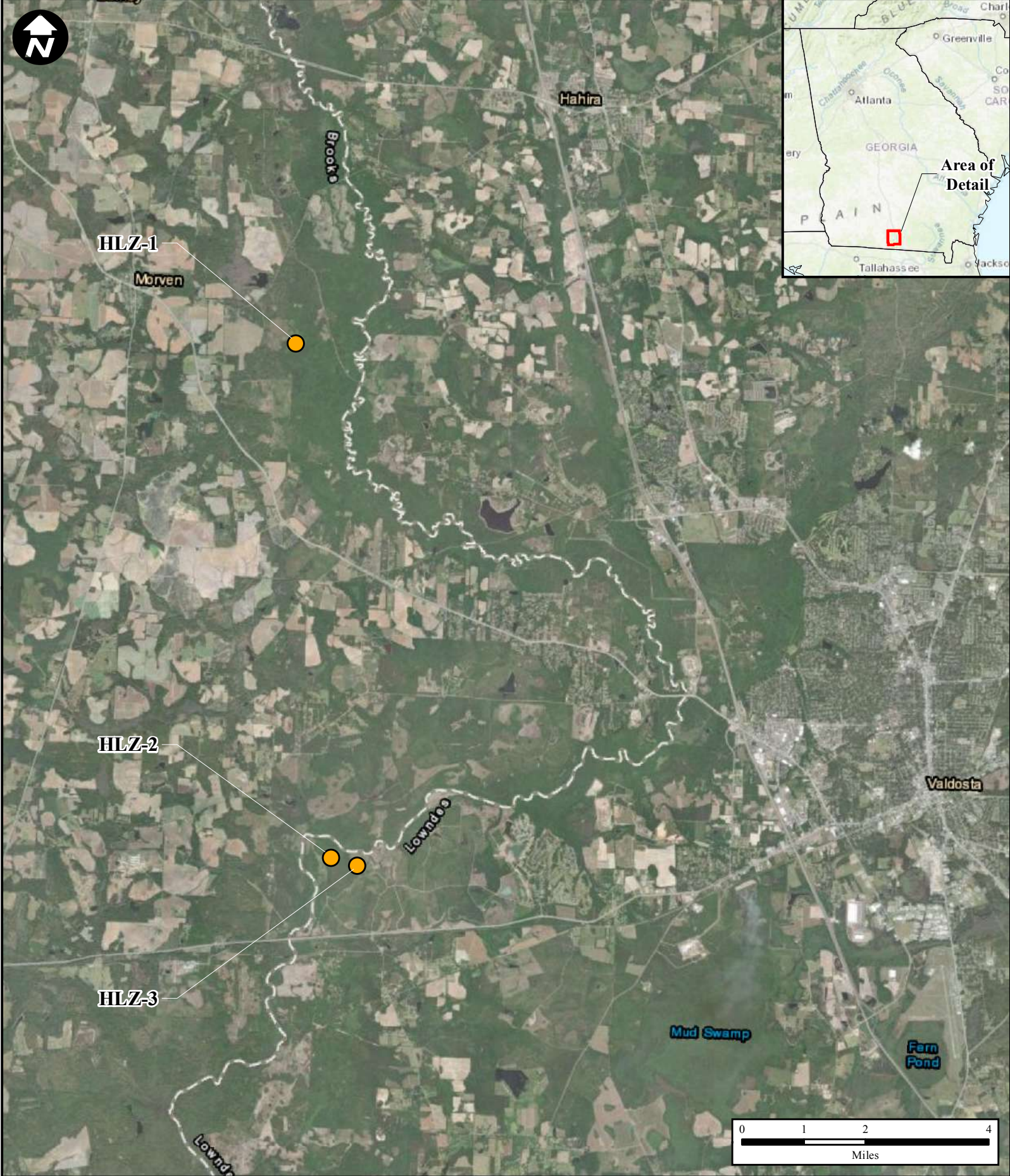
2 Attachments:

1. Figure 1 – Location of Proposed HLZs
2. Figure 2 – Detailed HLZ Locations

## **Tribal Scoping Letter Attachments**

**Figures 1 and 2**





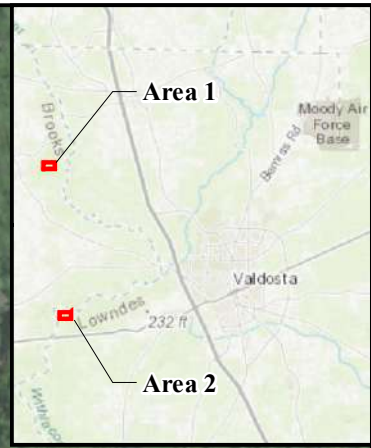
**Legend**  
 ● HLZ Locations  
 - - - County Boundary

**Location**  
 HLZ-1: 30.9337, -83.4551  
 HLZ-2: 30.8126, -83.4423  
 HLZ-3: 30.8109, -83.4352

**Figure 1**  
**Location of Proposed HLZs**

Environmental Assessment  
 Development of Additional HLZs  
 Moody Air Force Base, Georgia



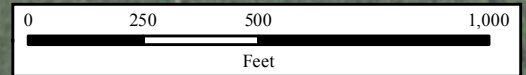


Area 1



Area 2

Aerial imagery dated 5/12/2022



**Legend**  
 Proposed HLZ

**Location**  
HLZ-1: 30.9337, -83.4551  
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HLZ-3: 30.8109, -83.4352

**Figure 2**  
**Detailed HLZ Locations**

Environmental Assessment  
Development of Additional HLZs  
Moody Air Force Base, Georgia

## IICEP Scoping Letters





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

18 July 2023

MEMORANDUM FOR BROOKS COUNTY COMMISSION  
COUNTY ADMINISTRATOR  
610 S HIGHLAND ROAD  
QUITMAN, GA 31643

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

1. The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the development of additional Helicopter Landing Zones (HLZs) on privately owned property near Moody Air Force Base (AFB), Georgia.
2. Moody AFB is located on approximately 11,594 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties. The DAF is proposing to develop three HLZs near Moody AFB (Figures 1 and 2). Activities would involve helicopter landings, flyovers, and ground troop training. The proposed land areas for the HLZs are privately owned and would be utilized by the DAF under lease agreements with Langdale Companies, the property owners of all three HLZs. Details of the proposed HLZs can be found in Table 1.

Table 1: Proposed HLZ Details

HLZ Name	County	Size (acres)	Location (Latitude / Longitude)	Parcel Number	Current Primary Land Use
HLZ-1	Brooks	2.3	30°56'1.05"N, 83°27'18.5"W	119 0006	Undeveloped
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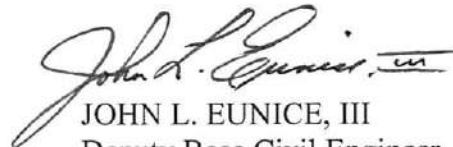
3. If you have additional information regarding impacts of the Proposed Action or of the environmental aspects of the project area which we are unaware, we would appreciate receiving such information for inclusion and consideration during the development of the EA.

*Attack • Rescue • Prevail ~ Tigers Lead!*



4. Please submit your written response within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA. Written responses can be sent to Mr. Lorence Busker at 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699 or via email to lorence.busker@us.af.mil within 30 days of receipt of this letter to ensure the DAF has sufficient time to fully consider them when preparing the Draft EA. Thank you in advance for your assistance in this effort.

Sincerely,



JOHN L. EUNICE, III  
Deputy Base Civil Engineer

2 Attachments:

1. Figure 1 – Location of Proposed HLZs
2. Figure 2 – Detailed HLZ Locations

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

18 July 2023

MEMORANDUM FOR BROOKS COUNTY COMMISSION  
DISTRICT 5 COMMISSIONER  
610 S HIGHLAND ROAD  
QUITMAN, GA 31643

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

1. The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the development of additional Helicopter Landing Zones (HLZs) on privately owned property near Moody Air Force Base (AFB), Georgia.
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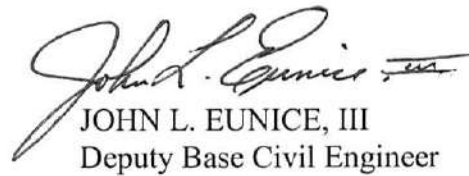
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JOHN L. EUNICE, III  
Deputy Base Civil Engineer

2 Attachments:

1. Figure 1 – Location of Proposed HLZs
2. Figure 2 – Detailed HLZ Locations

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

18 July 2023

MEMORANDUM FOR BROOKS COUNTY COMMISSION  
DISTRICT 2 COMMISSIONER  
610 S HIGHLAND ROAD  
QUITMAN, GA 31643

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

1. The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the development of additional Helicopter Landing Zones (HLZs) on privately owned property near Moody Air Force Base (AFB), Georgia.
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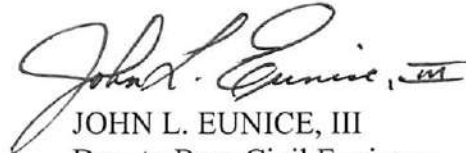
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2 Attachments:

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

18 July 2023

MEMORANDUM FOR BROOKS COUNTY PLANNING AND ZONING COMMISSION  
DISTRICT 5  
610 S HIGHLAND ROAD  
QUITMAN, GA 31643

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

1. The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the development of additional Helicopter Landing Zones (HLZs) on privately owned property near Moody Air Force Base (AFB), Georgia.
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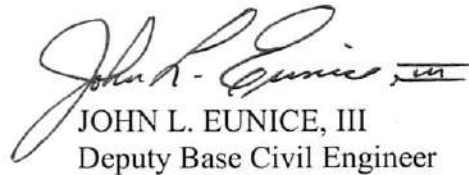
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**DEPARTMENT OF THE AIR FORCE  
23D CIVIL ENGINEER SQUADRON (ACC)  
MOODY AIR FORCE BASE GEORGIA**

18 July 2023

MEMORANDUM FOR BROOKS COUNTY PLANNING AND ZONING COMMISSION  
DISTRICT 2  
610 S HIGHLAND ROAD  
QUITMAN, GA 31643

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

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1. The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the development of additional Helicopter Landing Zones (HLZs) on privately owned property near Moody Air Force Base (AFB), Georgia.
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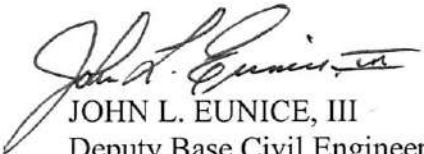
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**DEPARTMENT OF THE AIR FORCE  
23D CIVIL ENGINEER SQUADRON (ACC)  
MOODY AIR FORCE BASE GEORGIA**

18 July 2023

MEMORANDUM FOR GEORGIA DEPARTMENT OF COMMUNITY AFFAIRS  
ENVIRONMENTAL REVIEW AND PRESERVATION  
PROGRAM MANAGER  
60 EXECUTIVE PARK SOUTH, NE  
ATLANTA, GA 30329

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

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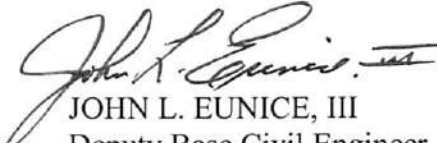
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Deputy Base Civil Engineer

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2. Figure 2 – Detailed HLZ Locations

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

18 July 2023

MEMORANDUM FOR GEORGIA DEPARTMENT OF TRANSPORTATION  
ONE GEORGIA CENTER  
600 WEST PEACHTREE NW – 25<sup>TH</sup> FLOOR  
ATLANTA, GA 30308

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

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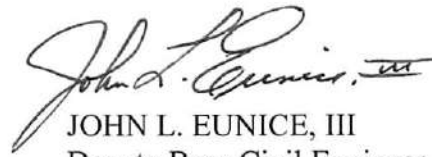
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**DEPARTMENT OF THE AIR FORCE  
23D CIVIL ENGINEER SQUADRON (ACC)  
MOODY AIR FORCE BASE GEORGIA**

18 July 2023

MEMORANDUM FOR GEORGIA ENVIRONMENTAL PROTECTION  
DIVISION  
2 MARTIN LUTHER KING JR. DRIVE  
SUITE 1152, EAST TOWER  
ATLANTA, GA 30334

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

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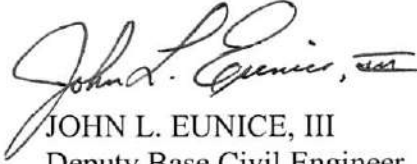
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**DEPARTMENT OF THE AIR FORCE  
23D CIVIL ENGINEER SQUADRON (ACC)  
MOODY AIR FORCE BASE GEORGIA**

18 July 2023

MEMORANDUM FOR U.S. FISH AND WILDLIFE SERVICE  
GEORGIA ECOLOGICAL SERVICES  
HIGHWAY 27 2 1<sup>ST</sup> DIVISION ROAD  
FORT BENNING, GA 31905

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

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2. Moody AFB is located on approximately 11,594 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties. The DAF is proposing to develop three HLZs near Moody AFB (Figures 1 and 2). Activities would involve helicopter landings, flyovers, and ground troop training. The proposed land areas for the HLZs are privately owned and would be utilized by the DAF under lease agreements with Langdale Companies, the property owners of all three HLZs. Details of the proposed HLZs can be found in Table 1.

**Table 1: Proposed HLZ Details**

HLZ Name	County	Size (acres)	Location (Latitude / Longitude)	Parcel Number	Current Primary Land Use
HLZ-1	Brooks	2.3	30°56'1.05"N, 83°27'18.5"W	119 0006	Undeveloped
HLZ-2	Lowndes	2.0	30°48'45.7"N, 83°26'32.5"W	0016 001	Undeveloped
HLZ-3	Lowndes	2.5	30°48'39.5"N, 83°26'06.8"W	0016 001	Undeveloped

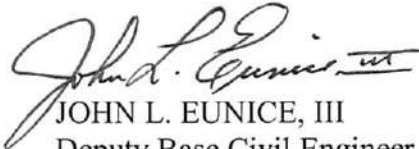
3. If you have additional information regarding impacts of the Proposed Action or of the environmental aspects of the project area which we are unaware, we would appreciate receiving such information for inclusion and consideration during the development of the EA.

*Attack • Rescue • Prevail ~ Tigers Lead!*



4. Please submit your written response within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA. Written responses can be sent to Mr. Lorence Busker at 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699 or via email to [lorence.busker@us.af.mil](mailto:lorence.busker@us.af.mil) within 30 days of receipt of this letter to ensure the DAF has sufficient time to fully consider them when preparing the Draft EA. Thank you in advance for your assistance in this effort.

Sincerely,



JOHN L. EUNICE, III  
Deputy Base Civil Engineer

2 Attachments:

1. Figure 1 – Location of Proposed HLZs
2. Figure 2 – Detailed HLZ Locations

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

18 July 2023

MEMORANDUM FOR GEORGIA WILDLIFE RESOURCES DIVISION  
2070 U.S. HIGHWAY 278, S.E.  
SOCIAL CIRCLE, GA 30025

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

1. The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the development of additional Helicopter Landing Zones (HLZs) on privately owned property near Moody Air Force Base (AFB), Georgia.
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**Table 1: Proposed HLZ Details**

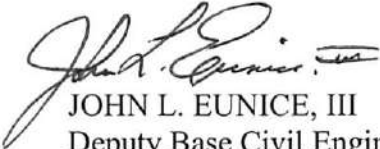
HLZ Name	County	Size (acres)	Location (Latitude / Longitude)	Parcel Number	Current Primary Land Use
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Deputy Base Civil Engineer

2 Attachments:

1. Figure 1 – Location of Proposed HLZs
2. Figure 2 – Detailed HLZ Locations

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

18 July 2023

MEMORANDUM FOR LOWNDES COUNTY PLANNER  
327 N. ASHLEY STREET  
VALDOSTA, GA 31601

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

1. The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the development of additional Helicopter Landing Zones (HLZs) on privately owned property near Moody Air Force Base (AFB), Georgia.
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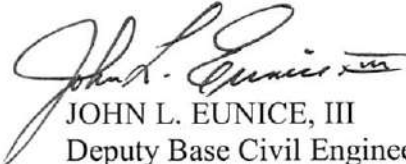
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2 Attachments:

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2. Figure 2 – Detailed HLZ Locations

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

18 July 2023

MEMORANDUM FOR CHAIRMAN BILL SLAUGHTER  
LOWNDES COUNTY COMMISSION  
327 N. ASHLEY STREET  
VALDOSTA, GA 31601

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

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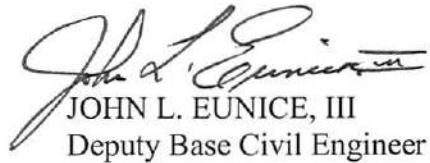
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2. Figure 2 – Detailed HLZ Locations

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

18 July 2023

MEMORANDUM FOR SOUTH GEORGIA REGIONAL PLANNING COUNCIL  
327 WEST SAVANNAH AVENUE  
VALDOSTA, GA 31601

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

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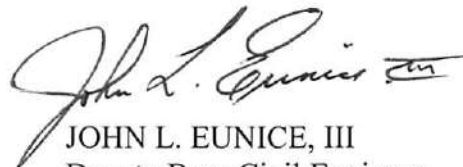
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DEPARTMENT OF THE AIR FORCE  
23D CIVIL ENGINEER SQUADRON (ACC)  
MOODY AIR FORCE BASE GEORGIA

18 July 2023

MEMORANDUM FOR U.S. FISH AND WILDLIFE SERVICE  
915 BAYMEADOWS WAY  
SUITE 200  
JACKSONVILLE, FL 32256-7517

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

SUBJECT Development of Additional Helicopter Landing Zones For Moody Air Force Base, Georgia

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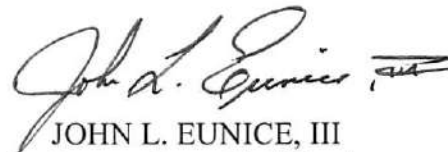
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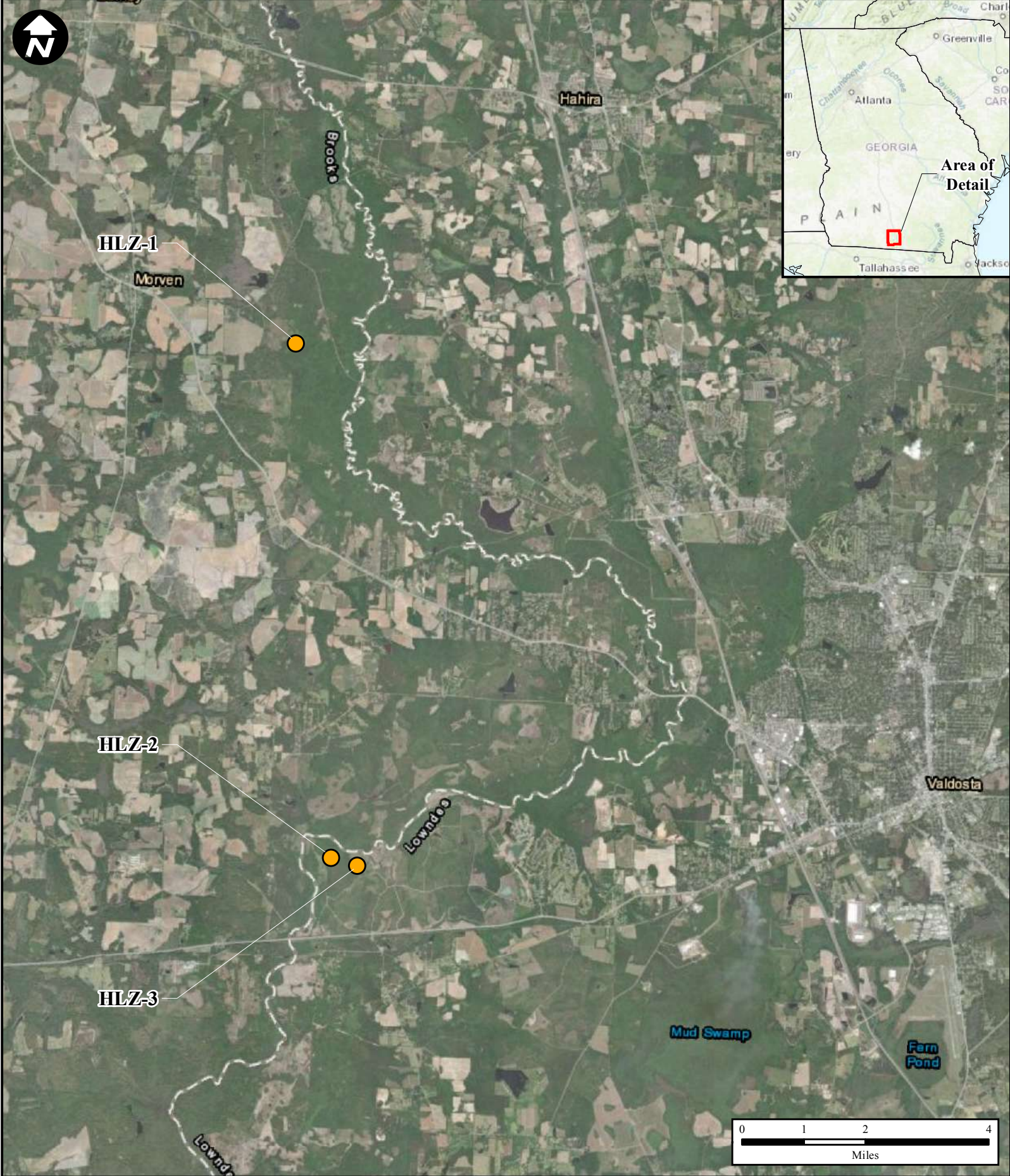
2 Attachments:

1. Figure 1 – Location of Proposed HLZs
2. Figure 2 – Detailed HLZ Locations

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## **IICEP Scoping Letter Attachments**

**Figures 1 and 2**



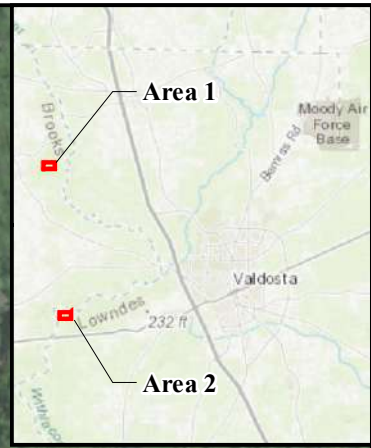
**Legend**  
 ● HLZ Locations  
 - - - County Boundary

**Location**  
 HLZ-1: 30.9337, -83.4551  
 HLZ-2: 30.8126, -83.4423  
 HLZ-3: 30.8109, -83.4352

**Figure 1**  
**Location of Proposed HLZs**

Environmental Assessment  
 Development of Additional HLZs  
 Moody Air Force Base, Georgia



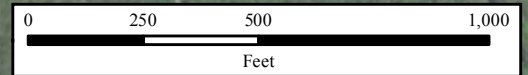


Area 1



Area 2

Aerial imagery dated 5/12/2022



**Legend**  
 Proposed HLZ

**Location**  
HLZ-1: 30.9337, -83.4551  
HLZ-2: 30.8126, -83.4423  
HLZ-3: 30.8109, -83.4352

**Figure 2**  
**Detailed HLZ Locations**

Environmental Assessment  
Development of Additional HLZs  
Moody Air Force Base, Georgia

## Scoping Period Responses

IICEP



October 5, 2023

John L. Eunice, III  
Deputy Base Civil Engineer  
Department of the Air Force  
23D Civil Engineer Squadron  
3485 Georgia Street  
Moody Air Force Base, Georgia 31699-1707  
**Attn: Lorence Busker**

**RE: Moody AFB: Construct 3 Helicopter Landing Zones  
Lowndes County, Georgia  
HP-230913-011**

Dear Mr. Eunice:

The Historic Preservation Division (HPD) has received initial information concerning the above referenced project requesting comments pursuant to the National Environmental Policy Act of 1969 (NEPA). Our comments are offered to assist the U.S. Department of the Air Force (Air Force) in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

Thank you for notifying us of this federal undertaking. We look forward to receiving Section 106 compliance documentation, as appropriate. If the federal agency intends to utilize NEPA to comply with Section 106, in lieu of the procedures set forth in 36 CFR Part 800, the Air Force should notify HPD and the Advisory Council on Historic Preservation of its intent.

Please refer to project number **HP-230913-011** in future correspondence regarding this project. If we may be of further assistance, please contact me at [Stacy.Rieke@dca.ga.gov](mailto:Stacy.Rieke@dca.ga.gov) or (470) 522-7979.

Sincerely,



Stacy Rieke  
Program Manager  
Environmental Review & Preservation Planning

**APPENDIX B: NOISE ANALYSIS**

# Flight Profile Operations Summary

**Based UH60A Aircraft with T700-CE-700 Engine**

**Closed Patterns**

Profile	Track	Day	Night	Total
HH60_1mile_E	1mileE	4.800	1.200	6.000
HH60_1mile_N	1mileN	4.800	1.200	6.000
HH60_1mile_S	1mileS	4.800	1.200	6.000
HH60_1mile_W	1mileW	4.800	1.200	6.000
HH60_2mile_E	2mileE	1.600	0.400	2.000
HH60_2mile_N	2mileN	1.600	0.400	2.000
HH60_2mile_S	2mileS	1.600	0.400	2.000
HH60_2mile_W	2mileW	1.600	0.400	2.000
Total:		25.600	6.400	32.000
Runway 75_DZ_HLZ_E1:		25.00%	25.00%	25.00%
Runway 75_DZ_HLZ_N1:		25.00%	25.00%	25.00%
Runway 75_DZ_HLZ_S1:		25.00%	25.00%	25.00%
Runway 75_DZ_HLZ_W1:		25.00%	25.00%	25.00%
Total:		80.00%	20.00%	

## Summary of Based Aircraft Operations

### Closed Patterns

	Day	Night	Total
Total:	25.600	6.400	32.000
Runway 75_DZ_HLZ_E1:	25.00%	25.00%	25.00%
Runway 75_DZ_HLZ_N1:	25.00%	25.00%	25.00%
Runway 75_DZ_HLZ_S1:	25.00%	25.00%	25.00%
Runway 75_DZ_HLZ_W1:	25.00%	25.00%	25.00%
Total:	80.00%	20.00%	



# Flight Profile Details

## HH60\_1mile\_E

Notes  
**Day Ops** 4.8  
**Night Ops** 1.2  
**Aircraft** UH60A  
**Engine** T700-CE-700  
**A/C Category** Based  
**Runway/Pad** 75\_DZ\_HLZ\_E1  
**Track** 1mileE  
**Runup Time** ----  
**Takeoff Displacement** 0 ft  
**Landing Displacement** 0 ft  
**Profile Segments**

Point	Distance NM	Height ft	Power KNOTS
a	0.00	20 AGL	Lnd Load 40 kts
b	0.50	40 AGL	Tkf Load 40 kts
c	1.28	80 AGL	Lfo Load 70 kts
d	2.07	100 AGL	Lfo Load 70 kts
e	2.69	100 AGL	Lnd Load 40 kts
f	4.14	20 AGL	Lnd Load 40 kts

## HH60\_1mile\_N

Notes  
**Day Ops** 4.8  
**Night Ops** 1.2  
**Aircraft** UH60A  
**Engine** T700-CE-700  
**A/C Category** Based  
**Runway/Pad** 75\_DZ\_HLZ\_N1  
**Track** 1mileN  
**Runup Time** ----  
**Takeoff Displacement** 0 ft  
**Landing Displacement** 0 ft  
**Profile Segments**

Point	Distance NM	Height ft	Power KNOTS
a	0.00	20 AGL	Lnd Load 40 kts
b	0.50	40 AGL	Tkf Load 40 kts
c	1.28	80 AGL	Lfo Load 70 kts
d	2.07	100 AGL	Lfo Load 70 kts
e	2.69	100 AGL	Lnd Load 40 kts
f	4.14	20 AGL	Lnd Load 40 kts

## HH60\_1mile\_S

Notes  
**Day Ops** 4.8  
**Night Ops** 1.2  
**Aircraft** UH60A  
**Engine** T700-CE-700  
**A/C Category** Based  
**Runway/Pad** 75\_DZ\_HLZ\_S1  
**Track** 1mileS  
**Runup Time** ----  
**Takeoff Displacement** 0 ft  
**Landing Displacement** 0 ft  
**Profile Segments**

	Distance Point NM	Height ft	Power KNOTS
a	0.00	20 AGL	Lnd Load 40 kts
b	0.50	40 AGL	Tkf Load 40 kts
c	1.28	80 AGL	Lfo Load 70 kts
d	2.07	100 AGL	Lfo Load 70 kts
e	2.69	100 AGL	Lnd Load 40 kts
f	4.14	20 AGL	Lnd Load 40 kts

## HH60\_1mile\_W

Notes  
**Day Ops** 4.8  
**Night Ops** 1.2  
**Aircraft** UH60A  
**Engine** T700-CE-700  
**A/C Category** Based  
**Runway/Pad** 75\_DZ\_HLZ\_W1  
**Track** 1mileW  
**Runup Time** ----  
**Takeoff Displacement** 0 ft  
**Landing Displacement** 0 ft  
**Profile Segments**

	Distance Point NM	Height ft	Power KNOTS
a	0.00	20 AGL	Lnd Load 40 kts
b	0.50	40 AGL	Tkf Load 40 kts
c	1.28	80 AGL	Lfo Load 70 kts
d	2.07	100 AGL	Lfo Load 70 kts
e	2.69	100 AGL	Lnd Load 40 kts
f	4.14	20 AGL	Lnd Load 40 kts

## HH60\_2mile\_E

Notes  
**Day Ops** 1.6  
**Night Ops** 0.4  
**Aircraft** UH60A  
**Engine** T700-CE-700  
**A/C Category** Based

<b>Runway/Pad</b>	75_DZ_HLZ_E1			
<b>Track</b>	2mileE			
<b>Runup Time</b>	----			
<b>Takeoff Displacement</b>	0 ft			
<b>Landing Displacement</b>	0 ft			
<b>Profile Segments</b>		Distance	Height	Power
	Point	NM	ft	KNOTS
	a	0.00	20 AGL	Lnd Load 40 kts
	b	0.50	40 AGL	Tkf Load 40 kts
	c	1.50	80 AGL	Lfo Load 70 kts
	d	4.00	100 AGL	Lfo Load 100 kts
	e	6.00	100 AGL	Lfo Load 70 kts
	f	9.00	50 AGL	Lnd Load 40 kts
	g	10.28	20 AGL	Lnd Load 40 kts

## HH60\_2mile\_N

<b>Notes</b>				
<b>Day Ops</b>	1.6			
<b>Night Ops</b>	0.4			
<b>Aircraft</b>	UH60A			
<b>Engine</b>	T700-CE-700			
<b>A/C Category</b>	Based			
<b>Runway/Pad</b>	75_DZ_HLZ_N1			
<b>Track</b>	2mileN			
<b>Runup Time</b>	----			
<b>Takeoff Displacement</b>	0 ft			
<b>Landing Displacement</b>	0 ft			
<b>Profile Segments</b>		Distance	Height	Power
	Point	NM	ft	KNOTS
	a	0.00	20 AGL	Lnd Load 40 kts
	b	0.50	40 AGL	Tkf Load 40 kts
	c	1.50	80 AGL	Lfo Load 70 kts
	d	4.00	100 AGL	Lfo Load 100 kts
	e	6.00	100 AGL	Lfo Load 70 kts
	f	9.00	50 AGL	Lnd Load 40 kts
	g	10.28	20 AGL	Lnd Load 40 kts

## HH60\_2mile\_S

<b>Notes</b>				
<b>Day Ops</b>	1.6			
<b>Night Ops</b>	0.4			
<b>Aircraft</b>	UH60A			
<b>Engine</b>	T700-CE-700			
<b>A/C Category</b>	Based			
<b>Runway/Pad</b>	75_DZ_HLZ_S1			
<b>Track</b>	2mileS			
<b>Runup Time</b>	----			

<b>Takeoff Displacement</b>	0 ft			
<b>Landing Displacement</b>	0 ft			
<b>Profile Segments</b>		Distance	Height	Power
	Point	NM	ft	KNOTS
	a	0.00	20 AGL	Lnd Load 40 kts
	b	0.50	40 AGL	Tkf Load 40 kts
	c	1.50	80 AGL	Lfo Load 70 kts
	d	4.00	100 AGL	Lfo Load 100 kts
	e	6.00	100 AGL	Lfo Load 70 kts
	f	9.00	50 AGL	Lnd Load 40 kts
	g	10.28	20 AGL	Lnd Load 40 kts

## HH60\_2mile\_W

<b>Notes</b>				
<b>Day Ops</b>	1.6			
<b>Night Ops</b>	0.4			
<b>Aircraft</b>	UH60A			
<b>Engine</b>	T700-CE-700			
<b>A/C Category</b>	Based			
<b>Runway/Pad</b>	75_DZ_HLZ_W1			
<b>Track</b>	2mileW			
<b>Runup Time</b>	----			
<b>Takeoff Displacement</b>	0 ft			
<b>Landing Displacement</b>	0 ft			
<b>Profile Segments</b>		Distance	Height	Power
	Point	NM	ft	KNOTS
	a	0.00	20 AGL	Lnd Load 40 kts
	b	0.50	40 AGL	Tkf Load 40 kts
	c	1.50	80 AGL	Lfo Load 70 kts
	d	4.00	100 AGL	Lfo Load 100 kts
	e	6.00	100 AGL	Lfo Load 70 kts
	f	9.00	50 AGL	Lnd Load 40 kts
	g	10.28	20 AGL	Lnd Load 40 kts

## Static Pad Summary

Name	Location	Elevation ft
HOVER15	lat: 30° 39.3579' N long: 82° 52.1901' W	15
HOVER35	lat: 30° 39.3579' N long: 82° 52.1901' W	35
HOVER45	lat: 30° 39.3579' N long: 82° 52.1901' W	45
HOVER75	lat: 30° 39.3579' N long: 82° 52.1901' W	75
WHEELSDOWN	lat: 30° 39.3579' N long: 82° 52.1901' W	0



## Static Profile Summary

Name	Aircraft	Engine	Suppressor	Pad	Heading ° mag
HOVER_15_12	UH60A	T700-CE-700	NONE	HOVER15	0
HOVER_35_12	UH60A	T700-CE-700	NONE	HOVER35	0
HOVER_45_12	UH60A	T700-CE-700	NONE	HOVER45	0
HOVER_75_12	UH60A	T700-CE-700	NONE	HOVER75	0
WHEELSDOWN_12	UH60A	T700-CE-700	NONE	WHEELSDOWN	0

## Static Profile Details

### HOVER\_15\_12

<b>Notes</b>					
<b>Aircraft</b>	UH60A				
<b>Engine</b>	T700-CE-700				
<b>Suppressor</b>	NONE				
<b>Pad</b>	HOVER15				
<b>Heading</b>	0° mag				
<b>Profile Segments</b>	Power	Day	Night	Duration	Number
	POWER	Ops	Ops	sec	Engines
	Ige Load	1.6	0.4	720	1

### HOVER\_35\_12

<b>Notes</b>					
<b>Aircraft</b>	UH60A				
<b>Engine</b>	T700-CE-700				
<b>Suppressor</b>	NONE				
<b>Pad</b>	HOVER35				
<b>Heading</b>	0° mag				
<b>Profile Segments</b>	Power	Day	Night	Duration	Number
	POWER	Ops	Ops	sec	Engines
	Ige Load	1.6	0.4	720	1

### HOVER\_45\_12

<b>Notes</b>					
<b>Aircraft</b>	UH60A				
<b>Engine</b>	T700-CE-700				
<b>Suppressor</b>	NONE				
<b>Pad</b>	HOVER45				
<b>Heading</b>	0° mag				
<b>Profile Segments</b>	Power	Day	Night	Duration	Number
	POWER	Ops	Ops	sec	Engines
	Ige Load	1.6	0.4	720	1

### HOVER\_75\_12

<b>Notes</b>					
<b>Aircraft</b>	UH60A				
<b>Engine</b>	T700-CE-700				
<b>Suppressor</b>	NONE				

<b>Pad</b>	HOVER75				
<b>Heading</b>	0° mag				
<b>Profile Segments</b>	Power	Day	Night	Duration	Number
	POWER	Ops	Ops	sec	Engines
	Ige Load	1.6	0.4	720	1

## WHEELSDOWN\_12

<b>Notes</b>					
<b>Aircraft</b>	UH60A				
<b>Engine</b>	T700-CE-700				
<b>Suppressor</b>	NONE				
<b>Pad</b>	WHEELSDOWN				
<b>Heading</b>	0° mag				
<b>Profile Segments</b>	Power	Day	Night	Duration	Number
	POWER	Ops	Ops	sec	Engines
	Idl	1.6	0.4	720	1

7.62 MOODY HH60.TXT

```
7.62 MOODY HH60.DAT
202205021327
Case file display
#
# Receiver Grid Selection = HH-60
# Metric Selection = PEAK, FLAT
# Activity Table Selection = 7.62 HH60 MOODY
#
RANGE
MOODY HH60 A
# HH60 MOODY
# US AIR FORCE
# GA
# USA
# BCOOK
UTM GRID ZONE NUMBER
17
#
# Firing point #1, full (to 1 m) UTM easting, northing and height
FRPT1
320791
3393000
150
#
# This is the azimuth from the first firing point to the first
# target, measured in degrees clockwise from the grid north
GRDAZ (deg)
90
#
# Distance in meters from firing point to target
TARDIS (m)
50
#
# This is the number of shooting lanes
LANNUM
1
#
# This is the spacing of between shooting lane centers in meters
LANSPC (m)
1
#
#
#
END RANGE
#
#
RECEIVER GRID
# HH60 MOODY
# US AIR FORCE
# GA
```



```

# USA
# BCOOK
SOUTHWEST CORNER
314000
3388000
OVERALL GRID SIZE (m) EAST-WEST
5000
OVERALL GRID SIZE (m) NORTH-SOUTH
5000
GRID RESOLUTION (m)
10
END_RECEIVER_GRID
#
#
WEAPONS_AND_AMMUNITION
WEAPON NAME/AMMO NAME
MG M60 7.62 mm / blank
# The following are the gun spectra
# SEL=a+b*x+c*x^2
# x=cos(off-axiz angle)
# BAND   a       b       c
FIT COEFICIENTS
0        -100     0       0
1        -100     0       0
2        -100     0       0
3        -100     0       0
4        -100     0       0
5        -100     0       0
6        -100     0       0
7        -100     0       0
8        -100     0       0
9        -100     0       0
10       90.8600006103516      -0.230000004172325      4.15000009536743
11       92.1999969482422      -0.150000005960464      3.95000004768372
12       94.0500030517578      -0.0299999993294477      3.67000007629395
13       94.8600006103516       0.140000000596046      3.33999991416931
14       96.4000015258789       0.349999994039536      2.98000001907349
15       98.3000030517578       0.620000004768372      2.57999992370605
16       100.059997558594       0.949999988079071      2.16000008583069
17       101.440002441406       1.30999994277954      1.76999998092651
18       103.569999694824       1.70000004768372      1.4099999666214
19       105.309997558594       2.09999990463257      1.05999994277954
20       106.459999084473       2.47000002861023      0.779999971389771
21       107.709999084473       2.83999991416931      0.579999983310699
22       108.949996948242       3.52999997138977      0.569999992847443
23       108.830001831055       5.03999996185303      0.639999985694885
24       110.629997253418       6.40999984741211      -0.300000011920929
25       113.400001525879       5.48000001907349      -0.5
26       114.540000915527       5.21000003814697      0.280000001192093
27       115.459999084473       6.07000017166138      -1.00999999046326

```

28	115.98999786377	5.53999996185303	-1.12000000476837
29	113.629997253418	4.03999996185303	-2.10999989509583
30	112.470001220703	4.46000003814697	-7.17999982833862
31	112.459999084473	5.8600001335144	-3.29999995231628
32	110.599998474121	6.01999998092651	-3.17000007629395
33	108.870002746582	6.48999977111816	-4.01000022888184
34	108.919998168945	7.01999998092651	-5.86999988555908
35	106.949996948242	5.65000009536743	-1.50999999046326
36	105.139999389648	6.28999996185303	-1.54999995231628
37	103.290000915527	6.6399998664856	-2.50999999046326
38	103.080001831055	7.32999992370605	-3.60999989509583
39	102.160003662109	7.1399998664856	-1.79999995231628
40	102.5	5.78999996185303	0.620000004768372
41	-100	0	0
42	-100	0	0
43	-100	0	0

BULLET SPEED (m/s) AND SPEED AT 100m (m/s)

0 0

BULLET DIAMETER (mm)

7.82000017166138

BULLET LENGTH (mm)

26

BULLET MASS (g)

9.72000026702881

END MG M60 7.62 mm / blank

#

END\_WEAPONS\_AND\_AMMUNITION

#

#

ACTIVITY\_FOR\_EACH\_RANGE

RANGE NAME

MOODY HH60 A

WEAPON&AMMO

MG M60 7.62 mm / blank

DAY RNDS

100

% DAY RAPID FIRE

0

NIGHT RNDS

0

% NIGHT RAPID FIRE

0

#

END\_ACTIVITY

#

#

METRICS\_AND\_PENALTIES

NOISE\_EXPOSURE\_METRIC

MXPK

ASSESSMENT\_PERIOD\_(h)



0  
0  
0  
0  
0  
0  
END\_FREQUENCY\_WEIGHTING  
#  
#

MOODY GBS.TXT



CASE\_BCALC\_v1.x

begin\_description

```
#Date/Time Created: 2 May 2022 14:04
#Case File Name: C:\BNOISE2\Cases\MOODY GBS.dat
#BNOISE2 v1.3.2003-07-03
```

```
#
# Receiver Grid Selection = MOODY HH60
# Metric Selection = PK, 10, NO WEIGHTING
# Activity Selection = MOODY HH60 GBS
# Include Terrain: False
# Include Land-Water: False
#
```

```
# Installation Name: MOODY HH60
# Service: US AIR FORCE
# State: GA
# Country: USA
# Author: BCOOK
# Date Created: 2 May 2022
# Date Last Modified: 2 May 2022
```

end\_description

begin\_bcalccommands

```
# This section is for diagnostic purposes only
Draw Firing Areas: .true.
Draw Target Areas: .true.
Draw Trajectories: .true.
Draw Registration Marks: .true.
Write Annotations: .true.
Calculate Contour Grid: .true.
```

end\_bcalccommands

begin\_sound\_propagation\_types

Propagation Directory Name: C:\BNOISE2\support\

```
Propagation Type: BN3.2 DAY FOCUS
Downwind Table: no loss
Downwind Corrections: dfocus.st
Upwind Table: no loss
Upwind Corrections: dfocus.st
# Date Created: 7 Jun 1999
```

# Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY BASE  
Downwind Table: noloss  
Downwind Corrections: dbase.st  
Upwind Table: noloss  
Upwind Corrections: dbase.st  
# Date Created: 7 Jun 1999  
# Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT  
Downwind Table: noloss  
Downwind Corrections: dneg.st  
Upwind Table: noloss  
Upwind Corrections: dneg.st  
# Date Created: 7 Jun 1999  
# Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT  
Downwind Table: noloss  
Downwind Corrections: dexneg.st  
Upwind Table: noloss  
Upwind Corrections: dexneg.st  
# Date Created: 7 Jun 1999  
# Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT FOCUS  
Downwind Table: noloss  
Downwind Corrections: nfocus.st  
Upwind Table: noloss  
Upwind Corrections: nfocus.st  
# Date Created: 7 Jun 1999  
# Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT BASE  
Downwind Table: noloss  
Downwind Corrections: nbase.st  
Upwind Table: noloss  
Upwind Corrections: nbase.st  
# Date Created: 7 Jun 1999  
# Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT  
Downwind Table: noloss  
Downwind Corrections: nneg.st  
Upwind Table: noloss  
Upwind Corrections: nneg.st  
# Date Created: 7 Jun 1999  
# Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT  
Downwind Table: noloss  
Downwind Corrections: nexneg.st  
Upwind Table: noloss  
Upwind Corrections: nexneg.st  
# Date Created: 7 Jun 1999  
# Date Last Modified: 7 Jun 1999

end\_sound\_propagation\_types

begin\_propagation\_occurrence\_by\_azimuth

Propagation Type: BN3.2 DAY FOCUS  
Propagation Azimuth (deg): 0  
Daytime Occurrence (pct): 5  
Nighttime Occurrence (pct): 0  
# Date Created: 9 Aug 1999  
# Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY BASE  
Propagation Azimuth (deg): 0  
Daytime Occurrence (pct): 25.4  
Nighttime Occurrence (pct): 0  
# Date Created: 9 Aug 1999  
# Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT  
Propagation Azimuth (deg): 0  
Daytime Occurrence (pct): 40.8  
Nighttime Occurrence (pct): 0  
# Date Created: 9 Aug 1999  
# Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT  
Propagation Azimuth (deg): 0  
Daytime Occurrence (pct): 28.8  
Nighttime Occurrence (pct): 0  
# Date Created: 9 Aug 1999  
# Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT FOCUS  
Propagation Azimuth (deg): 0  
Daytime Occurrence (pct): 0  
Nighttime Occurrence (pct): 5.6  
# Date Created: 9 Aug 1999  
# Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT BASE

Propagation Azimuth (deg): 0  
Daytime Occurrence (pct): 0  
Nighttime Occurrence (pct): 33.9  
# Date Created: 9 Aug 1999  
# Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT  
Propagation Azimuth (deg): 0  
Daytime Occurrence (pct): 0  
Nighttime Occurrence (pct): 28.8  
# Date Created: 9 Aug 1999  
# Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT  
Propagation Azimuth (deg): 0  
Daytime Occurrence (pct): 0  
Nighttime Occurrence (pct): 32  
# Date Created: 9 Aug 1999  
# Date Last Modified: 9 Aug 1999

end\_propagation\_occurrence\_by\_azimuth

begin\_receivergrid

Receiver Grid Name: MOODY HH60  
UTM Zone: 17  
SW Corner Easting: 314000.00  
SW Corner Northing: 3388000.00  
EW Overall Size: 5000  
NS Overall Size: 5000  
Mesh Spacing: 10  
# Installation Name: MOODY HH60  
# Service: US AIR FORCE  
# State: GA  
# Country: USA  
# Author: BCOOK  
# Date Created: 2 May 2022  
# Date Last Modified: 2 May 2022

end\_receivergrid

begin\_maps

#Land-Water XYW Map File Name: None  
#Terrain XYZ Map File Name: None

end\_maps

begin\_firingareas

Firing Area Name: MOODY HH60 FA\_POINT\_POINT  
UTM Zone: 17  
East1: 320791.00  
North1: 3393000.00  
Percent1: 100.00  
Elevation: 50.00  
# Easting: 320791.00  
# Northing: 3393000.00  
# EastWest Size: 0.00  
# NorthSouth Size: 0.00  
# Azimuth: 0.00  
# Installation Name: MOODY HH60  
# Service: US AIR FORCE  
# State: GA  
# Country: USA  
# Author: BCOOK  
# Date Created: 2 May 2022  
# Date Last Modified: 2 May 2022

end\_firingareas

begin\_targetareas

end\_targetareas

begin\_equivalentyields

Equivalent Yield Name: TNT  
Pressure Equivalent TNT Multiple: 1.0000  
Impulse Equivalent TNT Multiple: 1.0000  
# Description: M.M. Swisdak NSWC TR-75-116; ANSI S2.20-1983  
# Date Created: 1 Jan 1998  
# Date Last Modified: 1 Jan 1998

end\_equivalentyields

begin\_cselacousticefficiencies

end\_cselacousticefficiencies

begin\_directivityspectra



end\_directivityspectra

begin\_cseldirectivities

end\_cseldirectivities

begin\_noisesources

Noise Source Code: DTN01  
Weapon Class: EXPLOSIVE  
# Weapon Type: DEMOLITION  
# Weapon: TNT  
# Charge Increment: 0.25 LBS  
Explosive Charge Weight (kg): 0.1134  
# Charge Increment Description:  
Equivalent Yield: TNT  
# Noise Source Description:  
# Date Created: 10 Feb 2002  
# Date Last Modified: 10 Feb 2002

end\_noisesources

begin\_activitydetails

Detail Record Number: 1  
Firing Area: MOODY HH60 FA\_POINT\_POINT  
Firing Noise Source: DTN01  
Firing Height: 50.00  
Target Area:  
# This Acitivity Detail uses no Target Area  
Number of Day Shots: 2.00000000  
Number of Night Shots: 0.00000000  
# Activity Detail Date:  
# Activity Detail Description:  
# Date Created: 2 May 2022  
# Date Last Modified: 2 May 2022

end\_activitydetails

begin\_frequencyweighting

Frequency Weighting Name: NO WEIGHTING  
Band 0: 0.00  
Band 1: 0.00  
Band 2: 0.00  
Band 3: 0.00

Band 4: 0.00  
Band 5: 0.00  
Band 6: 0.00  
Band 7: 0.00  
Band 8: 0.00  
Band 9: 0.00  
Band 10: 0.00  
Band 11: 0.00  
Band 12: 0.00  
Band 13: 0.00  
Band 14: 0.00  
Band 15: 0.00  
Band 16: 0.00  
Band 17: 0.00  
Band 18: 0.00  
Band 19: 0.00  
Band 20: 0.00  
Band 21: 0.00  
Band 22: 0.00  
Band 23: 0.00  
Band 24: 0.00  
Band 25: 0.00  
Band 26: 0.00  
Band 27: 0.00  
Band 28: 0.00  
Band 29: 0.00  
Band 30: 0.00  
Band 31: 0.00  
Band 32: 0.00  
Band 33: 0.00  
Band 34: 0.00  
Band 35: 0.00  
Band 36: 0.00  
Band 37: 0.00  
Band 38: 0.00  
Band 39: 0.00  
Band 40: 0.00  
Band 41: 0.00  
Band 42: 0.00  
Band 43: 0.00

end\_frequencyweighting

begin\_metrics

Metric Name: PK, 10  
Frequency Weighting: NO WEIGHTING  
Contour Metric: PK  
Silence Threshold: 0.00

Assessment Period (h): 0.000277777813607827  
Exceedance Percent (pct): 10.00  
# Date Created: 12 Aug 1999  
# Date Last Modified: 12 Aug 1999

end\_metrics

Moody\_HLZ\_2023 Alt 1 with LATN grid1 - Baseline - MRNMap.LOG

DRAFT ENVIRONMENTAL ASSESSMENT

Environmental Assessment  
Appendix B

Development of Additional HLZs  
Moody AFB, Georgia

\*\*\*\*\* MOA RANGE NOISEMAP \*\*\*\*\*  
Version 3.0  
Release Date 2/7/2013

CASE INFORMATION

Case Name:Moody HLZ 2023 EA - Alt 1 w LATN - Baseline Scenario  
Site Name:(location being modeled by this case)

SETUP PARAMETERS

Number of MOAs and Ranges = 5      Number of tracks = 0  
Lower Left Corner of Grid in feet (X Y pair) = -299750., -299750.  
Upper Right Corner of Grid in feet (X Y pair) = 299750., 299750.  
Grid spacing = 500. feet      Number of events above an SEL of 65.0 dB  
Temperature = 59 F      Humidity = 70      Flying days per month = 30

MOA SPECIFICATIONS

MOA name CORSAIR SOUTH LOW MOA - 1000

Lat (deg)	Long (deg)
30.99999	-83.88306
30.99999	-83.46696
30.61665	-83.35555
30.63361	-83.71667
30.99999	-83.88306

Floor = 1000 feet AGL      Ceiling = 8000 feet AGL

MOA name CORSAIR SOUTH LOW MOA - 2000

Lat (deg)	Long (deg)
30.99999	-83.88306
30.99999	-83.46696
30.61665	-83.35555
30.63361	-83.71667
30.99999	-83.88306

Floor = 2000 feet AGL      Ceiling = 8000 feet AGL

MOA name CORSAIR SOUTH LOW MOA - 4000

Lat (deg)	Long (deg)
30.99999	-83.88306
30.99999	-83.46696
30.61665	-83.35555
30.63361	-83.71667
30.99999	-83.88306

Floor = 4000 feet AGL      Ceiling = 8000 feet AGL

MOA name CORSAIR SOUTH MOA

Lat (deg)	Long (deg)
30.99999	-83.88306
30.99999	-83.46696
30.61665	-83.35555
30.63361	-83.71667
30.99999	-83.88306

Floor = 8000 feet AGL      Ceiling = 18000 feet AGL

MOA name LATN

Lat (deg)	Long (deg)
32.06280	-83.90002
31.50029	-84.10002
30.63361	-83.71667
30.60582	-83.12556

DRAFT ENVIRONMENTAL ASSESSMENT

Environmental Assessment  
Appendix B

Development of Additional HLZs  
Moody AFB, Georgia

31.38306 -83.16111  
32.06280 -83.48335  
32.06280 -83.90002  
Floor = 100 feet AGL Ceiling = 8000 feet AGL

SPECIFIC POINT SPECIFICATION

Number of Specific points = 4  
Latitude Longitude Name  
30.81516 -83.60754 CORSAIR S POI  
30.93362 -83.45514 HLZ 1  
30.81270 -83.44236 HLZ 2  
30.81096 -83.43523 HLZ 3

MISSION DATA

Mission name = CORSAIR S - ALTERNATIVE 1 - A10  
Aircraft code =FM0090100 Speed = 180 kias Power = 86.0

Altitude Distribution  
Lower Alt Upper Alt Percent  
(feet AGL) (feet AGL) Utilization  
8000 23000 100.0

Mission name = CORSAIR S - ALTERNATIVE 1 - A10\_2  
Aircraft code =FM0090101 Speed = 250 kias Power = 93.0

Altitude Distribution  
Lower Alt Upper Alt Percent  
(feet AGL) (feet AGL) Utilization  
8000 23000 100.0

Mission name = CORSAIR S - ALTERNATIVE 1 - A10\_3  
Aircraft code =FM0090102 Speed = 350 kias Power = 97.0

Altitude Distribution  
Lower Alt Upper Alt Percent  
(feet AGL) (feet AGL) Utilization  
8000 23000 100.0

Mission name = CORSAIR S - ALTERNATIVE 1 - A29  
Aircraft code =FM0870100 Speed = 120 kias Power = 30.0

Altitude Distribution  
Lower Alt Upper Alt Percent  
(feet AGL) (feet AGL) Utilization  
8000 23000 100.0

Mission name = CORSAIR S - ALTERNATIVE 1 - A29\_2  
Aircraft code =FM0870101 Speed = 180 kias Power = 55.0

Altitude Distribution  
Lower Alt Upper Alt Percent  
(feet AGL) (feet AGL) Utilization  
8000 23000 100.0

Mission name = CORSAIR S - ALTERNATIVE 1 - A29\_3  
Aircraft code =FM0870102 Speed = 220 kias Power = 100.0

Altitude Distribution  
Lower Alt Upper Alt Percent  
(feet AGL) (feet AGL) Utilization  
8000 23000 100.0

Mission name = CORSAIR S - ALTERNATIVE 1 - F18  
Aircraft code =FM0450100 Speed = 350 kias Power = 80.0



DRAFT ENVIRONMENTAL ASSESSMENT

Environmental Assessment  
Appendix B

Development of Additional HLZs  
Moody AFB, Georgia

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
8000	23000	100.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1 - A10  
Aircraft code =FM0090100 Speed = 180 kias Power = 86.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	10.0
3000	5000	30.0
5000	8000	60.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1 - A10\_2  
Aircraft code =FM0090101 Speed = 250 kias Power = 93.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	10.0
3000	5000	30.0
5000	8000	60.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1 - A10\_3  
Aircraft code =FM0090102 Speed = 350 kias Power = 97.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	10.0
3000	5000	30.0
5000	8000	60.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1 - C130  
Aircraft code =FM0290400 Speed = 150 kias Power = 800.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	18.2
3000	5000	27.3
5000	8000	54.5

Mission name = CORSAIR S LOW - ALTERNATIVE 1 - C130\_2  
Aircraft code =FM0290401 Speed = 220 kias Power = 1800.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	18.2
3000	5000	27.3
5000	8000	54.5

Mission name = CORSAIR S LOW - ALTERNATIVE 1 - C130\_3  
Aircraft code =FM0290402 Speed = 250 kias Power = 4700.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	18.2
3000	5000	27.3
5000	8000	54.5

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**Development of Additional HLZs  
Moody AFB, Georgia**

Mission name = CORSAIR S LOW - ALTERNATIVE 1 - H60  
Aircraft code =FM6210100 Speed = 70 kias Power = 0.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	95.0
3000	5000	5.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1 - H60\_2  
Aircraft code =FM6210101 Speed = 100 kias Power = 0.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	95.0
3000	5000	5.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1 - H60\_3  
Aircraft code =FM6210102 Speed = 130 kias Power = 0.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	95.0
3000	5000	5.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1- A29  
Aircraft code =FM0870100 Speed = 120 kias Power = 30.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	10.0
3000	5000	30.0
5000	8000	60.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1- A29\_2  
Aircraft code =FM0870101 Speed = 180 kias Power = 55.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	10.0
3000	5000	30.0
5000	8000	60.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1- A29\_3  
Aircraft code =FM0870102 Speed = 220 kias Power = 100.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	10.0
3000	5000	30.0
5000	8000	60.0

Mission name = CORSAIR S LOW - ALTERNATIVE 1- F18  
Aircraft code =FM0450100 Speed = 350 kias Power = 80.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	10.0
3000	5000	10.0
5000	8000	80.0

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Mission name = LATN - EXISTING - A10  
Aircraft code =FM0090100 Speed = 180 kias Power = 86.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	1000	5.0
1000	3000	5.0
3000	5000	30.0
5000	8000	60.0

Mission name = LATN - EXISTING - A10\_2  
Aircraft code =FM0090101 Speed = 250 kias Power = 93.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	1000	5.0
1000	3000	5.0
3000	5000	30.0
5000	8000	60.0

Mission name = LATN - EXISTING - A10\_3  
Aircraft code =FM0090102 Speed = 350 kias Power = 97.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	1000	5.0
1000	3000	5.0
3000	5000	30.0
5000	8000	60.0

Mission name = LATN - EXISTING - C130  
Aircraft code =FM0290400 Speed = 150 kias Power = 800.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	5.0
1000	3000	15.0
3000	5000	30.0
5000	8000	50.0

Mission name = LATN - EXISTING - C130\_2  
Aircraft code =FM0290401 Speed = 220 kias Power = 1800.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	5.0
1000	3000	15.0
3000	5000	30.0
5000	8000	50.0

Mission name = LATN - EXISTING - C130\_3  
Aircraft code =FM0290402 Speed = 250 kias Power = 4700.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	5.0
1000	3000	15.0
3000	5000	30.0
5000	8000	50.0

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**Development of Additional HLZs  
Moody AFB, Georgia**

Mission name = LATN - EXISTING - H60  
 Aircraft code =FM6210100 Speed = 70 kias Power = 0.0  
 Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	1000	25.0
1000	3000	70.0
3000	5000	5.0

Mission name = LATN - EXISTING - H60\_2  
 Aircraft code =FM6210101 Speed = 100 kias Power = 0.0  
 Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	1000	25.0
1000	3000	70.0
3000	5000	5.0

Mission name = LATN - EXISTING - H60\_3  
 Aircraft code =FM6210102 Speed = 130 kias Power = 0.0  
 Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	1000	25.0
1000	3000	70.0
3000	5000	5.0

MOA OPERATION DATA

MOA name = CORSAIR SOUTH LOW MOA - 1000

Yearly	Mission	Time On Range	Daily		Monthly	
			Day	Night	Day	Night
Day	Night		OPS	OPS	OPS	OPS
OPS	OPS	(minutes)				
752.	CORSAIR S LOW - ALTERNATIVE 1 - A10	84. 4.	2.089	0.233	62.67	7.00
752.	CORSAIR S LOW - ALTERNATIVE 1 - A10_2	84. 14.	2.089	0.233	62.67	7.00
752.	CORSAIR S LOW - ALTERNATIVE 1 - A10_3	84. 2.	2.089	0.233	62.67	7.00
11.	CORSAIR S LOW - ALTERNATIVE 1 - C130	10. 3.	0.031	0.028	0.92	0.83
11.	CORSAIR S LOW - ALTERNATIVE 1 - C130_2	10. 24.	0.031	0.028	0.92	0.83
11.	CORSAIR S LOW - ALTERNATIVE 1 - C130_3	10. 3.	0.031	0.028	0.92	0.83
47.	CORSAIR S LOW - ALTERNATIVE 1 - H60	13. 8.	0.131	0.036	3.92	1.08
47.	CORSAIR S LOW - ALTERNATIVE 1 - H60_2	13. 128.	0.131	0.036	3.92	1.08
47.	CORSAIR S LOW - ALTERNATIVE 1 - H60_3	13. 15.	0.131	0.036	3.92	1.08
270.	CORSAIR S LOW - ALTERNATIVE 1- A29	14. 15.	0.750	0.039	22.50	1.17
270.	CORSAIR S LOW - ALTERNATIVE 1- A29_2	14. 47.	0.750	0.039	22.50	1.17
270.	CORSAIR S LOW - ALTERNATIVE 1- A29_3	14. 15.	0.750	0.039	22.50	1.17

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133.	CORSAIR S LOW - ALTERNATIVE 1- F18	0.369	0.019	11.08	0.58
	7. 33.				

MOA name = CORSAIR SOUTH MOA

			Daily		Monthly	
Yearly	Mission		Day	Night	Day	Night
Day	Night	Time On Range				
	Name		OPS	OPS	OPS	OPS
OPS	OPS	(minutes)				
1559.	CORSAIR S - ALTERNATIVE 1 - A10		4.331	0.481	129.92	14.42
	173. 12.					
1559.	CORSAIR S - ALTERNATIVE 1 - A10_2		4.331	0.481	129.92	14.42
	173. 42.					
1559.	CORSAIR S - ALTERNATIVE 1 - A10_3		4.331	0.481	129.92	14.42
	173. 6.					
500.	CORSAIR S - ALTERNATIVE 1 - A29		1.389	0.072	41.67	2.17
	26. 8.					
500.	CORSAIR S - ALTERNATIVE 1 - A29_2		1.389	0.072	41.67	2.17
	26. 47.					
500.	CORSAIR S - ALTERNATIVE 1 - A29_3		1.389	0.072	41.67	2.17
	26. 24.					
330.	CORSAIR S - ALTERNATIVE 1 - F18		0.917	0.067	27.50	2.00
	24. 30.					

MOA name = LATN

			Daily		Monthly	
Yearly	Mission		Day	Night	Day	Night
Day	Night	Time On Range				
	Name		OPS	OPS	OPS	OPS
OPS	OPS	(minutes)				
2826.	LATN - EXISTING - A10		7.850	0.872	235.50	26.17
	314. 2.					
2826.	LATN - EXISTING - A10_2		7.850	0.872	235.50	26.17
	314. 8.					
2826.	LATN - EXISTING - A10_3		7.850	0.872	235.50	26.17
	314. 1.					
511.	LATN - EXISTING - C130		1.419	1.336	42.58	40.08
	481. 3.					
511.	LATN - EXISTING - C130_2		1.419	1.336	42.58	40.08
	481. 24.					
511.	LATN - EXISTING - C130_3		1.419	1.336	42.58	40.08
	481. 3.					
1066.	LATN - EXISTING - H60		2.961	0.786	88.83	23.58
	283. 2.					
1066.	LATN - EXISTING - H60_2		2.961	0.786	88.83	23.58
	283. 25.					
1066.	LATN - EXISTING - H60_3		2.961	0.786	88.83	23.58
	283. 4.					

\*\*\*\*\* MOA RANGE NOISEMAP \*\*\*\*\*  
RESULTS

The noise metric is Ldn.

MOA RESULTS  
Uniform                      Number of

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**Development of Additional HLZs  
Moody AFB, Georgia**

MOA Name	MOA Area (sq statute miles)	Distributed Sound Level (dB)	Daily Events Above SEL of 65.0 dB
CORSAIR SOUTH LOW MOA - 1000	591.9	35.0	0.0
CORSAIR SOUTH LOW MOA - 2000	591.9	No operations on this MOA!	
CORSAIR SOUTH LOW MOA - 4000	591.9	No operations on this MOA!	
CORSAIR SOUTH MOA	591.9	35.0	0.0
LATN	4200.1	35.0	0.0

\*\*\*\*\* MOA RANGE NOISEMAP \*\*\*\*\*  
RESULTS

SPECIFIC POINT RESULTS

Specific Point: CORSAIR S POI  
Top 20 contributors to this level:

Sound Level <	Aircraft	(dB)	Airspace	>	Mission	
< 35.0	CORSAIR SOUTH LOW MOA - 1000				CORSAIR S LOW - ALTERNATIVE 1 - A10_2	A-10A
< 35.0	LATN				LATN - EXISTING - A10_2	A-10A
< 35.0	CORSAIR SOUTH MOA				CORSAIR S - ALTERNATIVE 1 - A10_2	A-10A
< 35.0	LATN				LATN - EXISTING - C130_2	C-
130J < 35.0	CORSAIR SOUTH LOW MOA - 1000				CORSAIR S LOW - ALTERNATIVE 1 - A10_3	A-10A
< 35.0	CORSAIR SOUTH LOW MOA - 1000				CORSAIR S LOW - ALTERNATIVE 1- A29_3	T-6
< 35.0	LATN				LATN - EXISTING - H60_2	UH60A
< 35.0	CORSAIR SOUTH LOW MOA - 1000				CORSAIR S LOW - ALTERNATIVE 1 - H60_2	UH60A
< 35.0	LATN				LATN - EXISTING - A10_3	A-10A
< 35.0	CORSAIR SOUTH LOW MOA - 1000				CORSAIR S LOW - ALTERNATIVE 1- F18	F-
18A/C < 35.0	CORSAIR SOUTH MOA				CORSAIR S - ALTERNATIVE 1 - A10_3	A-10A
< 35.0	CORSAIR SOUTH MOA				CORSAIR S - ALTERNATIVE 1 - A29_3	T-6
< 35.0	LATN				LATN - EXISTING - H60_3	UH60A
< 35.0	LATN				LATN - EXISTING - C130_3	C-
130J < 35.0	CORSAIR SOUTH LOW MOA - 1000				CORSAIR S LOW - ALTERNATIVE 1 - H60_3	UH60A
< 35.0	CORSAIR SOUTH LOW MOA - 1000				CORSAIR S LOW - ALTERNATIVE 1 - C130_2	C-
130J < 35.0	LATN				LATN - EXISTING - C130	C-
130J < 35.0	CORSAIR SOUTH LOW MOA - 1000				CORSAIR S LOW - ALTERNATIVE 1- A29_2	T-6
< 35.0	CORSAIR SOUTH MOA				CORSAIR S - ALTERNATIVE 1 - F18	F-
18A/C < 35.0						



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LATN	LATN - EXISTING - A10	A-10A
< 35.0		
.....		Total Level
		37.3

Specific Point: HLZ 1  
Top 20 contributors to this level:

Sound Level	Aircraft (dB) Airspace	Mission
< 35.0	CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1 - A10_2 A-10A
< 35.0	LATN	LATN - EXISTING - A10_2 A-10A
< 35.0	LATN	LATN - EXISTING - C130_2 C-
130J < 35.0	CORSAIR SOUTH MOA	CORSAIR S - ALTERNATIVE 1 - A10_2 A-10A
< 35.0	CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1 - A10_3 A-10A
< 35.0	LATN	LATN - EXISTING - H60_2 UH60A
< 35.0	CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1 - H60_2 UH60A
< 35.0	CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1- A29_3 T-6
< 35.0	LATN	LATN - EXISTING - A10_3 A-10A
< 35.0	CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1- F18 F-
18A/C < 35.0	LATN	LATN - EXISTING - H60_3 UH60A
< 35.0	CORSAIR SOUTH MOA	CORSAIR S - ALTERNATIVE 1 - A10_3 A-10A
< 35.0	CORSAIR SOUTH MOA	CORSAIR S - ALTERNATIVE 1 - A29_3 T-6
< 35.0	LATN	LATN - EXISTING - C130_3 C-
130J < 35.0	CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1 - H60_3 UH60A
< 35.0	LATN	LATN - EXISTING - C130 C-
130J < 35.0	CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1 - C130_2 C-
130J < 35.0	LATN	LATN - EXISTING - A10 A-10A
< 35.0	CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1- A29_2 T-6
< 35.0	CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1 - A10 A-10A
< 35.0		Total Level
.....		36.7

Specific Point: HLZ 2  
Top 20 contributors to this level:

Sound Level

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< Aircraft (dB)		Airspace	> Mission	
< 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1 - A10_2	A-10A
< 35.0	LATN		LATN - EXISTING - A10_2	A-10A
< 35.0	CORSAIR SOUTH MOA		CORSAIR S - ALTERNATIVE 1 - A10_2	A-10A
< 35.0	LATN		LATN - EXISTING - C130_2	C-
130J < 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1 - A10_3	A-10A
< 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1- A29_3	T-6
< 35.0	LATN		LATN - EXISTING - H60_2	UH60A
< 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1 - H60_2	UH60A
< 35.0	LATN		LATN - EXISTING - A10_3	A-10A
< 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1- F18	F-
18A/C < 35.0	CORSAIR SOUTH MOA		CORSAIR S - ALTERNATIVE 1 - A10_3	A-10A
< 35.0	CORSAIR SOUTH MOA		CORSAIR S - ALTERNATIVE 1 - A29_3	T-6
< 35.0	LATN		LATN - EXISTING - H60_3	UH60A
< 35.0	LATN		LATN - EXISTING - C130_3	C-
130J < 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1 - H60_3	UH60A
< 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1 - C130_2	C-
130J < 35.0	LATN		LATN - EXISTING - C130	C-
130J < 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1- A29_2	T-6
< 35.0	LATN		LATN - EXISTING - A10	A-10A
< 35.0	CORSAIR SOUTH MOA		CORSAIR S - ALTERNATIVE 1 - F18	F-
18A/C < 35.0				
				Total Level
.....	37.1			

Specific Point: HLZ 3  
Top 20 contributors to this level:

< Aircraft (dB)		Airspace	> Mission	
< 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1 - A10_2	A-10A
< 35.0	LATN		LATN - EXISTING - A10_2	A-10A
< 35.0	CORSAIR SOUTH MOA		CORSAIR S - ALTERNATIVE 1 - A10_2	A-10A
< 35.0	LATN		LATN - EXISTING - C130_2	C-
130J < 35.0	CORSAIR SOUTH LOW MOA - 1000		CORSAIR S LOW - ALTERNATIVE 1 - A10_3	A-10A
< 35.0				

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LATN	LATN - EXISTING - H60_2	UH60A
< 35.0		
CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1- A29_3	T-6
< 35.0		
CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1 - H60_2	UH60A
< 35.0		
LATN	LATN - EXISTING - A10_3	A-10A
< 35.0		
CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1- F18	F-
18A/C < 35.0		
CORSAIR SOUTH MOA	CORSAIR S - ALTERNATIVE 1 - A10_3	A-10A
< 35.0		
CORSAIR SOUTH MOA	CORSAIR S - ALTERNATIVE 1 - A29_3	T-6
< 35.0		
LATN	LATN - EXISTING - H60_3	UH60A
< 35.0		
LATN	LATN - EXISTING - C130_3	C-
130J < 35.0		
CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1 - H60_3	UH60A
< 35.0		
LATN	LATN - EXISTING - C130	C-
130J < 35.0		
CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1 - C130_2	C-
130J < 35.0		
CORSAIR SOUTH LOW MOA - 1000	CORSAIR S LOW - ALTERNATIVE 1- A29_2	T-6
< 35.0		
LATN	LATN - EXISTING - A10	A-10A
< 35.0		
CORSAIR SOUTH MOA	CORSAIR S - ALTERNATIVE 1 - F18	F-
18A/C < 35.0		
	Total Level	
..... 37.0		

<Run Log>

Date: 10/22/2023  
 Start Time: 19:28:50  
 Stop Time: 20:20:38  
 Total Running Time: 51 minutes and 48 seconds.

**APPENDIX C: AIR QUALITY ANALYSIS**

# AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA)

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

**a. Action Location:**

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

**b. Action Title:** Environmental Assessment for Development of Additional HLZs at Moody Air Force Base, Georgia

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

**d. Projected Action Start Date:** 1 / 2024

**e. Action Description:**

The proposed action is to lease three parcels of land for the development of HLZs near Moody Air Force Base. Site development would be limited to the clearing of vegetation and debris. The DAF intends to use these parcels primarily for daily HH-60 helicopter personnel recovery (PR) and aircrew training. Typical PR training missions include day-to-day training and more elaborate once-per-month training events.

Day-to-day training would involve typical flight training operations associated with tactical and remote training and would fulfill the basic PR training requirements. These training events would typically be conducted two times per week and would involve two HH-60 helicopters per sortie. The helicopters would fly from Moody AFB to an HLZ at 100-500 feet AGL and 110-120 knots indicated airspeed (KIAS). Each helicopter would spend between 30 minutes and two hours conducting training activities, including hovering and pattern work, before returning to the base.

Once-per-month training events would include simulated opposing forces operations in addition to the day-to-day training. Activities would involve two ground vehicles and approximately ten personnel at each HLZ. To provide for more realistic training, personnel would utilize training munitions to create a realistic combat experience.

**f. Point of Contact:**

**Name:** Marcel Briguglio  
**Title:** Assistant Consultant, Environmental Engineer  
**Organization:** WSP  
**Email:** marcel.briguglio@wsp.com  
**Phone Number:** 443-617-5054

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

applicable  
 not applicable

# AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA)

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving “steady state” (hsba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action’s potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (hsba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action’s net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

**Analysis Summary:**

### 2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.053	250	No
NOx	0.469	250	No
CO	0.525	250	No
SOx	0.001	250	No
PM 10	2.969	250	No
PM 2.5	0.020	250	No
Pb	0.000	25	No
NH3	0.001	250	No

### 2025 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.004	250	No
NOx	0.003	250	No
CO	0.061	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Marcel Briguglio, Assistant Consultant, Environmental Engineer

Oct 10 2023

**Name, Title**

**Date**



# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## 1. General Information

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### - Action Location

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

**- Action Title:** Environmental Assessment for Development of Additional HLZs at Moody Air Force Base, Georgia

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

**- Projected Action Start Date:** 1 / 2024

### - Action Purpose and Need:

The purpose of the proposed action is to address scheduling conflicts and increase range space by leasing land for the development of three HLZs within Moody AFB airspace. This will increase the ability of Attack and Rescue forces to prepare for major combat operations given extremely limited training and mission rehearsal areas and increased costs incurred by off-station/Temporary Duty Travel requirements to adequately prepare for real world missions.

The proposed action is needed to alleviate recurring scheduling conflicts and provide more realistic and varied training areas for 347 RQG and 23 WG aircraft. The limited number of current HLZ training areas leads to deficits in training proficiency and currency, which in turn drives up the man hour costs when use of alternate training areas distant to Moody AFB and its airspace is required. New HLZs within Moody AFB airspace are required to properly simulate current mission realities and ensure comprehensive training.

### - Action Description:

The proposed action is to lease three parcels of land for the development of HLZs near Moody Air Force Base. Site development would be limited to the clearing of vegetation and debris. The DAF intends to use these parcels primarily for daily HH-60 helicopter personnel recovery (PR) and aircrew training. Typical PR training missions include day-to-day training and more elaborate once-per-month training events.

Day-to-day training would involve typical flight training operations associated with tactical and remote training and would fulfill the basic PR training requirements. These training events would typically be conducted two times per week and would involve two HH-60 helicopters per sortie. The helicopters would fly from Moody AFB to an HLZ at 100-500 feet AGL and 110-120 knots indicated airspeed (KIAS). Each helicopter would spend between 30 minutes and two hours conducting training activities, including hovering and pattern work, before returning to the base.

Once-per-month training events would include simulated opposing forces operations in addition to the day-to-day training. Activities would involve two ground vehicles and approximately ten personnel at each HLZ. To provide for more realistic training, personnel would utilize training munitions to create a realistic combat experience.

### - Point of Contact

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**Title:** Assistant Consultant, Environmental Engineer  
**Organization:** WSP  
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**Phone Number:** 443-617-5054

### - Activity List:

Activity Type	Activity Title
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# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2.	Construction / Demolition	HLZ-1 Site Grading - Off-site (2.3 acres with offsite disposal of 3,771 cubic yds)
3.	Construction / Demolition	HLZ-2 Site Grading - Off-site (2.0 acres with offsite disposal of 3,227 cubic yds)
4.	Construction / Demolition	HLZ-3 Site Grading - Off-site (2.5 acres with offsite disposal of 4,033 cubic yds)
5.	Personnel	HLZ-1 Opposing Forces
6.	Personnel	HLZ-2 Opposing Forces
7.	Personnel	HLZ-3 Opposing Forces

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

### 2.1 General Information & Timeline Assumptions

**- Activity Location**

**County:** Brooks

**Regulatory Area(s):** NOT IN A REGULATORY AREA

**- Activity Title:** HLZ-1 Site Grading - Off-site (2.3 acres with offsite disposal of 3,771 cubic yds)

**- Activity Description:**

2.3 acres will be graded and trees and soil removed to a depth of 1 foot for HLZ-1. Assumed total material yield of 3,711 cubic yards and that all material will be disposed of off-site.

**- Activity Start Date**

**Start Month:** 1

**Start Month:** 2024

**- Activity End Date**

**Indefinite:** False

**End Month:** 1

**End Month:** 2024

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.016119
SO <sub>x</sub>	0.000226
NO <sub>x</sub>	0.155392
CO	0.154802

Pollutant	Total Emissions (TONs)
PM 10	1.004042
PM 2.5	0.006785
Pb	0.000000
NH <sub>3</sub>	0.000192

**- Activity Emissions of GHG:**

Pollutant	Total Emissions (TONs)
CH <sub>4</sub>	0.001030
N <sub>2</sub> O	0.000206

Pollutant	Total Emissions (TONs)
CO <sub>2</sub>	28.080900
CO <sub>2</sub> e	28.168141

**- Global Scale Activity Emissions for SCGHG:**

Pollutant	Total Emissions (TONs)
CH <sub>4</sub>	0.001030
N <sub>2</sub> O	0.000206

Pollutant	Total Emissions (TONs)
CO <sub>2</sub>	28.080900
CO <sub>2</sub> e	28.168141

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## 2.1 Site Grading Phase

### 2.1.1 Site Grading Phase Timeline Assumptions

**- Phase Start Date**

Start Month: 1  
 Start Quarter: 1  
 Start Year: 2024

**- Phase Duration**

Number of Month: 1  
 Number of Days: 0

### 2.1.2 Site Grading Phase Assumptions

**- General Site Grading Information**

Area of Site to be Graded (ft<sup>2</sup>): 100188  
 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>): 3711

**- 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	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	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 Criteria Pollutant Emission Factors (g/hp-hour) (default)**

Graders Composite [HP: 148] [LF: 0.41]						
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5
Emission Factors	0.36076	0.00489	3.17634	3.40450	0.17539	0.16136

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

<b>Other Construction Equipment Composite [HP: 82] [LF: 0.42]</b>						
	<b>VOC</b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>PM 10</b>	<b>PM 2.5</b>
Emission Factors	0.34346	0.00488	3.24084	3.56285	0.20853	0.19184
<b>Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]</b>						
	<b>VOC</b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>PM 10</b>	<b>PM 2.5</b>
Emission Factors	0.40864	0.00491	4.01022	3.25251	0.17852	0.16424
<b>Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]</b>						
	<b>VOC</b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>PM 10</b>	<b>PM 2.5</b>
Emission Factors	0.21500	0.00489	2.19159	3.49485	0.09716	0.08939

## - Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

<b>Graders Composite [HP: 148] [LF: 0.41]</b>				
	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>	<b>CO<sub>2</sub></b>	<b>CO<sub>2</sub>e</b>
Emission Factors	0.02151	0.00430	530.17041	531.98982
<b>Other Construction Equipment Composite [HP: 82] [LF: 0.42]</b>				
	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>	<b>CO<sub>2</sub></b>	<b>CO<sub>2</sub>e</b>
Emission Factors	0.02144	0.00429	528.45375	530.26726
<b>Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]</b>				
	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>	<b>CO<sub>2</sub></b>	<b>CO<sub>2</sub>e</b>
Emission Factors	0.02159	0.00432	532.20301	534.02939
<b>Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]</b>				
	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>	<b>CO<sub>2</sub></b>	<b>CO<sub>2</sub>e</b>
Emission Factors	0.02150	0.00430	529.93313	531.75173

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

	<b>VOC</b>	<b>SO<sub>x</sub></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>PM 10</b>	<b>PM 2.5</b>	<b>NH<sub>3</sub></b>
LDGV	0.20701	0.00208	0.11518	3.37463	0.00384	0.00340	0.02428
LDGT	0.22360	0.00269	0.20505	3.82428	0.00530	0.00469	0.02600
HDGV	0.90329	0.00604	0.91545	14.34210	0.02423	0.02143	0.05160
LDDV	0.06685	0.00107	0.08513	3.34703	0.00249	0.00229	0.00816
LDDT	0.07298	0.00122	0.12822	2.30536	0.00327	0.00301	0.00852
HDDV	0.12003	0.00426	2.51513	1.60098	0.05025	0.04623	0.03234
MC	2.72502	0.00258	0.64233	12.97662	0.02370	0.02096	0.05325

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

	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>	<b>CO<sub>2</sub></b>	<b>CO<sub>2</sub>e</b>
LDGV	0.01300	0.00478	312.83244	314.57980
LDGT	0.01600	0.00725	404.71763	407.27488
HDGV	0.06773	0.02960	909.96246	920.46532
LDDV	0.03748	0.00068	320.89540	322.03457
LDDT	0.02856	0.00100	365.62401	366.63449
HDDV	0.02473	0.00323	1266.89382	1268.47338
MC	0.11005	0.00300	388.70037	392.34534

### 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

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## - Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$$

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)

HP: Equipment Horsepower

LF: Equipment Load Factor

EF<sub>POL</sub>: Emission Factor for Pollutant (g/hp-hour)

0.002205: Conversion Factor grams to pounds

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

## 3. Construction / Demolition

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### 3.1 General Information & Timeline Assumptions

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

**- Activity Location**

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

**- Activity Title:** HLZ-2 Site Grading - Off-site (2.0 acres with offsite disposal of 3,227 cubic yds)

**- Activity Description:**

2 acres will be graded and trees and soil will be removed to a depth of 1 foot for HLZ-2. Assumed a total material yield of 3,227 cubic yards and that all material will be disposed of off-site.

**- Activity Start Date**

**Start Month:** 1  
**Start Month:** 2024

**- Activity End Date**

**Indefinite:** False  
**End Month:** 1  
**End Month:** 2024

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.016055
SO <sub>x</sub>	0.000224
NO <sub>x</sub>	0.154050
CO	0.153948

Pollutant	Total Emissions (TONs)
PM 10	0.874015
PM 2.5	0.006760
Pb	0.000000
NH <sub>3</sub>	0.000175

**- Activity Emissions of GHG:**

Pollutant	Total Emissions (TONs)
CH <sub>4</sub>	0.001017
N <sub>2</sub> O	0.000205

Pollutant	Total Emissions (TONs)
CO <sub>2</sub>	27.404872
CO <sub>2</sub> e	27.491271

**- Global Scale Activity Emissions for SCGHG:**

Pollutant	Total Emissions (TONs)
CH <sub>4</sub>	0.001017
N <sub>2</sub> O	0.000205

Pollutant	Total Emissions (TONs)
CO <sub>2</sub>	27.404872
CO <sub>2</sub> e	27.491271

### 3.1 Site Grading Phase

#### 3.1.1 Site Grading Phase Timeline Assumptions

**- Phase Start Date**

**Start Month:** 1  
**Start Quarter:** 1  
**Start Year:** 2024

**- Phase Duration**

**Number of Month:** 1  
**Number of Days:** 0

#### 3.1.2 Site Grading Phase Assumptions

**- General Site Grading Information**

**Area of Site to be Graded (ft<sup>2</sup>):** 87120  
**Amount of Material to be Hauled On-Site (yd<sup>3</sup>):** 0



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Amount of Material to be Hauled Off-Site (yd<sup>3</sup>): 3227

**- 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	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	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

### 3.1.3 Site Grading Phase Emission Factor(s)

**- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)**

Graders Composite [HP: 148] [LF: 0.41]						
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5
Emission Factors	0.36076	0.00489	3.17634	3.40450	0.17539	0.16136
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5
Emission Factors	0.34346	0.00488	3.24084	3.56285	0.20853	0.19184
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5
Emission Factors	0.40864	0.00491	4.01022	3.25251	0.17852	0.16424
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5
Emission Factors	0.21500	0.00489	2.19159	3.49485	0.09716	0.08939

**- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)**

Graders Composite [HP: 148] [LF: 0.41]				
	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2e</sub>
Emission Factors	0.02151	0.00430	530.17041	531.98982
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2e</sub>
Emission Factors	0.02144	0.00429	528.45375	530.26726
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2e</sub>

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Emission Factors	0.02159	0.00432	532.20301	534.02939
<b>Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]</b>				
	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>	<b>CO<sub>2</sub></b>	<b>CO<sub>2</sub>e</b>
Emission Factors	0.02150	0.00430	529.93313	531.75173

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

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	NH <sub>3</sub>
LDGV	0.20701	0.00208	0.11518	3.37463	0.00384	0.00340	0.02428
LDGT	0.22360	0.00269	0.20505	3.82428	0.00530	0.00469	0.02600
HDGV	0.90329	0.00604	0.91545	14.34210	0.02423	0.02143	0.05160
LDDV	0.06685	0.00107	0.08513	3.34703	0.00249	0.00229	0.00816
LDDT	0.07298	0.00122	0.12822	2.30536	0.00327	0.00301	0.00852
HDDV	0.12003	0.00426	2.51513	1.60098	0.05025	0.04623	0.03234
MC	2.72502	0.00258	0.64233	12.97662	0.02370	0.02096	0.05325

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

	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2</sub> e
LDGV	0.01300	0.00478	312.83244	314.57980
LDGT	0.01600	0.00725	404.71763	407.27488
HDGV	0.06773	0.02960	909.96246	920.46532
LDDV	0.03748	0.00068	320.89540	322.03457
LDDT	0.02856	0.00100	365.62401	366.63449
HDDV	0.02473	0.00323	1266.89382	1268.47338
MC	0.11005	0.00300	388.70037	392.34534

### 3.1.4 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

$$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$$

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)

HP: Equipment Horsepower

LF: Equipment Load Factor

EF<sub>POL</sub>: Emission Factor for Pollutant (g/hp-hour)

0.002205: Conversion Factor grams to pounds

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>)

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

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

## 4. Construction / Demolition

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### 4.1 General Information & Timeline Assumptions

#### - Activity Location

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

**- Activity Title:** HLZ-3 Site Grading - Off-site (2.5 acres with offsite disposal of 4,033 cubic yds)

#### - Activity Description:

2.5 acres will be graded of trees and soil removed of 1 foot for HLZ-3. Assumed a total material yield of 4,033 cubic yards and that all material will be disposed off off-site.

#### - Activity Start Date

**Start Month:** 1  
**Start Month:** 2024

#### - Activity End Date

**Indefinite:** False  
**End Month:** 1  
**End Month:** 2024

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

**- Activity Emissions:**

Pollutant	Total Emissions (TONs)
VOC	0.016161
SO <sub>x</sub>	0.000228
NO <sub>x</sub>	0.156285
CO	0.155370

Pollutant	Total Emissions (TONs)
PM 10	1.090726
PM 2.5	0.006801
Pb	0.000000
NH <sub>3</sub>	0.000204

**- Activity Emissions of GHG:**

Pollutant	Total Emissions (TONs)
CH <sub>4</sub>	0.001039
N <sub>2</sub> O	0.000208

Pollutant	Total Emissions (TONs)
CO <sub>2</sub>	28.530653
CO <sub>2</sub> e	28.618455

**- Global Scale Activity Emissions for SCGHG:**

Pollutant	Total Emissions (TONs)
CH <sub>4</sub>	0.001039
N <sub>2</sub> O	0.000208

Pollutant	Total Emissions (TONs)
CO <sub>2</sub>	28.530653
CO <sub>2</sub> e	28.618455

## 4.1 Site Grading Phase

### 4.1.1 Site Grading Phase Timeline Assumptions

**- Phase Start Date**

Start Month: 1  
 Start Quarter: 1  
 Start Year: 2024

**- Phase Duration**

Number of Month: 1  
 Number of Days: 0

### 4.1.2 Site Grading Phase Assumptions

**- General Site Grading Information**

Area of Site to be Graded (ft<sup>2</sup>): 108900  
 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>): 4033

**- 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	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	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 (%)**

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

**- Worker Trips**

Average Worker Round Trip Commute (mile): 20 (default)

**- Worker Trips Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

### 4.1.3 Site Grading Phase Emission Factor(s)

**- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)**

Graders Composite [HP: 148] [LF: 0.41]						
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5
Emission Factors	0.36076	0.00489	3.17634	3.40450	0.17539	0.16136
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5
Emission Factors	0.34346	0.00488	3.24084	3.56285	0.20853	0.19184
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5
Emission Factors	0.40864	0.00491	4.01022	3.25251	0.17852	0.16424
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5
Emission Factors	0.21500	0.00489	2.19159	3.49485	0.09716	0.08939

**- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)**

Graders Composite [HP: 148] [LF: 0.41]				
	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2</sub> e
Emission Factors	0.02151	0.00430	530.17041	531.98982
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2</sub> e
Emission Factors	0.02144	0.00429	528.45375	530.26726
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2</sub> e
Emission Factors	0.02159	0.00432	532.20301	534.02939
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2</sub> e
Emission Factors	0.02150	0.00430	529.93313	531.75173

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

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	NH <sub>3</sub>
LDGV	0.20701	0.00208	0.11518	3.37463	0.00384	0.00340	0.02428
LDGT	0.22360	0.00269	0.20505	3.82428	0.00530	0.00469	0.02600
HDGV	0.90329	0.00604	0.91545	14.34210	0.02423	0.02143	0.05160
LDDV	0.06685	0.00107	0.08513	3.34703	0.00249	0.00229	0.00816
LDDT	0.07298	0.00122	0.12822	2.30536	0.00327	0.00301	0.00852
HDDV	0.12003	0.00426	2.51513	1.60098	0.05025	0.04623	0.03234
MC	2.72502	0.00258	0.64233	12.97662	0.02370	0.02096	0.05325

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

	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2</sub> e
LDGV	0.01300	0.00478	312.83244	314.57980
LDGT	0.01600	0.00725	404.71763	407.27488

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

HDGV	0.06773	0.02960	909.96246	920.46532
LDDV	0.03748	0.00068	320.89540	322.03457
LDDT	0.02856	0.00100	365.62401	366.63449
HDDV	0.02473	0.00323	1266.89382	1268.47338
MC	0.11005	0.00300	388.70037	392.34534

## 4.1.4 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

$$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$$

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)  
 HP: Equipment Horsepower  
 LF: Equipment Load Factor  
 EF<sub>POL</sub>: Emission Factor for Pollutant (g/hp-hour)  
 0.002205: Conversion Factor grams to pounds  
 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)



# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1.25: Conversion Factor Number of Construction Equipment to Number of Works  
 NE: Number of Construction Equipment

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

$V_{POL}$ : Vehicle Emissions (TONs)  
 $VMT_{WT}$ : Worker Trips Vehicle Miles Travel (miles)  
 0.002205: Conversion Factor grams to pounds  
 $EF_{POL}$ : Emission Factor for Pollutant (grams/mile)  
 VM: Worker Trips On Road Vehicle Mixture (%)  
 2000: Conversion Factor pounds to tons

## 5. Personnel

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### 5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline?    Add

- Activity Location

County: Brooks  
 Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: HLZ-1 Opposing Forces

- Activity Description:

To provide a more realistic training experience, approximately ten personnel will act as "opposing forces" at HLZ-1.

- Activity Start Date

Start Month: 1  
 Start Year: 2024

- Activity End Date

Indefinite: Yes  
 End Month: N/A  
 End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.001400
SO <sub>x</sub>	0.000013
NO <sub>x</sub>	0.000950
CO	0.020248

Pollutant	Emissions Per Year (TONs)
PM 10	0.000027
PM 2.5	0.000024
Pb	0.000000
NH <sub>3</sub>	0.000137

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH <sub>4</sub>	0.000088
N <sub>2</sub> O	0.000033

Pollutant	Emissions Per Year (TONs)
CO <sub>2</sub>	1.957019
CO <sub>2</sub> e	1.969033

### 5.2 Personnel Assumptions

- Number of Personnel

Active Duty Personnel: 10

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

**Civilian Personnel:** 0  
**Support Contractor Personnel:** 0  
**Air National Guard (ANG) Personnel:** 0  
**Reserve Personnel:** 0

- Default Settings Used: No

- Average Personnel Round Trip Commute (mile): 40

**- Personnel Work Schedule**

**Active Duty Personnel:** 1 Days Per Month  
**Civilian Personnel:** 5 Days Per Week  
**Support Contractor Personnel:** 5 Days Per Week  
**Air National Guard (ANG) Personnel:** 4 Days Per Week  
**Reserve Personnel:** 4 Days Per Month

### 5.3 Personnel On Road Vehicle Mixture

**- On Road Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

### 5.4 Personnel Emission Factor(s)

**- On Road Vehicle Criteria Pollutant Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	NH <sub>3</sub>
LDGV	0.20701	0.00208	0.11518	3.37463	0.00384	0.00340	0.02428
LDGT	0.22360	0.00269	0.20505	3.82428	0.00530	0.00469	0.02600
HDGV	0.90329	0.00604	0.91545	14.34210	0.02423	0.02143	0.05160
LDDV	0.06685	0.00107	0.08513	3.34703	0.00249	0.00229	0.00816
LDDT	0.07298	0.00122	0.12822	2.30536	0.00327	0.00301	0.00852
HDDV	0.12003	0.00426	2.51513	1.60098	0.05025	0.04623	0.03234
MC	2.72502	0.00258	0.64233	12.97662	0.02370	0.02096	0.05325

**- On Road Vehicle Greenhouse Gasses Emission Factors (grams/mile)**

	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2e</sub>
LDGV	0.01300	0.00478	312.83244	314.57980
LDGT	0.01600	0.00725	404.71763	407.27488
HDGV	0.06773	0.02960	909.96246	920.46532
LDDV	0.03748	0.00068	320.89540	322.03457
LDDT	0.02856	0.00100	365.62401	366.63449
HDDV	0.02473	0.00323	1266.89382	1268.47338
MC	0.11005	0.00300	388.70037	392.34534

### 5.5 Personnel Formula(s)

**- Personnel Vehicle Miles Travel for Work Days per Year**

$$VMT_p = NP * WD * AC$$

VMT<sub>p</sub>: Personnel Vehicle Miles Travel (miles/year)

NP: Number of Personnel

WD: Work Days per Year

AC: Average Commute (miles)

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## - Total Vehicle Miles Travel per Year

$$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$$

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

VMT<sub>AD</sub>: Active Duty Personnel Vehicle Miles Travel (miles)

VMT<sub>C</sub>: Civilian Personnel Vehicle Miles Travel (miles)

VMT<sub>SC</sub>: Support Contractor Personnel Vehicle Miles Travel (miles)

VMT<sub>ANG</sub>: Air National Guard Personnel Vehicle Miles Travel (miles)

VMT<sub>AFRC</sub>: Reserve Personnel Vehicle Miles Travel (miles)

## - Vehicle Emissions per Year

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

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

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

0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)

VM: Personnel On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

## 6. Personnel

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### 6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

#### - Activity Location

County: Lowndes

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: HLZ-2 Opposing Forces

#### - Activity Description:

To provide a more realistic training experience, approximately ten personnel will act as "opposing forces" at HLZ-2.

#### - Activity Start Date

Start Month: 1

Start Year: 2024

#### - Activity End Date

Indefinite: Yes

End Month: N/A

End Year: N/A

#### - Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.001400
SO <sub>x</sub>	0.000013
NO <sub>x</sub>	0.000950
CO	0.020248

Pollutant	Emissions Per Year (TONs)
PM 10	0.000027
PM 2.5	0.000024
Pb	0.000000
NH <sub>3</sub>	0.000137

#### - Global Scale Activity Emissions of Greenhouse Gasses:

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Pollutant	Emissions Per Year (TONs)
CH <sub>4</sub>	0.000088
N <sub>2</sub> O	0.000033

Pollutant	Emissions Per Year (TONs)
CO <sub>2</sub>	1.957019
CO <sub>2e</sub>	1.969033

## 6.2 Personnel Assumptions

### - Number of Personnel

Active Duty Personnel:	10
Civilian Personnel:	0
Support Contractor Personnel:	0
Air National Guard (ANG) Personnel:	0
Reserve Personnel:	0

- Default Settings Used: No

- Average Personnel Round Trip Commute (mile): 40

### - Personnel Work Schedule

Active Duty Personnel:	1 Days Per Month
Civilian Personnel:	5 Days Per Week
Support Contractor Personnel:	5 Days Per Week
Air National Guard (ANG) Personnel:	4 Days Per Week
Reserve Personnel:	4 Days Per Month

## 6.3 Personnel On Road Vehicle Mixture

### - On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

## 6.4 Personnel Emission Factor(s)

### - On Road Vehicle Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	NH <sub>3</sub>
LDGV	0.20701	0.00208	0.11518	3.37463	0.00384	0.00340	0.02428
LDGT	0.22360	0.00269	0.20505	3.82428	0.00530	0.00469	0.02600
HDGV	0.90329	0.00604	0.91545	14.34210	0.02423	0.02143	0.05160
LDDV	0.06685	0.00107	0.08513	3.34703	0.00249	0.00229	0.00816
LDDT	0.07298	0.00122	0.12822	2.30536	0.00327	0.00301	0.00852
HDDV	0.12003	0.00426	2.51513	1.60098	0.05025	0.04623	0.03234
MC	2.72502	0.00258	0.64233	12.97662	0.02370	0.02096	0.05325

### - On Road Vehicle Greenhouse Gasses Emission Factors (grams/mile)

	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2e</sub>
LDGV	0.01300	0.00478	312.83244	314.57980
LDGT	0.01600	0.00725	404.71763	407.27488
HDGV	0.06773	0.02960	909.96246	920.46532
LDDV	0.03748	0.00068	320.89540	322.03457
LDDT	0.02856	0.00100	365.62401	366.63449
HDDV	0.02473	0.00323	1266.89382	1268.47338
MC	0.11005	0.00300	388.70037	392.34534

## 6.5 Personnel Formula(s)

# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

## - Personnel Vehicle Miles Travel for Work Days per Year

$$VMT_P = NP * WD * AC$$

VMT<sub>P</sub>: Personnel Vehicle Miles Travel (miles/year)

NP: Number of Personnel

WD: Work Days per Year

AC: Average Commute (miles)

## - Total Vehicle Miles Travel per Year

$$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$$

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

VMT<sub>AD</sub>: Active Duty Personnel Vehicle Miles Travel (miles)

VMT<sub>C</sub>: Civilian Personnel Vehicle Miles Travel (miles)

VMT<sub>SC</sub>: Support Contractor Personnel Vehicle Miles Travel (miles)

VMT<sub>ANG</sub>: Air National Guard Personnel Vehicle Miles Travel (miles)

VMT<sub>AFRC</sub>: Reserve Personnel Vehicle Miles Travel (miles)

## - Vehicle Emissions per Year

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

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

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

0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)

VM: Personnel On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

## 7. Personnel

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### 7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

#### - Activity Location

County: Lowndes

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: HLZ-3 Opposing Forces

#### - Activity Description:

To provide a more realistic training experience, approximately ten personnel will act as "opposing forces" at HLZ-3.

#### - Activity Start Date

Start Month: 1

Start Year: 2024

#### - Activity End Date

Indefinite: Yes

End Month: N/A

End Year: N/A

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**- Activity Emissions of Criteria Pollutants:**

Pollutant	Emissions Per Year (TONs)
VOC	0.001400
SO <sub>x</sub>	0.000013
NO <sub>x</sub>	0.000950
CO	0.020248

Pollutant	Emissions Per Year (TONs)
PM 10	0.000027
PM 2.5	0.000024
Pb	0.000000
NH <sub>3</sub>	0.000137

**- Global Scale Activity Emissions of Greenhouse Gasses:**

Pollutant	Emissions Per Year (TONs)
CH <sub>4</sub>	0.000088
N <sub>2</sub> O	0.000033

Pollutant	Emissions Per Year (TONs)
CO <sub>2</sub>	1.957019
CO <sub>2</sub> e	1.969033

## 7.2 Personnel Assumptions

**- Number of Personnel**

Active Duty Personnel:	10
Civilian Personnel:	0
Support Contractor Personnel:	0
Air National Guard (ANG) Personnel:	0
Reserve Personnel:	0

**- Default Settings Used:** No

**- Average Personnel Round Trip Commute (mile):** 40

**- Personnel Work Schedule**

Active Duty Personnel:	1 Days Per Month
Civilian Personnel:	5 Days Per Week
Support Contractor Personnel:	5 Days Per Week
Air National Guard (ANG) Personnel:	4 Days Per Week
Reserve Personnel:	4 Days Per Month

## 7.3 Personnel On Road Vehicle Mixture

**- On Road Vehicle Mixture (%)**

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

## 7.4 Personnel Emission Factor(s)

**- On Road Vehicle Criteria Pollutant Emission Factors (grams/mile)**

	VOC	SO <sub>x</sub>	NO <sub>x</sub>	CO	PM 10	PM 2.5	NH <sub>3</sub>
LDGV	0.20701	0.00208	0.11518	3.37463	0.00384	0.00340	0.02428
LDGT	0.22360	0.00269	0.20505	3.82428	0.00530	0.00469	0.02600
HDGV	0.90329	0.00604	0.91545	14.34210	0.02423	0.02143	0.05160
LDDV	0.06685	0.00107	0.08513	3.34703	0.00249	0.00229	0.00816
LDDT	0.07298	0.00122	0.12822	2.30536	0.00327	0.00301	0.00852
HDDV	0.12003	0.00426	2.51513	1.60098	0.05025	0.04623	0.03234
MC	2.72502	0.00258	0.64233	12.97662	0.02370	0.02096	0.05325

**- On Road Vehicle Greenhouse Gasses Emission Factors (grams/mile)**

	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CO <sub>2</sub> e
LDGV	0.01300	0.00478	312.83244	314.57980



# DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

LDGT	0.01600	0.00725	404.71763	407.27488
HDGV	0.06773	0.02960	909.96246	920.46532
LDDV	0.03748	0.00068	320.89540	322.03457
LDDT	0.02856	0.00100	365.62401	366.63449
HDDV	0.02473	0.00323	1266.89382	1268.47338
MC	0.11005	0.00300	388.70037	392.34534

## 7.5 Personnel Formula(s)

### - Personnel Vehicle Miles Travel for Work Days per Year

$$VMT_P = NP * WD * AC$$

VMT<sub>P</sub>: Personnel Vehicle Miles Travel (miles/year)

NP: Number of Personnel

WD: Work Days per Year

AC: Average Commute (miles)

### - Total Vehicle Miles Travel per Year

$$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$$

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

VMT<sub>AD</sub>: Active Duty Personnel Vehicle Miles Travel (miles)

VMT<sub>C</sub>: Civilian Personnel Vehicle Miles Travel (miles)

VMT<sub>SC</sub>: Support Contractor Personnel Vehicle Miles Travel (miles)

VMT<sub>ANG</sub>: Air National Guard Personnel Vehicle Miles Travel (miles)

VMT<sub>AFRC</sub>: Reserve Personnel Vehicle Miles Travel (miles)

### - Vehicle Emissions per Year

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

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

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

0.002205: Conversion Factor grams to pounds

EF<sub>POL</sub>: Emission Factor for Pollutant (grams/mile)

VM: Personnel On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

# AIR CONFORMITY APPLICABILITY MODEL REPORT

## GREENHOUSE GAS (GHG) EMISSIONS

**1. General Information:** The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to estimate GHG emissions and assess the theoretical Social Cost of Greenhouse Gases (SC GHG) associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions and SC GHG analysis.

**a. Action Location:**

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

**b. Action Title:** Environmental Assessment for Development of Additional HLZs at Moody Air Force Base, Georgia

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

**d. Projected Action Start Date:** 1 / 2024

**e. Action Description:**

The proposed action is to lease three parcels of land for the development of HLZs near Moody Air Force Base. Site development would be limited to the clearing of vegetation and debris. The DAF intends to use these parcels primarily for daily HH-60 helicopter personnel recovery (PR) and aircrew training. Typical PR training missions include day-to-day training and more elaborate once-per-month training events.

Day-to-day training would involve typical flight training operations associated with tactical and remote training and would fulfill the basic PR training requirements. These training events would typically be conducted two times per week and would involve two HH-60 helicopters per sortie. The helicopters would fly from Moody AFB to an HLZ at 100-500 feet AGL and 110-120 knots indicated airspeed (KIAS). Each helicopter would spend between 30 minutes and two hours conducting training activities, including hovering and pattern work, before returning to the base.

Once-per-month training events would include simulated opposing forces operations in addition to the day-to-day training. Activities would involve two ground vehicles and approximately ten personnel at each HLZ. To provide for more realistic training, personnel would utilize training munitions to create a realistic combat experience.

**f. Point of Contact:**

**Name:** Marcel Briguglio  
**Title:** Assistant Consultant, Environmental Engineer  
**Organization:** WSP  
**Email:** marcel.briguglio@wsp.com  
**Phone Number:** 443-617-5054

**2. Analysis:** Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year or 20 years beyond SS emissions year for aircraft operations related actions.

# AIR CONFORMITY APPLICABILITY MODEL REPORT GREENHOUSE GAS (GHG) EMISSIONS

## GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (NO<sub>2</sub>). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO<sub>2</sub> equivalents (CO<sub>2</sub>e). The CO<sub>2</sub>e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG’s ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO<sub>2</sub>. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO<sub>2</sub>e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO<sub>2</sub>e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO<sub>2</sub>e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	Threshold	Exceedance
2024	82	0.00303956	0.00065104	82	68,039	No
2025 [SS Year]	5	0.00024041	0.00008969	5	68,039	No
2026	5	0.00024041	0.00008969	5	68,039	No
2027	5	0.00024041	0.00008969	5	68,039	No
2028	5	0.00024041	0.00008969	5	68,039	No
2029	5	0.00024041	0.00008969	5	68,039	No
2030	5	0.00024041	0.00008969	5	68,039	No
2031	5	0.00024041	0.00008969	5	68,039	No
2032	5	0.00024041	0.00008969	5	68,039	No
2033	5	0.00024041	0.00008969	5	68,039	No
2034	5	0.00024041	0.00008969	5	68,039	No
2035	5	0.00024041	0.00008969	5	68,039	No

The following U.S. and State’s GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. <https://statesummaries.ncics.org/downloads/>).

State’s Annual GHG Emissions (mton/yr)				
YEAR	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
2024	134,190,406	447,000	21,205	134,658,611
2025 [SS Year]	134,190,406	447,000	21,205	134,658,611
2026	134,190,406	447,000	21,205	134,658,611
2027	134,190,406	447,000	21,205	134,658,611
2028	134,190,406	447,000	21,205	134,658,611
2029	134,190,406	447,000	21,205	134,658,611
2030	134,190,406	447,000	21,205	134,658,611

## AIR CONFORMITY APPLICABILITY MODEL REPORT GREENHOUSE GAS (GHG) EMISSIONS

2031	134,190,406	447,000	21,205	134,658,611
2032	134,190,406	447,000	21,205	134,658,611
2033	134,190,406	447,000	21,205	134,658,611
2034	134,190,406	447,000	21,205	134,658,611
2035	134,190,406	447,000	21,205	134,658,611

U.S. Annual GHG Emissions (mton/yr)				
YEAR	CO2	CH4	N2O	CO2e
2024	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2025 [SS Year]	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2026	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2027	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2028	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2029	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2030	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2031	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2032	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2033	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2034	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2035	5,136,454,179	25,626,912	1,500,708	5,163,581,798

### GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (yGba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	CH4	N2O	CO2e
2024-2035	State Total	1,610,284,866	5,363,999	254,461	1,615,903,327
2024-2035	U.S. Total	61,637,450,148	307,522,940	18,008,492	61,962,981,580
2024-2035	Action	140	0.005684	0.001638	141

# AIR CONFORMITY APPLICABILITY MODEL REPORT GREENHOUSE GAS (GHG) EMISSIONS

Percent of State Totals	0.00000870%	0.00000011%	0.00000064%	0.00000871%
Percent of U.S. Totals	0.00000023%	0.00000000%	0.00000001%	0.00000023%

## Climate Change Assessment (as SC GHG):

On a global scale, the potential climate change effects of an action are indirectly addressed and put into context through providing the theoretical SC GHG associated with an action. The SC GHG is an administrative and theoretical tool intended to provide additional context to a GHG’s potential impacts through approximating the long-term monetary damage that may result from GHG emissions affect on climate change. It is important to note that the SC GHG is a monetary quantification, in 2020 U.S. dollars, of the theoretical economic damages that could result from emitting GHGs into the atmosphere.

The SC GHG estimates are derived using the methodology and discount factors in the “Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990,” released by the Interagency Working Group on Social Cost of Greenhouse Gases (IWG SC GHGs) in February 2021.

The speciated IWG Annual SC GHG Emission associated with an action (or alternative) are first estimated as annual unit cost (cost per metric ton, \$/mton). Results of the annual IWG Annual SC GHG Emission Assessments are tabulated in the IWG Annual SC GHG Cost per Metric Ton Table below:

IWG SC GHG Discount Factor: 2.5%

IWG Annual SC GHG Cost per Metric Ton (\$/mton [In 2020 \$])			
YEAR	CO2	CH4	N2O
2024	\$82.00	\$2,200.00	\$29,000.00
2025 [SS Year]	\$83.00	\$2,200.00	\$30,000.00
2026	\$84.00	\$2,300.00	\$30,000.00
2027	\$86.00	\$2,300.00	\$31,000.00
2028	\$87.00	\$2,400.00	\$32,000.00
2029	\$88.00	\$2,500.00	\$32,000.00
2030	\$89.00	\$2,500.00	\$33,000.00
2031	\$91.00	\$2,600.00	\$33,000.00
2032	\$92.00	\$2,600.00	\$34,000.00
2033	\$94.00	\$2,700.00	\$35,000.00
2034	\$95.00	\$2,800.00	\$35,000.00
2035	\$96.00	\$2,800.00	\$36,000.00

Action-related SC GHG were estimated by calendar-year for the projected action’s lifecycle. Annual estimates were found by multiplying the annual emission for a given year by the corresponding IWG Annual SC GHG Emission value (see table above).

Action-Related Annual SC GHG (\$K/yr [In 2020 \$])				
YEAR	CO2	CH4	N2O	GHG
2024	\$6.69	\$0.01	\$0.02	\$6.71
2025 [SS Year]	\$0.44	\$0.00	\$0.00	\$0.45
2026	\$0.45	\$0.00	\$0.00	\$0.45
2027	\$0.46	\$0.00	\$0.00	\$0.46
2028	\$0.46	\$0.00	\$0.00	\$0.47
2029	\$0.47	\$0.00	\$0.00	\$0.47
2030	\$0.47	\$0.00	\$0.00	\$0.48
2031	\$0.48	\$0.00	\$0.00	\$0.49

## AIR CONFORMITY APPLICABILITY MODEL REPORT GREENHOUSE GAS (GHG) EMISSIONS

2032	\$0.49	\$0.00	\$0.00	\$0.49
2033	\$0.50	\$0.00	\$0.00	\$0.50
2034	\$0.51	\$0.00	\$0.00	\$0.51
2035	\$0.51	\$0.00	\$0.00	\$0.52

The following two tables summarize the U.S. and State's Annual SC GHG by calendar-year. The U.S. and State's Annual SC GHG are in 2020 dollars and were estimated by each year for the projected action lifecycle. Annual SC GHG estimates were found by multiplying the U.S. and State's annual five-year average GHG emissions for a given year by the corresponding IWG Annual SC GHG Cost per Metric Ton value.

State's Annual SC GHG (\$K/yr [In 2020 \$])				
YEAR	CO2	CH4	N2O	GHG
2024	\$11,003,613.25	\$983,399.84	\$614,948.58	\$12,601,961.68
2025 [SS Year]	\$11,137,803.66	\$983,399.84	\$636,153.71	\$12,757,357.21
2026	\$11,271,994.06	\$1,028,099.84	\$636,153.71	\$12,936,247.60
2027	\$11,540,374.88	\$1,028,099.84	\$657,358.83	\$13,225,833.54
2028	\$11,674,565.28	\$1,072,799.83	\$678,563.95	\$13,425,929.06
2029	\$11,808,755.69	\$1,117,499.82	\$678,563.95	\$13,604,819.46
2030	\$11,942,946.09	\$1,117,499.82	\$699,769.08	\$13,760,214.99
2031	\$12,211,326.90	\$1,162,199.81	\$699,769.08	\$14,073,295.79
2032	\$12,345,517.31	\$1,162,199.81	\$720,974.20	\$14,228,691.32
2033	\$12,613,898.12	\$1,206,899.81	\$742,179.32	\$14,562,977.25
2034	\$12,748,088.53	\$1,251,599.80	\$742,179.32	\$14,741,867.65
2035	\$12,882,278.93	\$1,251,599.80	\$763,384.45	\$14,897,263.18

U.S. Annual SC GHG (\$K/yr [In 2020 \$])				
YEAR	CO2	CH4	N2O	GHG
2024	\$421,189,242.68	\$56,379,205.70	\$43,520,521.44	\$521,088,969.82
2025 [SS Year]	\$426,325,696.86	\$56,379,205.70	\$45,021,229.08	\$527,726,131.63
2026	\$431,462,151.04	\$58,941,896.86	\$45,021,229.08	\$535,425,276.98
2027	\$441,735,059.39	\$58,941,896.86	\$46,521,936.72	\$547,198,892.97
2028	\$446,871,513.57	\$61,504,588.03	\$48,022,644.35	\$556,398,745.96
2029	\$452,007,967.75	\$64,067,279.20	\$48,022,644.35	\$564,097,891.30
2030	\$457,144,421.93	\$64,067,279.20	\$49,523,351.99	\$570,735,053.12
2031	\$467,417,330.29	\$66,629,970.37	\$49,523,351.99	\$583,570,652.65
2032	\$472,553,784.47	\$66,629,970.37	\$51,024,059.62	\$590,207,814.46
2033	\$482,826,692.83	\$69,192,661.54	\$52,524,767.26	\$604,544,121.62
2034	\$487,963,147.01	\$71,755,352.70	\$52,524,767.26	\$612,243,266.97
2035	\$493,099,601.18	\$71,755,352.70	\$54,025,474.90	\$618,880,428.78

### Relative Comparison of SC GHG:

To provide additional real-world context to the potential climate change impact associate with an action, a Relative Comparison of SC GHG Assessment is also performed. While the SC GHG estimates capture an indirect approximation of global climate damages, the Relative Comparison of SC GHG Assessment provides a better perspective from a regional and global scale.

The Relative Comparison of SC GHG Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (yGba.e., global, national, and regional) and the SC GHG as the degree (intensity) of the proposed action's effects. The Relative Comparison Assessment provides real-world context and allows for a reasoned choice among alternatives through a relative contrast analysis which weighs each alternative's SC GHG proportionally against (or relative to) existing global, national, and regional SC GHG. The below table

# AIR CONFORMITY APPLICABILITY MODEL REPORT GREENHOUSE GAS (GHG) EMISSIONS

provides a relative comparison between an action's SC GHG vs. state and U.S. projected SC GHG for the same time period:

Total SC-GHG (\$K [In 2020 \$])					
		CO2	CH4	N2O	GHG
2024-2035	State Total	\$143,181,162.70	\$13,365,297.86	\$8,269,998.17	\$164,816,458.73
2024-2035	U.S. Total	\$5,480,596,608.99	\$766,244,659.23	\$585,275,978.04	\$6,832,117,246.27
2024-2035	Action	\$11.93	\$0.01	\$0.05	\$12.00
Percent of State Totals		0.00000833%	0.00000010%	0.00000062%	0.00000728%
Percent of U.S. Totals		0.00000022%	0.00000000%	0.00000001%	0.00000018%

From a global context, the action alternative's total SC GHG percentage of total global SC GHG for the same time period is: 0.00000002%.\*

\* Global value based on the U.S. emits 13.4% of all global GHG annual emissions (2018 Emissions Data, Center for Climate and Energy Solutions, accessed 7-6-2023, <https://www.c2es.org/content/international-emissions>).

Marcel Briguglio, Assistant Consultant, Environmental Engineer

Oct 10 2023

**Name, Title**

**Date**



**APPENDIX D: ACAM OUTPUT**

**Development of Additional HLZs at Moody Air Force Base, Georgia  
Air Emissions from Proposed Action at HLZ-1**

**1 Initial Construction of HLZ-1**

Analysis of air emissions from the initial construction of HLZ-1 was completed using USAF's Air Conformity Applicability Model (ACAM). See the detailed ACAM report for a description of the air emissions calculations. Results are summarized in Section 1.2.

**1.1 Parameter**

Parcel Area (acres)	2.3
Depth of Site Grading (feet)	1

**1.2 Air Emissions - Initial Construction of HLZ-1**

Operation	Emissions (tons/yr)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
<b>Total</b>	<b>1.55E-01</b>	<b>2.26E-04</b>	<b>1.55E-01</b>	<b>1.61E-02</b>	<b>1.00</b>	<b>6.79E-03</b>	<b>28.17</b>

**2 Occasional Operations - HH-60G Aircraft**

**2.1 Parameter**

Aircraft type:	HH-60G	
Aircraft engine:	T-700-GE-700	
Number of engines:	2	
Number of sorties		
Number ops per week:	2	
Number weeks per year:	52	
Aircraft/sortie:	2	
Travel Moody AFB to HLZ		
Distance to HLZ (mi)	15	
KIAS	110	
Sortie duration		<b>Engine Power Setting Assumed</b>
Round trip flight time (hr)	0.24	Flight max
Pattern flying time (hr)	1.00	Flight Idle
Hovering time (hr)	0.80	Flight Idle
Ground running time (hr)	0.20	Ground Idle

**2.2 Emission Factors**

Power Setting	Thrust (%)	Fuel Flow Rate (lb/hr)	Emission Factors (lb/100 lb fuel)						
			NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
Ground Idle	4%	134	3.36	1.07	46.24	0.50	1.48	1.33	3214.59
Flight Idle	56%	469	10.95	1.07	5.12	0.02	1.26	1.13	3214.59
Flight max	82%	626	11.87	1.07	3.51	0.01	2.22	2.00	3214.59
Overspeed	100%	725	11.43	1.07	2.81	0.01	2.61	2.33	3214.59

Notes:

Emission factors for T-700-GE-700 engine [Air Emissions Guide for Air Force Mobile Sources, Table 2-9, June 2023, USAF]

**2.3 Air Emissions - Occasional Operations - HH-60G Aircraft**

Operation	Duration (hr/yr)	Fuel Usage (lb/yr)	Emissions (tons/yr)						
			NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
Round trip flight	49	13,220	7.85E-02	7.07E-03	2.32E-02	6.61E-05	1.47E-02	1.32E-02	21.25
Pattern flying	208	195,104	1.07	1.04E-01	4.99E-01	1.95E-03	1.23E-01	1.10E-01	313.59
Hovering	166	208,333	1.14	1.11E-01	5.33E-01	2.08E-03	1.31E-01	1.18E-01	334.85
Ground running	41.6	60,320	1.01E-01	3.23E-02	1.39	1.51E-02	4.46E-02	4.01E-02	96.95
<b>Total</b>			<b>2.39</b>	<b>2.55E-01</b>	<b>2.45</b>	<b>1.92E-02</b>	<b>3.13E-01</b>	<b>2.81E-01</b>	<b>766.64</b>

**3 Occasional Operations - Ammunition Usage**

**3.1 Parameter**

Number of ops	
Number ops per month:	1
Number months per year:	12
Ammunition usage per op	
7.62-mm (M240)	100
5.56-mm (M4)	500
Smoke cartridge (MK-18)	4
Smoke cartridge (MK-23)	1
Ground burst simulator	2

**3.2 Emission Factors**

Ammunition Description	DODIC	Emission Factors (lb/item)						
		NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
7.62-mm (M240)	A143	9.70E-05		2.30E-03		5.10E-05	3.80E-05	1.20E-03
5.56-mm (M4)	A059	8.50E-05		1.60E-03		3.90E-05	2.80E-05	8.70E-04
Smoke cartridge (MK-18)	G940	8.10E-05	1.60E-04	1.20E-02	2.10E-03	1.30E-01	1.00E-01	8.40E-02
Smoke cartridge (MK-23)	G978	4.40E-04		1.20E-02	2.00E-03	5.30E-02	2.90E-02	1.50E-02
Ground burst simulator	L594	5.50E-03	1.50E-04	2.10E-03	1.30E-04	1.90E-01	1.90E-01	3.40E-03

Notes:

Emission factors for DODIC A143 from AP-42, Section 15.1.15, Table 15.1.15-1 [February 2008, USEPA].

Emission factors for DODIC A059 from AP-42, Section 15.1.4, Table 15.1.4-1 [February 2008, USEPA].

Emission factors for DODIC G940 from AP-42, Section 15.5.6, Table 15.5.6-1 [July 2009, USEPA].

Emission factors for DODIC G978 from AP-42, Section 15.5.11, Table 15.5.11-1 [July 2009, USEPA].

Emission factors for DODIC L594 from AP-42, Section 15.8.10, Table 15.8.10-1 [July 2009, USEPA].

### 3.3 Air Emissions - Occasional Operations - Ammunition Usage

Ammunition Description	DODIC	Emissions (tons/yr)						
		NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
7.62-mm (M240)	A143	4.85E-06	0.00E+00	1.15E-04	0.00E+00	2.55E-06	1.90E-06	6.00E-05
5.56-mm (M4)	A059	2.13E-05	0.00E+00	4.00E-04	0.00E+00	9.75E-06	7.00E-06	2.18E-04
Smoke cartridge (MK-18)	G940	1.62E-07	3.20E-07	2.40E-05	4.20E-06	2.60E-04	2.00E-04	1.68E-04
Smoke cartridge (MK-23)	G978	2.20E-07	0.00E+00	6.00E-06	1.00E-06	2.65E-05	1.45E-05	7.50E-06
Ground burst simulator	L594	5.50E-06	1.50E-07	2.10E-06	1.30E-07	1.90E-04	1.90E-04	3.40E-06
<b>Total</b>		<b>3.20E-05</b>	<b>4.70E-07</b>	<b>5.47E-04</b>	<b>5.33E-06</b>	<b>4.89E-04</b>	<b>4.13E-04</b>	<b>4.56E-04</b>

### 4 Occasional Operations - Personnel

Analysis of air emissions from the initial construction of HLZ-1 was completed using USAF's Air Conformity Applicability Model (ACAM). See the detailed ACAM report for a description of the air emissions calculations. Results are summarized in Section 4.2.

#### 4.1 Parameter

Number of Active Duty Personnel	10
Average Personnel Round Trip Commute (mile)	40
Personnel Work Schedule (days per month)	1
Number months per year:	12

#### 4.2 Air Emissions - Occasional Operations - Opposing Forces Personnel

Operation	Emissions (tons/yr)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
<b>Total</b>	<b>9.50E-04</b>	<b>1.30E-05</b>	<b>2.02E-02</b>	<b>1.40E-03</b>	<b>2.70E-04</b>	<b>2.40E-05</b>	<b>1.97</b>

### 5 Air Emissions -Total for Proposed Action at HLZ-1

Operation	Emissions (tons/yr)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
Initial Construction of HLZ-1	0.16	0.00	0.15	0.02	1.00	0.01	28.17
Occasional HH60G	2.39	0.26	2.45	0.02	0.31	0.28	766.64
Occasional Ammunition Use	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Occasional Operations - Personnel	0.00	0.00	0.02	0.00	0.00	0.00	1.97
<b>Total</b>	<b>2.54</b>	<b>0.26</b>	<b>2.63</b>	<b>0.04</b>	<b>1.32</b>	<b>0.29</b>	<b>796.78</b>

**Development of Additional HLZs at Moody Air Force Base, Georgia  
Air Emissions from Proposed Action at HLZ-2**

**1 Initial Construction of HLZ-2**

Analysis of air emissions from the initial construction of HLZ-2 was completed using USAF's Air Conformity Applicability Model (ACAM). See the detailed ACAM report for a description of the air emissions calculations. Results are summarized in Section 1.2.

**1.1 Parameter**

Parcel Area (acres)	2.0
Depth of Site Grading (feet)	1

**1.2 Air Emissions - Initial Construction of HLZ-2**

Operation	Emissions (tons/yr)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
<b>Total</b>	<b>1.54E-01</b>	<b>2.24E-04</b>	<b>1.54E-01</b>	<b>1.61E-02</b>	<b>8.74E-01</b>	<b>6.76E-03</b>	<b>27.49</b>

**2 Occasional Operations - HH-60G Aircraft**

**2.1 Parameter**

Aircraft type:	HH-60G	
Aircraft engine:	T-700-GE-700	
Number of engines:	2	
Number of sorties		
Number ops per week:	2	
Number weeks per year:	52	
Aircraft/sortie:	2	
Travel Moody AFB to HLZ		
Distance to HLZ (mi)	17	
KIAS	110	
Sortie duration		<b>Engine Power Setting Assumed</b>
Round trip flight time (hr)	0.27	Flight max
Pattern flying time (hr)	1.00	Flight Idle
Hovering time (hr)	0.80	Flight Idle
Ground running time (hr)	0.20	Ground Idle

**2.2 Emission Factors**

Power Setting	Thrust (%)	Fuel Flow Rate (lb/hr)	Emission Factors (lb/100 lb fuel)						
			NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
Ground Idle	4%	134	3.36	1.07	46.24	0.50	1.48	1.33	3214.59
Flight Idle	56%	469	10.95	1.07	5.12	0.02	1.26	1.13	3214.59
Flight max	82%	626	11.87	1.07	3.51	0.01	2.22	2.00	3214.59
Overspeed	100%	725	11.43	1.07	2.81	0.01	2.61	2.33	3214.59

Notes:

Emission factors for T-700-GE-700 engine [Air Emissions Guide for Air Force Mobile Sources, Table 2-9, June 2023, USAF]

**2.3 Air Emissions - Occasional Operations - HH-60G Aircraft**

Operation	Duration (hr/yr)	Fuel Usage (lb/yr)	Emissions (tons/yr)						
			NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
Round trip flight	56	14,983	8.89E-02	8.02E-03	2.63E-02	7.49E-05	1.66E-02	1.50E-02	24.08
Pattern flying	208	195,104	1.07	1.04E-01	4.99E-01	1.95E-03	1.23E-01	1.10E-01	313.59
Hovering	166	208,333	1.14	1.11E-01	5.33E-01	2.08E-03	1.31E-01	1.18E-01	334.85
Ground running	41.6	60,320	1.01E-01	3.23E-02	1.39	1.51E-02	4.46E-02	4.01E-02	96.95
<b>Total</b>			<b>2.40</b>	<b>2.56E-01</b>	<b>2.45</b>	<b>1.92E-02</b>	<b>3.15E-01</b>	<b>2.83E-01</b>	<b>769.48</b>

**3 Occasional Operations - Ammunition Usage**

**3.1 Parameter**

Number of ops	
Number ops per month:	1
Number months per year:	12
Ammunition usage per op	
7.62-mm (M240)	100
5.56-mm (M4)	500
Smoke cartridge (MK-18)	4
Smoke cartridge (MK-23)	1
Ground burst simulator	2

**3.2 Emission Factors**

Ammunition Description	DODIC	Emission Factors (lb/item)						
		NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
7.62-mm (M240)	A143	9.70E-05		2.30E-03		5.10E-05	3.80E-05	1.20E-03
5.56-mm (M4)	A059	8.50E-05		1.60E-03		3.90E-05	2.80E-05	8.70E-04
Smoke cartridge (MK-18)	G940	8.10E-05	1.60E-04	1.20E-02	2.10E-03	1.30E-01	1.00E-01	8.40E-02
Smoke cartridge (MK-23)	G978	4.40E-04		1.20E-02	2.00E-03	5.30E-02	2.90E-02	1.50E-02
Ground burst simulator	L594	5.50E-03	1.50E-04	2.10E-03	1.30E-04	1.90E-01	1.90E-01	3.40E-03

Notes:

Emission factors for DODIC A143 from AP-42, Section 15.1.15, Table 15.1.15-1 [February 2008, USEPA].

Emission factors for DODIC A059 from AP-42, Section 15.1.4, Table 15.1.4-1 [February 2008, USEPA].

Emission factors for DODIC G940 from AP-42, Section 15.5.6, Table 15.5.6-1 [July 2009, USEPA].

Emission factors for DODIC G978 from AP-42, Section 15.5.11, Table 15.5.11-1 [July 2009, USEPA].

Emission factors for DODIC L594 from AP-42, Section 15.8.10, Table 15.8.10-1 [July 2009, USEPA].

### 3.3 Air Emissions - Occasional Operations - Ammunition Usage

Ammunition Description	DODIC	Emissions (tons/yr)						
		NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
7.62-mm (M240)	A143	4.85E-06	0.00E+00	1.15E-04	0.00E+00	2.55E-06	1.90E-06	6.00E-05
5.56-mm (M4)	A059	2.13E-05	0.00E+00	4.00E-04	0.00E+00	9.75E-06	7.00E-06	2.18E-04
Smoke cartridge (MK-18)	G940	1.62E-07	3.20E-07	2.40E-05	4.20E-06	2.60E-04	2.00E-04	1.68E-04
Smoke cartridge (MK-23)	G978	2.20E-07	0.00E+00	6.00E-06	1.00E-06	2.65E-05	1.45E-05	7.50E-06
Ground burst simulator	L594	5.50E-06	1.50E-07	2.10E-06	1.30E-07	1.90E-04	1.90E-04	3.40E-06
<b>Total</b>		<b>3.20E-05</b>	<b>4.70E-07</b>	<b>5.47E-04</b>	<b>5.33E-06</b>	<b>4.89E-04</b>	<b>4.13E-04</b>	<b>4.56E-04</b>

### 4 Occasional Operations - Personnel

Analysis of air emissions from the initial construction of HLZ-2 was completed using USAF's Air Conformity Applicability Model (ACAM). See the detailed ACAM report for a description of the air emissions calculations. Results are summarized in Section 4.2.

#### 4.1 Parameter

Number of Active Duty Personnel	10
Average Personnel Round Trip Commute (mile)	40
Personnel Work Schedule (days per month)	1
Number months per year:	12

#### 4.2 Air Emissions - Occasional Operations - Opposing Forces Personnel

Operation	Emissions (tons/yr)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
<b>Total</b>	<b>9.50E-04</b>	<b>1.30E-05</b>	<b>2.02E-02</b>	<b>1.40E-03</b>	<b>2.70E-05</b>	<b>2.40E-05</b>	<b>1.97</b>

### 5 Air Emissions -Total for Proposed Action at HLZ-2

Operation	Emissions (tons/yr)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
Initial Construction of HLZ-2	0.15	0.00	0.15	0.02	0.87	0.01	27.49
Occasional HH60G	2.40	0.26	2.45	0.02	0.32	0.28	769.48
Occasional Ammunition Use	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Occasional Operations - Personnel	0.00	0.00	0.02	0.00	0.00	0.00	1.97
<b>Total</b>	<b>2.55</b>	<b>0.26</b>	<b>2.63</b>	<b>0.04</b>	<b>1.19</b>	<b>0.29</b>	<b>798.94</b>

**Development of Additional HLZs at Moody Air Force Base, Georgia  
Air Emissions from Proposed Action at HLZ-3**

**1 Initial Construction of HLZ-3**

Analysis of air emissions from the initial construction of HLZ-3 was completed using USAF's Air Conformity Applicability Model (ACAM). See the detailed ACAM report for a description of the air emissions calculations. Results are summarized in Section 1.2.

**1.1 Parameter**

Parcel Area (acres)	2.5
Depth of Site Grading (feet)	1

**1.2 Air Emissions - Initial Construction of HLZ-3**

Operation	Emissions (tons/yr)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
<b>Total</b>	<b>1.56E-01</b>	<b>2.28E-04</b>	<b>1.55E-01</b>	<b>1.62E-02</b>	<b>1.09E+00</b>	<b>6.80E-03</b>	<b>28.62</b>

**2 Occasional Operations - HH-60G Aircraft**

**2.1 Parameter**

Aircraft type:	HH-60G	
Aircraft engine:	T-700-GE-700	
Number of engines:	2	
Number of sorties		
Number ops per week:	2	
Number weeks per year:	52	
Aircraft/sortie:	2	
Travel Moody AFB to HLZ		
Distance to HLZ (mi)	17	
KIAS	110	
Sortie duration		<b>Engine Power Setting Assumed</b>
Round trip flight time (hr)	0.27	Flight max
Pattern flying time (hr)	1.00	Flight Idle
Hovering time (hr)	0.80	Flight Idle
Ground running time (hr)	0.20	Ground Idle

**2.2 Emission Factors**

Power Setting	Thrust (%)	Fuel Flow Rate (lb/hr)	Emission Factors (lb/100 lb fuel)						
			NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
Ground Idle	4%	134	3.36	1.07	46.24	0.50	1.48	1.33	3214.59
Flight Idle	56%	469	10.95	1.07	5.12	0.02	1.26	1.13	3214.59
Flight max	82%	626	11.87	1.07	3.51	0.01	2.22	2.00	3214.59
Overspeed	100%	725	11.43	1.07	2.81	0.01	2.61	2.33	3214.59

Notes:

Emission factors for T-700-GE-700 engine [Air Emissions Guide for Air Force Mobile Sources, Table 2-9, June 2023, USAF]

**2.3 Air Emissions - Occasional Operations - HH-60G Aircraft**

Operation	Duration (hr/yr)	Fuel Usage (lb/yr)	Emissions (tons/yr)						
			NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
Round trip flight	56	14,983	8.89E-02	8.02E-03	2.63E-02	7.49E-05	1.66E-02	1.50E-02	24.08
Pattern flying	208	195,104	1.07	1.04E-01	4.99E-01	1.95E-03	1.23E-01	1.10E-01	313.59
Hovering	166	208,333	1.14	1.11E-01	5.33E-01	2.08E-03	1.31E-01	1.18E-01	334.85
Ground running	41.6	60,320	1.01E-01	3.23E-02	1.39	1.51E-02	4.46E-02	4.01E-02	96.95
<b>Total</b>			<b>2.40</b>	<b>2.56E-01</b>	<b>2.45</b>	<b>1.92E-02</b>	<b>3.15E-01</b>	<b>2.83E-01</b>	<b>769.48</b>

**3 Occasional Operations - Ammunition Usage**

**3.1 Parameter**

Number of ops	
Number ops per month:	1
Number months per year:	12
Ammunition usage per op	
7.62-mm (M240)	100
5.56-mm (M4)	500
Smoke cartridge (MK-18)	4
Smoke cartridge (MK-23)	1
Ground burst simulator	2

**3.2 Emission Factors**

Ammunition Description	DODIC	Emission Factors (lb/item)						
		NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
7.62-mm (M240)	A143	9.70E-05		2.30E-03		5.10E-05	3.80E-05	1.20E-03
5.56-mm (M4)	A059	8.50E-05		1.60E-03		3.90E-05	2.80E-05	8.70E-04
Smoke cartridge (MK-18)	G940	8.10E-05	1.60E-04	1.20E-02	2.10E-03	1.30E-01	1.00E-01	8.40E-02
Smoke cartridge (MK-23)	G978	4.40E-04		1.20E-02	2.00E-03	5.30E-02	2.90E-02	1.50E-02
Ground burst simulator	L594	5.50E-03	1.50E-04	2.10E-03	1.30E-04	1.90E-01	1.90E-01	3.40E-03

Notes:

Emission factors for DODIC A143 from AP-42, Section 15.1.15, Table 15.1.15-1 [February 2008, USEPA].

Emission factors for DODIC A059 from AP-42, Section 15.1.4, Table 15.1.4-1 [February 2008, USEPA].

Emission factors for DODIC G940 from AP-42, Section 15.5.6, Table 15.5.6-1 [July 2009, USEPA].

Emission factors for DODIC G978 from AP-42, Section 15.5.11, Table 15.5.11-1 [July 2009, USEPA].

Emission factors for DODIC L594 from AP-42, Section 15.8.10, Table 15.8.10-1 [July 2009, USEPA].

### 3.3 Air Emissions - Occasional Operations - Ammunition Usage

Ammunition Description	DODIC	Emissions (tons/yr)						
		NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
7.62-mm (M240)	A143	4.85E-06	0.00E+00	1.15E-04	0.00E+00	2.55E-06	1.90E-06	6.00E-05
5.56-mm (M4)	A059	2.13E-05	0.00E+00	4.00E-04	0.00E+00	9.75E-06	7.00E-06	2.18E-04
Smoke cartridge (MK-18)	G940	1.62E-07	3.20E-07	2.40E-05	4.20E-06	2.60E-04	2.00E-04	1.68E-04
Smoke cartridge (MK-23)	G978	2.20E-07	0.00E+00	6.00E-06	1.00E-06	2.65E-05	1.45E-05	7.50E-06
Ground burst simulator	L594	5.50E-06	1.50E-07	2.10E-06	1.30E-07	1.90E-04	1.90E-04	3.40E-06
<b>Total</b>		<b>3.20E-05</b>	<b>4.70E-07</b>	<b>5.47E-04</b>	<b>5.33E-06</b>	<b>4.89E-04</b>	<b>4.13E-04</b>	<b>4.56E-04</b>

### 4 Occasional Operations - Personnel

Analysis of air emissions from the initial construction of HLZ-3 was completed using USAF's Air Conformity Applicability Model (ACAM). See the detailed ACAM report for a description of the air emissions calculations. Results are summarized in Section 4.2.

#### 4.1 Parameter

Number of Active Duty Personnel	10
Average Personnel Round Trip Commute (mile)	40
Personnel Work Schedule (days per month)	1
Number months per year:	12

#### 4.2 Air Emissions - Occasional Operations - Personnel of HLZ-3

Operation	Emissions (tons/yr)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
<b>Total</b>	<b>9.50E-04</b>	<b>1.30E-05</b>	<b>2.02E-02</b>	<b>1.40E-03</b>	<b>2.70E-05</b>	<b>2.40E-05</b>	<b>1.97</b>

### 5 Air Emissions -Total for Proposed Action at HLZ-3

Operation	Emissions (tons/yr)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
<b>Initial Construction of HLZ-3</b>	0.16	0.00	0.16	0.02	1.09	0.01	28.62
<b>Occasional HH60G</b>	2.40	0.26	2.45	0.02	0.32	0.28	769.48
<b>Occasional Ammunition Use</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Occasional Operations - Personnel</b>	0.00	0.00	0.02	0.00	0.00	0.00	1.97
<b>Total</b>	<b>2.56</b>	<b>0.26</b>	<b>2.63</b>	<b>0.04</b>	<b>1.41</b>	<b>0.29</b>	<b>800.06</b>



**Development of Additional HLZs at Moody Air Force Base, Georgia**  
**Air Emissions from Proposed Action at All Three HLZ**

Proposed Action	Air Pollutant Emissions (tons per year)						
	NOx	SOx	CO	VOC	PM10	PM2.5	CO2e
HLZ-1	2.54	0.26	2.63	0.04	1.32	0.29	797
HLZ-2	2.55	0.26	2.63	0.04	1.19	0.29	799
HLZ-3	2.56	0.26	2.63	0.04	1.41	0.29	800
Total	7.66	0.77	7.88	0.11	3.92	0.87	2,396
Insignificance Indicator	250	250	250	250	250	250	75,000
Exeedance?	No	No	No	No	No	No	No

Notes:

Air quality EIAP insignificance thresholds and indicators are defined in Table 1 of *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*, USAF, April 2023.

**Total GHG Relative Significance**

Year	Locale	CO2e Emissions (mtons/yr)
2024-2035	State Total	1,615,903,327
2024-2035	U.S. Total	61,962,981,580
2024-2035	Action	2,173
Percent of State Totals		0.0001345%
Percent of U.S. Totals		0.0000035%

Notes:

1 mton = 1,000 kg = 1.1023 tons

**APPENDIX E: IPAC RESOURCES LIST**



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Georgia Ecological Services Field Office  
355 East Hancock Avenue  
Room 320  
Athens, GA 30601-2523  
Phone: (706) 613-9493 Fax: (706) 613-6059

In Reply Refer To:  
Project Code: 2023-0120241  
Project Name: Moody AFB HLZ-1

August 23, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Thank you for your request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design if you determine those species or designated critical habitat may be affected by your proposed project.

### **FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT**

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency, project proponent, or their designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally listed threatened or endangered fish or wildlife species without the appropriate permit. If you need additional information to assist in your effect determination, please contact the Service.

If you determine that your proposed action may affect federally listed species, please consult with the Service. Through the consultation process, we will analyze information contained in a biological assessment or equivalent document that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a Habitat Conservation Plan) may be necessary to exempt harm or harass federally listed threatened or endangered fish or wildlife species. For more information regarding formal consultation and HCPs, please see the Service's [Section 7 Consultation Library](#) and [Habitat Conservation Plans Library](#) Collections.

**Action Area.** The scope of federally listed species compliance not only includes direct effects, but also any indirect effects of project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations). The action area is the spatial extent of an action's direct and indirect modifications or impacts to the land, water, or air (50 CFR 402.02). Large projects may have effects to land, water, or air outside the immediate footprint of the project, and these areas should be included as part of the action area. Effects to land, water, or air outside of a project footprint could include things like lighting, dust, smoke, and noise. To obtain a complete list of species, the action area should be uploaded or drawn in IPaC rather than just the project footprint.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. An updated list may be requested through IPaC.

ESA Section 7 consultation (and related tools such as the EDGES and/or DKeys) apply to projects being permitted or funded by a Federal agency. However, please note that a lead federal agency may consider an action area that excludes portions of the project footprint. In these cases, further coordination with our office may be required to ensure compliance with the ESA. It is the responsibility of the project proponent to coordinate with the lead federal agency to understand the action and action area being reviewed as part of ESA Section 7 consultation.

**How to Submit a Project Review Package.** If you determine that your action may affect any federally listed species and would like technical assistance from our office, please send us a complete project review package. A step by step guide is available at the Georgia Ecological Services [Project Planning and Review](https://www.fws.gov/office/georgia-ecological-services/project-planning-review) page (<https://www.fws.gov/office/georgia-ecological-services/project-planning-review>).

Beginning April 1, 2023, requests for threatened and endangered species project reviews must be submitted to our office using the process described below. (If you are not emailing us to submit a project for review, your email will be forwarded to the appropriate staff.) This is a three-step process. All steps must be completed to ensure your project is reviewed by a biologist in our office and you receive a timely response. In brief the steps are:

**Step 1.** Request an official species list for your project through IPaC (Done!)

**Step 2.** Complete applicable Determination Keys

**Step 3.** Send your complete project review package to [GAES\\_Assistance@FWS.gov](mailto:GAES_Assistance@FWS.gov) for review if no DKey is applicable or all aspects of the project are not addressed by DKeys, i.e. a species returned by IPaC does not have a DKey to address impacts to it. A complete project review package should include:

1. A description of the proposed action, including any measures intended to avoid, minimize, or offset effects of the action. The description shall provide sufficient detail to assess the effects of the action on listed species and critical habitat, such as the purpose of the action; duration and timing of the action; location (latitude and longitude); specific activities involving disturbance to land, water, and air, and how they will be carried out; current description of areas to be affected directly or indirectly by the action; and maps, drawings, or similar schematics of the action.
2. An updated Official Species List and DKey results
3. Biological Assessments (may include habitat assessments and information on the presence of listed species in the action area);
4. Description of effects of the action on species in the action area and, if relevant, effect determinations for species and critical habitat;
5. Conservation measures and any other available information related to the nature and scope of the proposed action relevant to its effects on listed species or designated critical habitat (e.g., management plans related to stormwater, vegetation, erosion and sediment plans). Visit the [Georgia Conservation Planning Toolbox](https://www.fws.gov/story/conservation-tools-georgia) (<https://www.fws.gov/story/conservation-tools-georgia>) for information about conservation measures.
6. In the email subject line, use the following format to include the Project Code from your IPaC species list and the county in which the project is located (Example: Project Code: 2023-0049730 Gwinnett Co.). For Georgia Department of Transportation related projects, please work with the Office of Environmental Services ecologist to determine the appropriate USFWS transportation liaison.

The Georgia Ecological Services Field Office will send a response email within approximately 30 days of receipt with technical assistance or further recommendations for specific species.

## **WETLANDS AND FLOODPLAINS**

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value. We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's [NWI program website](https://www.fws.gov/program/national-wetlands-inventory) (<https://www.fws.gov/program/national-wetlands-inventory>) integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for

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permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

## **MIGRATORY BIRDS**

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's [Migratory Birds Program](https://fws.gov/program/migratory-birds) (https://fws.gov/program/migratory-birds). To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction. It can be found at the Service's [Migratory Birds Conservation Library Collection](https://fws.gov/library/collections/migratory-bird-conservation-documents) (https://fws.gov/library/collections/migratory-bird-conservation-documents).

Information related to best practices and migratory birds can be found at the Service's [Avoiding and Minimizing Incidental Take of Migratory Birds Library Collection](https://fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds) (https://fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds).

## **BALD AND GOLDEN EAGLES**

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to “disturb” eagles. Under the BGEPA, the Service may issue limited permits to incidentally “take” eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at the Service's [Bald and Golden Eagle Management Library Collection](https://fws.gov/library/collections/bald-and-golden-eagle-management) (https://fws.gov/library/collections/bald-and-golden-eagle-management).

## **NATIVE BATS**

If your species list includes Indiana bat (*Myotis sodalis*) or northern long-eared bat (*M. septentrionalis*) and the project is expected to impact forested habitat that is appropriate for maternity colonies of these species, forest clearing should occur outside of the period when bats may be present. Federally listed bats could be actively present in forested landscapes from April 1 to October 15 of any year and have non-volant pups from May 15 to July 31 in any year. Non-volant pups are incapable of flight and are vulnerable to disturbance during that time.

Indiana, northern long-eared, and gray (*M. grisescens*) bats are all known to utilize bridges and culverts in Georgia. If your project includes maintenance, construction, or any other modification or demolition to transportation structures, a qualified individual should complete a survey of these structures for bats and submit your findings via the Georgia Bats in Bridges cell phone application, free on Apple and Android devices. Please include these findings in any biological

assessment(s) or other documentation that is submitted to our office for technical assistance or consultation.

Additional information can be found at Georgia Ecological Services' [Conservation Planning Toolbox](#) and [Bat Conservation in Georgia](#) pages.

### **MONARCH BUTTERFLY**

On December 20, 2020, the Service determined that listing the Monarch butterfly (*Danaus plexippus*) under the Endangered Species Act is warranted but precluded at this time by higher priority listing actions. With this finding, the monarch butterfly becomes a candidate for listing. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

As it is a candidate for listing, the Service welcomes conservation measures for this species. Recommended, and voluntary, conservation measures for projects in Georgia can be found at our [Monarch Conservation in Georgia](https://www.fws.gov/project/monarch-conservation-georgia) (<https://www.fws.gov/project/monarch-conservation-georgia>) page.

### **EASTERN INDIGO SNAKE**

Our office has published guidance documents to assist project proponents in avoiding and minimizing potential impact to the eastern indigo snake. The [Visual Encounter Survey Protocol for the Eastern Indigo Snake \(\*Drymarchon couperi\*\) in Georgia](#) is recommended for project proponents or their designees to evaluate the possible presence of the Eastern indigo snake at a proposed project site. The [Standard Protection Measures for the Eastern Indigo Snake \(\*Drymarchon couperi\*\)](#) include educational materials and training that can help protect the species by making staff working on a project site aware of their presence and traits. In Georgia, indigo snakes are closely associated with the state-listed gopher tortoise (*Gopherus polyphemus*), a reptile that excavates extensive underground burrows that provide the snake shelter from winter cold and summer desiccation.

### **SOLAR ENERGY DEVELOPMENT**

The Georgia Low Impact Solar Siting Tool (LISST) is available as a map layer in IPaC (Find it in the “Layers” Box > “Environmental Data”) and as a [web application](#) to provide project managers with the data to identify areas that may be preferred for low impact development. The tool seeks to support the acceleration of large-scale solar development in areas with less impact to the environment.

### **STATE AGENCY COORDINATION**

Additional information that addresses at-risk or high priority natural resources can be found in the State Wildlife Action Plan (<https://georgiawildlife.com/WildlifeActionPlan>), at Georgia Department of Natural Resources, Wildlife Resources Division Biodiversity Portal (<https://georgiawildlife.com/conservation/species-of-concern>), Georgia's Natural, Archaeological, and Historic Resources GIS portal (<https://www.gnahrgis.org/gnahrgis/index.do>), and the [Georgia Ecological Services HUC10 Watershed Guidance](#) page.

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Thank you for your concern for endangered and threatened species. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please email [gaes\\_assistance@fws.gov](mailto:gaes_assistance@fws.gov) and reference the project county and your Service Project Tracking Number.

This letter constitutes Georgia Ecological Services' general comments under the authority of the Endangered Species Act.

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

## OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

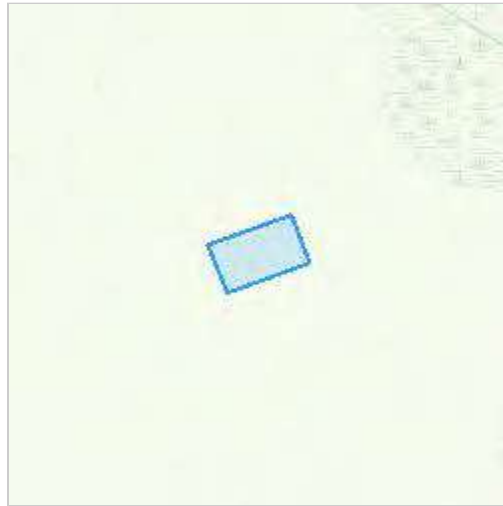
**Georgia Ecological Services Field Office**  
355 East Hancock Avenue  
Room 320  
Athens, GA 30601-2523  
(706) 613-9493

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## PROJECT SUMMARY

Project Code: 2023-0120241  
Project Name: Moody AFB HLZ-1  
Project Type: Military Maneuvers  
Project Description: Potential helicopter landing zone.  
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@30.9336298,-83.45511594172794,14z>



Counties: Brooks County, Georgia

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## ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### BIRDS

NAME	STATUS
Whooping Crane <i>Grus americana</i> Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/758">https://ecos.fws.gov/ecp/species/758</a>	Experimental Population, Non- Essential
Wood Stork <i>Mycteria americana</i> Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8477">https://ecos.fws.gov/ecp/species/8477</a>	Threatened

### REPTILES

NAME	STATUS
Eastern Indigo Snake <i>Drymarchon couperi</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/646">https://ecos.fws.gov/ecp/species/646</a>	Threatened
Suwannee Alligator Snapping Turtle <i>Macrochelys suwanniensis</i> Population: No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10891">https://ecos.fws.gov/ecp/species/10891</a>	Proposed Threatened

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## INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

MIGRATORY BIRD INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

## MIGRATORY BIRDS FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

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The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
  2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
  3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).
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Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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## WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

### FRESHWATER FORESTED/SHRUB WETLAND

- [PFO1/4A](#)
  - [PFO1F](#)
-



**IPAC USER CONTACT INFORMATION**

Agency: WSP Environment & Infrastructure, Inc.  
Name: Paul Haywood  
Address: 1075 Big Shanty Road NW  
Address Line 2: Suite 100  
City: Kennesaw  
State: GA  
Zip: 30144  
Email: haywookp@gmail.com  
Phone: 4707631224

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# All Rare Animals, Plants, Natural Plant Communities within Hahira West, GA, SW Quarter Quad

Rows filtered / total: 5 / 5 -- Records updated July 10, 2023

Scientific Name ▲	Common Name ▲	GA Prot ▲	US Prot ▼	GRank ▲	SRank ▲	
<input type="text" value="filter column..."/>	<input type="text" value="filter column..."/>	<input type="text" value="filter colu"/>	<input type="text" value="filter colu"/>	<input type="text" value="filter col"/>	<input type="text" value="filter col"/>	
<a href="#">Elanoides forficatus</a>	<a href="#">Swallow-tailed Kite</a>	R		G5	S2	
<a href="#">Haliaeetus leucocephalus</a>	<a href="#">Bald Eagle</a>	T		G5	S3	
<a href="#">Polygala leptostachys</a>	<a href="#">Georgia Milkwort</a>			G3G4	S1	
<a href="#">Sarracenia flava</a>	<a href="#">Yellow Flytrap</a>	U		G5?	S3S4	
<a href="#">Ursus americanus floridanus</a>	<a href="#">Florida Black Bear</a>			G5T4	S4	



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Georgia Ecological Services Field Office  
355 East Hancock Avenue  
Room 320  
Athens, GA 30601-2523  
Phone: (706) 613-9493 Fax: (706) 613-6059

In Reply Refer To:  
Project Code: 2023-0120245  
Project Name: Moody AFB HLZ-2

August 23, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Thank you for your request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design if you determine those species or designated critical habitat may be affected by your proposed project.

### **FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT**

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency, project proponent, or their designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally listed threatened or endangered fish or wildlife species without the appropriate permit. If you need additional information to assist in your effect determination, please contact the Service.

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New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. An updated list may be requested through IPaC.

ESA Section 7 consultation (and related tools such as the EDGES and/or DKeys) apply to projects being permitted or funded by a Federal agency. However, please note that a lead federal agency may consider an action area that excludes portions of the project footprint. In these cases, further coordination with our office may be required to ensure compliance with the ESA. It is the responsibility of the project proponent to coordinate with the lead federal agency to understand the action and action area being reviewed as part of ESA Section 7 consultation.

**How to Submit a Project Review Package.** If you determine that your action may affect any federally listed species and would like technical assistance from our office, please send us a complete project review package. A step by step guide is available at the Georgia Ecological Services [Project Planning and Review](https://www.fws.gov/office/georgia-ecological-services/project-planning-review) page (<https://www.fws.gov/office/georgia-ecological-services/project-planning-review>).

Beginning April 1, 2023, requests for threatened and endangered species project reviews must be submitted to our office using the process described below. (If you are not emailing us to submit a project for review, your email will be forwarded to the appropriate staff.) This is a three-step process. All steps must be completed to ensure your project is reviewed by a biologist in our office and you receive a timely response. In brief the steps are:

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**Step 1.** Request an official species list for your project through IPaC (Done!)

**Step 2.** Complete applicable Determination Keys

**Step 3.** Send your complete project review package to [GAES\\_Assistance@FWS.gov](mailto:GAES_Assistance@FWS.gov) for review if no DKey is applicable or all aspects of the project are not addressed by DKeys, i.e. a species returned by IPaC does not have a DKey to address impacts to it. A complete project review package should include:

1. A description of the proposed action, including any measures intended to avoid, minimize, or offset effects of the action. The description shall provide sufficient detail to assess the effects of the action on listed species and critical habitat, such as the purpose of the action; duration and timing of the action; location (latitude and longitude); specific activities involving disturbance to land, water, and air, and how they will be carried out; current description of areas to be affected directly or indirectly by the action; and maps, drawings, or similar schematics of the action.
2. An updated Official Species List and DKey results
3. Biological Assessments (may include habitat assessments and information on the presence of listed species in the action area);
4. Description of effects of the action on species in the action area and, if relevant, effect determinations for species and critical habitat;
5. Conservation measures and any other available information related to the nature and scope of the proposed action relevant to its effects on listed species or designated critical habitat (e.g., management plans related to stormwater, vegetation, erosion and sediment plans). Visit the [Georgia Conservation Planning Toolbox](https://www.fws.gov/story/conservation-tools-georgia) (<https://www.fws.gov/story/conservation-tools-georgia>) for information about conservation measures.
6. In the email subject line, use the following format to include the Project Code from your IPaC species list and the county in which the project is located (Example: Project Code: 2023-0049730 Gwinnett Co.). For Georgia Department of Transportation related projects, please work with the Office of Environmental Services ecologist to determine the appropriate USFWS transportation liaison.

The Georgia Ecological Services Field Office will send a response email within approximately 30 days of receipt with technical assistance or further recommendations for specific species.

## **WETLANDS AND FLOODPLAINS**

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value. We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's [NWI program website](https://www.fws.gov/program/national-wetlands-inventory) (<https://www.fws.gov/program/national-wetlands-inventory>) integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for

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permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

## **MIGRATORY BIRDS**

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's [Migratory Birds Program](https://fws.gov/program/migratory-birds) (https://fws.gov/program/migratory-birds). To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction. It can be found at the Service's [Migratory Birds Conservation Library Collection](https://fws.gov/library/collections/migratory-bird-conservation-documents) (https://fws.gov/library/collections/migratory-bird-conservation-documents).

Information related to best practices and migratory birds can be found at the Service's [Avoiding and Minimizing Incidental Take of Migratory Birds Library Collection](https://fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds) (https://fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds).

## **BALD AND GOLDEN EAGLES**

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to “disturb” eagles. Under the BGEPA, the Service may issue limited permits to incidentally “take” eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at the Service's [Bald and Golden Eagle Management Library Collection](https://fws.gov/library/collections/bald-and-golden-eagle-management) (https://fws.gov/library/collections/bald-and-golden-eagle-management).

## **NATIVE BATS**

If your species list includes Indiana bat (*Myotis sodalis*) or northern long-eared bat (*M. septentrionalis*) and the project is expected to impact forested habitat that is appropriate for maternity colonies of these species, forest clearing should occur outside of the period when bats may be present. Federally listed bats could be actively present in forested landscapes from April 1 to October 15 of any year and have non-volant pups from May 15 to July 31 in any year. Non-volant pups are incapable of flight and are vulnerable to disturbance during that time.

Indiana, northern long-eared, and gray (*M. grisescens*) bats are all known to utilize bridges and culverts in Georgia. If your project includes maintenance, construction, or any other modification or demolition to transportation structures, a qualified individual should complete a survey of these structures for bats and submit your findings via the Georgia Bats in Bridges cell phone application, free on Apple and Android devices. Please include these findings in any biological

assessment(s) or other documentation that is submitted to our office for technical assistance or consultation.

Additional information can be found at Georgia Ecological Services' [Conservation Planning Toolbox](#) and [Bat Conservation in Georgia](#) pages.

### **MONARCH BUTTERFLY**

On December 20, 2020, the Service determined that listing the Monarch butterfly (*Danaus plexippus*) under the Endangered Species Act is warranted but precluded at this time by higher priority listing actions. With this finding, the monarch butterfly becomes a candidate for listing. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

As it is a candidate for listing, the Service welcomes conservation measures for this species. Recommended, and voluntary, conservation measures for projects in Georgia can be found at our [Monarch Conservation in Georgia](https://www.fws.gov/project/monarch-conservation-georgia) (<https://www.fws.gov/project/monarch-conservation-georgia>) page.

### **EASTERN INDIGO SNAKE**

Our office has published guidance documents to assist project proponents in avoiding and minimizing potential impact to the eastern indigo snake. The [Visual Encounter Survey Protocol for the Eastern Indigo Snake \(\*Drymarchon couperi\*\) in Georgia](#) is recommended for project proponents or their designees to evaluate the possible presence of the Eastern indigo snake at a proposed project site. The [Standard Protection Measures for the Eastern Indigo Snake \(\*Drymarchon couperi\*\)](#) include educational materials and training that can help protect the species by making staff working on a project site aware of their presence and traits. In Georgia, indigo snakes are closely associated with the state-listed gopher tortoise (*Gopherus polyphemus*), a reptile that excavates extensive underground burrows that provide the snake shelter from winter cold and summer desiccation.

### **SOLAR ENERGY DEVELOPMENT**

The Georgia Low Impact Solar Siting Tool (LISST) is available as a map layer in IPaC (Find it in the “Layers” Box > “Environmental Data”) and as a [web application](#) to provide project managers with the data to identify areas that may be preferred for low impact development. The tool seeks to support the acceleration of large-scale solar development in areas with less impact to the environment.

### **STATE AGENCY COORDINATION**

Additional information that addresses at-risk or high priority natural resources can be found in the State Wildlife Action Plan (<https://georgiawildlife.com/WildlifeActionPlan>), at Georgia Department of Natural Resources, Wildlife Resources Division Biodiversity Portal (<https://georgiawildlife.com/conservation/species-of-concern>), Georgia's Natural, Archaeological, and Historic Resources GIS portal (<https://www.gnahrgis.org/gnahrgis/index.do>), and the [Georgia Ecological Services HUC10 Watershed Guidance](#) page.

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Thank you for your concern for endangered and threatened species. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please email [gaes\\_assistance@fws.gov](mailto:gaes_assistance@fws.gov) and reference the project county and your Service Project Tracking Number.

This letter constitutes Georgia Ecological Services' general comments under the authority of the Endangered Species Act.

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

## OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Georgia Ecological Services Field Office**  
355 East Hancock Avenue  
Room 320  
Athens, GA 30601-2523  
(706) 613-9493

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## PROJECT SUMMARY

Project Code: 2023-0120245  
Project Name: Moody AFB HLZ-2  
Project Type: Military Maneuvers  
Project Description: Potential helicopter landing zone.  
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@30.81275885,-83.44250117662665,14z>



Counties: Lowndes County, Georgia

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## ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### BIRDS

NAME	STATUS
Whooping Crane <i>Grus americana</i> Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/758">https://ecos.fws.gov/ecp/species/758</a>	Experimental Population, Non- Essential
Wood Stork <i>Mycteria americana</i> Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8477">https://ecos.fws.gov/ecp/species/8477</a>	Threatened

### REPTILES

NAME	STATUS
Eastern Indigo Snake <i>Drymarchon couperi</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/646">https://ecos.fws.gov/ecp/species/646</a>	Threatened
Suwannee Alligator Snapping Turtle <i>Macrochelys suwanniensis</i> Population: No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10891">https://ecos.fws.gov/ecp/species/10891</a>	Proposed Threatened

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## INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

MIGRATORY BIRD INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

## MIGRATORY BIRDS FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

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The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
  2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
  3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).
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Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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## WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED.  
PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

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## **IPAC USER CONTACT INFORMATION**

Agency: WSP Environment & Infrastructure, Inc.  
Name: Paul Haywood  
Address: 1075 Big Shanty Road NW  
Address Line 2: Suite 100  
City: Kennesaw  
State: GA  
Zip: 30144  
Email: haywookp@gmail.com  
Phone: 4707631224

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# All Rare Animals, Plants, Natural Plant Communities within Ousley, GA, NW Quarter Quad

Rows filtered / total: 3 / 3 -- Records updated July 10, 2023

Scientific Name ▲	Common Name ▲	GA Prot ▲	US Prot ▼	GRank ▲	SRank ▲
<input type="text" value="filter column..."/>	<input type="text" value="filter column..."/>	<input type="text" value="filter colu"/>	<input type="text" value="filter colu"/>	<input type="text" value="filter col"/>	<input type="text" value="filter col"/>
<a href="#">Polygala leptostachys</a>	<a href="#">Georgia Milkwort</a>			G3G4	S1
<a href="#">Sarracenia flava</a>	<a href="#">Yellow Flytrap</a>	U		G5?	S3S4
<a href="#">Ursus americanus floridanus</a>	<a href="#">Florida Black Bear</a>			G5T4	S4



# All Rare Animals, Plants, Natural Plant Communities within Ousley, GA, SW Quarter Quad

Rows filtered / total: 13 / 13 -- Records updated July 10, 2023

Scientific Name ▲	Common Name ▲	GA Prot ▲	US Prot ▼	GRank ▲	SRank ▲
<input type="text" value="filter column..."/>	<input type="text" value="filter column..."/>	<input type="text" value="filter colu"/>	<input type="text" value="filter colu"/>	<input type="text" value="filter col"/>	<input type="text" value="filter col"/>
<a href="#">Gopherus polyphemus</a>	<a href="#">Gopher Tortoise</a>	T	Null	G3	S3
<a href="#">Ameiurus serracanthus</a>	<a href="#">Spotted Bullhead</a>	R		G3	S3
<a href="#">Cyclonaias kleiniana</a>	<a href="#">Florida Mapleleaf</a>			G2G3	S2
<a href="#">Elanoides forficatus</a>	<a href="#">Swallow-tailed Kite</a>	R		G5	S2
<a href="#">Litsea aestivalis</a>	<a href="#">Pond Spice</a>	R		G3?	S2
<a href="#">Macrochelys suwanniensis</a>	<a href="#">Suwanee Alligator Snapping...</a>	T		G2	S2
<a href="#">Micropterus notius</a>	<a href="#">Suwannee Bass</a>	R		G3	S2
<a href="#">Ophisaurus compressus</a>	<a href="#">Island Glass Lizard</a>			G3G4	S2
<a href="#">Polygala leptostachys</a>	<a href="#">Georgia Milkwort</a>			G3G4	S1
<a href="#">Sphodros abbotii</a>	<a href="#">Purse-web spider</a>			G4G5	S2
<a href="#">Spiranthes sylvatica</a>	<a href="#">Pale Green Ladies-tresses</a>			GNR	S1?
<a href="#">Tragia cordata</a>	<a href="#">Heartleaf Nettle Vine</a>			G4	S2?
<a href="#">Ursus americanus floridanus</a>	<a href="#">Florida Black Bear</a>			G5T4	S4



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Georgia Ecological Services Field Office  
355 East Hancock Avenue  
Room 320  
Athens, GA 30601-2523  
Phone: (706) 613-9493 Fax: (706) 613-6059

In Reply Refer To:  
Project Code: 2023-0120252  
Project Name: Moody AFB HLZ-3

August 23, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Thank you for your request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design if you determine those species or designated critical habitat may be affected by your proposed project.

### **FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT**

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency, project proponent, or their designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally listed threatened or endangered fish or wildlife species without the appropriate permit. If you need additional information to assist in your effect determination, please contact the Service.

If you determine that your proposed action may affect federally listed species, please consult with the Service. Through the consultation process, we will analyze information contained in a biological assessment or equivalent document that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a Habitat Conservation Plan) may be necessary to exempt harm or harass federally listed threatened or endangered fish or wildlife species. For more information regarding formal consultation and HCPs, please see the Service's [Section 7 Consultation Library](#) and [Habitat Conservation Plans Library](#) Collections.

**Action Area.** The scope of federally listed species compliance not only includes direct effects, but also any indirect effects of project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations). The action area is the spatial extent of an action's direct and indirect modifications or impacts to the land, water, or air (50 CFR 402.02). Large projects may have effects to land, water, or air outside the immediate footprint of the project, and these areas should be included as part of the action area. Effects to land, water, or air outside of a project footprint could include things like lighting, dust, smoke, and noise. To obtain a complete list of species, the action area should be uploaded or drawn in IPaC rather than just the project footprint.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. An updated list may be requested through IPaC.

ESA Section 7 consultation (and related tools such as the EDGES and/or DKeys) apply to projects being permitted or funded by a Federal agency. However, please note that a lead federal agency may consider an action area that excludes portions of the project footprint. In these cases, further coordination with our office may be required to ensure compliance with the ESA. It is the responsibility of the project proponent to coordinate with the lead federal agency to understand the action and action area being reviewed as part of ESA Section 7 consultation.

**How to Submit a Project Review Package.** If you determine that your action may affect any federally listed species and would like technical assistance from our office, please send us a complete project review package. A step by step guide is available at the Georgia Ecological Services [Project Planning and Review](https://www.fws.gov/office/georgia-ecological-services/project-planning-review) page (<https://www.fws.gov/office/georgia-ecological-services/project-planning-review>).

Beginning April 1, 2023, requests for threatened and endangered species project reviews must be submitted to our office using the process described below. (If you are not emailing us to submit a project for review, your email will be forwarded to the appropriate staff.) This is a three-step process. All steps must be completed to ensure your project is reviewed by a biologist in our office and you receive a timely response. In brief the steps are:

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**Step 1.** Request an official species list for your project through IPaC (Done!)

**Step 2.** Complete applicable Determination Keys

**Step 3.** Send your complete project review package to [GAES\\_Assistance@FWS.gov](mailto:GAES_Assistance@FWS.gov) for review if no DKey is applicable or all aspects of the project are not addressed by DKeys, i.e. a species returned by IPaC does not have a DKey to address impacts to it. A complete project review package should include:

1. A description of the proposed action, including any measures intended to avoid, minimize, or offset effects of the action. The description shall provide sufficient detail to assess the effects of the action on listed species and critical habitat, such as the purpose of the action; duration and timing of the action; location (latitude and longitude); specific activities involving disturbance to land, water, and air, and how they will be carried out; current description of areas to be affected directly or indirectly by the action; and maps, drawings, or similar schematics of the action.
2. An updated Official Species List and DKey results
3. Biological Assessments (may include habitat assessments and information on the presence of listed species in the action area);
4. Description of effects of the action on species in the action area and, if relevant, effect determinations for species and critical habitat;
5. Conservation measures and any other available information related to the nature and scope of the proposed action relevant to its effects on listed species or designated critical habitat (e.g., management plans related to stormwater, vegetation, erosion and sediment plans). Visit the [Georgia Conservation Planning Toolbox](https://www.fws.gov/story/conservation-tools-georgia) (<https://www.fws.gov/story/conservation-tools-georgia>) for information about conservation measures.
6. In the email subject line, use the following format to include the Project Code from your IPaC species list and the county in which the project is located (Example: Project Code: 2023-0049730 Gwinnett Co.). For Georgia Department of Transportation related projects, please work with the Office of Environmental Services ecologist to determine the appropriate USFWS transportation liaison.

The Georgia Ecological Services Field Office will send a response email within approximately 30 days of receipt with technical assistance or further recommendations for specific species.

## **WETLANDS AND FLOODPLAINS**

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value. We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's [NWI program website](https://www.fws.gov/program/national-wetlands-inventory) (<https://www.fws.gov/program/national-wetlands-inventory>) integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for

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permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

## **MIGRATORY BIRDS**

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's [Migratory Birds Program](https://fws.gov/program/migratory-birds) (https://fws.gov/program/migratory-birds). To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction. It can be found at the Service's [Migratory Birds Conservation Library Collection](https://fws.gov/library/collections/migratory-bird-conservation-documents) (https://fws.gov/library/collections/migratory-bird-conservation-documents).

Information related to best practices and migratory birds can be found at the Service's [Avoiding and Minimizing Incidental Take of Migratory Birds Library Collection](https://fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds) (https://fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds).

## **BALD AND GOLDEN EAGLES**

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to “disturb” eagles. Under the BGEPA, the Service may issue limited permits to incidentally “take” eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at the Service's [Bald and Golden Eagle Management Library Collection](https://fws.gov/library/collections/bald-and-golden-eagle-management) (https://fws.gov/library/collections/bald-and-golden-eagle-management).

## **NATIVE BATS**

If your species list includes Indiana bat (*Myotis sodalis*) or northern long-eared bat (*M. septentrionalis*) and the project is expected to impact forested habitat that is appropriate for maternity colonies of these species, forest clearing should occur outside of the period when bats may be present. Federally listed bats could be actively present in forested landscapes from April 1 to October 15 of any year and have non-volant pups from May 15 to July 31 in any year. Non-volant pups are incapable of flight and are vulnerable to disturbance during that time.

Indiana, northern long-eared, and gray (*M. grisescens*) bats are all known to utilize bridges and culverts in Georgia. If your project includes maintenance, construction, or any other modification or demolition to transportation structures, a qualified individual should complete a survey of these structures for bats and submit your findings via the Georgia Bats in Bridges cell phone application, free on Apple and Android devices. Please include these findings in any biological



assessment(s) or other documentation that is submitted to our office for technical assistance or consultation.

Additional information can be found at Georgia Ecological Services' [Conservation Planning Toolbox](#) and [Bat Conservation in Georgia](#) pages.

### **MONARCH BUTTERFLY**

On December 20, 2020, the Service determined that listing the Monarch butterfly (*Danaus plexippus*) under the Endangered Species Act is warranted but precluded at this time by higher priority listing actions. With this finding, the monarch butterfly becomes a candidate for listing. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

As it is a candidate for listing, the Service welcomes conservation measures for this species. Recommended, and voluntary, conservation measures for projects in Georgia can be found at our [Monarch Conservation in Georgia](https://www.fws.gov/project/monarch-conservation-georgia) (<https://www.fws.gov/project/monarch-conservation-georgia>) page.

### **EASTERN INDIGO SNAKE**

Our office has published guidance documents to assist project proponents in avoiding and minimizing potential impact to the eastern indigo snake. The [Visual Encounter Survey Protocol for the Eastern Indigo Snake \(\*Drymarchon couperi\*\) in Georgia](#) is recommended for project proponents or their designees to evaluate the possible presence of the Eastern indigo snake at a proposed project site. The [Standard Protection Measures for the Eastern Indigo Snake \(\*Drymarchon couperi\*\)](#) include educational materials and training that can help protect the species by making staff working on a project site aware of their presence and traits. In Georgia, indigo snakes are closely associated with the state-listed gopher tortoise (*Gopherus polyphemus*), a reptile that excavates extensive underground burrows that provide the snake shelter from winter cold and summer desiccation.

### **SOLAR ENERGY DEVELOPMENT**

The Georgia Low Impact Solar Siting Tool (LISST) is available as a map layer in IPaC (Find it in the “Layers” Box > “Environmental Data”) and as a [web application](#) to provide project managers with the data to identify areas that may be preferred for low impact development. The tool seeks to support the acceleration of large-scale solar development in areas with less impact to the environment.

### **STATE AGENCY COORDINATION**

Additional information that addresses at-risk or high priority natural resources can be found in the State Wildlife Action Plan (<https://georgiawildlife.com/WildlifeActionPlan>), at Georgia Department of Natural Resources, Wildlife Resources Division Biodiversity Portal (<https://georgiawildlife.com/conservation/species-of-concern>), Georgia's Natural, Archaeological, and Historic Resources GIS portal (<https://www.gnahrgis.org/gnahrgis/index.do>), and the [Georgia Ecological Services HUC10 Watershed Guidance](#) page.

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Thank you for your concern for endangered and threatened species. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please email [gaes\\_assistance@fws.gov](mailto:gaes_assistance@fws.gov) and reference the project county and your Service Project Tracking Number.

This letter constitutes Georgia Ecological Services' general comments under the authority of the Endangered Species Act.

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

## OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Georgia Ecological Services Field Office**  
355 East Hancock Avenue  
Room 320  
Athens, GA 30601-2523  
(706) 613-9493

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## PROJECT SUMMARY

Project Code: 2023-0120252  
Project Name: Moody AFB HLZ-3  
Project Type: Military Maneuvers  
Project Description: Potential helicopter landing zone.  
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@30.810900850000003,-83.43525898249905,14z>



Counties: Lowndes County, Georgia

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## ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## BIRDS

NAME	STATUS
Whooping Crane <i>Grus americana</i> Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/758">https://ecos.fws.gov/ecp/species/758</a>	Experimental Population, Non- Essential
Wood Stork <i>Mycteria americana</i> Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8477">https://ecos.fws.gov/ecp/species/8477</a>	Threatened

## REPTILES

NAME	STATUS
Eastern Indigo Snake <i>Drymarchon couperi</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/646">https://ecos.fws.gov/ecp/species/646</a>	Threatened
Suwannee Alligator Snapping Turtle <i>Macrochelys suwanniensis</i> Population: No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10891">https://ecos.fws.gov/ecp/species/10891</a>	Proposed Threatened

## INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

MIGRATORY BIRD INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

## MIGRATORY BIRDS FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

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The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
  2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
  3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).
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Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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## WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

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**IPAC USER CONTACT INFORMATION**

Agency: WSP Environment & Infrastructure, Inc.  
Name: Paul Haywood  
Address: 1075 Big Shanty Road NW  
Address Line 2: Suite 100  
City: Kennesaw  
State: GA  
Zip: 30144  
Email: haywookp@gmail.com  
Phone: 4707631224

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# All Rare Animals, Plants, Natural Plant Communities within Ousley, GA, SE Quarter Quad

Rows filtered / total: 12 / 12 -- Records updated July 10, 2023

Scientific Name ▲	Common Name ▲	GA Prot ▲	US Prot ▼	GRank ▲	SRank ▲
<input type="text" value="filter column..."/>	<input type="text" value="filter column..."/>	<input type="text" value="filter colu"/>	<input type="text" value="filter colu"/>	<input type="text" value="filter col"/>	<input type="text" value="filter col"/>
<a href="#">Gopherus polyphemus</a>	<a href="#">Gopher Tortoise</a>	T	Null	G3	S3
<a href="#">Agalinis aphylla</a>	<a href="#">Scale-leaf Purple Foxglove</a>			G3G4	S2
<a href="#">Agalinis georgiana</a>	<a href="#">Georgia Purple Foxglove</a>			G1	S1
<a href="#">Angelica dentata</a>	<a href="#">Sandhill Angelica</a>			G2G3	S2
<a href="#">Baptisia lecontei</a>	<a href="#">Leconte Wild Indigo</a>			G4?	S1
<a href="#">Drosera tracyi</a>	<a href="#">Tracy's Dew-threads</a>			G3G4	S1
<a href="#">Haliaeetus leucocephalus</a>	<a href="#">Bald Eagle</a>	T		G5	S3
<a href="#">Helianthium tenellum</a>	<a href="#">Dwarf Burhead</a>			G5?	S2?
<a href="#">Ophisaurus attenuatus</a>	<a href="#">Slender Glass Lizard</a>			G5	S3
<a href="#">Polygala leptostachys</a>	<a href="#">Georgia Milkwort</a>			G3G4	S1
<a href="#">Spiranthes sylvatica</a>	<a href="#">Pale Green Ladies-tresses</a>			GNR	S1?
<a href="#">Ursus americanus floridanus</a>	<a href="#">Florida Black Bear</a>			G5T4	S4