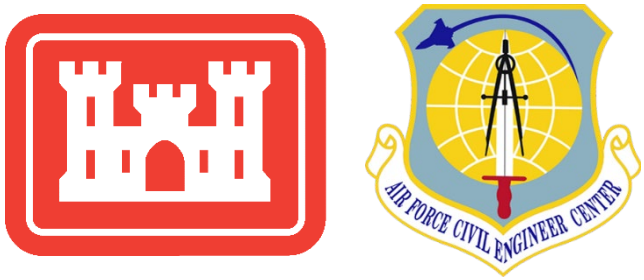
DRAFT

ENVIRONMENTAL ASSESSMENT

FOR

820TH BASE DEFENSE GROUP AREA DEVELOPMENT PLAN, MOODY AIR FORCE BASE, GEORGIA



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

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Acronyms and Abbreviations

23 WG	23d Wing
820th BDG	820th Base Defense Group
820th SFG	820th Security Forces Group
ACAM	Air Conformity Applicability Model
AFB	Air Force Base
AFI	Air Force Instruction
APE	Area of Potential Effects
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
C&D	Construction and Demolition
CATM	Combat Arm Training and Maintenance
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_{2e}	Carbon Dioxide Equivalents
CWA	Clean Water Act
dB	Decibels
dBA	A-Weighted Decibel
DNL	Day-Night Sound Level
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
GADNR	Department of Natural Resources
GBBL	Grand Bay-Banks Lake
GHG	Greenhouse Gas
gpd	gallons per day
HAZMART	Hazardous Material Pharmacy
Hz	Hertz
INRMP	Integrated Natural Resources Management Plan
kcf	thousand cubic feet
kV	Kilovolt
LBP	Lead Based Paint
L_{eq}	Equivalent Sound Level
L_{max}	Maximum Sound Level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHP	Natural Heritage Program
NPDES	National Pollutant Discharge Elimination System

NPHA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
MBTA	Migratory Bird Treaty Act
NRHP	National Register of Historic Places
O_3	Ozone
OSHA	Occupational Safety and Health Administration
Pb	Lead
PEMB	Pre-Engineered Metal Building
$PM_{2.5}$	Particulate matter with diameter ≤ 2.5 micrometers
PM_{10}	Particulate matter with diameter ≤ 10 micrometers
PSD	Prevention of Significant Deterioration
ROI	Region of Influence
SEL	Sound Exposure Level
sf	Square Feet
SO_2	Sulfur Dioxide
tpy	tons per year
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USFWS	United States Fish and Wildlife ServiceBA
USEPA	United States Environmental Protection Agency

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

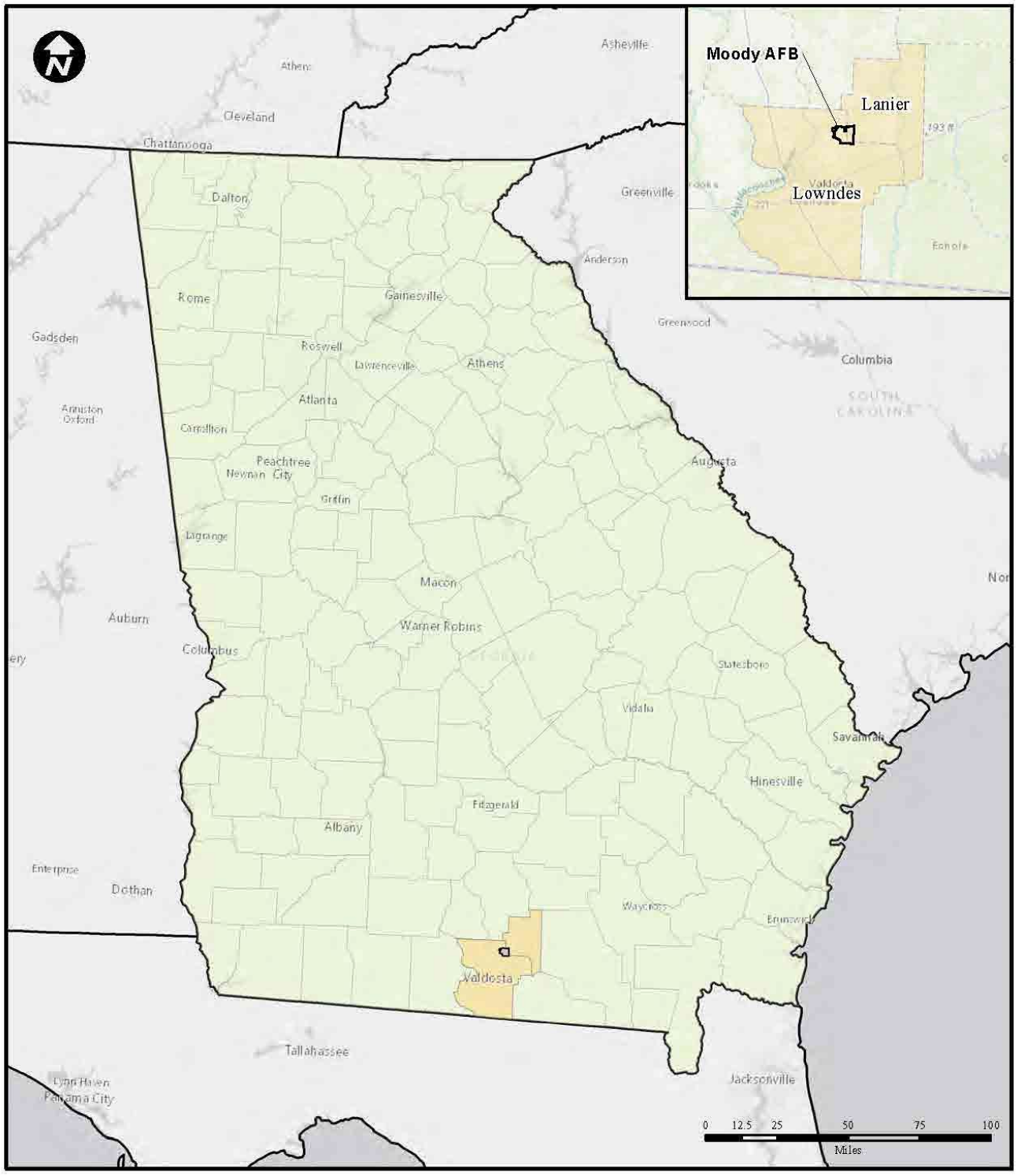
The 23d Wing (23 WG) and Environmental Division (23 CES) at Moody Air Force Base (Moody AFB or Base) has conducted this Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended; the President's Council on Environmental Quality (CEQ) Regulations Implementing NEPA (Title 40 Code of Federal Regulations (CFR) §§ 1500–1508) [The May 20, 2022 version of CEQ NEPA rules is being used, 85 Federal Register (FR) 43357-43373]; and Department of the Air Force Instruction (AFI) 32-1015, Integrated Installation Planning [32 CFR Part 989], which implements NEPA and CEQ regulations.

Moody AFB is an active United States Air Force (USAF) installation in south-central Georgia, ten miles northeast of Valdosta, Georgia (**Figure 1-1**). The installation occupies 11,098 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. Nearby cities include Valdosta, Georgia, about ten miles southwest, and Lakeland, Georgia, about seven miles northeast. Moody AFB is approximately 85 miles northeast of Tallahassee, Florida, and 120 miles northwest of Jacksonville, Florida.

The 820th Security Forces Group (820th SFG) was activated at Lackland AFB, Texas, in 1997. The mission of the 820th SFG was to rapidly deploy to a location to set up defenses, pass the mission to follow-on forces, and redeploy back to base. The group was designed for the purpose of first-in force protection, drawing from multiple disciplines for comprehensive threat assessment. In 2000, the 820th SFG was moved to Moody AFB, establishing the 822d, 823d, and 824th Security Forces Squadrons.

In 2009, the 820th Combat Operations Squadron was activated under the 820th SFG with the mission of providing combat support to the 820th. A year later in 2010, the 820th SFG was renamed the 820th Base Defense Group (820th BDG); the only unit of its kind with the sole purpose of base defense in high-threat areas. The 822d, 823d, and 824th Security Forces Squadrons were redesignated to Base Defense Squadrons. The core mission of the 820th BDG is to defend an airfield or base from its initial occupation to the arrival of follow-on forces.

The 23 WG has evaluated their current mission and the projected future missions at Moody AFB. Based on that evaluation, the 23 WG has deemed this EA as a mission critical need. The EA provides an environmental assessment for the proposed development of a campus for the 820th BDG at Moody AFB, Georgia. The development would streamline and improve the efficiency of manpower for the 820th BDG by providing a consolidated and efficient campus environment.



Legend

- Moody AFB
- Lowndes and Lanier Counties
- Georgia Counties

Figure 1-1

Location of Moody Air Force Base
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

1.2 PURPOSE OF THE ACTION

The purpose of the proposed action is to consolidate the mission activities of the 820th BDG into a single campus at Moody AFB. The proposed project supports construction of the campus and would call for development and redevelopment of approximately 36 acres in the north-central portion of the base.

1.3 NEED FOR THE ACTION

The proposed action is needed to consolidate functions and improve the man-hour efficiency of the 820th BDG at Moody AFB. The 820th BDG operates in existing buildings scattered throughout the base. Current buildings have been repurposed for use by the 820th BDG and are subject to inefficient layouts and outdated or inadequate infrastructure. In addition, these facilities are not centrally located, leading to communication and coordination issues stemming from inconvenient transit across sections of the base. The 820th BDG requires updated facilities that provide enhanced communications between squadrons and support for specialized squadron operations. Current facilities fall short of these needs and lead to loss of efficiency and decreased squad performance.

1.4 DECISION TO BE MADE

The decision to be made is the selection of an alternative for Moody AFB to support the development of the 820th BDG campus. This EA evaluates the potential environmental consequences of implementing the proposed action as described in **Section 2.1**, Proposed Action.

Based on the analyses conducted in support of this EA, the USAF 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), 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.

1.4.1 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.

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 percent chance of inundation by a flood event in a given year. Executive Order (EO) 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. A review of the FEMA National Flood Insurance Program Flood Insurance Rate Map

indicates that no areas of the Proposed Action are located within or near designated 100-year floodplains (**Figure 1-2**). As a result, the USAF has not identified any potential for direct or indirect impacts to floodplain resources resulting from the Proposed Action, and this resource area has not been carried forward for detailed analysis.

Wetlands

United States Army Corps of Engineers (USACE) defines Wetlands as areas that are inundated or saturated by surface or ground water 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. This 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 United States. (WOTUS), in accordance with the Federal Clean Water Act (CWA) (33 United States Code (USC) §§ 1251 et seq.), Section 10 of the Rivers and Harbors Act of 1899 (33 USC § 403), and the USACE regulations, guidance, and applicable manual. Jurisdictional wetlands are those subject to regulatory authority under Section 404 of the CWA.

Moody AFB completed a basewide delineation for wetlands and other jurisdictional waters in 2016 (Moody AFB, 2016). Additionally, Moody AFB had a second wetland delineation conducted to support the 820th BDG in 2021 (Moody AFB, 2022a). A review of these delineation reports indicate that no areas of the Proposed Action are located within or near jurisdictional wetlands (**Figure 1-3**). As a result, the USAF has not identified any potential for direct or indirect impacts to wetland resources resulting from the Proposed Action, and this resource area has not been carried forward for detailed analysis.

Historic Resources

In January 2017, a Section 106 cultural resource study concluded that seven additional structures were not eligible for listing in the National Register of Historic Places (NRHP). All base facilities constructed during the World War II era, the Cold War era, and all base facilities that have reached 50 years of age to date were evaluated. Two structures, the Base Chapel (Building 110) and the Base Water Tower (Building 618), are the only structures on Moody AFB that have been determined eligible for inclusion on the NRHP (Moody AFB, 2018a). Additionally, HPD concurred that Moody AFB does not appear to currently contain NRHP-eligible historic districts. The nearest NRHP-eligible structure is the Base Water Tower, which dates to the World War II era and is located approximately 4,600 feet to the southwest of the Proposed Action. The Base Chapel is approximately 4,800 feet southwest of the Proposed Action. The closest NRHP-listed resources are located several miles away from Moody AFB in Valdosta, Georgia.

As a result, the Air Force does not anticipate impacts to historic resources, which were not carried forward for detailed analysis. Archaeological resources are considered in Section 3.9. Agency/Tribal concurrence status will be updated following the completion of the 30-day Draft EA comment period.

Legend

Study Area

100 Year Floodplain (Zone A)

Figure 1-2
FEMA Floodplains
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

Legend
Study Area
Field Wetland Approximation

Figure 1-3
Wetland Map
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

Airspace

There would be no interactions between airspace and the Proposed Action. The Proposed Action does not involve changes to, or use of, airspace. Consequently, the USAF has not identified airspace as an issue of concern and this resource area has not been carried forward for detailed analysis.

Human Health and Safety

Within the context of this EA, safety issues are associated with potential impacts affecting the safety of installation personnel and the public. Worker safety associated with construction/demolition activities is covered by Occupational Safety and Health Administration (OSHA) regulations and all applicable installation safety requirements; typical construction/demolition activities do not pose a safety issue to workers provided all applicable OSHA and USAF safety requirements are implemented. No further analysis is warranted given the scope of the Proposed Action and lack of safety issues outside those normally associated with construction/demolition activities covered by OSHA and other safety requirements/regulations.

Socioeconomics

Construction activities and expenditures associated with the Proposed Action would create direct, indirect, and induced employment and earnings in the local area surrounding Moody AFB. However, these beneficial impacts would be insignificant considering the overall scope of the Proposed Action as compared to normal economic activity within the region. Therefore, this issue area was not carried forward for further impact analysis.

Environmental Justice

The scope of the Proposed Action is limited to Moody AFB. Based on other resource area analyses, the Proposed Action would not result in off-base impacts to low-income or minority populations and environmental justice. Therefore, this issue area was not carried forward for further impact analysis.

1.5 INTERGOVERNMENTAL CONSULTATIONS, INTERAGENCY COORDINATION, AND PUBLIC REVIEW

1.5.1 Interagency and Intergovernmental Coordination and Consultations

Federal, state, and local agencies with jurisdiction that could be affected by the Proposed Action were notified during the development of this EA. Scoping letters were distributed to relevant Federal, state, and local agencies on April 29, 2022 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 are included in **Appendix A**.

1.5.2 Government to Government Consultations

Executive Order (EO) 13175, Consultation and Coordination with Indian Tribal Governments (November 6, 2000), directs Federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with legal mandates, federally recognized tribes that are affiliated historically with the Moody AFB geographic region will be invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the Interagency/Intergovernmental Coordination for Environmental Planning processes and requires separate notification of all relevant tribes. 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 PUBLIC AND AGENCY REVIEW OF EA

A Notice of Availability (NOA) of the Draft EA and Draft FONSI will be published in the *Valdosta Daily Times* in Valdosta, Georgia, announcing the availability of the Draft EA for review. The publication of the NOA will initiate a 30-day review period. A copy of the Draft EA will be made available for review at the South Georgia Regional Library at 300 Woodrow Wilson Drive, Valdosta, Georgia, and the Moody AFB public website. A copy of the Draft EA will also be made available for review online at http://www.moody.af.mil/Resources/Environmental-Initiative. At the closing of the public review period, applicable comments from the general public and interagency and intergovernmental coordination and consultation will be incorporated into the analysis of potential environmental impacts performed as part of the EA, where applicable, and included in of the Final EA.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action and the alternatives that the USAF is considering to fulfill the purpose of and need for the Proposed Action (refer to **Section 1.2** and **Section 1.3**). 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 develop or redevelop several facilities for the creation of an 820th BDG campus at Moody AFB. The development area location is shown in **Figure 2-1.** Proposed developments and facility types are shown in **Figure 2-2** and described in detail in the sections below.

2.1.1 Construction

Facility construction accounts for the majority of changes in the proposed campus area. Facilities are broken down by type in the following paragraphs:

Squadron Operations Buildings

Four 14,617 square foot (sf) squadron buildings would be installed to house the daily operations of the 820th BDG squadrons. A Pre-Engineered Metal Building (PEMB) system would be utilized for each building, which ensures short construction timelines and cost-efficiency across all facilities.

The proposed squadron building would include:

- Twelve staff offices
- Secretary/administrative assistant office
- Training Classroom
- Conference/meeting room
- Toilets with showers and locker space
- Squadron gear storage with space storage lockers for personal storage
- Dedicated storage areas for unit equipment and secure storage
- Mezzanine for overflow and additional functional area including offices
- Building support areas for mechanical, electrical, communications, Secret Internet Protocol Router Network
- Interior construction of metal studs with drywall and concrete masonry walls
- Interior finishes with painted walls, acoustical tile ceilings in the admin spaces and durable floor finishes (options would be sealed concrete, vinyl composite tile and ceramic tile)

Armory Building

One 6,751 sf armory would be constructed utilizing a PEMB. Construction of the new armory would alleviate the insufficient storage, lighting, and security issues in the existing Building 932 armory.

The proposed squadron building would include:

- Personnel support areas including supervisor office and personnel toilets with showers and locker area.
- Armory specific function areas for weapons storage and weapon issue, weapons cleaning and maintenance, and tool storage.
- Facility support areas for mechanical, electrical, communications and janitors.
- Outdoor covered training and work area which will also serve for weapons issue, cleaning, and maintenance.
- Interior construction would be painted concrete masonry, painted cast-in-place concrete, security fence enclosures and durable floor finishes (options would be sealed concrete, resilient flooring, and ceramic tile).

Warehouses and Shops

A total of four PEMB warehouses would be constructed and integrated into the campus as part of the proposed action. This includes the following facilities:

- Supply warehouse (75,000 sf)
- Medical supply storage and shipping warehouse (5,500 sf)
- Communications warehouse (16,500 sf)
- Air shop/warehouse (16,500 sf)

2.1.2 Area Development

The proposed action developments would utilize approximately 36 acres, mostly within the boundaries of the currently developed areas. Of the 36 acres, 20% is cleared undeveloped area, with the remaining 80% consisting of forested area. Site development in these areas would include the following:

- Selective clearing, grading for new roads and parking, and grading and fill for building pads. Proposed building pads would be raised as to avoid potential flooding from wetland areas during storm events.
- Construction of roadways, 767 parking spots, and roundabout.
- Bioretention systems for runoff capture from impervious areas. Downspout discharges would be disconnected from the storm system to promote infiltration to the soil.
- Addition of a 6-lane, 400-meter track with an infield combat fitness area. The track would require an asphalt base with a latex surface overlay. The infield would utilize a synthetic turf system with rubber infill.
- Replacement of current sewer lift station with a larger lift station with the capacity to accommodate current and future facility requirements.

- Installation of a gravity sewer main, 8-inch water main, and force main.
- Demolition of existing grenade range and relocation from current location to a site adjacent to the proposed construction development.

2.1.3 Demolition/Renovation

The major updates to the campus development area involve the demolition, renovation, and construction of several facilities currently used by the 820th BDG. Buildings 1531, 1532, and 1500 are scheduled for demolition, as they occupy the proposed footprint for the proposed medical storage warehouse, supply warehouse, and supply warehouse access road.

Buildings 1530 and 1505/1506 are currently adequate for use by the 820th BDG but are considered for renovation to better meet mission requirements.

Legend
- Moody AFB
- Proposed Development Area
- Lowndes and Lanier Counties

Figure **2-1**

Location of Proposed 820 BDG **Campus**
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

Legend

- Facility Construction
- Track and Combat Fitness Area
- Stormwater Management Facility
- Roadways and Parking
- Proposed Remodel
- Proposed Demolition
- Proposed Grenade Range Location
- Gravity Sewer Main
- 8" Water Main
- Force Main

Figure 2-2

Proposed Developments
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

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. Per the requirements of 32 CFR Part 989, the USAF Environmental Impact Analysis Process (EIAP) regulations, 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:

- Meet current development criteria outlined in Air Force Instruction 32-1024 *Standard Facility Requirements*, Unified Facilities Criteria 4-010-01 *Department of Defense Minimum Antiterrorism Standards for Buildings*, the American with Disabilities Act of 1990, and Architectural Barriers Act of 1968.
- Increase efficiency of the manpower for the 820th BDG.
- Result in no adverse impacts to nearby wetlands or floodplains.
- Result in no overall reduction of existing training areas.

2.3 SCREENING OF ALTERNATIVES

Alternatives for the proposed 820th BDG campus were developed using the criteria described above to identify suitable development alternatives.

- **Alternative 1 – Develop All Proposed Facilities and Infrastructure.** Development under the proposed action would include all proposed facilities and infrastructure outlined in **Section 2.1**.
- **Alternative 2 – Minimum Development of Proposed Facilities.** Development under the proposed action would not develop all facilities proposed in Alternative 1. The air shop warehouse would remain in Building 721. Buildings 1505, 1506, and 1530 would not be renovated as proposed. Buildings 1531, 1532, and 1500 would not be demolished as proposed. Development of all other facilities would occur as proposed in Alternative 1.
- **No-Action Alternative.** None of the proposed action developments would take place. 820th BDG operations would continue with no facility change.

The selection standards described in **Section 2.2** were applied to these alternatives to determine which alternative(s) could meet facility development requirements and would fulfill the purpose and need for the action. **Table 2-1** provides a comparison of the alternatives to the selection standards.

Table 2-1. Selection Standards

Proposed Action Alternatives	Selection Standards				
	Facility Requirements	Efficiency	Wetlands	Protected Species	Training Impacts
Alternative 1	Yes	Yes	Yes	Yes	Yes
Alternative 2	Yes	Yes	Yes	Yes	Yes
No-Action Alternative	No	No	No	No	No

2.4 DETAILED DESCRIPTION OF THE ALTERNATIVES

The USAF has identified three alternatives that may meet requirements for the proposed action: Alternative 1, Alternative 2, and the No-Action Alternative. The following sections provide descriptions of the two alternatives.

2.4.1 Alternative 1 – Develop All Proposed Facilities and Infrastructure

Development under the proposed action would include all proposed facilities and infrastructure. All facility requirements would be met under this proposed action. The centralized 820th BDG campus would alleviate communication and coordination issues and lead to increased squad performance. The following facilities would be developed as part of the proposed action alternative:

Facilities Construction

- Warehouse 75,000 sf
- Air Shop 16,500 sf
- Communications Warehouse 16,500 sf
- Medical Supply Warehouse 5,500 sf
- Armory, 6,715 sf
- Squadron Buildings 14,617 sf (x4)
- Combat fitness area
- Running Track (6-lane, 400 meter)

Infrastructure Construction

- Connecting roads and 767 parking places
- 8-inch force main
- Lift station
- Sewer lines
- Power and communications connections

Remodel

- Building 1530
- Building 1505/1506

Demolition

- Building 1531
- Building 1532
- Building 1500

2.4.2 Alternative 2 – Minimum Development of Proposed Facilities

Under Alternative 2, 820th BDG campus would develop fewer facilities than outlined in Alternative 1. This alternative would allow construction of most elements mentioned in Alternative 1 while preserving the functionality and location benefits of existing facilities. Facility requirements would still be met, but efficiency benefits may be hindered due to personnel separation and use of outdated facilities.

The following facilities would not be developed as part of the proposed action alternative:

Air Shop

The air shop would remain where it is currently located in the existing Building 721. The existing air shop maintains a functional relationship to the airfield, and benefits from the logistics associated with proximity to aircraft and materials supply routes. Logistical benefits may decrease upon relocation to the BDG main campus. However, lack of proximity to the main campus may hinder communication and coordination under this alternative.

Buildings 1505, 1506, and 1530

Building 1530 contains a 2-bay drive-thru vehicle shop, support area for the shop, and numerous administrative offices and support areas. Building 1505/1506 houses 820th BDG Command Offices. USAF personnel identified that these buildings are currently adequate but could potentially be remodeled/renovated to better suit mission needs.

Building 1500

Building 1500 does not provide mission critical functions to the 820th BDG and potentially could be left in place.

2.4.3 No-Action Alternative

The USAF EIAP, codified at 32 CFR Part 989.8, 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 USAF would not develop any of the proposed facilities mentioned in **Section 2.4.1**. No new construction or remodeling would occur, and facilities scheduled for demolition would remain in place. The 820th BDG would continue to use repurposed facilities scattered throughout the base. Facility requirements would be met, but man-hour efficiency would remain hindered due to communication and coordination issues. There would be no change to impacts on wetlands or protected species.

2.5 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED ANALYSIS

2.5.1 Proposed Action: Site Developments East of Current Campus

Under this proposed action, the 820th BDG campus would be developed east of the current BDG facilities. Construction in this location would involve minimum tree removal and preserve the current grenade range. Development under this proposed action would include all proposed facilities and infrastructure outlined in Alternative 1.

The campus developments would be sited on several acres of existing training area. Therefore, this alternative did not meet selection standards for the proposed action and was disqualified from further analysis.

3.0 AFFECTED ENVIRONMENT

The Region of Influence (ROI) for the Proposed Action is the project boundary as shown on **Figure 2-1** 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 Preferred Alternative or the No Action Alternative.

3.2 LAND USE

3.2.1 Definition of the Resource

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

In the 2015 Installation Development Plan (IDP), land use for Moody AFB is divided into 12 categories (Moody AFB, 2015a). **Table 3-1** lists each of the categories and describes the typical facility types found in each land use category.

Table 3-1. Land Use Categories and Typical Facilities/Features

Land Use Category	Typical Facilities/Features
Administrative	Headquarters, security operations, office
Airfield pavements	Runways, taxiways, aprons, overruns
Airfield O&M	Hangars, aircraft maintenance units, squadron operations, tower, fire station
Community commercial	Commissary, base exchange, club, dining facility
Community service	Commissary, exchange, gym/recreation center, theater
Housing – accompanied	Family housing (privatized)
Housing – unaccompanied	Airmen housing, visitor housing – visitor quarters, temporary lodging facilities
Industrial	Base engineering, maintenance shops, warehousing
Medical/dental	Clinic, pharmacy
Open space	Conservation area, buffer space
Outdoor recreation	Outdoor courts, athletic fields, golf course, ranges
Training	Simulators, high-bay technical training, classrooms

Note: O&M = Operations and Maintenance

The Proposed Action is located within two of the installation land use categories: aircraft operations and maintenance and industrial. Land use areas near the proposed action area are shown in **Figure 3-1.**

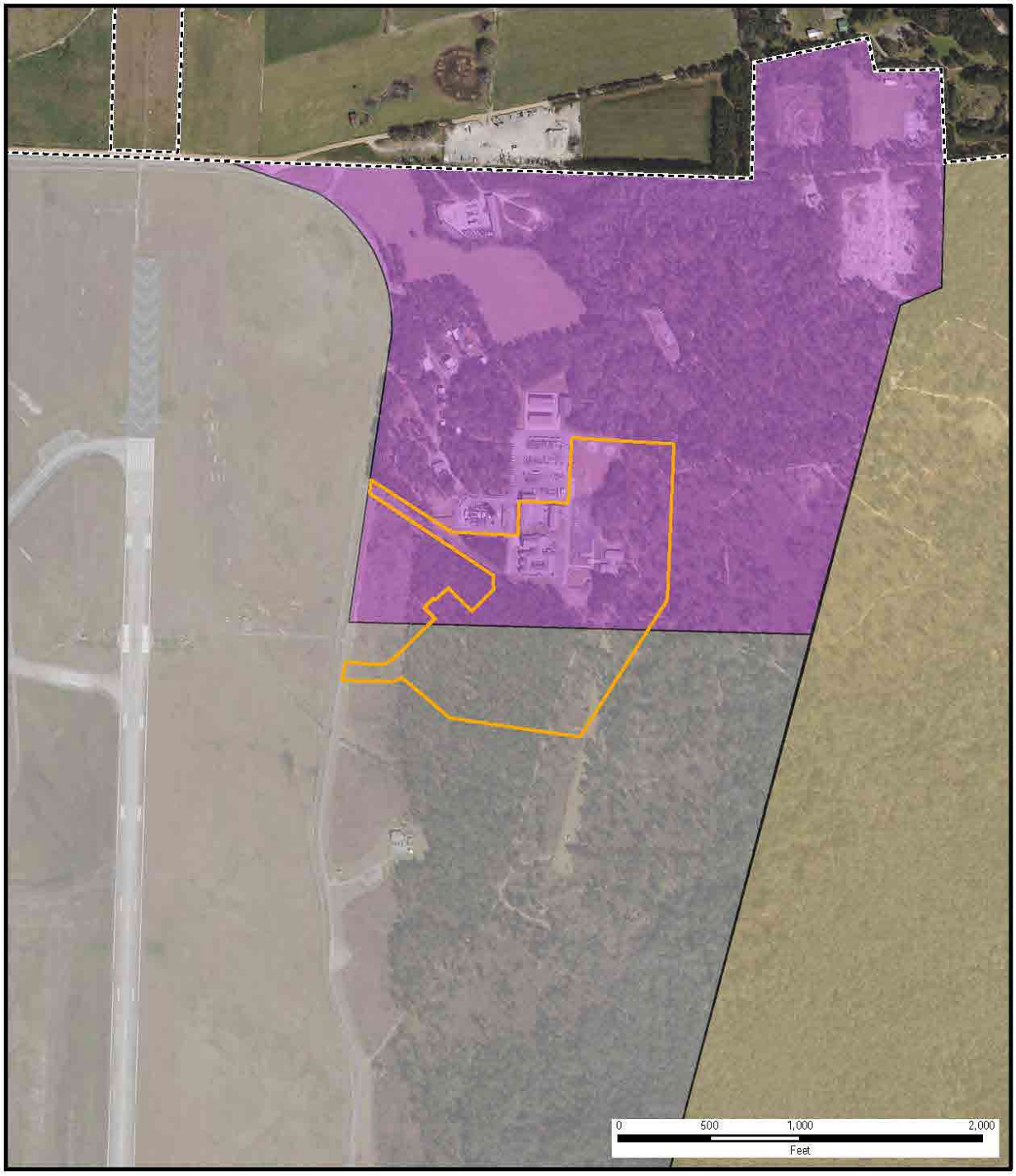


Figure **3-1**
On-Base Land Use
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

3.3 NOISE

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 (Federal Interagency Committee on Noise, 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 3-2**.

Table 3-2. Common Sounds and Their Levels

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

Source: Harris, 1998
Note: 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 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.
- Peak (dBP) - Peak is a single-event sound level without frequency weighting. Peak is the highest instantaneous sound pressure level produced at that instance. There is no time component or assessment period with Peak such as with DNL on L_{max}. The peak level is the same day or night. It's also the same whether one round is fired or a thousand rounds fired at a given range.

3.3.1 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. The USAF's land use guidelines for noise exposure are outlined in AFI 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 Federal Aviation Administration (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)	Small Arms (dBP))	General Recommended Uses
Low	<13%	< 65 dBA	< 87	Noise-sensitive land uses acceptable
Moderate	13%-37%	65–75 dBA	87 – 104	Noise-sensitive land uses normally not recommended
High	>37%	> 75 dBA	> 104	Noise-sensitive land uses not recommended

Source: Air Force 2016, FAA 2015
Note: DNL = day-night sound level; dBA = A-weighted decibel

3.3.2 Existing Conditions

Existing noise levels at Moody AFB are dominated by aircraft operations and noise exposure was determined through aircraft noise modeling associated with the Moody AFB Air Installation Compatible Use Zone Study (Moody AFB, 2015b). There is a total of 2,729 acres exposed to noise levels that exceed 65 DNL from aircraft operations at Moody AFB, the majority of which are within the base boundary. On-base noise levels are what one would expect from an active USAF base where the highest noise levels are along the runway and on aircraft parking aprons where aircraft maintenance operations occur. Noise levels of 75+ DNL are confined to within the base boundaries; however, the 65 DNL contour extends beyond the base boundary, and to a much lesser extent, the 70 DNL contour also extends beyond the base boundary. Existing noise levels within the proposed development area would be within the range of 55 to 65 DNL.

Moody AFB also includes a Combat Arm Training and Maintenance (CATM) Range, located in the southeast section of the base approximately 4,500 feet to the east of the nearest runway. The range is used for small arms weapons proficiency and training, specifically pistols, shotguns, rifles, and three types of machine guns. The M60/M240 are the loudest weapons fired at the CATM range utilizing a 7.62 millimeter round, where peak noise levels can reach 70-91 dBP at 5,280 feet dependent on the orientation of the receptor in relation to the weapon (USACHPPM 2005).

Individual Overflight Noise. Although operational noise levels are too low to result in incompatibility with existing land uses, noise from individual aircraft overflights generate distinct acoustical events. **Table 3-4** outlines the L_{max} and SEL for existing individual aircraft overflights for the primary and secondary users of Moody AFB. These overflights are brief and intermittent and are usually associated with arrivals, departures, or closed pattern operations at the Moody AFB airfield.

Table 3-4. Sound Levels for Individual Overflights

Altitude (feet)	Primary Aircraft (Typical Overflights)							
	L_{max} (dBA)[a]				SEL (dBA)[b]			
	A-29	A-10	H-60	C-130	A-29	A-10	H-60	C-130
500[c]	82.7	96.0	84.2	91.5	84.6	94.5	90.5	96.2
1,000	75.5	87.8	77.5	84.4	79.2	88.1	85.6	90.9
2,000	68.0	77.7	70.3	76.7	73.6	79.8	80.2	85.0

Source: USAF 2016; USAF 2020

Notes: [a] Lmax is the maximum sound level during an individual overflight. Overflights that exceed 75 dBA Lmax (bolded values) could interfere with speech. [b] 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. [c] Noise model does not provide an output for sound levels of individual overflights at an altitude of 100 feet Above Ground Level.

dBA = A-weighted decibel; L_{max} = maximum sound level; SEL = sound exposure level

3.4 AIR QUALITY

3.4.1 Definition of the Resource

Ambient Air Quality Standards

Section 108 of the Clean Air Act (CAA) requires that the United States Environmental Protection Agency (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_2), Ozone (O_3), sulfur dioxide (SO_2), and particulate matter, which includes particulate matter with a diameter less than or equal to 2.5 micrometers ($PM_{2.5}$) and particulate matter with a diameter less than or equal to 10 micrometers (PM_{10}). 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 3-5** provides the ambient air quality standards set forth by the Georgia Air Protection Branch.

Table 3-5. Ambient Air Quality Standards [1]

Criteria Pollutant	Averaging Time	Level [2]	Form
SO_2	1 hour	75 ppb	99th 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_{10}	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
$PM_{2.5}$	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	Annual	12.0 µg/m^3	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_3	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^3	Not to be exceeded
NO_2	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Annual	53 ppb	Annual mean

[1] Georgia Rule 391-3-1.02(4)
[2] ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter

Greenhouse Gases and Climate Change

CEQ's *Final Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change* (Aug 2016) provides guidance regarding NEPA air quality assessments. This document recommends that agencies quantify a proposed action's projected direct and indirect Greenhouse gas (GHG) emissions. GHG emission estimates have been prepared. Where possible, these emission estimates were developed using the Air Conformity Applicability Model (ACAM). Where emissions from aircraft models and/or other activities were not addressed within ACAM, engineering analyses were used to develop the GHG emission estimates.

Section 6.3.1 of the EIAP Guide does not establish a quantity of GHG emissions as significant relating to impacts to the environment but does imply methods (e.g., the use of ACAM) to establish significance indicators. Indicators are USEPA thresholds applied out of context to their intended use that do not provide definitive impact determination but rather evidence to the potential significance of GHG emissions on air quality. The USEPA has established a requirement for GHG emissions to undergo a Best Available Control Technology (BACT) analysis under the Prevention of Significant Deterioration (PSD) permit program. If a permitting project would emit or has the potential to emit 75,000 short tons (2,000 pounds per short ton) per year of carbon dioxide equivalents (CO_{2e}), and would otherwise be subject to the PSD requirements, then a BACT analysis must be performed on the GHG emissions. This value was used as the significance indicator for the proposed actions included in this EA.

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 (tpy) CO_{2e}], 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 ACAM. The results are described in **Section 4.4** (Air Quality).

3.4.2 Existing Conditions

Moody AFB is located within Lowndes County, under the jurisdiction of Georgia Department of Natural Resources (GADNR) Environmental Protection Division, which publishes statewide air quality and permitting regulations. Lowndes County is currently designated by the USEPA as an *attainment* area for CO, SO_2, NO_2, O_3, particulate matter (PM_{10} and $PM_{2.5}$), and Pb (USEPA, 2020).

A design value is a statistic that describes the air quality status of a given location relative to the level of the NAAQS. USEPA has computed county-level design values for each county that contains an air monitoring station based upon data collected at the station. One PM2.5 air monitoring station is located in Lowndes County; other criteria pollutants are not monitored at this station. However, several air monitoring stations are located in southern Georgia and northern

Florida counties. An analysis of the design values computed for each of these counties determined that the maximum 2018-2020 design values are (USEPA, 2021):

- $PM_{2.5}$ 7.5 µg/m^3 [Lowndes County, GA]
- O_3 0.060 ppm [Duval County, FL]
- SO_2 47 ppb [Nassau County, FL]
- CO 1.1 ppm [Duval County, FL]
- NO_2 10 ppb [Duval County, FL]

These design values were used for the Moody AFB area. Each of these values is less than 95% of the respective NAAQS (see **Table 3-5**). Consequently, as described in Section 5.2.2 of the Air Quality EIAP Guide Volume II (USAF, 2020), the air quality measured in the Moody AFB area is clearly in attainment with the NAAQS.

3.5 WATER RESOURCES

3.5.1 Definition of the Resource

Water resources include surface water, wetlands, floodplains, and groundwater. Surface water resources include lakes, rivers, and streams and are important for a variety of reasons, including economic, ecological, recreational, and human health factors. Groundwater resources include all water reserves contained in soil and geologic deposits below the ground surface. These resources are important for a variety of reasons, including drinking water, irrigation, power generation, recreation, food control, and human health. As previously noted, no wetlands or floodplains were identified within the Proposed Action area, so those resources were not carried through detailed analysis.

The CWA was established to ensure the “restoration and maintenance of the chemical, physical, and biological integrity of the Nation’s waters” (Section 402). Under the act, it is illegal to discharge pollutants from a “point source” into any surface water without a National Pollutant Discharge Elimination System (NPDES) permit. Furthermore, any applicant for a federal license or permit to conduct activities that may result in the discharge of a pollutant into Waters of the United States must also obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over the affected waters at the point where the discharge would originate.

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

The Energy Independence and Security Act of 2007 Section 438 (42 USC §17094) and Unified Facilities Criteria (UFC) 3-210-10, Low-Impact Development (as amended, 2016) include requirements for the management of stormwater on federal facilities. Any development project involving a federal facility with a footprint that exceeds 5,000 sf is required to use site planning, design, construction, and maintenance strategies to maintain or restore, to the maximum extent

technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow.

Water resources in Georgia are afforded protection under GADNR Environmental Protection Division. These programs are administered in accordance with the state's stormwater management program and the state's erosion and sedimentation control program (GADNR, 2018; GSWCC, 2016) under the auspices of the Environmental Protection Division's Watershed Protection Branch. Potential impacts to surface waters may result if a proposed action triggers permitting requirements under a Section 401 Certification Program (40 CFR § 230.10(b)). The Environmental Protection Division requires a minimum 25-foot buffer on all state waters (intermittent or perennial streams) regardless of whether or not CWA Sections 404 or 401 are applicable.

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

3.5.2 Existing Conditions

Surface Water

Moody AFB is located within the Suwannee River Basin. Major drainages in this basin that affect Moody AFB include the Withlacoochee River to the west and the Alapaha River to the east. A major feature of this basin is the Grand Bay/Banks Lake wetland complex, which is partially located within the political boundaries of Moody AFB.

The topography at Moody AFB is extremely flat and storm water runoff is handled through a network of drop inlets, underground storm sewers, and some above-ground ditches and swales. This system directs surface flow at Moody AFB to three relatively large water bodies: Mission Lake, Grand Bay/Banks Lake wetland complex, and Beatty Creek.

There are no defined streams within the project area. A network of ditches drains the area around the existing 820th BDG development, as well as along Perimeter Road. Drainage is generally towards the southeast towards Moody Bay.

Groundwater

Groundwater at Moody AFB occurs in two major aquifers, the surficial and Floridan aquifer systems. The surficial aquifer system is located 10 to 20 feet below ground surface and in the area near Moody AFB is confined by a layer of impermeable or semi-permeable materials. The Floridan aquifer is the primary source of usable groundwater water in the vicinity of Moody AFB. The aquifer is confined and is located approximately 150 feet below ground surface.

The area is located within a groundwater recharge area. These groundwater recharge areas are locations where the surface water may directly infiltrate underground aquifers. Such locations are inherently sensitive to stormwater runoff that may contain pollutants that, if introduced, could

affect the regional water supply. In developed areas such as Moody AFB, stormwater systems assist in preventing runoff from directly entering underground aquifers.

3.6 HAZARDOUS MATERIALS/WASTE

3.6.1 Definition of the Resource

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

Hazardous wastes are regulated under the Resource Conservation and Recovery Act and are defined as any solid, liquid, contained gaseous, or semisolid waste or any combination of wastes that either exhibit one or more of the hazardous characteristics of ignitability, corrosivity, toxicity, or reactivity or are listed as a hazardous waste under 40 CFR Part 261. The State of Georgia has adopted federal regulations for any solid waste that has been defined as a hazardous waste. These regulations are promulgated by the Board of Natural Resources in Chapter 391-3-11 (Office of the Secretary of State of Georgia, 2022) of the Rules and Regulations of the State of Georgia (GADNR, 2017).

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

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

Finally, proposed activities may affect asbestos and Lead Based Paint (LBP) in existing structures. Asbestos is a naturally occurring mineral that is a very effective heat and sound insulator. Consequently, it was used in many buildings as a fire and noise retardant. Friable (brittle) asbestos becomes hazardous when fibers become airborne and are inhaled. Asbestos has been linked to several diseases, including lung cancer, and has not been used in construction materials since 1989. Lead was used as an additive and pigment in paints for many years prior to 1978; therefore, older structures on the base that have multiple layers of older paint are potential sources of lead. Exposure to lead is usually through inhalation during renovation and demolition activities or through ingestion of paint chips or lead-contaminated drinking water. Lead has been associated with central nervous system disorders, particularly among children and other sensitive populations.

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

3.6.2 Existing Conditions

Hazardous Materials Management

A variety of products containing hazardous materials are used by the base as part of day-to-day operations. To administer these materials, Moody AFB has implemented a comprehensive hazardous material management process, including the use of a Hazardous Material Pharmacy (HAZMART). The HAZMART encompasses both a storage facility and an established set of procedures designed to control the acquisition, storage, issue, and disposition of serviceable hazardous materials. Working in coordination with the Environmental Management, Bio-environmental, and Safety Offices, the HAZMART ensures that only approved products are purchased and stored and that they are only issued to authorized users. Contractors conducting operations on the base are required to supply information to the base regarding any hazardous material utilized.

Hazardous Waste Management

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

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

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

Asbestos and LBP

Under the proposed action. Buildings 1500, 1531, and 1532 would be demolished, and Buildings 1530, 1505, 1506 would undergo additions/remodeling. There is a potential that renovation/demolition activities would disturb asbestos or LBP (if any) in these buildings. Asbestos was used in construction materials until an USEPA-initiated ban in 1989. LBP was in widespread use until 1978, when Congress banned all lead paint sales in the United States. Buildings constructed before these dates have the potential to contain LBP or Asbestos. Building

1500 is the only building part of the proposed action at risk of containing LPB or Asbestos, as shown in **Table 3-6**.

Table 3-6. Building Construction Dates

Proposed Action	Building	Current Use	Year Constructed
Demolition	1500	820th SFG Office and Storage Facility	1953
	1531	820th SFG Radar/Communications	1994
	1532	820th SFG Maintenance Facility	1994
Addition/ Remodel	1505	AGOW Headquarters	2009
	1506	AGOW Support Facility	2009
	1530	820th SFG Maintenance Facility - Wash Rack	1997

Note: AGOW = Air Ground Operations Wing

Building 1500 asbestos sampling data indicates that 6 samples were collected from 3 different materials during the inspection visit in 2009 (Moody AFB, 2010). Sampled materials included textured-finish gypsum board, acoustic ceiling tile, and vinyl cove molding and mastic. None of the materials sampled during the inspection of Building 1500 were found to contain asbestos. LPB samples also revealed no detected concentrations in the facility (Haugen, 2022). Lack of asbestos or LBP detection in the samples does not eliminate the possibility of detection elsewhere in the facility.

No asbestos sampling data are available for all other buildings listed in **Table 3-6**. Additionally, no sampling for LBP has been conducted at any of the buildings. Moody AFB manages asbestos and LBP in place where possible, removing it only when there is a threat to human health or the environment or when it may be impacted by construction or demolition. Georgia Environmental Protection Division regulations require facility owners and/or operators involved in demolition and renovation activities to inspect the affected facility before attempting to remove any asbestos, to file proper notification, and to handle and dispose of asbestos properly. Removal and disposal of asbestos and LBP are stipulated in project designs and are carried out in strict compliance with all applicable federal, state, and local laws, rules, regulations, and standards.

ERP Sites

The proposed location of several proposed action elements would be located near the existing LF-04 Northeast Landfill ERP site (**Figure 3-2**). Risks are associated with potential disturbance of existing site infrastructure elements, such as groundwater monitoring wells.

LF-04 encompasses approximately 108 acres in the northeast quadrant of Moody AFB. Much of the land surface at LF-04 consists of unimproved, pine woods. There is a seasonally swampy area within the extreme southern portion of the site, immediately west of the Grand Bay Swamp. The site includes a former landfill, which occupies approximately 8 acres within the northwest corner of the site. This landfill, which was actively utilized between 1972 and 1978, received waste from Moody AFB, including runway marking paint and approximately 50 cubic yards of fuel- and solvent-saturated soil. The remaining 100 acres encompass the groundwater contaminant plume associated with the former landfill. Investigations have identified volatile organic carbons (VOCs),

primarily trichloroethylene and associated biodegradation products in groundwater. Groundwater monitoring and remediation activities are ongoing at this site.

Several proposed action elements are located within the boundary of LF-04. These elements include construction footprints for the proposed Air Shop, the northernmost Stormwater Management Facility area, Gravity Sewer Main, and parking lot and roadway areas. The parking lot and sewer main are located within 50 feet of groundwater monitoring well MW17.

Solid Wastes

All municipal solid waste at Moody AFB is disposed of in a permitted secure off-base landfill. Additionally, construction and demolition (C&D) debris is occasionally generated from various projects. The generation of C&D debris has the potential to greatly impact Moody AFB's overall solid waste generation rate and Moody AFB's attainment of solid waste goals because of the relatively large mass of material involved. Typical C&D debris includes lumber, timber, reinforcing steel, piping, wiring, brick, plaster, masonry, metal, wall board, roofing, insulation materials, concrete, asphalt, and packing/packaging materials. Contractors are urged to recycle those materials that may be recycled (typically asphalt, concrete, and occasionally—and at the request of Moody AFB personnel—metal products). No contractual language currently exists stating that contractors must recycle C&D debris, and it is at the contractor's discretion how to manage C&D debris.

The Waste Management Evergreen Landfill, located in Lowndes County, is utilized by Moody AFB for disposal of municipal solid waste, which includes household refuse, as well as C&D debris. This landfill receives an average daily tonnage of 1,500 tons/day and has capacity until 2067 under current tonnage (Georgia EPD, 2020). In addition, there are two landfills in the region that are permitted to accept C&D debris: the Atkinson County Landfill and the Fitzgerald Landfill located in Ben Hill County, Georgia. These landfills also accept tree trimmings and wood debris,

as may be generated by proposed land-clearing activities. The average daily tonnage and life expectancy for Cook County Landfill and Fitzgerald-Ben Hill County Landfill is 162 tons/day for 32 years and 61 tons/day for 36 years, respectively (Georgia EPD, 2021).

Figure 3-2
LF-04 ERP Site
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

3.7 INFRASTRUCTURE

3.7.1 Definition of the Resource

Infrastructure, within the context of this EA, is associated with utilities and transportation. The utilities described and analyzed for potential impacts from the implementation of the Proposed Action and alternatives include potable water, wastewater, electricity, and natural gas. The description of each utility focuses on existing infrastructure (e.g., wells), current utility use, and any predefined capacity or limitations as set forth in permits or regulations. Transportation is defined as the potentially affected roadways on the main base. The ROI for infrastructure includes Moody AFB.

3.7.2 Existing Conditions

Potable Water

The water supply aquifer is currently accessed via three main wells operating at less than 50 percent capacity (estimated) and six secondary wells located throughout the base. The three main wells located on the main base provide potable water after being treated at the nanofiltration plant. This water is sent to a 500,000-gallon underground storage tank and a 250,000-gallon elevated storage tank. Water is delivered by the main distribution system through 25 miles of 10- and 12-inch cast iron and polyvinyl chloride (PVC) pipes. The six remaining wells located throughout the base provide water for fire protection, air conditioning, recreation, and personnel support in isolated areas.

Moody AFB can currently supply a maximum of approximately 750,000 gallons per day (gpd) from the aquifer to meet peak demands. The estimated peak demand is approximately 230,000 gpd and average demand is 200,000 gpd. Non-potable water byproducts of the filtration process are utilized for site irrigation, lowering the site's demand for potable water (Moody AFB, 2015a).

The existing 820th BDG facility area is served by a 12-inch water main.

Wastewater

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

There are 27 lift stations in the system and approximately 131,500 linear feet of sanitary sewer lines composed of asbestos cement, cast iron, PVC, terra cotta, reinforced concrete, steel, and ductile iron. Additionally, there are three septic systems in use around the installation.

The existing 820th BDG facility area is served by gravity sewers that drain to a lift station located adjacent to Building 1536, which feeds through an 8-inch force main.

Electricity

Electricity to Moody AFB is provided by two 115-kilovolt (kV) feeders from two separate Georgia Transmission-owned substations located off-base. A single, three-phase, 12-megavolt ampere transformer steps the voltage down from 115 kV to 12.47 kV for distribution throughout the base via five primary circuits. The system is approximately 98 percent underground and 2 percent overhead. All overhead distribution is located on the main base. All power on the runway side of the base is underground. Generators provide backup and emergency power to several of the base facilities.

Natural Gas

Atlanta Gas Light and Commerce Energy are the main natural gas service and infrastructure suppliers for Lowndes County, which is provided to Moody AFB through a contract managed by the Defense Energy Support Center. Natural gas is distributed throughout the main base and base housing areas. The main base consumes approximately 27,160,000 thousand cubic feet (kcf) annually, based on average consumption for fiscal years 2012 and 2013. Peak average consumption of approximately 7,982,000 kcf per month occurs in December, January, and February, and the average base gas demand of approximately 2,233,000 kcf per month occurs in June through September (Moody AFB, 2015a).

Transportation

The 39 miles of road system on Moody AFB are laid out in the standard “wagon wheel” pattern, with the hub of the wheel being Bradley Circle. Streets are classified as arterials or collectors. Mitchell

Boulevard, Robbins Road, and Robinson Road are considered the arterial streets that carry the majority of traffic. Nine streets are considered collector streets: Berger, Burrell, Davis, Dexter, George, Georgia, and Hickam Streets; Darque Boulevard; and Robinson Road. These streets support distribution of traffic from the arterials to local streets or directly to intended destinations. Eisemann Road provides base access to the Recycling Center, 23d Civil Engineer Squadron Field Training Exercise site, and the back access road to Grand Bay Range.

The existing 820th BDG facility area is served by Luke Street, which is a two-lane road off of Perimeter Road.

3.8 BIOLOGICAL/NATURAL RESOURCES

3.8.1 Definition of the Resource

Biological resources refer to the plant and animal species occurring near the proposed installation development project areas. Vegetation communities provide habitat for numerous wildlife species. This section focuses on plant and animal species and natural community types that typify or are important to the function of ecosystems in the region or that are protected by federal or state law or statute. Species with regulatory protection, or that are otherwise considered rare or vulnerable to human disturbance, are defined as sensitive species in this document. Sensitive species are protected by and/or listed under the Endangered Species Act (ESA), Migratory Bird

Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), EO 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*), the GADNR, and the Georgia Natural Heritage Program (NHP).

The ESA prohibits the unauthorized take of threatened or endangered species, where "take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. An endangered species is defined as any species in danger of extinction throughout all or a significant portion of its range, while a threatened species is defined as any species likely to become endangered in the foreseeable future. The ESA also requires critical habitat to be identified for listed species, which is defined as the physical and biological features essential for a species' conservation (e.g., food, water, shelter). However, designated critical habitat is not present on Moody AFB. In addition to endangered and threatened designations, the United States Fish and Wildlife Service (USFWS) has identified an additional status category of "candidate species." Candidate species are those species for which sufficient information is available to propose them as endangered or threatened under the ESA but for which development of a proposed regulation is precluded by other, higher-priority listing activities.

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

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

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

The MBTA provides for the conservation of migratory birds, which are defined as any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. Unless permitted, the MBTA prohibits the taking of migratory birds. The USFWS published a rule authorizing incidental take of migratory birds during military readiness activities in 2007. Military readiness activities include training and testing actions related to combat but do not include activities such as construction projects. In 2014, the DoD and USFWS entered into a Memorandum of Understanding regarding migratory bird conservation during activities other than military readiness and airfield operations (construction, demolition, and facility renovation, etc.) (DoD and USFWS, 2014). In general, the Memorandum of Understanding

identifies discretionary actions a DoD proponent may undertake, to the extent practicable and consistent with the military mission, for projects that are likely to have a measurable negative effect on migratory bird populations. Such actions include avoiding or minimizing exposure of birds and their habitats to avian stressors that may result in take.

Migratory birds are further addressed in EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, which requires federal agencies to evaluate the effects of their actions on migratory birds (with an emphasis on species of concern). Species of concern are those identified in (1) the USFWS report *Migratory Nongame Birds of Management Concern in the United States* (USFWS, 2011), (2) priority species identified by established plans such as those prepared by Partners In Flight, or (3) listed species in 50 CFR § 17.11, Endangered and Threatened Wildlife.

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

3.8.2 Existing Conditions

Vegetation communities, wildlife, and sensitive species are described for the Proposed Action in the following subsections.

3.8.2.1 Vegetation and Habitats

Descriptions of vegetation and plant community associations on Moody AFB are provided in the base’s Integrated Natural Resources Management Plan (INRMP) (Moody AFB, 2018b). Moody AFB is located in the lower coastal plain physiographic region of the Outer Coastal Plain Mixed Forest province, within the U.S. lowland ecoregion, as described by Bailey (1995). Representative trees of this province include various pines, oaks, laurels, and magnolias. Forests of longleaf pine (*Pinus palustris*), loblolly pine (*P. taeda*), and slash pine (*P. elliottii*) dominate large areas of sandy upland habitat, while gum-bay swamps (dominated by cypress trees) and scrub-shrub wetlands occur extensively throughout the region.

The historical vegetative composition of Moody AFB was likely dominated by mesic (moderate or well-balance supply of moisture) and wet-mesic longleaf pine forest. This composition has been altered by land management, construction, and other human activities. The unimproved areas on base currently consist primarily of longleaf/slash pine forest, pine flatwoods, pine plantations, mixed hardwood areas (including hardwood hammocks), and extensive areas of various wetland community types. Moody AFB lies within the Grand Bay-Banks Lake (GBBL) system (a large, approximately 13,000-acre wetland complex), and wetlands cover about 46 percent of the installation. Wetlands in the GBBL complex primarily consist of broad Carolina bays and shallow lakes connected by cypress-black gum (*Nyssa sylva*tica) swamps. In addition to unimproved areas, developed areas, landscaped/maintained areas, and open fields occur on the installation.

Vegetation in maintained areas (i.e., mowed) within the developed area of the Proposed Action was characterized by a maintained herbaceous community. Maintained areas were typically

dominated by centipede grass (*Eremochloa ophiuroides*) and Bahia Grass (Paspalum notatum), accompanied by common coastal herbaceous species such as dwarf dandelion (*Krigia virginica*).

Forested areas within the Proposed Action area consisted of loblolly pine (*Pinus taeda*), longleaf pine (*Pinus palustris*), sweetgum (*Liquidambar styraciflua*) and water oak (*Quercus nigra*) in the canopy. The understory was sparse, consisting of species in the forest canopy and winged sumac (*Rhus copallinum*) and blackberry (*Rubus* sp.). Groundcover and vines consisted of bracken fern (*Pteridium aquilinum*), goldentop (*Euthamia graminifolia*), sawbriar (*Smilax bona-nox*) and muscadine (*Vitis rotundifolia*).

Areas managed for gopher tortoise (*Gopherus polyphemus*) habitat is also located within the Proposed Action area. This forested area is dominated by mature timber consisting of approximately 35 acres of loblolly pine plantation, and approximately 14 acres of younger longleaf pines found adjacent to Perimeter Road. Due to periodic prescribed fires, understory is absent. Ground cover is dominated by wiregrass (*Aristida beyrichiana*) and muhly grass (*Muhlenbergia* sp.)

3.8.2.2 Wildlife

Many wildlife species occur on Moody AFB, and the species composition at any particular site is influenced by the habitat type present. Species typically associated with various habitats are listed in the INRMP (Moody AFB, 2018b). Based primarily on this information, species considered representative of upland habitats are listed in **Table 3-7**. The table does not present an exhaustive list of wildlife potentially present on Moody AFB (refer to the INRMP for a more complete list), and not all species listed necessarily occur near the project areas. However, these species are typical of wildlife found on the installation. Wildlife occurrence in the developed portions of the base is likely limited, consisting mostly of species found in urban areas and tolerant of human presence and activity (e.g., rodents and other small mammals, lizards, some bird species).

Table 3-7. Representative Wildlife Species in Upland Forest Habitats on Moody AFB

Common Name	Scientific Name
Mammals	
Opossum	*Didelphis virginiana*
Raccoon	*Procyon lotor*
Striped skunk	*Mephitis mephitis*
Gray fox	*Urocyon cinereoargenteus*
Fox squirrel	*Sciurus niger*
Gray squirrel	*Sciurus carolinensis*
Eastern cottontail rabbit	*Sylvilagus floridanus*
White-tailed deer	*Odocoileus virginianus*
Seminole bat	*Lasiurus seminolus*
Red bat	*Lasiurus borealis*
Evening bat	*Nycticeius humeralis*
Northern yellow bat	*Lasiurus intermedius*
Southeastern bat	*Myotis austroriparius*
Birds	
Red-shouldered hawk	*Buteo lineatus*

Northern bobwhite quail	*Colinus virginianus*
Pileated woodpecker	*Dryocopus pileatus*
Downy woodpecker	*Picoides pubescens*
Red-bellied woodpecker	*Melanerpes carolinus*
Northern flicker	*Colaptes auratus*
Yellow-billed cuckoo	*Coccyzus americanus*
Ruby-throated hummingbird	*Archilochus colubris*
American crow	*Corvus brachyrhynchos*
Yellow-bellied sapsucker	*Sphyrapicus varius*
Carolina chickadee	*Poecile carolinensis*
Tufted titmouse	*Baeolophus bicolor*
Brown-headed nuthatch	*Sitta pusilla*
Carolina wren	*Thryothorus ludovicianus*
Blue-gray gnatcatcher	*Polioptila caerulea*
Great crested flycatcher	*Myiarchus crinitus*
Ruby-crowned kinglet	*Regulus calendula*
Wild turkey	*Meleagris gallopavo*
White-eyed vireo	*Vireo griseus*
Red-eyed vireo	*Vireo olivaceus*
Northern parula	*Setophaga americana*
Common grackle	*Quiscalus quiscula*
Summer tanager	*Piranga rubra*
Eastern towhee	*Pipilo erythrophthalmus*
White-throated sparrow	*Zonotrichia albicollis*
Blue jay	*Cyanocitta cristata*
Brown thrasher	*Toxostoma rufum*
Northern cardinal	*Cardinalis cardinalis*
Hooded warbler	*Setophaga citrina*
Reptiles	
Eastern box turtle	*Terrapene carolina carolina*
Eastern cottonmouth	*Agkistrodon piscivorus*
Five-lined skink	*Plestiodon inexpectatus*
Timber rattlesnake	*Crotalus horridus*
Black racer	*Coluber constrictor*
Amphibians	
Little grass frog	*Pseudacris ocularis*
Squirrel tree frog	*Hyla squirella*
Eastern spadefoot toad	*Scaphiopus holbrookii*

3.8.2.3 Sensitive Species

The Moody AFB INRMP identifies 18 threatened, endangered, or rare species (having a federal, state, or NHP status) with known current or historic occurrence on the base (Moody AFB, 2018b). In addition, the GADNR has previously provided information on sensitive species with potential occurrence near the base. The resulting list of sensitive species that are known to occur within 1 mile of the Proposed Action is included in **Table 3-8**. The frosted flatwoods salamander

(*Ambystoma cingulatum*), listed as threatened under the ESA, occurs in the region of Moody AFB. However, this species has not been observed on the base, even though species-specific surveys have been conducted, and habitat conditions are generally considered marginal (Palis, 2005). The Georgia Natural, Archaeological, and Historic Resources GIS catalog lists an occurrence 0.8 miles northeast of the project area, but indicates that the population is "possibly extirpated (GNAHRIS, 2022). Therefore, occurrence in the project areas is unlikely. The two species with federal status that potentially occur within the area of the Proposed Action are gopher tortoise and eastern indigo snake, and these are described in the following paragraphs. Descriptions of the other species listed in **Table 3-8** can be found in the base's INRMP, the USFWS's Endangered Species web page, and the GADNR's Rare Species Profiles web page.

In addition to the species described above, migratory birds occur on and near Moody AFB at various times of the year. Increased migratory bird activity typically occurs in September/October and in April/May. Blackbirds and songbird species are particularly active around sunrise and sunset during winter. Migratory waterfowl are prevalent in wet areas. Although migratory birds may occur in some the project areas, bird habitat of greater quantity and quality occurs throughout the nearby large undeveloped wetland and forest areas of the Grand Bay Weapons Range, GBBL, and Banks Lake National Wildlife Refuge.

Table 3-8. Sensitive Species Occurring Within 1.0 miles of the Proposed Action

Common Name	Scientific Name	Federal Status	State Status	NHP
Amphibians				
Frosted flatwoods salamander	*Ambystoma cingulatum*	T	T	G2/S2
Birds				
Florida sandhill crane	*Grus canadensis pratensis*	None	None	G5/S1
Loggerhead shrike	*Lanius ludovicianus migrans*	None	None	G4/S3
Mammals				
Florida black bear	*Ursus americanus floridanus*	None	None	G5T2/S2
Reptiles				
Gopher tortoise	*Gopherus polyphemus*	Candidate	T	G3/S2
Spotted turtle	*Clemmys guttata*	None	U	G5/S3
Plants				
Yellow flytrap	*Sarracenia flava*	None	U	G5?/S3S4
Bluff white oak	*Quercus austrina*	None	None	G4?/S3?

E = endangered; NHP = Natural Heritage Program; T = threatened; U = unusual; ? = questionable rank, best guess provided

Gopher Tortoise

The eastern population of the gopher tortoise (occurring east of Alabama) is a candidate species under the ESA. The USFWS published a Federal Register notice in 2011 indicating that listing of the species in the eastern portion of its range as threatened under the ESA is warranted. However, at the time of publication of this EA, such listing had been precluded by higher priority actions.

The gopher tortoise is found primarily within pine sandhills or flatwoods, where it excavates a tunnel-like burrow for shelter from temperature extremes and refuge from predators (USFWS, 1990). The burrows may be used by many other species, making the gopher tortoise a principal component of the ecosystem in which it occurs. The primary features of preferred tortoise habitat are sandy soils, an open forest canopy with plenty of sunlight, and abundant forbs and

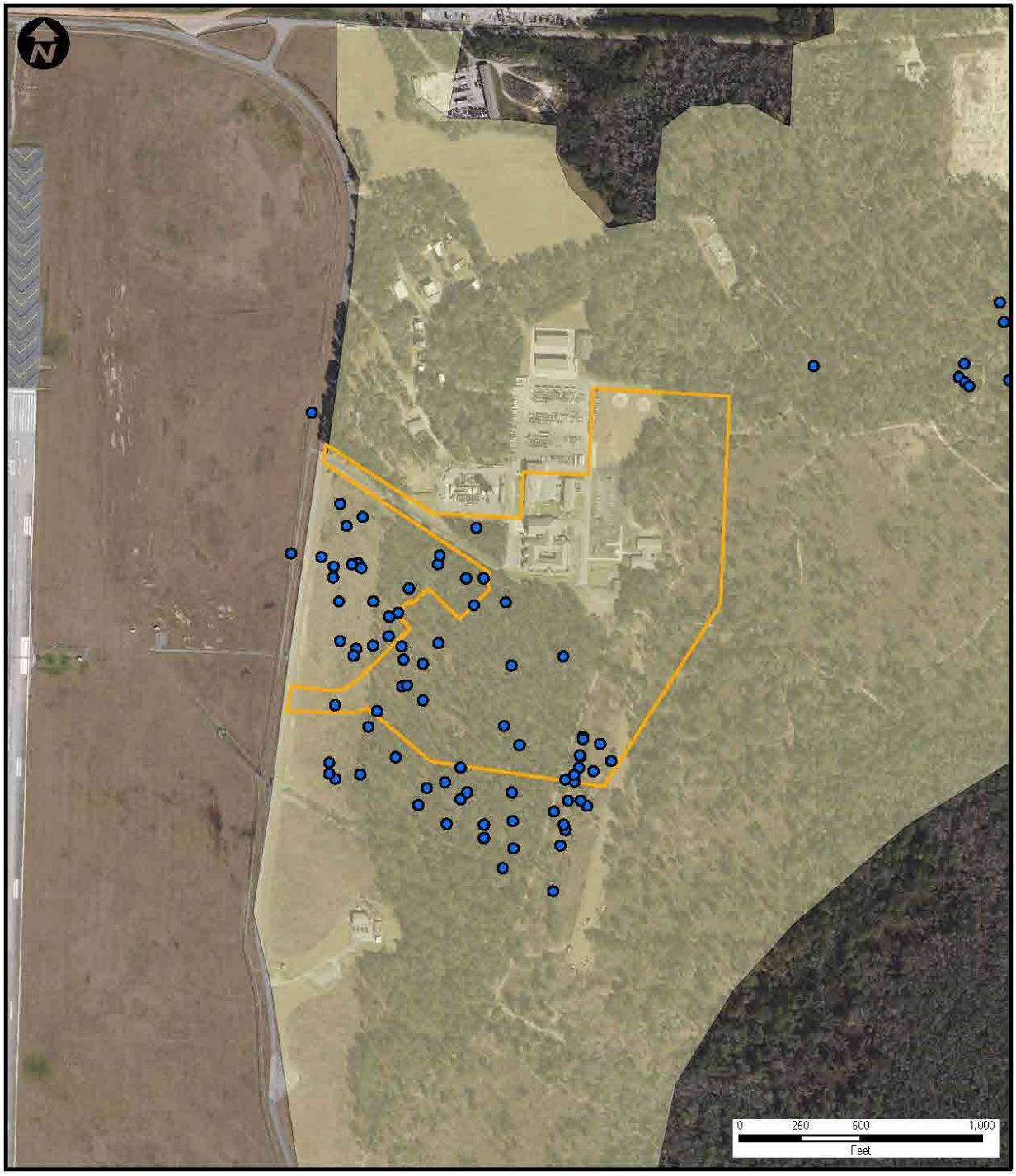
grasses in the understory. Natural or prescribed fire helps maintain desirable understory conditions. Nesting occurs during May and June, and hatching occurs from August through September.

Gopher tortoise populations are well established on portions of Moody AFB, with six colonies identified on the installation in 2012 (Moody AFB, 2018b). However, despite intensive habitat management activities, including prescribed burning, timber thinning, and hardwood midstory removal, gopher tortoise populations have declined on the installation over the last 15 years. While there is no known definitive cause, installation staff attribute the decline to habitat fragmentation and habitat succession effects (canopy closure in pine plantations), population senescence, and lack of adequate reproduction, recruitment, and immigration. Gopher tortoise burrows identified during recent surveys in the proposed project area, along with the corresponding potential tortoise habitat, are shown in **Figure 3-3**. Based on recent survey data, there are 29 burrows within the study boundary. However, burrow locations may change over time, so although the general habitat area shown is applicable to analysis in this document, individual burrow locations are likely different. The species is actively managed on Moody AFB through prescribed burning and timber management.

Eastern Indigo Snake

The eastern indigo snake, listed as threatened under the ESA, is a wide-ranging snake found in a variety of habitats including pine flatwoods, scrubby flatwoods, high pine, dry prairie, tropical hardwood hammocks, freshwater marsh edge, agricultural fields, coastal dunes, and human-altered habitats (NPS, 2021). The species may move seasonally between upland and wetland habitats. The average home range of the indigo snake varies by season, with individuals typically using much larger areas during warm months. Indigo snakes frequently utilize gopher tortoise burrows as refugia from cold temperatures in winter, for egg laying, and for protection during shedding when they are more vulnerable to predation. Occurrence in xeric (dry) sandhill habitat in Georgia is attributed primarily to the availability of gopher tortoise burrows during winter.

Indigo snakes were documented on the southeastern portion of Moody AFB in the early to mid-1990s, and at least three individuals were released at Grand Bay Weapons Range in 1993 and 1995 (Moody AFB, 2008; Moody AFB, 2018b; USFWS, 2008). One adult and one juvenile indigo snake were sighted in 1996 on Grand Bay Weapons Range. Indigo snakes have not been sighted since this time, despite monitoring efforts and species-specific surveys. The species may presently occur on the installation, but a self-sustaining population is considered unlikely due to the fragmented, marginal habitat. Because of the close association of this snake with gopher tortoise burrows, potential habitat is considered to coincide with tortoise habitat.



Legend
- Study Area
- Potential Gopher Tortoise Habitat
- Gopher Tortoise Burrows

Figure **3-3**
Gopher Tortoise Burrows and Potential Habitat
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

3.9 CULTURAL RESOURCES

3.9.1 Definition of the Resource

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and any other physical evidence of human activity considered important to a culture or community for scientific, traditional, religious, or other reasons. They include archaeological resources (both prehistoric and historic), historic architectural resources, and American Indian sacred sites and Traditional Cultural Properties (TCPs). Historic properties (as defined in 36 CFR § 60.4) are considered for potential adverse impacts from an action. Historic properties are significant archaeological, architectural, or traditional resources that are either eligible for listing or listed in the National Historic Preservation Act (NHPA) of 1966, as amended. Under Section 106 of the NHPA, Moody AFB is required to consider the effects of its undertakings on historic properties listed or eligible for listing on the NRHP. The regulatory NHPA Section 106 compliance process consists of four primary stages. These include: initiation of the Section 106 process (36 CFR § 800.3); identification of historic properties (36 CFR § 800.4), which includes identifying historic properties potentially affected by undertakings; assessment of adverse effects (36 CFR § 800.5), which determines whether the undertaking will affect historic properties and if effects to those properties might be adverse; and resolution of adverse effects (36 CFR § 800.6) between affected and consulting parties.

Moody AFB coordinates NEPA compliance with their NHPA responsibilities to ensure that historic properties are given adequate consideration during the preparation of environmental documents such as this EA. As per AFI 32-7003 Sections 2.9.1 and 2.9.2 and 36 CFR § 800.8, Moody AFB incorporates NHPA Section 106 review into the NEPA process or substitutes the NEPA process for a separate NHPA Section 106 review of alternatives.

As defined under 36 CFR § 800.16(d), “the Area of Potential Effects is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The area of potential effects (APE) is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking.” The USAF has defined the APE for direct effects to historic properties as the specific footprint of the development area. The APE for indirect effects is defined as a 1,000-foot buffer around the Proposed Action footprint. Given the auditory and visual environment of a developed cantonment area located on an active Air Force base, this buffer should capture all locations from which project construction or demolition activity may be visible or audible.

Archaeological and architectural resources of cultural significance located within the property boundary of Moody AFB have been previously evaluated (in accordance with a variety of acts, agreements, and AFIs, regulations, and directives), and are described in the Integrated Cultural Resources Management Plan (Moody AFB, 2018c). Multiple archaeological surveys have been conducted on Moody AFB and associated properties over the years. The National Park Service conducted archaeological investigations over the entirety of Moody AFB in 1986 and recorded one site (NPS, 1986). In 1998 a Phase I survey of 49.5 acres was located south of the base’s south gate, east of Bemiss Road; two sites were recorded during this survey (Morgan, 1998). Archaeological investigations at Moody AFB to date have located 27 archaeological sites and 39 isolated finds (Moody, 2018b).

The most recent archaeology survey that included the project area was conducted in 2019 (USAF, 2019). This survey covered the area of the Proposed Action in detail. Only one archaeological resource, an indeterminate prehistoric isolated find, was identified within the area of the Proposed Action. This resource was recommended not eligible for listing on the NRHP.

3.10 EARTH RESOURCES

3.10.1 Definition of the Resource

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

3.10.2 Existing Conditions

Geology

The geology of Lowndes County consists of the Hawthorn Formation that overlies the Tampa Formation. The Hawthorn Formation averages 150 feet in thickness and is phosphatic in composition (Stevens, 1973; Stevens, 1979; USGS, 2014). The underlying Tampa Formation is composed of limestone that can be seen in outcrops along the Withlacoochee River (Stevens, 1979; USGS, 2014). Additionally, Lowndes County is within a karst region, having abundant sinkholes and sinkhole lakes that have formed where the aquifer crops out and the overlying confining unit has been removed by erosion (Krause, 1979; Leeth, Clarke, Craig, & Wipperfurth, 2001). These are a result of groundwater dissolving the high calcium carbonate content of the underlying limestone formations.

Soils

The project area is located within the Tifton Upland District of the Lower Coastal Plain physiographic province (Clark & Zisa, 1976). The soils on uplands in this region were formed in deep sedimentary sands and clays. Alluvial soils near streams and tributaries generally originated from material eroded from the uplands (Stevens, 1973; Stevens, 1979).

Three soil series are located within the boundary of the project area (**Table 3-9** and **Figure 3-4**): Stilson loamy sand (Se), Tifton-Urban land complex (Tub), and Pelham loamy sand (Pe). Soil Series in the areas surrounding the project area include Dasher muck (Da), Grady sandy loam (Gr), Istokpoga complex (Ist), Johnston-Osier-Bibb association (Job), Leefield loamy sand (Le), Leefield loamy sand (LsA), Stilson loamy sand (SeB), Tifton loamy sand (TfA, TfB), and Tifton loamy sand (TqA, TqB). None of these areas are utilized for agricultural purposes.

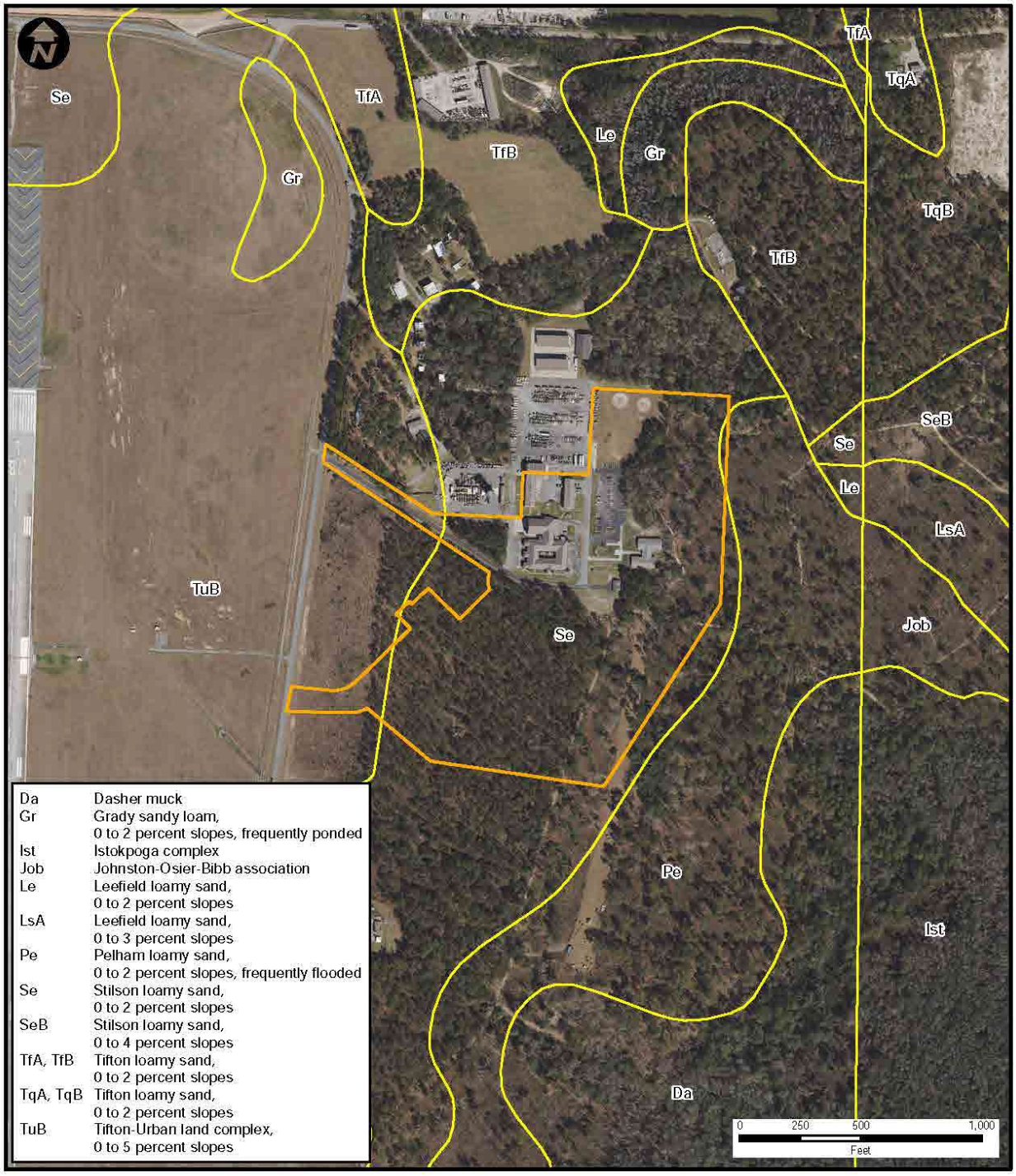


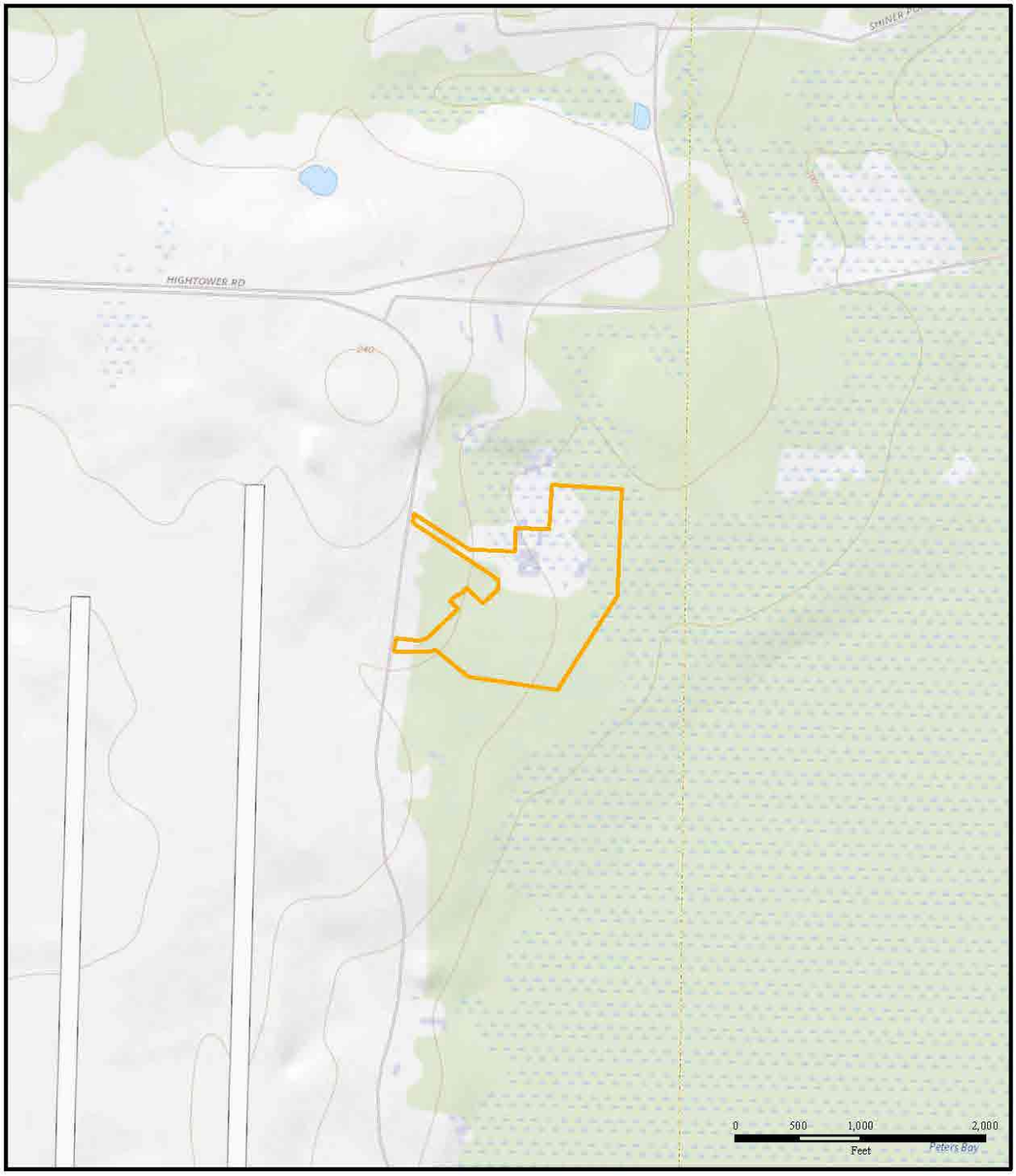
Figure 3-4
Soils Map
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

Table 3-9. Soil Types within Project and Surrounding Areas

Soil Name	Soil Symbol
Dasher muck	Da
Grady sandy loam	Gr
Istokpoga complex	Ist
Johnston-Osier-Bibb association	Job
Leefield loamy sand	Le
Leefield loamy sand	LsA
Pelham loamy sand	Pe
Stilson loamy sand	Se
Stilson loamy sand	SeB
Tifton loamy sand	TfA, TfB
Tifton loamy sand	TqA, TqB
Tifton-Urban land complex	TuB

Topography

The topography of the project area is generally flat, sloping downward to the east at a rate of 20 feet per quarter mile (**Figure 3-5**). Groundwater is anticipated to flow eastward in the direction of the regional topography. The proposed action area is in an area considered hazardous for aquifer vulnerability and sinkhole formation because of the moderately shallow depth to groundwater and moderately high recharge movement and low containment rate (Krause, 1979; Leeth, Clarke, Craig, & Wipperfurth, 2001). Elevations within the area of the Proposed Action range from approximately 230 feet above mean sea level (AMSL) near the Luke Street/Perimeter Road intersection to 200 feet AMSL along the southeastern area boundary.



Legend

Study Area

Figure 3-5
Topographic Map
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

Potential impacts to resources identified in Chapter 3, Affected Environment, are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity in 40 CFR § 1508.27. This requires the significance of the action to be analyzed with respect to the setting of a proposed action and relative to the severity of the impact.

4.2 LAND USE

4.2.1 Analysis Methodology

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

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

Based on analysis presented below, the USAF has not identified any significant adverse land use impacts from the Proposed Action. The Proposed Action would not result in any substantive land use changes or significant impacts based on the criteria listed above. Land use changes would be negligible, and the new land use would be compatible with the adjacent land uses. Elements in the Proposed Action would not be prohibited or have any specific restrictions within the applicable planning districts and future planning areas as defined in the IDP.

4.2.2 Alternative 1

The majority of the proposed development area is located in an area of maintenance and industrial use. The proposed developments would have a minor change to the existing land use for the potentially affected areas. Design elements north of the medical warehouse would remain in an industrial land use area. The development area would disturb approximately 14.7 acres of Aircraft Operations and Maintenance area, converting this area to that of Industrial land use. Elements partially or entirely included within this area include the squadron operations buildings, combat fitness area, 6-lane track, grenade range, the two southernmost stormwater management facility ponds, and all associate parking and roadways including the south entrance.

There would be no adverse impacts to land use designations from this alternative. The current 14.7-acre area designated for Aircraft Operations and Maintenance consists of undeveloped pine forest, which neither adds nor detracts from land use properties.

4.2.3 Alternative 2

Impacts under Alternative 2 would be the same as described in **Section 4.2.2**. The air shop and buildings 1500, 1505, 1506, and 1530 are all located within an Industrial land use area. Removal of these developments under this alternative would result in no changes from the impacts described in Alternative 1.

4.2.4 No Action Alternative

Under the No Action Alternative, there would be no land use impacts beyond the scope of normal conditions and influences within the land use ROI. The Proposed Action would not be implemented, and the existing land use designations at Moody AFB would remain unchanged.

4.3 NOISE

4.3.1 Approach to Analysis

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 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 3.3**, annoyance due to aircraft noise can be predicted based on the DNL. When subjected to DNL of 65 dB, approximately 12 percent 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 percent). 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 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.

4.3.2 Alternative 1

As described in **Section 2.4.1**, selection of this alternative would result in the complete 820th BDG campus development plan and would include associated infrastructure, the renovation of three buildings, and the demolition of three buildings.

For the purpose of this noise assessment with regards to short-term development, the three loudest pieces of equipment were chosen for each stage with the assumption that they would all be utilized over the same time period (e.g., 8-hour workday). During the C&D stages, it is projected that operations would result in an L_{eq} of be 56 dB at the Moody AFB boundary and 51 dB at the nearest residence (**Table 4-1**). The greatest L_{max} values would be anticipated during demolition and result in L_{max} values of 59 dB and 54 dB at the Moody AFB boundary and nearest residence, respectively. Demolition L_{eq} would be similar to existing daytime noise levels in these areas with L_{max} exceeding these levels. However, given the proximity of the residence in relation to an active airfield, daily aircraft operations would result in a much greater L_{max} (see **Table 3-4**) than any short-term demolition or construction activities. Given that existing building operations in this area would be subject to demolition or renovation, proposed construction noise levels would not impact existing building operations. Therefore, construction noise levels associated with the development of the 820th BDG campus would not be significant.

A temporary increase in noise levels associated with haul truck operations (i.e., removing debris and/or bringing in fill) would occur along Georgia State Route 125 where residences are within 50-feet of the roadway (**Table 4-1**). These noise levels would be similar to what residences experience when semi-tractor trailers operate on this road; however, the frequency with which residences experience these noise levels would increase through implementation of Alternative 1. While the frequency of increased noise would occur, haul truck operations would be short-term and only last for the duration of construction; therefore, impacts would not be significant.

Table 4-1. Proposed Construction Noise Levels

Stage	Location	Distance (feet)	Noise Level (L_{eq})	Noise Level (L_{max})
Demolition	50 feet	50	86	90
	Moody AFB Boundary	1,700	56	59
	Residence	3,000	51	54
Construction	50 feet	50	86	85
	Moody AFB Boundary	1,500	56	56
	Residence	3,000	51	51
Haul Truck	50 feet	50	n/a	85

Source: Moody AFB, 2022b
Note: L_{eq} = noise level equivalent in decibels; L_{max}=maximum noise level in decibels; n/a=not applicable

Long-term operations associated with the Alternative 1 would not result in an increase in noise levels above existing conditions. These proposed facilities are commercial in nature (e.g., no production of materials requiring loud machinery, etc.) or warehouses. Further, aircraft operations are the dominate noise source within the area and would continue to be under this alternative. The proposed 820th BDG would also be approximately 1.75 miles from the existing CATM range, thus beyond the distance where small range munitions noise would be incompatible. Therefore, impacts associated with long-term operations of the proposed 820th BDG campus would not be significant.

4.3.3 Alternative 2

Implementation of Alternative 2 would result in partial development of the 820th BDG campus with fewer facilities than outlined in Alternative 1. Removed from Alternative 2 development would be the Air Shop and the demolition of Building 1500. Construction noise levels would be reduced by approximately 1 dB, given that the Proposed Storage Warehouse is approximately 350 feet further from Moody AFB Boundary and the nearest residence. Demolition and haul truck noise levels would remain as described for Alternative 1. Operational noise levels would also remain as described for Alternative 1. Thus, noise impacts through implementation of Alternative 2 would not be significant.

4.3.4 No Action Alternative

Under the No Action Alternative, the proposed 820th BDG campus development plan would not be implemented and there would be no increase in proposed development or operational noise levels when compared to existing conditions. Thus, there would be no noise impacts resulting from selection of the No Action Alternative.

4.4 AIR QUALITY

4.4.1 Analysis Methodology

As described in **Section 3.4.2**, *Existing Conditions*, Moody AFB is located in an area currently designated by the USEPA as *attainment* for all NAAQS criteria pollutants (USEPA, 2020). In accordance with USAF guidance (USAF, 2020), this area is also classified as clearly attainment with the NAAQS.

There are no established significance thresholds for attainment areas. However, as defined by the PSD regulation [40 CFR Part 52, § 51.166], a major stationary source is one that emits or has the potential to emit greater than 250 tpy of a criteria pollutant. This threshold is one of the CAA's triggers for a new major source or a source making a major modification in an attainment area. In accordance with USAF guidance (USAF, 2020), in an area that is clearly in attainment with the NAAQS, the 250 tpy PSD threshold is an indicator of potentially significant air quality impacts for NEPA.

To evaluate criteria pollutant emissions, air emission estimates for the proposed action were calculated. Proposed actions that would emit (or have the potential to emit) less than 250 tpy of a criteria pollutant would be deemed insignificant because the indicator would suggest that the action would not cause or contribute to exceeding one or more the NAAQS.

To evaluate GHG emissions, air emission estimates for the proposed action were calculated in terms of CO_{2e}. The Significance Indication Analysis as described in Section 6.3.1 of the Air Quality EIAP Guide (USAF, 2020) was then implemented. In guidance issued on 1 August 2016, CEQ did not propose a particular quantity of GHG emissions as "significant" or "insignificant" relating to impacts to the environment or climate change. However, on 3 October 2016, the USEPA proposed establishing a de minimis value of GHGs or "Significant Emissions Rate" (SER) of 75,000 tons per year CO_{2e} from stationary sources as a basis for requiring sources to obtain a Title V permit if the sources were not otherwise required to obtain a Title V permit. As a result of this rule proposal, the 75,000 tpy CO_{2e} has been used as an indicator of *de minimis* significance; actions resulting in less than 75,000 tpy CO_{2e} of GHG emissions are considered *de minimis* (too trivial or minor to merit consideration) and not significant enough to warrant further NEPA analysis.

Finally, the effects of climate change on the proposed actions were considered as directed in Section 6.4 of the Air Quality EIAP Guide (USAF, 2020). As with the GHG analysis, actions resulting in less than 75,000 tpy CO_{2e} of GHG emissions have been considered *de minimis* (too trivial or minor to merit consideration) and not significant enough to warrant further NEPA analysis.

Air emissions are generated from land development, demolition, renovation, and construction activities. The USAF's ACAM was used to perform an analysis to assess the potential air quality impact/s associated with the proposed action in accordance with the Air Force Manual (AFMAN) 32-7002, Environmental Compliance and Pollution Prevention; the EIAP (EIAP, 32 CFR 989). Note that ACAM does not estimate emission from building renovation projects. Air emissions from renovation projects in existing buildings are covered by Categorical Exclusion A2.3.8 (32 CFR 989, **Appendix B**) and are not considered individually or cumulatively to have a significant effect on human environment based on agency experience.

The currently anticipated project duration is anticipated to be approximately 800 days (Studio 8 Design, 2021). For the air quality analysis, development and demolition activities were assumed to begin and end during a single calendar year (assumed to be 2023), while construction activities were assumed to begin during the first year and end at the end of the 800-day period (assumed to be during 2025). "Steady state" emissions were assumed to only consist of emissions generated by comfort heating equipment installed within the new buildings.

4.4.2 Alternative 1

The proposed action for Alternative 1 would include development of approximately 36 acres including clearing, grading, roadway and parking lot construction, combat fitness area and running track construction, lift station replacement, sewer line installation, and demolition / relocation of a grenade range. In addition, Alternative 1 would include demolition of three buildings and renovation of three other buildings. Finally, Alternative 1 would include the construction of nine buildings with a combined floor area of approximately 180,000 sf.

Potential air quality impacts may occur due to the use of gasoline and diesel-powered construction vehicles (e.g., dump trucks, dozers, etc.) during the land development, demolition, and construction activities. In addition to emissions from fuel combustion emissions, fugitive dust emissions can occur during ground excavation, material handling and storage, movement of equipment at the site, and transport of material during construction. Fugitive dust is most likely to

be a problem during periods of intense activity and would be exacerbated by windy and/or dry weather conditions. Land development, demolition, and building construction methods would utilize Best Management Practices (BMPs) to control fugitive dust.

Details regarding the calculation of air emissions from the implementation of Alternative 1 are presented in **Appendix B** and summarized in **Table 4-2**. The estimated annual net emissions associated with implementation of Alternative 1 are less than the insignificance indicators, indicating no significant impact to air quality. Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs. No further air assessment is needed. It should be noted that if all the development, demolition, and construction activities were to occur during the same calendar year, the estimated annual net emissions associated with implementation of Alternative 1 would remain less than the insignificance indicators.

Table 4-2: Air Quality Impacts from Proposed Action Alternative 1

Description	Air Pollutant Emissions (tons per year)						
	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO_2
Transient Emissions							
2023	3.27	3.60	41.69	0.16	0.01	0.47	1,607
2024	2.87	2.59	0.13	0.13	0.01	1.89	1,565
2025	0.98	1.08	0.08	0.08	0.01	0.60	1,145
Steady State Emissions							
2026	0.77	0.92	0.07	0.07	0.01	0.05	1,105
Insignificance Indicator	250	250	250	250	250	250	75,000
Exceedance?	No	No	No	No	No	No	No

4.4.3 Alternative 2

The proposed action for Alternative 2 is identical to that for Alternative 1 except for three items:

1. One of the existing buildings, Building 1500, would not be demolished.
2. No remodeling of existing buildings would be completed.
3. One of the new buildings, the Air Shop, would not be constructed. As a result, the combined floor area of the new buildings associated with Alternative 2 would be reduced to approximately 162,000 sf.

Potential air quality impacts associated with Alternative 2 are similar to those associated with Alternative 1 as described in Section 4.4.2. Details regarding the calculation of air emissions from the implementation of Alternative 2 are presented in **Appendix B** and summarized in **Table 4-3**. The estimated annual net emissions associated with implementation of Alternative 2 are less than the insignificance indicators, indicating no significant impact to air quality. Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs. No further air assessment is needed. It should be noted that if all the development, demolition, and construction activities were to occur during the same calendar year, the estimated annual net emissions associated with implementation of Alternative 2 would remain less than the insignificance indicators.

Table 4-3: Air Quality Impacts from Proposed Action Alternative 2

Description	Air Pollutant Emissions (tons per year)						
	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO_2
Transient Emissions							
2023	3.22	3.54	41.68	0.15	0.01	0.47	1,536
2024	2.79	2.49	0.13	0.13	0.01	1.74	1,459
2025	0.91	1.00	0.07	0.07	0.01	0.55	1,043
Steady State Emissions							
2026	0.70	0.83	0.06	0.06	0.01	0.05	1,003
Insignificance Indicator	250	250	250	250	250	250	75,000
Exceedance?	No	No	No	No	No	No	No

4.4.4 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.

4.5 WATER RESOURCES

4.5.1 Analysis Methodology

Potential impacts to water resources were evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity in 40 CFR § 1508.27. Criteria for evaluating impacts related to water resources are water availability, water quality, loss of a particular resource and/or its functions, and adherence to applicable regulations. Impacts are measured by the potential to (1) reduce water availability or supply to existing users, (2) endanger public health or safety by causing decreased surface water or groundwater quality, or (3) violate laws or regulations adopted to protect or manage water resources. Impacts are also measured by evaluating whether there would be a temporary or permanent loss of water resources or a loss or reduction in their ability to perform their unique functions.

An impact to water resources would be significant if it would (1) adversely affect water quality or endanger public health by contributing pollutants to surface water or groundwater, (2) threaten or damage hydrologic characteristics, (3) cause the permanent loss of wetland or floodplains, or (4) violate established laws or regulations that have been adopted to protect or manage water resources of the area.

Based on the analysis presented below, implementation of the Proposed Action or associated alternatives under the Proposed Action would not reduce water availability or supply to existing users, endanger public health or safety by causing decreased surface water or groundwater quality, or violate laws or regulations adopted to protect or manage water resources. Additionally, the Proposed Action would not adversely affect water quality or endanger public health by contributing pollutants to surface water or groundwater, threaten or damage hydrologic

characteristics, cause the permanent loss of wetland or floodplains, or violate established laws or regulations that have been adopted to protect or manage water resources of the area. As a result, the USAF has not identified any significant adverse impacts to water resources under the Proposed Action or alternatives.

4.5.2 Alternative 1

Surface Water

The Proposed Action would not result in direct impacts to surface waters. Potential indirect impacts from proposed construction activities could result in additional sediment loads being transported to surface waters in the vicinity of proposed construction

The Proposed Action would result in approximately 14.1 acres of new impervious area from infrastructure construction. Section 438 of the Energy Independence and Security Act of 2007 (EISA) requires strict stormwater runoff requirements for federal development and redevelopment projects. A development footprint exceeding 5,000 sf is required to utilize site planning, design, construction, and maintenance strategies to maintain or restore the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. The site design as detailed in the 820th BDG 100% Design Narrative (Studio 8 Design, 2021) will meet these requirements through passive stormwater quality measures which include:

- Stormwater runoff treatment from via construction of bio swales, enhanced swales, and grass filter strips.
- Disconnecting downspout discharges from the storm system where feasible to promote infiltration into the soil.
- Construction of bioretention features along the eastern side of the site that will retain and infiltrate the runoff from a 95th percentile storm event.

The 95th percentile storm event for Moody AFB equates to 2.1 inches of rainfall depth. The estimated stormwater runoff volume from this storm event for the developed project area is 140,540 cubic feet. This volume with be retained in the bioretention areas at a maximum depth of 8 inches.

During construction, a Stormwater Pollution Prevention Plan and sediment and erosion control plan would be prepared in compliance with Georgia NPDES requirements and Georgia's Erosion and Sedimentation Act of 1975. The Stormwater Pollution Prevention Plan and sediment and erosion control plan would implement the use of management practices to prevent erosion and sedimentation. The addition of impervious surface resulting from new construction would result in increased stormwater loads throughout the installation. However, no new point discharge sources would be developed, and while the current stormwater system on the installation is expected to be sufficient to handle any increased stormwater load, the need for any post-construction stormwater handling system improvements would be evaluated and identified during the design phase. The Proposed Action would comply with the Energy Independence and Security Act of 2007, Section 438, which requires additional stormwater retention for projects over 5,000 sf. Implementation of BMPs would minimize indirect impacts, and no significant adverse impacts to surface waters would be anticipated.

Groundwater

No significant impacts to groundwater resources are anticipated from the Proposed Action. Construction activities are not anticipated to require significant amounts of groundwater

The entire proposed development area is located within a groundwater recharge area in which the surface water may directly infiltrate underground aquifers. The confined nature and depths of the aquifers in the vicinity of the project site limits the potential for spills to migrate into aquifers used for drinking water. With adequate stormwater control and conveyance, no site restrictions are expected to the proposed development. With the implementation of BMPs as part of the Erosion, Sedimentation, and Pollution Control Plan requirements, impacts to groundwater as a result of the Proposed Action would not be anticipated.

Other potential impacts to groundwater during construction include contamination from spills or leaks associated with construction vehicles and machinery. Fuels and other petroleum products would be stored and transferred on-site during construction activities. Spill prevention plans would be in place to minimize the potential for spills and to quickly clean up any spills that would occur.

4.5.3 Alternative 2

Surface Water

Direct impacts to surface water under Alternative 2 would be only minimally reduced from impacts described in **Section 4.5.2**. Impacts attributed to the air shop and building 1500, 1505, 1506, and 1530 developments would be eliminated. No new point discharge sources would be developed, and post-construction stormwater handling system improvements would be evaluated and identified during the design phase. The total impervious area would be reduced slightly, from 14.1 acres to 13.0 acres, which would slightly reduce surface runoff. The developments would trigger EISA Section 438 compliance as described in **Section 4.5.2**. The required stormwater impact mitigation measures would be developed as described in Alternative 1. Construction procedures and compliance with state and federal requirements would be unchanged from Alternative 1.

Groundwater

Impacts to groundwater under Alternative 2 would be only minimally reduced from impacts described in **Section 4.5.2**. Impacts attributed to the air shop and building 1500, 1505, 1506, and 1530 developments would be eliminated. Spill prevention plans and applicable BMPs as detailed in **Section 4.5.2** would be implemented under this alternative.

4.5.4 No Action Alternative

Surface Water

Implementation of the no action alternatives would have no interaction with surface waters, and, therefore, no adverse impacts to surface waters. Existing surface water resources would be maintained in their current state, and no special mitigation measures would be required.

Groundwater

Implementation of the no action alternative for the Proposed Action would have no interaction with groundwater, and, therefore, no adverse impacts to groundwater. Existing groundwater resources would be maintained in their current state, and no special mitigation measures would be required.

4.6 HAZARDOUS MATERIALS/WASTE

4.6.1 Analysis Methodology

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

A significant impact would occur if:

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

Based on the analysis presented below and the resultant impacts as compared to the criteria presented above, the USAF has not identified any significant adverse impacts associated with solid or hazardous materials and waste.

4.6.2 Alternative 1

Hazardous Materials Management

New buildings and renovations would be constructed utilizing normal construction methods, which would limit, to the extent possible, the use of hazardous materials. Petroleum products and other hazardous materials (e.g., paints and solvents) would be used during construction and renovation activities. These materials would be stored in proper containers, employing secondary containment as necessary to prevent and limit accidental spills. All spills and accidental discharges of petroleum products, hazardous materials, or hazardous wastes would be reported and mitigated. The base has emergency response procedures and site-specific contingency plans for all hazardous material locations. Emergency generators with integral fuel storage tanks may be required at buildings proposed for construction. Management of these would be in accordance with existing oil and hazardous substances spill prevention and response plans.

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

Hazardous Waste Management

Hazardous and petroleum wastes would be generated in small quantities during construction and would include empty containers, spent solvents, waste paint and solvents, used oil, spill cleanup materials, and lead-acid batteries from construction equipment. These wastes would be stored in appropriate containers in accordance with applicable federal and State of Georgia regulations.

Wastes that cannot be recycled would be disposed of by the contractor at licensed facilities in a manner approved by the USEPA. No change to permits, hazardous waste generator status, or management would be required, and no significant environmental impacts from implementation of the proposed actions/alternatives are anticipated.

Asbestos and LBP

No asbestos sampling data are available for buildings that would undergo additions/remodeling or demolition under proposed activities. However, Building 1500 was constructed in 1953, before the 1987 USEPA ban on the usage of asbestos building construction, and has a high likelihood of containing asbestos. Construction of all other facilities occurred after 1994 (**Table 3-6**), and therefore are unlikely to contain asbestos. In all cases, an asbestos survey would be conducted prior to any renovation or demolition, and if present, asbestos would be abated. Disposal of asbestos wastes would be conducted as directed by the National Emission Standards for Hazardous Air Pollutants. The Georgia Environmental Protection Division would be notified prior to removal actions, and only Georgia-licensed contractors would be allowed to perform the work. Contractor personnel would have to be trained and certified. Transport and disposal documentation records, including signed manifests, would also be required.

Building 1500 may have a potential for containing LBP, as it was constructed before the 1978 ban of LBP sales in the United States. Construction of all other facilities occurred after 1994 (**Table 3-6**), and therefore are unlikely to contain LBP. Prior to demolition, an LBP survey would be conducted. Demolition of structures known to contain LBP would be conducted in accordance with applicable regulations. Proper disposal of any resulting lead-containing wastes would also be conducted in accordance with federal regulations, including the Toxic Substances Control Act and the Occupational Safety and Health Act. Further, these wastes would be accompanied by a waste manifest and disposed of at an approved facility.

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

ERP Sites

As shown in **Figure 3-2**, the proposed locations of 820th campus elements would overlap, or be located near, LF-04 Northeast Landfill ERP site. Elements located within the LF-04 boundary include the Air Shop and 0.3 acres of associated parking, approximately 350 feet of the 8-inch water main, and approximately 1.25 acres of the northernmost stormwater management facility area. There are no land use controls in place for the proposed locations of the 820th campus elements.

Impacts would be eliminated at this site by not disturbing contaminated soils and by avoiding existing site infrastructure elements. The only identified nearby element is monitoring well MW17 located approximately 50 feet north of the proposed 8-inch water main and air shop vehicle access/parking area. Groundwater sampling data obtained in the Spring (July 3) and Fall (October 23) of 2018 indicate that the depth to at MW17 was 5.14 and 10.98 feet below ground surface,

respectively (Arcadis, 2018). Additionally, analytical results revealed that all target constituents were under laboratory detection limits, and therefore beneath the USEPA maximum contaminant levels (Arcadis, 2018).

Impacts to MW17 are not expected since enough space is available between the well and proposed elements for construction teams to reasonably avoid the area. However, prior to the disturbance of any potentially affected soils within LF-04 boundaries, requirements for notifying the Georgia Environmental Protection Division would have to be met. This may involve generating a construction waiver by the Moody AFB ERP Office, which would coordinate with the Georgia Environmental Protection Division regarding the project and potential impacts. Also, before any work could commence, the potential presence of hazardous constituents would be communicated to workers. Site safety briefings that include distribution of material safety data sheets and discussion of safe work practices, including the use of personal protective equipment, would be conducted to protect worker health. Should soils need to be removed, transported, treated, and/or disposed, Resource Conservation and Recovery Act regulations would apply to the characterization, transportation, and disposal of this material.

Alternative 2 would not include the construction of the Air Shop. Thus, potential exposure to soil and groundwater within the LF-04 boundary would be reduced in comparison Alternative 1. Additionally, the 8” water main and associated vehicle access/parking servicing the Air Shop would not be constructed, further reducing presence of the proposed action within ERP site boundaries.

With implementation of the procedures described above, no significant impacts to ERP sites would occur.

Solid Wastes

Construction activities associated with the proposed actions/alternatives would result in the generation of C&D debris, including concrete and asphalt rubble and scrap materials, such as wood, drywall, plastic, masonry, etc. Using conventional construction methods, approximately 4.34 pounds of C&D debris would be generated for every square foot of building space, while approximately 157 pounds per square foot would be generated from demolitions (USEPA, 2009b). The resulting quantities of C&D debris associated with proposed activities are shown in **Table 4-4**.

Table 4-4. C&D Debris from Implementation of Proposed Actions and Alternatives

Development	Alternative 1			Alternative 2	
	Con	Demo	Reno	Con	Demo
Air Shop	16500	-	-	-	-
Comms Warehouse	16500	-	-	16500	-
Storage Warehouse	7500	-	-	7500	-
Medical Warehouse	5500	-	-	5500	-
Squadron Ops (Combined)	58468	-	-	58468	-
Armory	6751	-	-	6751	-
Bldg. 1531	-	9250	-	-	9250
Bldg. 1532	-	4900	-	-	4900
Bldg. 1500	-	1100	-	-	-
Bldg. 1530	-	-	22000	-	-
Bldg. 1505	-	-	4100	-	-
Bldg. 1506	-	-	4100	-	-
Total Square Feet	**111219**	**15250**	**30200**	**94719**	**14150**
SW Factor	4.34	158	4.34	4.34	158
Tons	241	1205	66	206	1118
Total Tons	**1512**			**1323**	

Con = Construction; Demo = Demolition; Reno = Renovation; Comms = Communications; Ops = Operations

1. Table only lists projects/alternatives that would result in the generation of construction-related solid wastes.
2. There are no renovations associated with Alternative 2.
3. Source: (USEPA, 2009b)
4. Solid Waste (SW) factors in units of pounds per square foot.

As shown in **Table 4-4**, the Alternative 1 would generate the highest quantity of C&D debris (i.e., approximately 1,550 tons). C&D debris would be disposed of at the Evergreen Landfill, Cook County Landfill, and the Thomas County Landfill. As discussed in **Section 3.6**, the Evergreen Landfill alone accepts an average of 1,500 tons per day of debris five days per week, which equates to approximately 390,000 tons per year of capacity. Construction activities would occur over multiple years, further limiting the quantity of debris generated at any one time. Additionally, appropriate management of construction debris, including recycling and reuse, when possible, would further limit any potential adverse impacts.

C&D debris would also be generated during reconstruction of paved surfaces (roads, buildings slabs, sidewalks, etc.), stormwater management facility, and the running track and fitness area. Building materials, such as asphalt, concrete, and synthetic turf material, would not be expected to generate significant waste, since they are produced in the needed quantities and can be recycled in the event that the material or its placement does not meet specifications. In the case of paved surfaces, C&D debris would likely consist mostly of wooden forms that could be recycled.

Any soils excavated during construction activities would be stockpiled for construction and landscaping uses, while woody debris from land-clearing activities could also be chipped or

mulched on-site and used for landscaping. Other nonhazardous waste generated would be the result of construction site operations (e.g., food waste, office waste, packaging materials). The quantity of this type of waste would be minor when compared to the C&D debris generated.

Under the proposed action, there would be no change in personnel or other activities that would result in a change in the quantity of municipal solid waste over that currently generated.

AFMAN 32-7002, Environmental Compliance and Pollution Prevention, requires that installations maximize non-hazardous solid waste and C&D debris diversion from landfills or incinerators through reuse, donation, recycling, Qualified Recycling Programs, composting and mulching, or other waste diversion activities. Installations are directed to use the USEPA pollution prevention methodology to optimize reduction in both the volume of solid waste disposed and overall cost of non-hazardous solid waste management. Pollution prevention methods include source reduction, such as chemical substitution, process change, or other techniques to reduce generation of hazardous material. Spent material or waste that cannot be reused or recycled is disposed of in an environmentally safe manner, consistent with the requirements of all applicable laws.

Furthermore, under Moody AFB's Affirmative Procurement Program, contractors are encouraged to recycle materials discarded as waste from construction activities.

Based on the estimated quantity of solid waste associated with the proposed actions/alternatives, no significant impacts are expected, as sufficient landfill capacity exists to accommodate the additional solid waste generated from construction, demolition, and operational and activities.

As discussed in **Section 3.6**, Hazardous Materials/Waste, no hazardous materials are used, and no hazardous wastes are generated. Additionally, proposed construction activities would not generate C&D debris in volumes exceeding the capacity of regional disposal facilities. Consequently, no significant impacts would occur.

4.6.3 Alternative 2

Hazardous Waste/Materials Management

Under Alternative 2, there would be no deviations from the hazardous materials or waste management procedures detailed in **Section 4.7.3**. Impacts from hazardous materials or waste would be similar to impacts described under Alternative 1. No hazardous materials or waste would be generated from renovation activities, as Buildings 1505, 1506, and 1530 would not be renovated under this alternative. Hazardous materials and waste production from the construction of the Air Shop under Alternative 1 would be eliminated as construction of this facility would not take place.

Asbestos and LBP

Any existing asbestos and LBP in buildings Building 1500, 1505, 1506, and 1530 would remain in place and undisturbed. There would be a loss in beneficial impacts from the removal of existing asbestos/LBP seen in Alternative 1, but no significant adverse impacts would be seen under this alternative.

ERP Sites

Alternative 2 would not include the construction of the Air Shop. Thus, potential exposure to soil and groundwater within the LF-04 boundary would be reduced in comparison Alternative 1.

Additionally, the 8” water main and associated vehicle access/parking servicing the Air Shop would not be constructed, further reducing presence of the proposed action within ERP site boundaries.

Solid Wastes

Alternative 2 would generate solid wastes in lower quantities than seen in Alternative 1, as described in **Table 4-4**. There would be no deviations from the solid waste management procedures detailed in **Section 4.7.3**. Overall impacts would be similar to those seen under Alternative 1.

4.6.4 No Action Alternative

Under the No Action Alternative, the Proposed Action as described in Alternatives 1 and 2 would not be implemented. Baseline conditions for hazardous materials, hazardous wastes, asbestos and LBP, ERP sites, and solid wastes, as described in **Section 3.6**, Hazardous Materials/Waste, would remain unchanged. Therefore, no significant impacts would occur under the No Action Alternative.

4.7 INFRASTRUCTURE

4.7.1 Analysis Methodology

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

EO 13990, *Climate Crisis; Efforts to Protect Public Health and Environment and Restore Science*, sets numerous energy requirements and goals that should be considered in the design, construction, and operation of any facility construction or renovation/repair projects with utility requirements. These includes ensuring new construction and major renovations conform to applicable building energy efficiency requirements and sustainable design principles, considering building efficiency when renewing or entering into leases, implementing space utilization and optimization practices, and annually assess and report on building conformance to sustainability metrics.

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

Based on analysis presented below, implementation of the Proposed Action or alternatives would not have any significant impacts on utility or transportation. The Proposed Action and alternatives would require changes to the existing utility infrastructure at Moody AFB. However, existing supply and capacities for all utilities are adequate to service the development of the alternatives.

Regarding transportation, there would be negligible adverse impacts to transportation associated with increased construction traffic; however, these impacts would be temporary and short term only during construction activities.

4.7.2 Alternative 1

Utilities

The Proposed Action would require new utility lines for water, sanitary sewer, electrical, natural gas, and communications. New utilities would connect to existing tie-in points wherever possible. Where surface disturbance to install new utility lines would not be required, the existing utility infrastructure would be maintained.

Utility usage along with wastewater generation would not create demand exceedances on existing systems and would not exceed permitted water or wastewater capacity ceilings, because no new permanent personnel would be added to the base population. Measures that would be incorporated into the design for the facility construction projects and any facility renovations include high-efficiency lighting upgrades, Heating, Ventilation, and Air Conditioning (HVAC) efficiency improvements, building automation and controls, water-efficient and low-flow fixtures, weather sealing, and replacement of windows and doors.

Transportation

Adverse impacts to transportation would be limited to the existing transportation network within and near the existing 820th BDG campus. Some use of public roadways would be needed to transport equipment and materials during the construction period, but they would be minimal and temporary.

Due to the consolidation of the 820th facilities, a slight increase in vehicle traffic would be anticipated as off-campus personnel would now drive on-base to the new campus. Demolition and construction activities would require the delivery of materials to and removal of construction-related debris from demolition, renovation, and new construction sites. Construction-related traffic would make up only a small portion of the total existing traffic volume in the area and at the base.

Intermittent traffic delays, detours, and temporary road closures may occur in the vicinity of the 820th BDG campus. Potential congestion impacts could be avoided or minimized by scheduling truck deliveries outside of the peak inbound traffic time and by using different access gates. Also, many of the heavy construction vehicles would be driven to the site and kept on-base for the duration of the C&D activities, resulting in relatively few additional trips. Traffic delays would be temporary in nature, ending once construction activities have ceased. As a result, no long-term or significant impacts on transportation infrastructure are anticipated.

4.7.3 Alternative 2

Utilities

Utility usage under Alternative 2 would be the same as described in **Section 4.7.2**. Utilities construction attributed to the air shop and building 1500, 1505, 1506, and 1530 developments in Alternative 1 would not occur under this alternative. Design measures would be incorporated as described in **Section 4.7.2**.

Transportation

Transportation impacts under Alternative 2 would be only minimally reduced from impacts described in **Section 4.7.2**. Impacts attributed to the air shop and building 1500, 1505, 1506, and 1530 developments would be eliminated, as no renovation activities would take place, one less building would be constructed, and one less building would be demolished. This would lead to a shorter period of traffic delays, detours, temporary road closures, and construction vehicle presence, resulting in less prominent effects on transportation. Traffic delays would be temporary in nature, ending once construction activities have ceased. No long-term or significant impacts on transportation infrastructure are anticipated.

4.7.4 No Action Alternative

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

4.8 BIOLOGICAL/NATURAL RESOURCES

4.8.1 Analysis Methodology

Impacts to biological resources may occur due to various aspects of the Proposed Action, including direct physical impacts, habitat alteration/loss (including some land clearing), and short-term disturbance during construction or demolition activities.

Analysis of biological resources considered potential impacts to vegetation communities and wildlife, including sensitive species. The plant and animal resources potentially affected are identified based on habitat type and previously documented occurrence. Projected conditions were compared with baseline conditions within the context of regional habitat availability and species populations, and a determination was made as to whether impacts would be adverse. An adverse impact would degrade habitat quality or diminish species health. A significant adverse impact would be one that is likely to jeopardize the continued existence of a species or result in an overall decrease in population diversity, abundance, or fitness.

Based on analysis presented below, some minor adverse impacts to vegetation and general wildlife species have been identified due to habitat loss associated with land-clearing activities. However, the Proposed Action is not likely to jeopardize the continued existence of a species or result in an overall decrease in population diversity, abundance, or fitness. Consequently, the USAF has not identified any significant adverse impacts to biological species.

4.8.2 Alternative 1

Vegetation

The Proposed Action would require work within approximately 4.7 acres of developed, improved, or maintained areas. Examples of these types of areas include existing facilities and associated parking lots, landscaped or mowed parcels, and roadside shoulders. Although a relatively small number of wildlife species may occur in such areas (generally those tolerant of human presence and activity), the limited habitat value substantially decreases the biological importance of these sites. Therefore, impacts to vegetation and the associated wildlife resulting from parts of the Proposed Action located within developed or maintained areas are generally considered minor

and are not analyzed further in this document. The remaining approximately 15.7 acres of the proposed development area would affect forested and pine plantation habitat and, therefore, would have a greater potential to impact biological resources. This includes potential gopher tortoise habitat that is present within the proposed development area. Potential impacts to gopher tortoises are discussed separately below. Vegetation would be converted from forested habitat to base facilities/infrastructure and/or maintained vegetation.

Wildlife

Construction activities within or adjacent to mixed hardwood forest and pine plantation areas could potentially result in injury, mortality, or disturbance to wildlife species. The potential for injury or mortality would result from direct strike by vehicles or construction equipment. Mobile species, such adult birds, would not be as susceptible to physical strikes, while others, such as smaller and/or less mobile species, would have greater potential to be impacted. It is not expected that substantial numbers of wildlife would be physically impacted. In addition, most of the wildlife species expected in the project areas are locally and regionally common, and mortality or injury to a small number of individuals would not result in an overall decrease in population diversity, abundance, or fitness of any species.

Wildlife in the project areas could also be temporarily disturbed or displaced due to increased noise and human activity associated with construction or demolition. It is expected that these effects would be short term and would affect only animals in the immediate project areas. Affected individuals would generally be able to return to the area after completion of activities. While some individuals might avoid project sites long term, the affected areas are small compared with other, similar available habitat nearby.

In addition to temporary wildlife disturbance and the potential for physical impacts during construction activities, vegetation removal would represent long-term habitat loss. A maximum of about 15.7 acres of forest would be affected. Trees and other vegetation may support foraging, nesting, and other behaviors for mammals, birds (including migratory birds), reptiles, and amphibians. While any habitat loss could adversely affect individuals, the amount of impacted forest habitat is relatively small compared with similar habitat available in the vicinity, and several of the affected sites occur in areas near current human activity. Overall, population-level effects to any species are not expected. To the extent practicable, Moody AFB would schedule tree removal to occur outside of times of increased migratory bird activity. Increased activity typically occurs in September/October and April/May.

Sensitive Species

Potential effects of the proposed actions on species protected under the ESA and BGEPA are discussed below. Moody AFB will complete informal Section 7 consultation with the USFWS for the gopher tortoise and eastern indigo snake for a “may affect, but not likely to adversely affect” determination.

Gopher Tortoise

Construction of the proposed developments would occur entirely within an area designated as potential gopher tortoise habitat, however only 15 acres of the total 36-acre study area would contain burrows based on the results of recent burrow surveys. According to Moody AFB survey

data, a total of 29 identified gopher tortoise burrows are located within the proposed action area. Moody AFB would conduct a pre-construction survey and coordinate with GADNR to relocate captured gopher tortoise either to state-owned property or to private property with conservation easements.

Eastern Indigo Snake

The eastern indigo snake could theoretically occur in most natural areas of the installation, but the probability of encountering this species during project activities is low based on the low number of historical sightings. Because of the typically close association between indigo snakes and gopher tortoise burrows, the potential for occurrence is considered greater in the tortoise habitat areas. During the pre-construction gopher tortoise survey, any indigo snakes would also be identified, captured, and subsequently relocated to an area outside the construction zone with coordination from USFWS and GADNR.

Potential impacts include direct impact by vehicles or other equipment, displacement, and disturbance. Indigo snakes could also be affected if gopher tortoise burrows were damaged or collapsed. Therefore, the gopher tortoise protection measures described above would also provide protection for indigo snakes. In addition, construction personnel would receive education regarding indigo snake identification. If an indigo snake were sighted, construction personnel would halt activities and contact base environmental personnel.

All installation personnel are informed at the Right Start Newcomers briefing and through other established outreach efforts regarding the presence of and requirement to protect listed species, and this procedure would continue. Any additional training and monitoring activities for potential impacts to listed species would be conducted by the Moody AFB Natural Resources Office, as applicable. Given the low potential for protected species occurrence in the project areas and/or ongoing management efforts with gopher tortoise, the USAF concludes that (1) there would be no significant impacts to species listed by the State of Georgia or NHP, (2) the actions would

not have a measurable negative effect on migratory bird populations, and (3) activities are not likely to adversely affect species listed under the ESA.

4.8.3 Alternative 2

Impacts to biological and natural resources under Alternative 2 would be only minimally reduced from impacts described in **Section 4.8.2**. Impacts attributed to the air shop and Building 1500, 1505, 1506, and 1530 developments would be eliminated. As most of these facilities would have been constructed in developed areas, no significant differences from impacts described for Alternative 1 would be expected.

4.8.4 No Action Alternative

Under the No Action Alternative, there would be no interaction with biological resources and, therefore, no adverse impacts to vegetation or wildlife. Existing habitats and wildlife species distribution would be maintained in their current states, and no special mitigation measures would be required.

4.9 CULTURAL RESOURCES

4.9.1 Analysis Methodology

This section discusses potential impacts to cultural resources, including any traditional, historic, and prehistoric resources located within and adjacent to the area of the Proposed Action.

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

Potential impacts to cultural resources can occur by physically altering, damaging, or destroying a resource or by altering characteristics of the surrounding environment that contribute to the resource's significance. Resources can also be impacted by neglecting the resource to the extent that it deteriorates or is destroyed. Adverse effects occur when these activities intersect with identified NRHP-eligible resources within the APE.

4.9.2 Alternative 1

The area of the Proposed Action has been surveyed for archaeological and structural resources and does not contain any archaeological sites, historic structures, historic districts, cemeteries, sacred sites, TCPs, or other resources identified as eligible for listing on the NRHP. The prehistoric isolated find is considered not eligible for listing in the NRHP and, as such, planned renovation, demolition, and construction activities would not result in adverse effects to cultural resources. The Chapel (Building 110) and the Water Tower (Building 618) are the only structures on Moody AFB eligible for listing in the NRHP. Neither building falls within the direct or indirect impact APE for this project.

Moody AFB will coordinate with the Georgia HPD as required under Section 106 of the NHPA of 1966. Moody AFB expects that the Proposed Action would result in a finding of no adverse effect to cultural resources regarding eligible resources under Section 106 of the NHPA. Additionally, Moody AFB initiated government to government consultation regarding the Proposed Action with Native American tribes on April 29, 2022. Letters were sent to the Muscogee (Creek) Nation, the Muscogee Nation of Florida, the Poarch Band of Creeks, the Seminole Nation of Oklahoma, the Thlopthlocco Tribal Town, the Kialagee Tribal Town, and the Coushatta Tribe of Louisiana. These seven tribes will also be invited to comment on potential impacts to cultural resources as a result of the Proposed Action. All correspondence associated with the HPD consultation and communications with the tribes are provided in **Appendix A**, Public Involvement, of this document.

In the case of inadvertent discovery of cultural resources, work on-site would cease and the discovery immediately reported to the cultural resources manager, who would initiate the Section 106 process. Additionally, the archaeological site must be treated as potentially eligible for listing on the NRHP until the Georgia State Historic Preservation Office has concurred that the site is not eligible and USAF activity can then resume (Moody AFB, 2012).

4.9.3 Alternative 2

Removal of the air shop construction, demolition of Building 1500, 1505, 1506, and remodeling of Building 1530 from the scope of developments would only slightly reduce the APE of the development area in comparison to Alternative 1. Inadvertent discovery procedures and the consequent Section 106 process initiation process would be followed as described in **Section 4.9.2**. The developments under Alternative 2 would not intersect with identified NRHP-eligible resources, therefore no significant impacts to cultural resources would not be anticipated under Alternative 2.

4.9.4 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and, as a result, impacts to cultural resources would not be anticipated.

4.10 EARTH RESOURCES

4.10.1 Analysis Methodology

This section discusses potential impacts to earth resources located within the area of the Proposed Action. Exposure to potential geologic hazards and potential for soil erosion and soil limitations were considered when evaluating impacts to soils and geology. Generally, impacts can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering designs are incorporated into project development.

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

4.10.2 Alternative 1

With the implementation of BMPs, the USAF has identified no significant adverse impacts under the Proposed Action. Because ground-disturbing activities would exceed 1 acre, an NPDES permit would be required. Under the permit, Moody AFB would be required to implement BMPs as part of the Erosion, Sedimentation, and Pollution Control Plan requirements. These BMPs would serve to mitigate any potential impacts to soils or subsequent impacts to wetlands, surface waters, and groundwater. With application of BMPs as required and adherence to permit stipulations, potential impacts to soil resources, groundwater recharge areas, and topography would not be anticipated.

Most of the activity associated with the Proposed Action would occur on Stilson loamy sand soils. A small amount of new paved areas along the western side of the development boundary would occur on Tifton-Urban land soils. With flood control and proper drainage measures, there are no major limitations that would preclude these soil types from development. Tifton soils and Stilson soils are both suitable for development, as they have only a slight erosion hazard and small risk of flooding. Approximately a third of the proposed grenade range would be located within Pelham loamy sand. This soil has a low erosion hazard but has frequent flooding, which can potentially

occur more than 50 percent of the time in any year (USDA, 2022). Approximately half of the current munitions range is located within Pelham loamy sand. Therefore, the proposed grenade range would result in an overall decrease in operations within areas of frequent flooding.

Significant topographic changes due to limited grading for project facilities and infrastructure are not expected. Ground disturbance due to grading, road construction, and facility construction activities could result in soil erosion within the project area. The use of permit-required BMPs would reduce any potential impacts from erosion during these activities.

4.10.3 Alternative 2

Alternative 2 would develop all proposed elements with the exception of the demolition of Building 1500, construction of the Air Shop, and the renovation of Buildings 1505, 1506, and 1530. The development footprint under Alternative 2 would be slightly smaller than that of Alternative 1. Therefore, impacts to geology, soil resources, and topography from proposed activities would be decreased in comparison Alternative 1. BMPs to mitigate impacts would be implemented in the same manner as described in **Section 4.10.2**. Potential adverse impacts to earth resources would be reduced in comparison to Alternative 1, resulting in an overall less than significant impact.

4.10.4 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and, as a result, would not result in any additional impacts to earth resources within the proposed development area.

4.11 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 actions and past, present, and reasonably foreseeable actions were to interact with the resource to the degree that incremental or additive effects occur.

4.11.1 Relevant Past, Present, and Foreseeable Future Actions

Within the context of this EA and the scope of the Proposed Action, past, ongoing, and future projects relevant to cumulative impacts analyses include those involving demolition, site preparation, facility/infrastructure construction, and noise generating activities within or near Moody AFB because those actions may have an incremental impact on the resources analyzed within this EA.

Moody AFB Actions

Recent past and ongoing actions at Moody AFB were considered as part of the existing condition in the appropriate resource ROI. Each project summarized in this section was reviewed to consider the implication of each action with the proposed or alternative actions. Potential overlaps in affected area and project timing were considered. Moody AFB is an active military installation that experiences continuous evolution of mission and operational requirements. **Table 4-5** lists the past, present, and reasonably foreseeable future major Air Force projects anticipated to occur at Moody AFB.

Table 4-5. Relevant Past, Present, and Foreseeable Future Actions

Project	Project Summary	Time Frame	Relevance to Proposed Action	Resource Interaction
Installation Development Plan – 17 projects	Basewide facility construction, infrastructure construction, renovation and repair, and demolition projects.	Future/ Present	Construction, renovation, and demolition activity at Moody AFB	Noise, water resources, infrastructure, biological resources, earth resources
Grand Bay Weapons Range Expansion	Acquire land to be used for training requirements. Land would most likely be southwest and contiguous to the installation.	Future	Expands low-altitude training at the Grand Bay Range	Noise, Biological Resources
Construct Parking at A-10 Area, Main Base	Project is to provide parking for privately owned vehicles that will meet antiterrorism/force protection standoff requirements of UFC 4-101-01, DoD Minimum Antiterrorism Standards for Buildings, for maintenance and support personnel in the A-10 area.	Present	Construction activity at Moody AFB	Noise, water resources, infrastructure, biological resources, earth resources
Construct Additional Parking at Golf Course	Project is to provide needed additional parking for golf course patrons, including patrons of the golf course, pro shop or snack bar.	Present	Construction activity at Moody AFB	Noise, water resources, infrastructure, biological resources, earth resources
Construct Jogging Trail along Stone Road, Davidson Gate/Stone Road	Project is to construct a trail along the east side of Stone Road to reduce the number of traffic crossings and improve user safety.	Present	Construction activity at Moody AFB	Noise, water resources, infrastructure, biological

intersection to Burma Road traffic circle				resources, earth resources
Construct Tracking Photovoltaic Panel Array	Project is to construct standard arrays to enhance the energy security posture and energy resilience of the installation and meet the "clean source" goals of EO 13693, Planning for Federal Sustainability in the Next Decade.	Present	Construction activity at Moody AFB	Noise, water resources, biological resources, earth resources
Construct Addition and Make Interior Repairs to Base Education Office, Building 328	Project is to provide a suitably sized education support office for assigned staff and sufficient storage and classroom space to meet installation needs.	Present	Construction activity at Moody AFB	Noise, infrastructure
Demolish Buildings 617, 622	Project is to demolish buildings to minimize maintenance and repair costs	Present	Renovation/demolition activity at Moody AFB	Noise

Complex Outside Moody AFB

No specific actions for the ROI outside of Moody AFB have been identified that could occur during the same time period as the proposed action. Typical actions that may occur over time throughout the region that are relative to the Proposed Action/Alternatives are facility and infrastructure demolition, renovation, and construction projects. However, no specific information is available on potential future projects near Moody AFB. As a result, potential interactions of the Proposed Action/Alternatives with potential future facility and infrastructure demolition, renovation, and construction projects are discussed from a qualitative perspective.

4.11.2 Magnitude and Significance of Cumulative Effects

Land Use

Projects at Moody AFB could result in various negligible to minor land use changes. There would be no changes to land use or incompatible uses associated with the Proposed Action. As a result, implementation of the Proposed Action would not incrementally contribute to impacts associated with other past, present, or reasonably foreseeable future actions within the ROI and no cumulative impacts to land use have been identified.

Noise

None of the identified proposed actions at Moody AFB that would substantially change the noise environment. Construction, renovation, and demolition projects at Moody AFB would occur, but they would not create significant noise impacts in combination 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. Depending on the timing of capital and infrastructure improvement projects occurring on Moody AFB and in the surrounding community, incremental increases in air emissions would result from construction activities. However, if any of the aforementioned projects were to occur over the same time period, emissions from several, simultaneous projects are not likely to result in temporary or long-term combined emissions that would exceed county significance criteria or negatively affect attainment status or otherwise adversely affect regional air quality. Therefore, cumulative effects on air quality would be negligible. No significant impacts would occur.

Water Resources

All construction projects have the potential for adverse effects on surface water quality due erosion and the transport of sediment in stormwater runoff. However, construction activity would comply with appropriate local, state and federal environmental regulations and permits to control erosion and transportation of sediment. BMPs such as silt fence and sediment traps would be used to control erosion and sediment transport to surface waters, and the respective construction activities are unlikely to occur at the same time. Several of the projects would result in the increase of impervious surface. Implementation of the Proposed Action would have a negligible effect on the total quantity and quality of stormwater runoff. There would be no significant incremental adverse cumulative effects on water resources from implementation of the Proposed Action. Streams, wetlands, their regulated buffers and floodplains would be avoided.

Adherence to all environmental management requirements would help to ensure that there would be minimal impacts to any water resources as a result of the proposed activities. When combined with past, present, and future projects, adverse cumulative impacts are not expected because avoidance, minimization (BMPs), and mitigation measures would be employed for each project as directed by state and federal regulations.

Hazardous Materials/Waste

Hazardous materials such as fuels for equipment and vehicles would be managed in accordance with applicable federal, state and local regulations to prevent accidental releases, and the discovery of hazardous/toxic materials during construction of the various projects would be handled in accordance with applicable regulations. If not recyclable, it is anticipated that hazardous/toxic materials would be disposed in appropriately permitted disposal facilities in compliance and accordance with local, state, and federal waste regulations if recycling/reuse are not viable options. It is unlikely that solid or hazardous waste materials from the other relevant projects would be generated during the same time period. There would be no significant incremental adverse cumulative effects on hazardous materials/waste generation or disposal from implementation of the Proposed Action.

Infrastructure

The Proposed Action would have a negligible impact on utilities, while some of the identified projects could impact the existing utility infrastructure and capacity at Moody AFB. Some of the projects that provide infrastructure improvements also have beneficial effects. Other development projects occurring during the same timeframe as the Proposed Action may also contribute to

minor, short-term transportation impacts during construction activities. Any adverse cumulative impacts would be minor and short term.

Biological/Natural Resources

Construction projects have the potential for adverse effects on wildlife from habitat alteration and from noise and human activity during construction. Potential cumulative impacts to biological resources would be associated with actions undertaken by Moody AFB that could affect similar forested and wetland habitats and the wildlife species associated with them. Multiple small, incremental effects can become pronounced if they reach some threshold of significance. For example, multiple actions that individually cause a small amount of habitat fragmentation could eventually result in an area becoming essentially unusable for wide-ranging species.

Some forested areas would be impacted by the proposed action, and wildlife species relying on these habitats would be affected to some degree. However, it is not anticipated that the overall health or viability of wildlife populations, including sensitive species, would be substantively impacted. Substantial areas of similar habitat occur in the vicinity, including on-base property, although future incremental habitat eradication or alteration could remove some of this habitat. Additional future habitat removal and wildlife disturbance on the base is likely, but there are currently no known projects that would cumulatively jeopardize the continued existence of a species or result in an overall significant decrease in population diversity, abundance, or fitness for any species. There would be no significant incremental adverse cumulative effects on biological resources from implementation of the Proposed Action.

Cultural Resources

No impacts to cultural resources are anticipated from the Proposed Action. If adverse effects are anticipated to occur to resources on Moody AFB, adherence to the Section 106 process in the NHPA, and standard operating procedures set forth in the Moody AFB Integrated Cultural Resources Management Plan would be followed. Similarly, if adverse effects are anticipated to occur to resources outside of Moody AFB, and the project is considered a federal undertaking, compliance with the Section 106 process in the NHPA would also be required.

With the implementation of the Section 106 process and as there are no identified impacts to cultural resources and no cumulative impacts are expected for this resource area under this action in conjunction with other past, present, or future proposed actions.

Earth Resources

The Proposed Action, as well as other facility and infrastructure construction projects at Moody AFB, have the potential to impact earth resources through increased erosion during construction. All projects discussed (past, present, and future) would be required to comply with GADNR NPDES and Lowndes County Land Disturbance Permit requirements. Under these permits, Moody AFB would be required to implement BMPs as part of the Erosion, Sedimentation & Pollution Control Plan. Implementation of these BMPs would minimize the potential for incremental impacts associated with soil erosion. Since the Proposed Action and other projects involving activities such as construction, road building and grading activities are small to moderate in size and localized, any potential impacts would be short term.

The Proposed Action would not substantially affect local topography, so no cumulative effects related to topographic resources are expected.

Some of these projects may be located within a groundwater recharge zone, so there could be a concern for groundwater contamination issues. However, the proposed activities would follow proscribed BMPs for soil erosion and are unlikely to introduce contaminants that could enter the groundwater. With the implementation of BMPs and compliance with permitting requirements, the Air Force has not identified any cumulative impacts to earth resources from past, present, and future actions

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5.0 LIST OF PREPARERS

Name/Organization	Degree	Contribution	Years of Experience
Eric Rider Nicklaus Engineering, Inc.	B.S. Environmental and Resource Science M.S. Soils and Biogeochemistry	Project Manager	17
Jonathan Bourdeau, Wood E&IS, Inc.	B.S. Forest Resources M.S. Management Science	Primary Author/ NEPA Specialist	22
Brian Cook Wood E&IS, Inc.	B.A. Biology	Senior Noise Analyst	22
Sean Mulligan Wood E&IS, Inc.	B.S. Mechanical Engineering	Senior Air Quality Analyst	28
Josh Sandige Nicklaus Engineering, Inc.	B.S. Environmental Science	Project Scientist	3
Richard Harmon Wood E&IS, Inc.	B.S. Marine Biology M.S. Coastal Ecology	Senior Technical Reviewer	33

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6.0 PERSONS AND AGENCIES CONSULTED/COORDINATED

Name	Title / Responsibility
Lorence Busker	Moody AFB Project Manager
Gregory Lee	Moody AFB Environmental Element Chief
Joseph Sandley	Moody AFB Superintendent of Training
Philip Hoderny	Moody AFB 23 CES Architect/Project Manager
David Martin	AFCEC NEPA Program Manager
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	
Lanier County Commission	
Lowndes County Commission	
Lowndes County Planner	
Lowndes County Manager	
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	

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APPENDICES

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Appendix A: Public, Tribal, and Agency Reviews, Comments, and Consultations

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Tribal Coordination

Name/Title/Organization	Comments
The Muscogee (Creek) Nation David Hill, Principal Chief Corain Lowe-Zepeda, THPO	Request for tribal consultation sent to the Muscogee (Creek) Nation via certified mail (April 29, 2022) and via email (May 2, 2022), including letter signed by Installation Commander.
Poarch Band of Creeks Stephanie Bryan, Tribal Chair Larry Haikey, THPO	Request for tribal consultation sent to Poarch Band of Creeks via certified mail (April 29, 2022) and via email (May 2, 2022), including letter signed by Installation Commander.
Coushatta Tribe of Louisiana David Sickey, Chairman Linda Langley, THPO	Request for tribal consultation sent to Coushatta Tribe of Louisiana via certified mail (April 29, 2022) and via email (May 2, 2022), including letter signed by Installation Commander.
Kialegee Tribal Town Brian Givens, Mekko David Cook, Cultural Preservation Officer	Request for tribal consultation sent to Kialegee Tribal Town via certified mail (April 29, 2022) and via email (May 2, 2022), including letter signed by Installation Commander.
Thlopthlocco Tribal Town Ryan Morrow, Town King (Mekko) David Frank, THPO	Request for tribal consultation sent to Thlopthlocco Tribal Town via certified mail (April 29, 2022) and via email (May 2, 2022), including letter signed by Installation Commander.
Muscogee Nation of Florida Ms. Ann Denson Tucker, Chairwoman	Request for tribal consultation sent to Muscogee Nation of Florida via certified mail (April 29, 2022) and via email (May 2, 2022), including letter signed by Installation Commander.
Seminole Nation of Oklahoma Ben Yahola, THPO	Request for tribal consultation sent to Seminole Nation of Oklahoma via certified mail (April 29, 2022) and via email (May 2, 2022), including letter signed by Installation Commander.

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

AIR COMBAT COMMAND
1992 - 2022

Date
15 APR 2022

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

Ryan Morrow, Town King
Thopthlocco Tribal Town
P.O. Box 188
Okemah, OK 74859

Dear Town King Morrow,

The United States Air Force 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 a campus for the 820th Base Defense Group (BDG) at Moody Air Force Base (AFB), Georgia.

Moody AFB is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties (Figure 1). The 820th BDG Operations Wing wants to develop a campus to consolidate all of their personnel and much of their training into one area. At the present time there are operational inefficiencies due to their personnel being widely distributed over the base. Building the campus would include construction of up to nine (9) new buildings, parking areas, running track, and fitness areas. The plan also includes remodeling two (2) existing buildings and possible demolition of three (3) of the existing buildings. In addition roads, and infrastructure to include power, water and sewer would be constructed to support the new and remodeled buildings. All of this would occur to the northeast and east of the airfield. Figures showing the location of the proposed campus on Moody Air Force Base (Figure 2) and the layout of the campus at full buildout (Figure 3) are attached. It should be noted that construction of the complete campus would be done slowly over several years (10-15 years).

Known environmental constraints within the Area of Potential Effect include wetlands, endangered or threatened species, and cultural resources. As part of the project the boundary of the wetlands to the east of the area will be delineated to ensure that they can be avoided. Therefore, this project would have no impact to wetlands. In the southern part of the project area there is small population of state threatened gopher tortoises that would be impacted by the project. As part of this project, the Air Force will work with the Wildlife Resources Division of the Georgia Department of Natural Resources and the U.S. Fish and Wildlife Service to relocate these tortoises to a suitable off-base area. Based on recent Phase I Archeological Surveys in the

project area, there are no identified archeological sites or historic facilities that are potentially eligible for listing under the National Historic Preservation Act.

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 area of potential effects for this proposed undertaking, which includes parts of Moody AFB Main Base (Figures 2 and 3). Additionally, the USAF requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis.

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

Please forward any written comments to Mr. Lorence Busker, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699 or email to lorence.busker@us.af.mil within 30 days of receipt of this letter to ensure the USAF has sufficient time to fully consider them when preparing the Draft 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

Russell P. Cook, Colonel, USAF
Commander, 23d Wing

Attachments
1. Figure 1 – Location of Moody AFB
2. Figure 2 – Location of Proposed 820th Campus on Moody Air Force Base, Georgia
3. Figure 3 – Proposed layout of the 820th Campus at full build out

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

AIR COMBAT COMMAND
1992 - 2022

Date
15 APR 2022

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

Lewis J. Johnson, Principal Chief
Seminole Nation of Oklahoma
PO Box 1498
Wewoka, OK 74884

Dear Principal Chief Johnson,

The United States Air Force 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 a campus for the 820th Base Defense Group (BDG) at Moody Air Force Base (AFB), Georgia.

Moody AFB is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties (Figure 1). The 820th BDG Operations Wing wants to develop a campus to consolidate all of their personnel and much of their training into one area. At the present time there are operational inefficiencies due to their personnel being widely distributed over the base. Building the campus would include construction of up to nine (9) new buildings, parking areas, running track, and fitness areas. The plan also includes remodeling two (2) existing buildings and possible demolition of three (3) of the existing buildings. In addition roads, and infrastructure to include power, water and sewer would be constructed to support the new and remodeled buildings. All of this would occur to the northeast and east of the airfield. Figures showing the location of the proposed campus on Moody Air Force Base (Figure 2) and the layout of the campus at full buildout (Figure 3) are attached. It should be noted that construction of the complete campus would be done slowly over several years (10-15 years).

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Russell P. Cook, Colonel, USAF
Commander, 23d Wing

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

AIR COMBAT COMMAND
1992 - 2022

Date
15 APR 2022

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

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

Dear Tribal Chair Bryan,

The United States Air Force 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 a campus for the 820th Base Defense Group (BDG) at Moody Air Force Base (AFB), Georgia.

Moody AFB is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties (Figure 1). The 820th BDG Operations Wing wants to develop a campus to consolidate all of their personnel and much of their training into one area. At the present time there are operational inefficiencies due to their personnel being widely distributed over the base. Building the campus would include construction of up to nine (9) new buildings, parking areas, running track, and fitness areas. The plan also includes remodeling two (2) existing buildings and possible demolition of three (3) of the existing buildings. In addition roads, and infrastructure to include power, water and sewer would be constructed to support the new and remodeled buildings. All of this would occur to the northeast and east of the airfield. Figures showing the location of the proposed campus on Moody Air Force Base (Figure 2) and the layout of the campus at full buildout (Figure 3) are attached. It should be noted that construction of the complete campus would be done slowly over several years (10-15 years).

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Russell P. Cook, Colonel, USAF
Commander, 23d Wing

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

AIR COMBAT COMMAND
1992 - 2022

Date
15 APR 2022

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

David Hill, Principal Chief
The Muscogee (Creek) Nation
PO Box 580
Okmulgee, OK 74447

Dear Principal Chief Hill,

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

AIR COMBAT COMMAND
1992 - 2022

Date

15 APR 2022

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

Brian Givens, Mekko
Kialegee Tribal Town
P.O. Box 332
Wetumka, OK 74883

Dear Mekko Givens,

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Commander, 23d Wing

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

AIR COMBAT COMMAND
1992 - 2022

Date

15 APR 2022

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

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

Dear Chairwoman Tucker,

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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 area of potential effects for this proposed undertaking, which includes parts of Moody AFB Main Base (Figures 2 and 3). Additionally, the USAF requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis.

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

Please forward any written comments to Mr. Lorence Busker, 23 CES/CEIE, 3485 Georgia Street, Moody AFB, GA 31699 or email to lorence.busker@us.af.mil within 30 days of receipt of this letter to ensure the USAF has sufficient time to fully consider them when preparing the Draft 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

Russell P. Cook, Colonel, USAF
Commander, 23d Wing

Attachments
1. Figure 1 – Location of Moody AFB
2. Figure 2 – Location of Proposed 820th Campus on Moody Air Force Base, Georgia
3. Figure 3 – Proposed layout of the 820th Campus at full build out

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

AIR COMBAT COMMAND
1992 - 2022

Date

15 APR 2022

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

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

Dear Chairman Sickey,

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Moody AFB is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties (Figure 1). The 820th BDG Operations Wing wants to develop a campus to consolidate all of their personnel and much of their training into one area. At the present time there are operational inefficiencies due to their personnel being widely distributed over the base. Building the campus would include construction of up to nine (9) new buildings, parking areas, running track, and fitness areas. The plan also includes remodeling two (2) existing buildings and possible demolition of three (3) of the existing buildings. In addition roads, and infrastructure to include power, water and sewer would be constructed to support the new and remodeled buildings. All of this would occur to the northeast and east of the airfield. Figures showing the location of the proposed campus on Moody Air Force Base (Figure 2) and the layout of the campus at full buildout (Figure 3) are attached. It should be noted that construction of the complete campus would be done slowly over several years (10-15 years).

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IICEP Consultation Letters

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

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

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

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Deputy Base Civil Engineer

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

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

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

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

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

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

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

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

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

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

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

Georgia Department of Transportation
Intermodal Division
One Georgia Center
600 West Peachtree NW – 25th Floor
Atlanta, Georgia 30308

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MOODY AIR FORCE BASE GEORGIA

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

Georgia Department of Community Affairs
Environmental Review and Preservation Program Manager
60 Executive Park South, NE
Atlanta, GA 30329

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

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

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

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MOODY AIR FORCE BASE GEORGIA

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

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

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

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

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

Dear Sir or Madam:

The United States Air Force 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 a campus for the 820th Base Defense Group (BDG) at Moody Air Force Base (AFB), Georgia.

Moody AFB is located on approximately 10,843 acres in south-central Georgia, northeast of the city of Valdosta in Lowndes and Lanier counties (Figure 1). The 820th BDG Operations Wing wants to develop a campus to consolidate all of their personnel and much of their training into one area. At the present time there are operational inefficiencies due to their personnel being widely distributed over the base. Building the campus would include construction of up to nine (9) new buildings, parking areas, running track, and fitness areas. The plan also includes remodeling two (2) existing buildings and possible demolition of three (3) of the existing buildings. In addition roads, and infrastructure to include power, water and sewer would be constructed to support the new and remodeled buildings. All of this would occur to the northeast and east of the airfield. Figures showing the location of the proposed campus on Moody Air Force Base (Figure 2) and the layout of the campus at full buildout (Figure 3) are attached. It should be noted that construction of the complete campus would be done slowly over several years (10-15 years).

Known environmental constraints within the Area of Potential Effect include wetlands, endangered or threatened species, and cultural resources. As part of the project the boundary of the wetlands to the east of the area will be delineated to ensure that they can be avoided. Therefore, this project would have no impact to wetlands. In the southern part of the project area there is small population of state threatened gopher tortoises that would be impacted by the project. As part of this project, the Air Force will work with the Wildlife Resources Division of the Georgia Department of Natural Resources and the U.S. Fish and Wildlife Service to relocate these tortoises to a suitable off-base area. Based on recent Phase I Archeological Surveys in the project area, there are no identified archeological sites or historic facilities that are potentially

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

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, Georgia 31699 or via email at lorence.busker@us.af.mil. Thank you in advance for your assistance in this effort.

Sincerely

JOHN L. EUNICE, III
Deputy Base Civil Engineer

Attachments:

1. Figure 1. Location of Moody Air Force Base, Georgia
1. Figure 2. Location of Proposed 820th Campus on Moody Air Force Base, Georgia
2. Figure 3. Layout of the Campus at full build out

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

23 CES/CD

3485 Georgia Street
Moody AFB, GA 31699-1707

U. S. Fish and Wildlife Service
Georgia Ecological Services
Highway 27 @ 1st Division Road
Fort Benning, GA 31905

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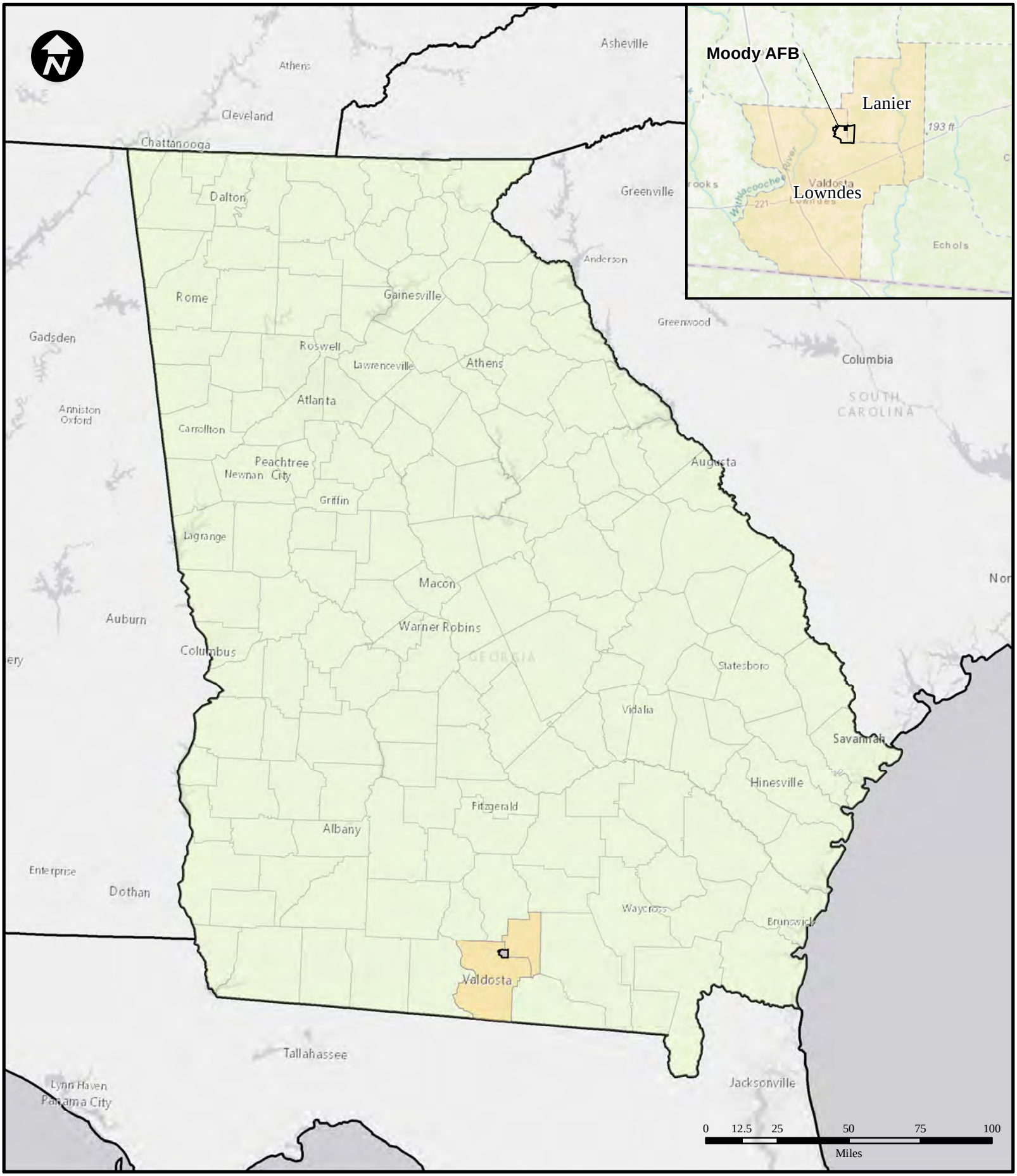
Consultation Letter Attachments

Figures 1, 2 and 3



Legend

- Moody AFB
- Lowndes and Lanier Counties
- Georgia Counties

Figure 1

Location of Moody Air Force Base

Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

Legend

- Moody AFB
- Proposed Development Area
- Lowndes and Lanier Counties

Figure 2

Location of Proposed 820 BDG Campus

Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

Legend

- Facility Construction
- Track and Combat Fitness Area
- Stormwater Management Facility
- Roadways and Parking
- Proposed Remodel
- Proposed Demolition
- Proposed Grenade Range Location
- Gravity Sewer Main
- 8" Water Main
- Force Main

Figure 3

Proposed Developments
Environmental Assessment
820th BDG Area Development Plan
Moody Air Force Base, Georgia

Appendix B: Noise Analysis

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Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/18/2022
Case Description: Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Boundary	Industrial	55.0	55.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40	85.0		1500.0	0.0
Generator	No	50	82.0		1500.0	0.0
Pneumatic Tools	No	50	85.0		1500.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	55.5	51.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	52.5	49.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pneumatic Tools	55.5	52.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	55.5	56.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/18/2022
Case Description: Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Boundary	Industrial	55.0	55.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dump Truck	No	40	84.0		1700.0	0.0
Mounted Impact Hammer (hoe ram)	Yes	20	90.0		1700.0	0.0
Shears (on backhoe)	No	40	85.0		1700.0	0.0

Results

Equipment		Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Dump Truck		53.4	49.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mounted Impact Hammer (hoe ram)		59.4	52.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shears (on backhoe)		54.4	50.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	59.4	55.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/18/2022
Case Description: Construction

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40	85.0		2600.0	0.0
Generator	No	50	82.0		2600.0	0.0
Pneumatic Tools	No	50	85.0		2600.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	50.7	46.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	47.7	44.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pneumatic Tools	50.7	47.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	50.7	51.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/18/2022
Case Description: Demolition

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dump Truck	No	40	84.0		3000.0	0.0
Mounted Impact Hammer (hoe ram)	Yes	20	90.0		3000.0	0.0
Shears (on backhoe)	No	40	85.0		3000.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dump Truck	48.4	44.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mounted Impact Hammer (hoe ram)	54.4	47.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shears (on backhoe)	49.4	45.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	54.4	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/18/2022
Case Description: Construction

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
50 feet	Industrial	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40	85.0		50.0	0.0
Generator	No	50	82.0		50.0	0.0
Pneumatic Tools	No	50	85.0		50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	82.0	79.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pneumatic Tools	85.0	82.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	85.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/18/2022
Case Description: Demolition

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
50 feet	Industrial	60.0	60.0	60.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dump Truck	No	40	84.0		50.0	0.0
Mounted Impact Hammer (hoe ram)	Yes	20	90.0		50.0	0.0
Shears (on backhoe)	No	40	85.0		50.0	0.0

Results

		Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment		Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dump Truck		84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mounted Impact Hammer (hoe ram)		90.0	83.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shears (on backhoe)		85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	90.0	86.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix C: Air Analysis

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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 an analysis to assess the potential air quality impact/s associated with the action 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 General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

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

b. Action Title: 820th Base Defense Group Area Development Plan, Moody Air Force Base, Georgia

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2023

e. Action Description:

Development under the proposed action would include all proposed facilities and infrastructure. All facility requirements would be met under this proposed action. The centralized 820 BDG campus would alleviate communication and coordination issues and lead to increased squad performance. The following facilities would be developed as part of the proposed action alternative:

Facilities Construction
· Warehouse 75,000 sf
· Air Shop 16,500 sf
· Communications Warehouse 16,500 sf
· Medical Supply Warehouse 5,500 sf
· Armory, 6,715 sf
· Squadron Buildings 14,617 sf (x4)
· Combat fitness area
· Running Track (6-lane, 400 meter)

Infrastructure Construction
· Connecting roads and 767 parking places
· 8-inch force main
· Lift station
· Sewer lines
· Power and communications connections

Remodel
· Building 1530
· Building 1505/1506

Demolition
· Building 1531
· Building 1532
· Building 1500

f. Point of Contact:

Name: Sydnie Margallo
Title: Air Quality Specialist and Environmental Analyst
Organization: Wood, Environment & Infrastructure Solutions, Inc.
Email: sydnie.margallo@woodplc.com
Phone Number:

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

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

_____ applicable
__X__ not applicable

Total 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" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used 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 potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any 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 pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

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

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.474	250	No
NOx	3.603	250	No
CO	3.267	250	No
SOx	0.012	250	No
PM 10	41.685	250	No
PM 2.5	0.156	250	No
Pb	0.000	25	No
NH3	0.007	250	No
CO2e	1607.1		

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.886	250	No
NOx	2.585	250	No
CO	2.870	250	No
SOx	0.010	250	No
PM 10	0.134	250	No
PM 2.5	0.134	250	No

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

Pb	0.000	25	No
NH3	0.002	250	No
CO2e	1565.1		

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.604	250	No
NOx	1.083	250	No
CO	0.983	250	No
SOx	0.006	250	No
PM 10	0.078	250	No
PM 2.5	0.078	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	1145.4		

2026 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.051	250	No
NOx	0.918	250	No
CO	0.771	250	No
SOx	0.006	250	No
PM 10	0.070	250	No
PM 2.5	0.070	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	1105.5		

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

_____ _____

Sydnie Margallo, Air Quality Specialist and Environmental Analyst DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

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

- Action Title: 820th Base Defense Group Area Development Plan, Moody Air Force Base, Georgia

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:

The purpose of the proposed action is to consolidate the mission activities of the 820 BDG into a single campus at Moody AFB. The proposed project supports construction of the campus, and would call for development and redevelopment of approximately 36 acres in the north-central portion of the base.

The proposed action is needed to consolidate functions and improve the man-hour efficiency of the 820 BDG at Moody AFB. The 820 BDG operates in existing buildings scattered throughout the base. Current buildings have been repurposed for use by the 820 BDG and are subject to inefficient layouts and outdated or inadequate infrastructure. In addition, these facilities are not centrally located, leading to communication and coordination issues stemming from inconvenient transit across sections of the base. The 820 BDG requires updated facilities that provide enhanced communications between squadrons and support for specialized squadron operations. Current facilities fall short of these needs and lead to loss of efficiency and decreased squad performance.

- Action Description:

Development under the proposed action would include all proposed facilities and infrastructure. All facility requirements would be met under this proposed action. The centralized 820 BDG campus would alleviate communication and coordination issues and lead to increased squad performance. The following facilities would be developed as part of the proposed action alternative:

Facilities Construction
· Warehouse 75,000 sf
· Air Shop 16,500 sf
· Communications Warehouse 16,500 sf
· Medical Supply Warehouse 5,500 sf
· Armory, 6,715 sf
· Squadron Buildings 14,617 sf (x4)
· Combat fitness area
· Running Track (6-lane, 400 meter)

Infrastructure Construction
· Connecting roads and 767 parking places
· 8-inch force main
· Lift station
· Sewer lines
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Remodel
· Building 1530
· Building 1505/1506

Demolition
· Building 1531
· Building 1532
· Building 1500

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Point of Contact
Name: Sydnie Margallo
Title: Air Quality Specialist and Environmental Analyst
Organization: Wood, Environment & Infrastructure Solutions, Inc.
Email: sydnie.margallo@woodplc.com
Phone Number:

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Alternative 1: Demolition and Construction to Support 820th BDG Area Development Plan
3.	Heating	Alternative 1: Heating

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

- Activity Title: Alternative 1: Demolition and Construction to Support 820th BDG Area Development Plan

- Activity Description:
Demolition of Buildings 1531, 1532, and 1500
Construction of Squadron Operations Buildings 1-4, Armory Building, Supply Warehouse Building, Medical Supply Storage and Shipping Warehouse Building, Communications Warehouse Building, and Air Shop/Warehouse Building

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 2
End Month: 2025

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.829308
SO_x	0.013556
NO_x	4.821704
CO	5.063093
PM 10	41.711345

Pollutant	Total Emissions (TONs)
PM 2.5	0.181746
Pb	0.000000
NH_3	0.009620
CO_2e	1369.5

2.1 Demolition Phase

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 10

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 15150
Height of Building to be demolished (ft): 14

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 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 Demolition Phase Emission Factor(s)

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

Concrete/Industrial Saws Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0382	0.0006	0.2766	0.3728	0.0127	0.0127	0.0034	58.549
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e

Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards ($1\ yd^3 / 27\ ft^3$)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 3
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 10

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 1568000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 3600

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	3	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

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

- Worker Trips Vehicle Mixture (%)

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

2.2.3 Site Grading Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 3
Start Quarter: 4
Start Year: 2023

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Phase Duration
Number of Month: 1
Number of Days: 10

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 1568000
Amount of Material to be Hauled On-Site (yd^3): 1002
Amount of Material to be Hauled Off-Site (yd^3): 174222

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 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

2.3.3 Trenching / Excavating Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase
VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 20
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 178719
Height of Building (ft): 14
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

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

- Worker Trips Vehicle Mixture (%)

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

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

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

2.4.3 Building Construction Phase Emission Factor(s)

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

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

- Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.5 Architectural Coatings Phase

2.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 12
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 10

2.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 178719
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

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

- Worker Trips Vehicle Mixture (%)

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

2.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

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

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

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.6 Paving Phase

2.6.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 1
Number of Days: 10

2.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 378290

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

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

- Worker Trips Vehicle Mixture (%)

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

2.6.3 Paving Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)

3. Heating

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

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

- Activity Title: Alternative 1: Heating

- Activity Description:
Natural Gas heater

- Activity Start Date
Start Month: 5
Start Year: 2023

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.050505
SO_x	0.005510
NO_x	0.918275
CO	0.771351
PM 10	0.069789

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.069789
Pb	0.000000
NH_3	0.000000
CO_2e	1105.5

3.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 178719
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.1079

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

3.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120390

3.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
$FC_{HER} = HA * EI / HV / 1000000$

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)

EI: Energy Intensity Requirement (MMBtu/ft^2)
HV: Heat Value (MMBTU/ft^3)
1000000: Conversion Factor

- Heating Emissions per Year

HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

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 an analysis to assess the potential air quality impact/s associated with the action 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 General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

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

b. Action Title: 820th Base Defense Group Area Development Plan, Moody Air Force Base, Georgia

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2023

e. Action Description:

Development under the proposed action would include all proposed facilities and infrastructure. All facility requirements would be met under this proposed action. The centralized 820 BDG campus would alleviate communication and coordination issues and lead to increased squad performance. The following facilities would be developed as part of the proposed action alternative:
Facilities Construction
· Warehouse 75,000 sf
· Communications Warehouse 16,500 sf
· Medical Supply Warehouse 5,500 sf
· Armory, 6,715 sf
· Squadron Buildings 14,617 sf (x4)
· Combat fitness area
· Running Track (6-lane, 400 meter)
Infrastructure Construction
· Connecting roads and 767 parking places
· 8-inch force main
· Lift station
· Sewer lines
· Power and communications connections
Demolition
· Building 1531
· Building 1532

f. Point of Contact:

Name: Sydnie Margallo
Title: Air Quality Specialist and Environmental Analyst
Organization: Wood, Environment & Infrastructure Solutions, Inc.
Email: sydnie.margallo@woodplc.com
Phone Number:

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

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

_____ applicable
__X__ not applicable

Total 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" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used 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 potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any 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 pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

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

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.470	250	No
NOx	3.538	250	No
CO	3.217	250	No
SOx	0.012	250	No
PM 10	41.678	250	No
PM 2.5	0.151	250	No
Pb	0.000	25	No
NH3	0.007	250	No
CO2e	1536.4		

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.736	250	No
NOx	2.488	250	No
CO	2.793	250	No
SOx	0.010	250	No
PM 10	0.127	250	No
PM 2.5	0.127	250	No

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

Pb	0.000	25	No
NH3	0.002	250	No
CO2e	1459.2		

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.552	250	No
NOx	0.998	250	No
CO	0.911	250	No
SOx	0.005	250	No
PM 10	0.072	250	No
PM 2.5	0.072	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	1043.3		

2026 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.046	250	No
NOx	0.833	250	No
CO	0.700	250	No
SOx	0.005	250	No
PM 10	0.063	250	No
PM 2.5	0.063	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	1003.4		

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

_____ _____

Sydnie Margallo, Air Quality Specialist and Environmental Analyst DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT
ALTERNATIVE 2

1. General Information

- Action Location

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

- Action Title: 820th Base Defense Group Area Development Plan, Moody Air Force Base, Georgia

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:

The purpose of the proposed action is to consolidate the mission activities of the 820 BDG into a single campus at Moody AFB. The proposed project supports construction of the campus, and would call for development and redevelopment of approximately 36 acres in the north-central portion of the base.

The proposed action is needed to consolidate functions and improve the man-hour efficiency of the 820 BDG at Moody AFB. The 820 BDG operates in existing buildings scattered throughout the base. Current buildings have been repurposed for use by the 820 BDG and are subject to inefficient layouts and outdated or inadequate infrastructure. In addition, these facilities are not centrally located, leading to communication and coordination issues stemming from inconvenient transit across sections of the base. The 820 BDG requires updated facilities that provide enhanced communications between squadrons and support for specialized squadron operations. Current facilities fall short of these needs and lead to loss of efficiency and decreased squad performance.

- Action Description:

Development under the proposed action would include all proposed facilities and infrastructure. All facility requirements would be met under this proposed action. The centralized 820 BDG campus would alleviate communication and coordination issues and lead to increased squad performance. The following facilities would be developed as part of the proposed action alternative:

Facilities Construction
· Warehouse 75,000 sf
· Communications Warehouse 16,500 sf
· Medical Supply Warehouse 5,500 sf
· Armory, 6,715 sf
· Squadron Buildings 14,617 sf (x4)
· Combat fitness area
· Running Track (6-lane, 400 meter)

Infrastructure Construction
· Connecting roads and 767 parking places
· 8-inch force main
· Lift station
· Sewer lines
· Power and communications connections

Demolition
· Building 1531
· Building 1532

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT
ALTERNATIVE 2

- Point of Contact
Name: Sydnie Margallo
Title: Air Quality Specialist and Environmental Analyst
Organization: Wood, Environment & Infrastructure Solutions, Inc.
Email: sydnie.margallo@woodplc.com
Phone Number:

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Alternative 2: Demolition and Construction to Support 820th BDG Area Development Plan
3.	Heating	Alternative 2: Heating

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

- Activity Title: Alternative 2: Demolition and Construction to Support 820th BDG Area Development Plan

- Activity Description:
Demolition of Buildings 1531 and 1532
Construction of Squadron Operations Buildings 1-4, Armory Building, Supply Warehouse Building, Medical Supply Storage and Shipping Warehouse Building, and Communications Warehouse Building

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 2
End Month: 2025

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.635688
SO_x	0.013500
NO_x	4.801168
CO	5.054044
PM 10	41.707698

Pollutant	Total Emissions (TONs)
PM 2.5	0.181097
Pb	0.000000
NH_3	0.009491
CO_2e	1363.0

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT
ALTERNATIVE 2

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 10

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 14150
Height of Building to be demolished (ft): 14

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 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 Demolition Phase Emission Factor(s)

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

Concrete/Industrial Saws Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0382	0.0006	0.2766	0.3728	0.0127	0.0127	0.0034	58.549
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards ($1\ yd^3 / 27\ ft^3$)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 3
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 10

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 1568000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 3600

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	3	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

2.2.3 Site Grading Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 3
Start Quarter: 4
Start Year: 2023

- Phase Duration

Number of Month: 1
Number of Days: 10

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2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft^2): 1568000
Amount of Material to be Hauled On-Site (yd^3): 1002
Amount of Material to be Hauled Off-Site (yd^3): 174222

- Trenching Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 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

2.3.3 Trenching / Excavating Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 20
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 162219
Height of Building (ft): 14
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

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

2.4.3 Building Construction Phase Emission Factor(s)

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

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

- Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

2.5 Architectural Coatings Phase

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2.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 12
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 10

2.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 162219
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

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

- Worker Trips Vehicle Mixture (%)

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

2.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

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

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

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.6 Paving Phase

2.6.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 1
Number of Days: 10

2.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 378290

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

2.6.3 Paving Phase Emission Factor(s)

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

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.273	000.002	000.207	003.148	000.007	000.006		000.023	00320.956
LDGT	000.345	000.003	000.366	004.453	000.009	000.008		000.024	00414.257
HDGV	000.716	000.005	000.988	014.742	000.020	000.017		000.044	00766.469
LDDV	000.103	000.003	000.133	002.604	000.004	000.004		000.008	00312.295
LDDT	000.240	000.004	000.378	004.437	000.007	000.006		000.008	00443.620
HDDV	000.494	000.013	004.839	001.748	000.167	000.153		000.028	01500.756
MC	002.588	000.003	000.723	013.090	000.027	000.024		000.054	00395.915

2.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)

HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

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

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

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

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

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

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

3. Heating

3.1 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: Alternative 2: Heating

- Activity Description:
Natural Gas heating for all 8 new buildings

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ALTERNATIVE 2

- Activity Start Date
Start Month: 5
Start Year: 2023

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.045842
SO_x	0.005001
NO_x	0.833497
CO	0.700137
PM 10	0.063346

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.063346
Pb	0.000000
NH_3	0.000000
CO_2e	1003.4

3.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 162219
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.1079

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

3.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120390

3.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
$FC_{HER} = HA * EI / HV / 1000000$

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value ($MMBTU/ft^3$)
1000000: Conversion Factor

- Heating Emissions per Year
$HE_{POL} = FC * EF_{POL} / 2000$

HE_{POL}: Heating Emission Emissions (TONs)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT
ALTERNATIVE 2

FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons