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MULTI-PROJECT ENVIRONMENTAL ASSESSMENT

FOR

MISSION TRANSFORMATION AT ROBINS AIR FORCE BASE, GEORGIA

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

August 2022

Privacy Advisory

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Acronyms and Abbreviations

350 SWW	350th Spectrum Warfare Wing
78 ABW	78th Air Base Wing
78 ABW/PA	78th Air Base Wing Public Affairs
ACAM	Air Conformity Applicability Model
ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
AFCENT	Air Forces Central Command
AFFF	Aqueous Film Forming Foam
AFI	Air Force Instruction
AOC	Area of Concern
AOR	Area of Responsibility
BACN	Battlefield Airborne Communication Node
BMCOC	Battle Management Combined Operations Complex
C2	Command and Control
CAA	Clean Air Act
CDL	Common Datalink Antenna
CENTCOM	Central Command
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHP	Combined Heat and Power
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_{2e}	Carbon Dioxide Equivalents
CONEX	Container Express
CONUS	Continental United States
CRM	Cultural Resources Manager
CSU	Colorado State University
DAF	Department of the Air Force
dB	Decibels
dBA	A-weighted Decibel
DNL	Day-Night Level
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EMS	Electromagnetic Spectrum
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Restoration Program
ESA	Endangered Species Act
EW	Electronic Warfare
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FY	Fiscal Year

GA	Georgia
GADNR	Georgia Department of Natural Resources
GAEPD	Georgia Environmental Protection Division
GHG	Greenhouse Gas
HAZMAT	Hazardous Material
HWMP	Hazardous Waste Management Plan
Hz	Hertz
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resource Management Plan
ISWMP	Integrated Solid Waste Management Plan
JSTARS	Joint Surveillance Target Attack Radar System
L_{max}	Maximum Sound Level
MGD	million gallons per day
MPEA	Multi-Project Environmental Assessment
MS4	Municipal Separate Storm Sewer Systems
MSW	Municipal Solid Waste
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	Ozone
OSHA	Occupational Safety and Health Administration
Pb	Lead
PDM	Programmed Depot Maintenance
PFAS	Polyfluoroalkyl Substances
PM_{10}	Particulate Matter ≤ 10 micrometers
$PM_{2.5}$	Particulate Matter ≤ 2.5 micrometers
ppt	Parts Per Trillion
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RD-PCE	Rapidly Deployable Payload Control Elements
ROI	Region of Influence
SAPF	Special Access Program Facility
SCIF	Sensitive Compartmentalized Information Facility
sf	Square Feet
SHPO	Georgia State Historic Preservation Officer
SLAMS	State and Local Air Monitoring Station
SO_2	Sulphur Dioxide
SWG	Spectrum Warfare Group
SWMU	Solid Waste Management Unit
TDY	Temporary Duty

TRI	Toxic Release Inventory
UFC	Unified Facilities Criteria
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compound
WR-ALC	Warner Robins Air Logistics Complex

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

The 78th Air Base Wing (78 ABW), Environmental Management Branch (78 CEG/CEIE) at Robins Air Force Base (Robins AFB or Base) has conducted this Multi-Project Environmental Assessment (MPEA) 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 FR 43304-43376]; and Department of the Air Force (DAF) Environmental Impact Analysis Process (EIAP) [32 CFR Part 989], which implements NEPA and CEQ regulations.

The 78 ABW is the host organization of Robins Air Force Base (AFB). It is responsible for every service associated with a large base, including force protection, emergency response and management, medical services, airfield operations, facility operations and maintenance, personnel management, communications, logistics readiness, morale and welfare, legal, environmental management, public affairs, and support functions. This involves facilities support and equipment provisions for the base's 141 warehouses, 141 shops/hangars, and 107 administrative facilities which support over 23,000 civilians, military members, and contractors. The 78 ABW also provides support for the Warner Robins Air Logistics Complex (WR-ALC), which performs depot-level maintenance and repairs on a wide variety of DAF equipment and weapons systems, including the C-5 Galaxy, C-130 Hercules, F-15E Strike Eagle, C-17 Globemaster III, several Special Operations Forces aircraft, and the Predator and Reaper.

The 78 ABW has evaluated their current mission and the projected future missions at Robins AFB. Based on that evaluation, the 78 ABW has deemed this MPEA as a mission critical need. The MPEA provides an Environmental Assessment (EA) of proposed actions for mission changes at the 78 ABW, for the following projects: (i) beddown of the Kingpin mission; (ii) the establishment of a Spectrum Warfare Group (SWG) mission; and (iii) beddown of the E-11A Battlefield Airborne Communication Node (BACN) mission at Robins AFB, Georgia. The following sections provide a detailed description of the mission set changes.

The Air National Guard's 116th Air Control Wing at Robins currently hosts a total of 16 E-8C Joint Surveillance Target Attack Radar System (JSTARS) aircraft. The E-8C is a modified Boeing 707-300 series commercial airframe extensively remanufactured and modified with the radar, communications, operations, and control subsystems required to perform its operational mission. The aircraft are becoming more costly over time because they require more frequent and more extensive maintenance due to the age of the aircraft and reduced availability of parts. Additionally, the JSTARS is less technologically competent compared to growing adversarial threats. For these reasons the DAF announced the retirement of 16 E-8C JSTARS, which was initiated in Fiscal Year (FY) 2022 and planned for completion by the end of FY 2024. The DAF proposes to redistribute the manpower that currently supports the E-8C JSTARS mission to support these new additional missions proposed for Robins AFB.

1.1.1 Kingpin Mission Beddown

Kingpin is the callsign associated with the capabilities provided by the 727th Expeditionary Air Control Squadron. It is a DAF/coalition unit that is the premier Battle Management Command and Control agency in the U.S. Central Command (CENTCOM) Area of Responsibility (AOR). Kingpin maintains

a constant live picture of an airspace of focus and directs joint and coalition fighters, bombers, tankers, Intelligence, Surveillance and Reconnaissance aircraft, and Remotely Piloted Aircraft. It draws on sensors spread throughout the region, including ground-based radars, air traffic control systems, and networked surveillance platforms. The Kingpin mission is a Command and Control (C2) function.

The operational and strategic environment that once drove Air Forces Central Command (AFCENT) to build its C2 functions has evolved, and now compels AFCENT to transition portions of the C2 missions towards Continental United States (CONUS) locations. The Kingpin mission's personnel and computer and communications equipment can be located in CONUS while continuing to integrate with the systems in the AOR and perform their mission.

The Kingpin mission transferred from the CENTCOM AOR to Shaw AFB as a temporary location in April 2020. On 16 March 2021, the Acting Secretary of the Air Force approved the beddown of the Kingpin mission permanently at Robins AFB upon completion of the EIAP.

1.1.2 Spectrum Warfare Group Activation

Electromagnetic Spectrum (EMS) superiority is a leading indicator and fundamental component of achieving superiority in air, land, sea, space, or cyberspace. The EMS not only provides the critical connective tissue that enables all-domain operations but represents a natural seam and critical vulnerability across joint force operations. Electromagnetic Warfare (EW), or control of electromagnetic and directed energy in the EMS, can be used to attack the enemy or defend from attacks in the electromagnetic operational environment. Dominance in the EMS is necessary to prevent adversaries from gaining military advantage over U.S. forces.

In 2018 and 2019, the DAF's EW/EMS Enterprise Capability Collaboration Team assessed the DAF's readiness to dominate in the EMS. From that analysis, the Secretary of the Air Force and the Chief of Staff of the Air Force signed a plan charging the Air Force to consolidate and modernize the EW/EMS Reprogramming Enterprise.

DAF Program Guidance Letter PGL 20-02, *Activation of HQ 350th Spectrum Warfare Wing*, directed the activation of the 350th Spectrum Warfare Wing (350 SWW) temporarily at Eglin AFB to consolidate and modernize the Air Force's Reprogramming Enterprise. The guidance letter also directed the Headquarters Air Combat Command to complete a Strategic Basing Action for Secretary of the Air Force approval to determine the permanent location of the HQ 350 SWW. Subsequently on 22 January 2021, the Acting Secretary of the Air Force approved Eglin AFB as the sole candidate base for the 350 SWW. On 16 March 2021, the Acting Secretary of the Air Force also approved the establishment of the SWG, a group-sized element reporting to the 350 SWW, at Robins AFB upon completion of the EIAP. High level management will be conducted from Eglin AFB, but operations were not required to be based in the same area. Robins AFB was selected to base operations in order to take advantage of the software and hardware experts prominent in Macon and the greater Atlanta area.

1.1.3 E-11A Squadron Beddown

The E-11A is a modified Bombardier Global 6000 business jet modified with the BACN payload, a communications relay and gateway system. BACN provides military commanders with a versatile means of exchanging information from multiple air, ground, and maritime sources, to include host nation, joint, and coalition forces. It facilitates the transport of both voice and data across the battlespace enabling network connectivity among weapon systems, sensors, warfighters, decision makers, platforms, and command centers. BACN reduces line-of-sight issues, provides greater range

for communication links, and provides commanders with versatile and flexible communications support across the range of military operations as well as a reliable means of communications between edge users across different waveforms and data formats.

The BACN payload is controlled from the ground in theater from two distinct ground sites. The first is the Payload Control Element-Launch (PCE-L), which pre-flights the payload on the aircraft and then performs the launch and recovery functions. PCE-Ls are collocated with the aircraft in theater. The second is the Payload Control Element-Mission (PCE-M), which controls the payload from the ground. PCE-Ms are currently at Combined Forces Air Component Commander designated C2 nodes and accomplish real-time re-tasking of the payload in the area of responsibility.

The E-11A mission is currently executing with continuously deployed temporary duty (TDY) personnel and equipment. On 16 March 2021, the Acting Secretary of the Air Force approved the beddown of the E-11A squadron at Robins AFB upon completion of the EIAP.

1.2 PURPOSE AND NEED OF THE ACTION

1.2.1 Kingpin Mission Beddown

The purpose of the proposed Kingpin mission beddown is to increase troop safety by relocating Kingpin out of the forward area, where threat of attack by adversaries exists, and back to CONUS.

The proposed Kingpin mission beddown is needed because advancements in ballistic missile, cruise missile and unmanned aerial systems capabilities, and foreign adversaries' proven willingness to use them, have put troops executing the Kingpin mission at an unnecessary safety risk. When AFCENT C2 missions were originally placed in the forward area, the idea of conducting operational C2 from the United States was untenable. The DAF did not have the bandwidth or the connectivity in place to move data at the speed of need. Today's advances in communications and data technology make distance virtually irrelevant and allows shifting posture to capitalize on the advantage of distance.

1.2.2 Spectrum Warfare Group Activation

The purpose of the proposed SWG activation at Robins AFB is to consolidate and modernize DAF EW capabilities by providing cheaper and more effective enemy deterrent systems for the defense and attack capabilities of the United States.

The proposed SWG activation is needed to ensure the DAF EW/EMS requirements are met. Warfare in the EMS has been more proliferated in modern times than ever before. Development of resilient, agile, and efficient technologies and techniques are essential to ensure the DAF's dominance in the EMS. The proposed action would support the 350 SWW and DAF Program Guidance Letter PGL 20-02 as directed by the Secretary of the Air Force.

1.2.3 E-11A Squadron Beddown

The purpose of the proposed E-11A squadron beddown is to improve the readiness of the E-11A BACN by conducting personnel training, growing expertise, stabilizing the associated career fields, and better managing rotational deployments with a stateside E-11A unit.

The proposed E-11A squadron beddown is needed because the mission is currently executed entirely in theater with TDY and contractor personnel. There is no stateside E-11A unit, so the aircraft and equipment are continuously deployed. This is an anomalous way to manage an aircraft fleet and

mission, which was a result of fielding a quick-reaction capability directly into theater. A stateside based E-11A unit is needed to normalize the mission.

1.3 REGULATORY FRAMEWORK

The relevant policies, laws, and regulations applicable to this MPEA are summarized below.

- NEPA of 1969 [42 United States Code (USC) §§ 102(2)(c)], which requires that all agencies of the federal Government prepare a detailed statement for major federal actions significantly affecting the quality of the human environment. The detailed statement is to include the environmental impact of the proposed action, any adverse environmental effects that cannot be avoided, alternatives to the proposed action, statements assessing the environmental impact of the action and alternatives. These statements are commonly referred to as Environmental Impact Statements (EIS) and EA.
- CEQ Regulations (40 CFR Parts 1500-1508), which implement the requirements of NEPA.
- Occupational Health and Safety Act (OSHA), which outlines occupational health and safety regulations.
- Executive Order (EO) 11988, Floodplain Management (24 May 1977)
- EO 11990, Protection of Wetlands (24 May 1977)
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (11 February 1994)
- EO 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input (30 January 2015)
- EO 13783, Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis (25 January 2021)
- EO 14008, Tackling the Climate Crisis at Home and Abroad (27 Jan 2021)
- EO 14057, Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability (13 December 2021)
- Clean Water Act, 33 USC §§ 1251-1387
- Clean Air Act (CAA), as amended, 42 USC §§ 7401-7671q, including 1990 General Conformity Rule
- Endangered Species Act (ESA) of 1973, as amended (7 USC 136; 16 USC 1531 et seq.)
- National Historic Preservation Act (NHPA) (16 USC 470 et seq.)
- Resource Conservation and Recovery Act (RCRA), 42 USC §§ 6901-6992k
- Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC §§ 9601-9675
- 32 CFR Part 989, EIAP, published in the Federal Register on 15 July 1999

1.4 DECISION TO BE MADE

This MPEA evaluates the potential environmental consequences associated with the proposed Kingpin mission beddown, SWG activation, and E-11A squadron beddown at Robins AFB. These proposed actions are analyzed in this MPEA along with the associated no-action alternatives as required under federal law. All other alternatives considered were eliminated from detailed study in the MPEA, as discussed in Chapter 2. Chapter 2 of this MPEA includes the Description of the Proposed Actions and Alternatives, and Chapter 3 includes the Affected Environment and Environmental Consequences.

Based on the analysis in this MPEA, the Air Force Materiel Command Civil Engineers Directorate (AFMC/A4C) will make one of three decisions regarding the Proposed Actions: 1) determine the potential environmental impacts associated with the Proposed Actions and alternatives and sign a Finding of No Significant Impact (FONSI), if all environmental impacts are less than significant; 2) initiate preparation of an EIS if it is determined that significant impacts would occur through implementation of the Proposed Actions or alternatives. If significant impacts are identified, the 78 ABW would undertake mitigation to reduce impacts to below the level of significance to reach a FONSI, undertake the preparation of an EIS addressing the proposed actions, or abandon the proposed actions. As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed project and be available to inform decision-makers of the potential environmental impacts; 3) Select the No Action alternative, whereby the Kingpin Mission Beddown, SWG Activation, and E-11A Squadron Beddown would not be implemented.

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 MPEA. Scoping letters were distributed to relevant federal, state, and local agencies on May 27, 2022 notifying them of the Proposed Action and requesting input on the scope of the MPEA. Scoping notices were sent to the U.S. Fish and Wildlife Service (USFWS), the Georgia (GA) Department of Community Affairs, the GA Historic Preservation Division, the GA Department of Transportation, the GA Environmental Protection Division, the GA Department of Natural Resources, and the Houston County Board of Commissioners. A representative example of the scoping notice sent to federal, state, and local agencies and all agency responses are included in **Appendix A**. The same agencies were notified of the availability of the Draft MPEA and Draft FONSI/FONPA and requested to review and provide comment during the review period.

1.5.1.1 Government to Government Consultations

The NHPA, 54 U.S.C. § 306108 and its implementing regulations at 36 C.F.R. Part 800, require an agency to consult with federally-recognized tribes who may have properties of cultural and religious significance affected by the project. To comply with legal mandates, federally recognized tribes that are affiliated historically with the Robins AFB geographic region were invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the Interagency/Intergovernmental Coordination for Environmental Planning processes requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The Robins AFB point-of-contact for Native American tribes is the Installation Commander. The Robins AFB point-of-contact for consultation with the Tribal Historic Preservation Officer and the Advisory Council on Historic Preservation is the Cultural Resources Manager.

Thirteen tribes are affiliated with Robins AFB. The 78 CEG/CEIE sent eleven of the thirteen tribes a letter requesting information on the potential to impact properties of religious or cultural significance and invited their consultation on May 27, 2022. A copy of this Draft MPEA was also sent to the eleven tribes previously contacted. Two tribes, both the Cherokee Nation of Oklahoma and the Miccosukee

Indian Tribe of Florida, have communicated to Robins AFB that they do not wish to participate in consultation with the base. A representative example of the letters sent to the tribes is provided in the "Tribal Review" section of **Appendix A**.

Native American tribal governments affiliated with Robins AFB are listed below.

- Alabama-Coushatta Tribe of Texas
- Alabama-Quassarte Tribal Town
- Cherokee Nation of Oklahoma
- Coushatta Tribe of Louisiana
- Eastern Band of Cherokee Indians
- Kialegee Tribal Town of Oklahoma
- Miccosukee Indian Tribe of Florida
- Muscogee Creek Nation
- Poarch Band of Creek Indians
- Seminole Nation of Oklahoma
- Seminole Tribe of Florida
- Thlopthlocco Tribal Town
- United Keetoowah Band of Cherokee

1.5.1.2 Agency Consultations

As part of this MPEA, and per the requirements of Section 106 of the NHPA and implementing regulations (36 CFR Part 800), and Section 7 of the Endangered Species Act and implementing regulations, consultations with the Georgia State Historic Preservation Officer (SHPO) and the U.S. Fish and Wildlife Service (USFWS) are ongoing. Scoping letters were distributed to both agencies on May 27, 2022. Further detail on Section 106 consultation is in **Section 3.8.2.2**. Further detail on Section 7 consultation is in **Section 3.7.2.3**. Copies of consultation letters are located in **Appendix A**.

1.5.2 Public Review

The DAF published early notice (i.e., at least 30 days prior to the release of the Draft MPEA) that the Proposed Actions would occur near a floodplain in the Houston Home Journal in Perry, Georgia on June 1, 2022. The comment period for public and agency input on these projects lasted for 30 days. The notice identified state and federal regulatory agencies with special expertise that had been contacted and solicited public comment on the Proposed Actions and any practicable alternatives. No public comments were received in response to the early notice.

A Notice of Availability (NOA) for the Draft MPEA and Draft FONSI/FONPA will be published in the Houston Home Journal announcing the availability of the documents for review. The publication of the NOA will initiate a 30-day review period. A copy of the Draft MPEA and Draft FONSI/FONPA will be made available for review at the Nola Brantley Memorial Library. A copy of the Draft MPEA and Draft FONSI/FONPA will also be made available for review online at *https://www.robins.af.mil/Units/78th-Air-Base-Wing/78th-Civil-Engineer-Group/-Environmental/*. 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 MPEA, where applicable, and included in **Appendix A** of the Final MPEA.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes the selection standards used to determine the range of reasonable alternatives, the details of the proposed actions and their alternatives, and any alternatives eliminated from further consideration. 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 provides the baseline against which the environmental impacts of implementing the alternatives can be compared.

The details of the three proposed actions that constitute the mission realignments at Robins AFB are described in detail in the following sections. Using military judgement, the Acting Secretary of the Air Force approved establishing these three missions at Robins AFB. The DAF proposes to use the manpower that currently supports the E-8C JSTARS mission to support these new additional missions proposed for Robins AFB. The 461 Air Control Wing (461 ACW) would be a primary source of Regular Air Force manpower that supports the standup of the Kingpin, SWG, & BACN missions.

2.1 KINGPIN MISSION BEDDOWN

2.1.1 Selection Standards for Kingpin Mission Beddown

The following selection standards are applicable to the Kingpin Mission beddown:

Mission

- Establish the Kingpin mission permanently at a base that locates all functions of the unit within walking distance to enable efficient and effective execution of the mission.

Facilities and Infrastructure

- Provide a total of approximately 60,000 square feet (sf) of necessary facility space.

Base Support

- Provide sufficient capacity of support services, to include medical/dental, housing/lodging, fitness center, child development center, school, dining, and security, for up to approximately 500 personnel and their dependents.

Existing Resources and Operations

- Maximize reuse of existing resources, to include personnel and facilities, to the maximum extent feasible for efficient and cost-effective beddown and operations.
- Minimize impact to existing DAF missions, to include minimizing inefficiencies and disruptions to ongoing operations from displacing personnel or functions to different bases or facilities.

Timing

- Begin Kingpin operations at the permanent location by summer 2024.

2.1.2 Detailed Description of Proposed Action for Kingpin Mission Beddown

The Kingpin mission would permanently transfer to Robins AFB starting in summer 2024, with some equipment and facility renovations starting in FY23. The sensors in the AOR, consisting of

ground-based radars, air traffic control systems, and networked surveillance platforms, would remain in the AOR.

Personnel

The proposed distribution of total force personnel includes approximately 800 permanent party, 500 of which would be additional manpower at Robins and 300 of which would be existing manpower at Robins. This comprises both the operational and support functions of the mission and are critical for establishing this capability at Robins AFB.

The proposed distribution of personnel supporting the Kingpin mission at Robins AFB would initially be approximately 150 rotational or TDY personnel.

As the DAF would transition the manning from rotational to permanent party, the number of manpower positions at Robins AFB would increase to transform from a rotational work schedule to a steady state work schedule. It is undetermined at this point whether the additional 500 positions would be rotational or permanent. For the purposes of this MPEA, it is assumed the additional positions would be permanent, as that constitutes the greatest potential for environmental impacts.

Facility Requirements

The DAF has planned for and programmed Military Construction funding for the construction of the Battle Management Combined Operations Complex (BMCOC) an 80,000-90,000 sf facility to house the Kingpin, SWG, and E-11A squadron missions. Because all three missions require Special Access Program Facility (SAPF)/Sensitive Compartmentalized Information Facility (SCIF) space for their missions, cost and execution efficiencies are gained by constructing a single facility for these units. The proposed BMCOC location is depicted in **Figure 2-1**. The BMCOC would be constructed to the northeast of the runway on an open plot of land between Buildings 2063 and 2081. The new construction would include other site development such as parking and road/pavement improvements. The construction design would comply with Unified Facilities Criteria (UFC) 3-201-01, Architectural Barriers Act requirements outlined in Surface Deployment and Distribution Command's Transportation Engineering Agency 55-17, and Robins AFB Instruction 32-101 Base Parking, dated 29 June 2021. The facility size would be based on Kingpin, SWG, and E-11A squadron requirements plus any remaining SAPF/SCIF requirements for other Air Combat Command tenant units on Robins AFB. The DAF intent would be to consolidate any other Air Combat Command missions on Robins AFB that require SAPF/SCIF space but are either short of their requirements, performing workarounds, or in temporary-type facilities. Unclassified and secure communications infrastructure will be required in the BMCOC.

Construction of the BMCOC would involve demolition and removal of the existing asphalt parking lot and sidewalks along the northeastern border of the proposed BMCOC location along Borghese Drive. Sidewalks would be reconstructed along this section during construction activities. Partial demolition of the existing abandoned taxiway may be required. Approximately 190 parking spaces will be provided along approximately 3.4 acres of this section of the apron.

The new construction is proposed to start in FY24, and the Kingpin mission beddown is proposed to start by July 2024. Therefore, the new construction would not be ready in time to accommodate the Kingpin mission. The initial relocation of the Kingpin mission would require the use and

renovation of existing facilities and the potential procurement of Container Express (CONEX) structures until the construction is complete.

There are three Facility Alternatives that could meet Kingpin mission needs while awaiting completion of the new building. All renovations would be interior only. The only exterior work would be installation of generator pads, installation of generators, and trenching for and installation of power/utility cables.

Facility Alternative 1. The location of Facility Alternative 1 and proposed generator pads is depicted in **Figure 2-1**. This alternative would perform interior renovations on Building 2066. There would also be installation of generator pads and five backup generators. Installation would require some soil excavation for generator pads and trenching for power lines to the generators. Building 2066 is currently available and unoccupied.

Facility Alternative 2. The location of Facility Alternative 2 is depicted in **Figure 2-1**. The Kingpin mission would be supported in three locations. This alternative would site 15 mobile CONEX structures on an existing parking lot adjacent to Building 2083. It would also perform a partial renovation on Building 2081 and utilize space in Building 2066.

The proposed renovation of building 2081 would include conversion of the existing storage space to additional office space by installation of a modular two-story insert, similar to the existing office space in the facility. The renovation would not require any structural changes to the building, construction or modification of permanent internal walls or materials, or any alterations to the exterior of the building.

This would also require siting of a restroom trailer. Some trenching leading to the parking lot may be required to provide utilities and/or communications to the CONEX structures. Restoration of the parking lot site would be required after removal of the CONEX facilities.

Facility Alternative 3. The Kingpin mission would beddown in a portion of Building 2039, depicted in **Figure 2-1**. This space is currently available and unoccupied. There would be some interior renovation required for Kingpin. The renovation would consist of interior work such as the possible movement of walls and installation of electrical or communications conduit. External generators would be required and up to two generator pads would be installed next to the facility.

2.1.3 No-Action Alternative for Kingpin Mission Beddown

The No-Action Alternative would represent baseline conditions experienced if the proposed action or alternatives are not implemented over time. This alternative would not beddown the Kingpin Mission at Robins AFB and there would be no personnel established at Robins AFB for the Kingpin Mission. The DAF would decide to identify a different location to permanently beddown the Kingpin Mission. If the DAF proposed this, it would require environmental analysis to be performed for that location. The other proposed actions (SWG and E-11 beddown) are independent of the Kingpin beddown. The DAF, under this no action alternative, could still decide to proceed with either or both of those other actions as analyzed in this MPEA. If the Kingpin mission is not established at Robins AFB, it could result in reducing the size of the combined SAPF/SCIF new construction facility analyzed in this document.

2.1.4 Alternatives Eliminated from Further Consideration for Kingpin Mission Beddown

The Kingpin mission was temporarily relocated from the AFCENT AOR to Shaw AFB, SC, where it now operates. Continuing operating the Kingpin mission at Shaw AFB on a permanent basis was eliminated from further analysis because it would require relocating up to 500 personnel to Shaw AFB, with the potential to negatively impact the base support to these personnel. The availability of utilizing JSTARS manpower at Robins AFB enables a manpower-neutral impact at both Shaw and Robins, minimizing adverse impacts to both bases' support functions and off-base socioeconomics, such as housing and schools. Therefore, the alternative of permanently bedding down the Kingpin mission at Shaw AFB was eliminated from further analysis because this alternative does not meet the Base Support or the Existing Resources and Operations selection standards outlined in **Section 2.1.2**.

All other DAF installations have been eliminated from further analysis for the permanent location of the Kingpin mission because they do not meet the Existing Resources and Operations selection standard. Locating the mission at Robins AFB allows the DAF to reutilize existing JSTARS manpower and avoids the movement of an Air National Guard unit. The divestiture of the JSTARS mission at Robins AFB presents an opportunity for the DAF to take advantage of this highly skilled manpower and reutilize it for the Kingpin mission, as well as the SWG and the E-11A BACN Squadron. The reutilization of over 83% of the JSTARS personnel at Robins AFB eliminates the costs and potential environmental impacts associated with moving personnel to another installation and prevents the disruptions to the personnel and their dependents by not forcing them to relocate. It also prevents having to relocate an Air National Guard unit that was performing the JSTARS mission from Robins AFB to another location. In addition, bedding down the mission at another installation and adding 500 personnel for the Kingpin mission would potentially impact another installation's support capacities.

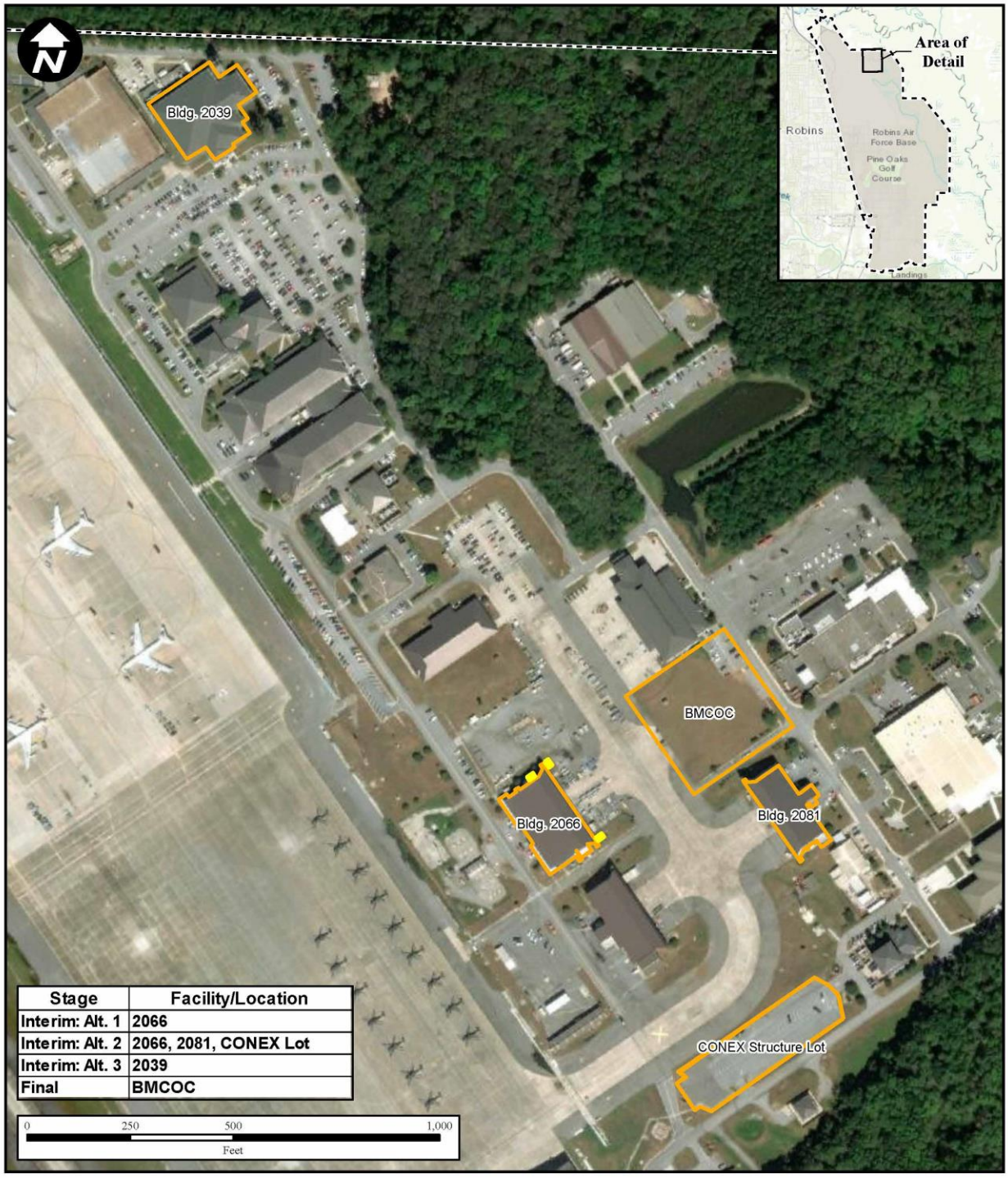


Figure 2-1

Kingpin Mission Alternatives
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

2.2 SPECTRUM WARFARE GROUP ACTIVATION

2.2.1 Selection Standards for Spectrum Warfare Group Activation

The following selection standards are applicable to the SWG activation:

Mission

- Establish the SWG mission permanently at a base that locates all functions of the group within walking distance to enable efficient and effective execution of the mission.
- Co-locate the SWG mission with the Electronic Warfare and Avionics Program Office in the Air Force Life Cycle Management Center to provide synergy between these two missions.

Facilities and Infrastructure

- Provide a total of approximately 144,000 sf of necessary facility space.

Base Support

- Provide sufficient capacity of support services, to include medical/dental, housing/lodging, fitness center, child development center, school, dining, and security, for approximately 400 personnel and their dependents.

Existing Resources and Operations

- Maximize reuse of existing resources, to include personnel and facilities, to the maximum extent feasible for efficient and cost-effective beddown and operations.
- Minimize impact to existing DAF missions, to include minimizing inefficiencies and disruptions to ongoing operations from displacing personnel or functions to different bases or facilities.

Timing

- Activate the two SWG detachments in FY24.

2.2.2 Detailed Description of Proposed Action for Spectrum Warfare Group Activation

The SWG would be activated in FY24 with a small number of personnel and would grow to full scope through FY27.

- FY24: SWG activates with two detachments.
- FY25: Growth to three detachments and five Group staff personnel.
- FY26: Two detachments convert to squadrons.
- FY27: SWG reaches full scope with either three or four squadrons.

Personnel

The SWG would activate with two detachments and approximately 30 personnel in FY24, increasing to approximately 95 personnel in FY25 and would increase manpower until reaching full scope in FY27. The SWG would have 400 personnel assigned to Robins AFB by FY27, including the 87th Electronic Warfare Squadron. The 87th EW Squadron, consisting of approximately 100 personnel, would possibly move from Eglin AFB to Robins AFB as part of the SWG standup. The DAF intends to provide at least some of that manpower from the active-duty E-8C mission as those aircraft retire. However, there are some unknowns in DAF resource

allocation, therefore this analysis assumes that all 400 personnel would be additive to Robins AFB.

Facility Requirements

The full mission requirements of the SWG could only be met by constructing the BMCOC on Robins AFB. The SWG would require a large amount of SAPF/SCIF space. There is existing facility space that could be made available on Robins AFB, but that facility space is not certified for SAPF/SCIF, and it would be prohibitively expensive to configure that facility space to meet those security requirements.

As described in **Section 2.1.2**, the facility location is depicted in **Figure 2-2** and construction would begin in FY24. Since the SWG would activate in FY24, an interim facility option would be required until the BMCOC construction was completed.

The proposed interim facility solution would have the SWG occupying space in Building 2072 and Building 2051 North, depicted in **Figure 2-2**. The proposed final facility solution would consist of the use of the BMCOC, Building 2051 North, and Building 2066. Building 2051 is currently used by the E-8C JSTARS mission and space should become available in that facility as the JSTARS mission is reduced. Building 2066 would be used for equipment storage in both the interim and final facility solution.

2.2.3 No-Action Alternative for Spectrum Warfare Group Activation

The No-Action Alternative would represent baseline conditions experienced if the proposed action or alternatives are not implemented over time. This alternative would not activate an SWG at Robins AFB and there would be no personnel established at Robins AFB for the SWG. The DAF would decide to identify a different location to activate an SWG. If the DAF proposed this, it would require environmental analysis to be performed for that location. The other proposed actions (Kingpin and E-11 beddown) are independent of the SWG activation. The DAF, under this no action alternative, could still decide to proceed with either or both of those other actions as analyzed in this MPEA. If the SWG is not activated at Robins AFB, it could result in reducing the size of the combined SAPF/SCIF new construction facility analyzed in this document.

2.2.4 Alternatives Eliminated from Further Consideration for Spectrum Warfare Group Activation

Alternate locations for the proposed BMCOC were considered but eliminated from further analysis. As shown in **Figure 2-2**, the SWG would operate out of multiple facilities on the east side of the airfield, adjacent to the proposed location of the BMCOC. Locations on the west side of the base were considered for new construction, but these would result in inefficiency and ineffective span of control by requiring SWG personnel to travel across base for coordination with and execution of various functions of the mission. Permanently locating these missions on the west side of the base would require demolition of existing structures and parking lots, displacement of existing users, and negatively impact one of the three major Air Logistics Centers in the DAF that currently operates on that side of the installation. The DAF also considered the permanent use of building 300 on the west side of the base, but this would result in displacement of current users of this facility and inefficiency of operations across the installation. Therefore, other alternatives for the location of the BMCOC were eliminated from further analysis because all other sites would not meet the mission selection.

In addition, the proposed location shown in **Figure 2-2** is the only practicable alternative for the new construction because this area east of the airfield is constrained by dense facility, transportation, parking, and other infrastructure, as well as forest and wetlands to the east, north, and south. While the proposed location is near the 100-year floodplain, the location is a previously developed site of a now demolished aircraft hangar, so this siting minimizes environmental impacts by avoiding construction within an undeveloped area. The 100-year floodplain extends through the majority of the east side of the base, so there is no practicable alternative to the proposed new construction location near the floodplain.

All other DAF installations have been eliminated from further analysis for the permanent location of the SWG because they do not meet the Mission and Existing Resources and Operations selection standards. The SWG would be focusing in electronic warfare capabilities. The Electronic Warfare and Avionics Program Office in the Air Force Life Cycle Management Center is currently located at Robins AFB and placing the SWG at Robins would provide synergy between those missions. Locating the SWG at Robins AFB allows the DAF to reutilize existing JSTARS manpower, avoids the movement of an Air National Guard unit, and takes advantage of electronic warfare expertise currently at Robins AFB. The divestiture of the JSTARS mission at Robins AFB presents an opportunity for the DAF to take advantage of this highly skilled manpower and reutilize it for the SWG, as well as the Kingpin mission and the E-11A BACN Squadron. The reutilization of over 83% of the JSTARS personnel at Robins AFB eliminates the costs and potential environmental impacts associated with moving personnel to another installation and prevents the disruptions to the personnel and their dependents by not forcing them to relocate. It also prevents having to relocate an Air National Guard unit that was performing the JSTARS mission from Robins AFB to another location. In addition, bedding down the mission at another installation and adding 300 personnel for the SWG would potentially impact another installation’s support capacities.

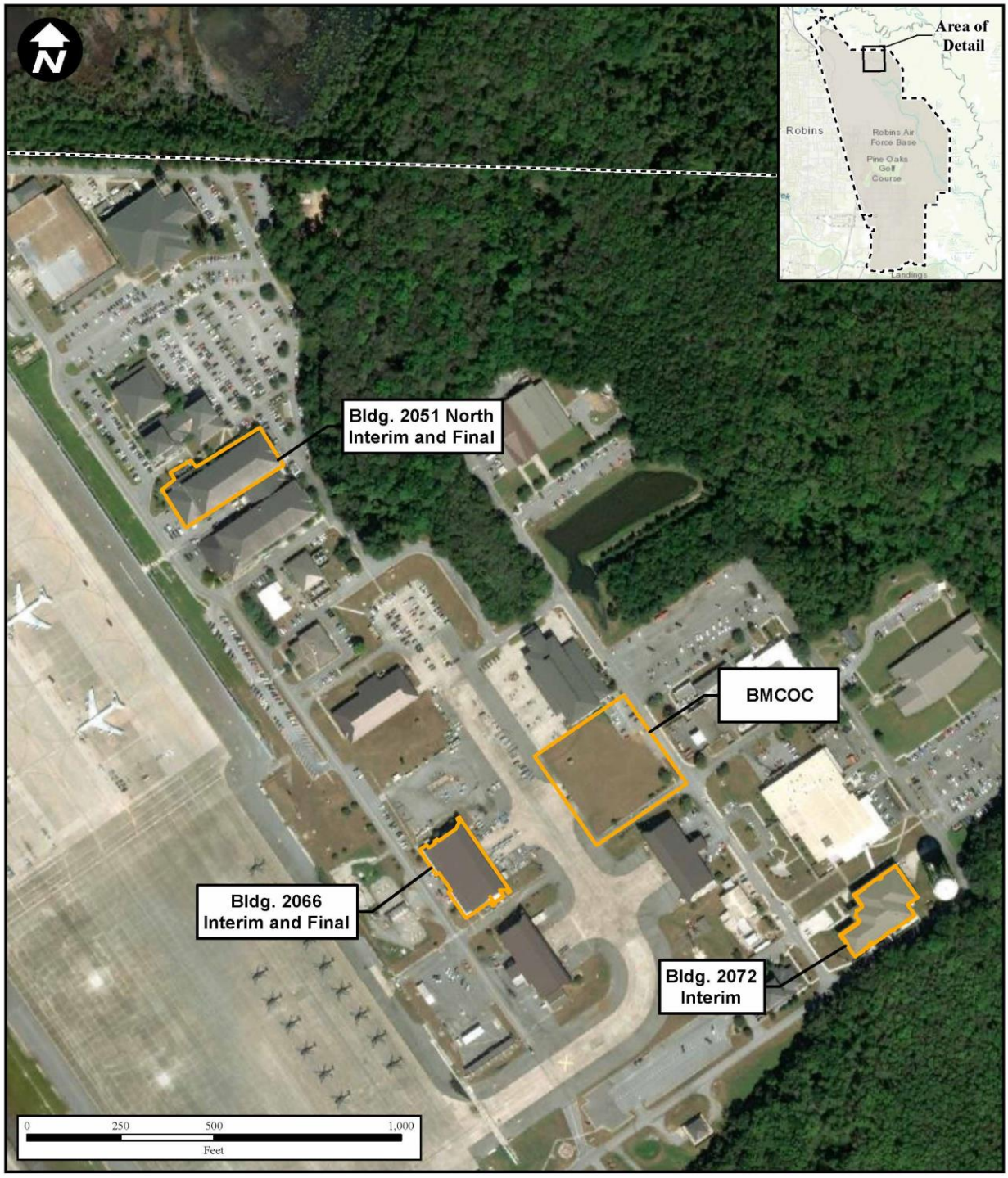


Figure 2-2
SWG Mission
Interim and Final Facilities
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

2.3 E-11A SQUADRON BEDDOWN

2.3.1 Selection Standards for E-11A Squadron Beddown

The following selection standards are applicable to the E-11A squadron beddown:

Mission

- Establish the E-11A squadron mission permanently at a base that locates all functions of the squadron within walking distance to enable efficient and effective execution of the mission.

Facilities and Infrastructure

- Provide a total of approximately 306,000 sf of necessary facility space.

Base Support

- Provide sufficient capacity of support services, to include medical/dental, housing/lodging, fitness center, child development center, school, dining, and security, for approximately 378 personnel and their dependents.

Existing Resources and Operations

- Maximize reuse of existing resources, to include personnel and facilities, to the maximum extent feasible for efficient and cost-effective beddown and operations.
- Minimize impact to existing DAF missions, to include minimizing inefficiencies and disruptions to ongoing operations from displacing personnel or functions to different bases or facilities.

Timing

- Accept aircraft and begin flying operations in FY23.

2.3.2 Detailed Description of Proposed Action for E-11A Squadron Beddown

The E-11A beddown would occur in four phases:

- Phase 1 (FY23): Maintenance and Maintenance Support arrive at Robins; first aircraft arrival
- Phase 2 (FY23): Initial Operating Capability; begin flying operations
- Phase 3 (FY26): Full Operational Capability

The proposed E-11A beddown schedule is depicted in **Table 2-1**. The E-11A fleet is projected to consist of a total of nine aircraft. For the reasonably foreseeable future, six of those aircraft would be stationed at Robins AFB while three would remain in theater. If in the future the DAF were to release those three aircraft in theater from their commitment and were to propose bedding them down at Robins AFB, supplemental environmental analysis would need to be performed.

Table 2-1: E-11A Aircraft Beddown Schedule

Fiscal Year	FY22	FY23	FY24	FY25	FY26	FY27
E-11A BACN (Robins)	0	3	4	5	6	6
E-11A BACN (Deployed)	3	3	3	3	3	3
E-11A BACN Total	3	6	7	8	9	9

Airfield Operations and Airspace Use

The E-11A beddown would result in the addition of 4,182 airfield operations annually as depicted in **Table 2-2**. The E-11A would not require any special use airspace.

Table 2-2: Proposed Airfield Operations Changes for E-11A BACN Aircraft at Robins AFB

Departure						Arrival								
Standard/Mil			Afterburner/FCF			IFR/Straight-In			VFR: Overhead/Pitch-out			VFR: Tactical Overhead		
Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total
1,024	512	1,536	0	0	0	1,024	512	1,536	0	0	0	0	0	0

Closed Pattern												Totals		
VFR: Inside DW			VFR: Outside DW (not used)			VFR: Outside DW to Pitch-out			IFR			Departure, Arrival, Closed Pattern Total		
Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total
175	85	260	0	0	0	0	0	0	550	300	850	**2,773**	**1,409**	**4,182**

Note: FCF = Functional Check Flight; IFR = Instrument Flight Rules; VFR = Visual Flight Rules; DW = Down Wind - Closed Pattern approaches are counted as two operations

Personnel

The E-11A beddown would include the addition of approximately 378 total personnel to Robins AFB.

Equipment

In addition to the normal ground equipment associated with aircraft operations, BACN operations on Robins AFB would require storage of Rapidly Deployable Payload Control Elements (RD-PCEs) in a PCE Yard. These deployable ground units would control the payload during start-up, takeoff, recovery, and shutdown but would normally operate from a deployed location. It is possible that in future the payload would be controlled from the main operating base (Robins AFB) versus from a deployed location.

Each set of RD-PCE consists of two 20-foot shelters on mobilizers (wheeled attachments for transport) with an accompanying pallet of air conditioners and auxiliaries. The shelters are approximately 20x8x8 ft and the mobilizers would add a couple of feet to each end. The BACN mission would require 7 sets of RD-PCEs or 14 total units/shelters. One additional unit/shelter would be required for office/administrative functions, for a total of 15 units/shelters. Additionally, a tower would be required for a Common Datalink Antenna (CDL) system to support line-of-sight tactical military communications. The antenna tower would be constructed at least 15 feet higher than the surrounding hangars, which reach an apex of approximately 105 ft above ground surface. Therefore, the antenna would be at least 120 feet high. The antenna tower would be a steel lattice structure similar in design to existing antenna towers on Robins AFB. The apex of the tower would include a 90-pound antenna enclosed within a 101-inch wide, 102-inch high protective radome.

The radome would appear as a 52 inch high cylinder capped with a 101 inch diameter, 50 inch high half sphere. Standard protective radomes are either white or grey depending on manufacturer specifications.

The entire PCE Yard would be designated as a Protection Level 3 asset, requiring perimeter security fencing and an Intrusion Detection System.

Two RD-PCEs and the office/administration unit/shelter would be operational at a time in order to perform training, maintenance, hardware, and software upgrades. This would require potential trenching to provide electrical service and communications connections. A backup generator would be required for mission continuity. The generator would be a 35-kW commercial generator, similar to a Briggs & Stratton 76130.

Facility Requirements

As described in **Section 2.1.2**, the E-11A squadron would operate some functions, particularly those requiring SAPF/SCIF space, in the proposed BMCOC that is depicted in **Figure 2-1 and 2-2**.

E-11A operations and maintenance are proposed to be located in Building 2051 South. However, this facility would not be available until FY24 when JSTARS divestiture is complete. This would require an interim location for E-11A Operations. The interim location would be either Building 300 or Building 301. **Figure 2-3** depicts the interim facility locations.

The remainder of the E-11A mission would be distributed between several facilities. E-11A maintenance would operate from Building 2051 South as an interim facility as JSTARS operations depart the facility. Personnel would move in incrementally into the facility as JSTARS-occupied space becomes available, and eventually be the final location for operations after JSTARS fully vacates the facility. Building 2030 would be utilized as an interim and final location as a storage hangar for the E-11A. The E-11A flight simulator final location would be in Building 2045. The E-11A payload simulator final location would be Building 2039. The E-11A storage final location would be Building 2067. **Figure 2-4** depicts these locations.

The final location for the RD-PCE Yard would be on an existing parking lot adjacent to Building 2036. A perimeter fence equipped with an Intrusion Detection System would be constructed around the perimeter of the RD-PCE Yard. There are two locations that would be suitable for the installation of the antenna. The first location would be adjacent to the parking lot near Building 2036. The second location would be adjacent to Building 2030. The location of the proposed developments in is depicted in **Figure 2-5**.

2.3.3 No-Action Alternative for E-11A Squadron Beddown

The No-Action Alternative would represent baseline conditions experienced if the proposed action or alternatives are not implemented over time. This alternative would not activate an E-11A squadron at Robins AFB. The E-11A BACN aircraft would not operate at Robins AFB. The DAF would decide to identify a different location to activate an E-11A Squadron. If the DAF proposed this, it would require environmental analysis to be performed for that location. The other proposed actions (Kingpin and SWG beddown) are independent of the E-11A activation. The DAF, under this no action alternative, could still decide to proceed with either or both of those other actions

as analyzed in this MPEA. If the E-11A squadron is not activated at Robins AFB, it could result in reducing the size of the combined SAPF/SCIF new construction facility analyzed in this document.

Legend
E-11A Interim Facility
Installation Boundary

Figure 2-3
E-11A Mission
Interim Buildings 300 and 301
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

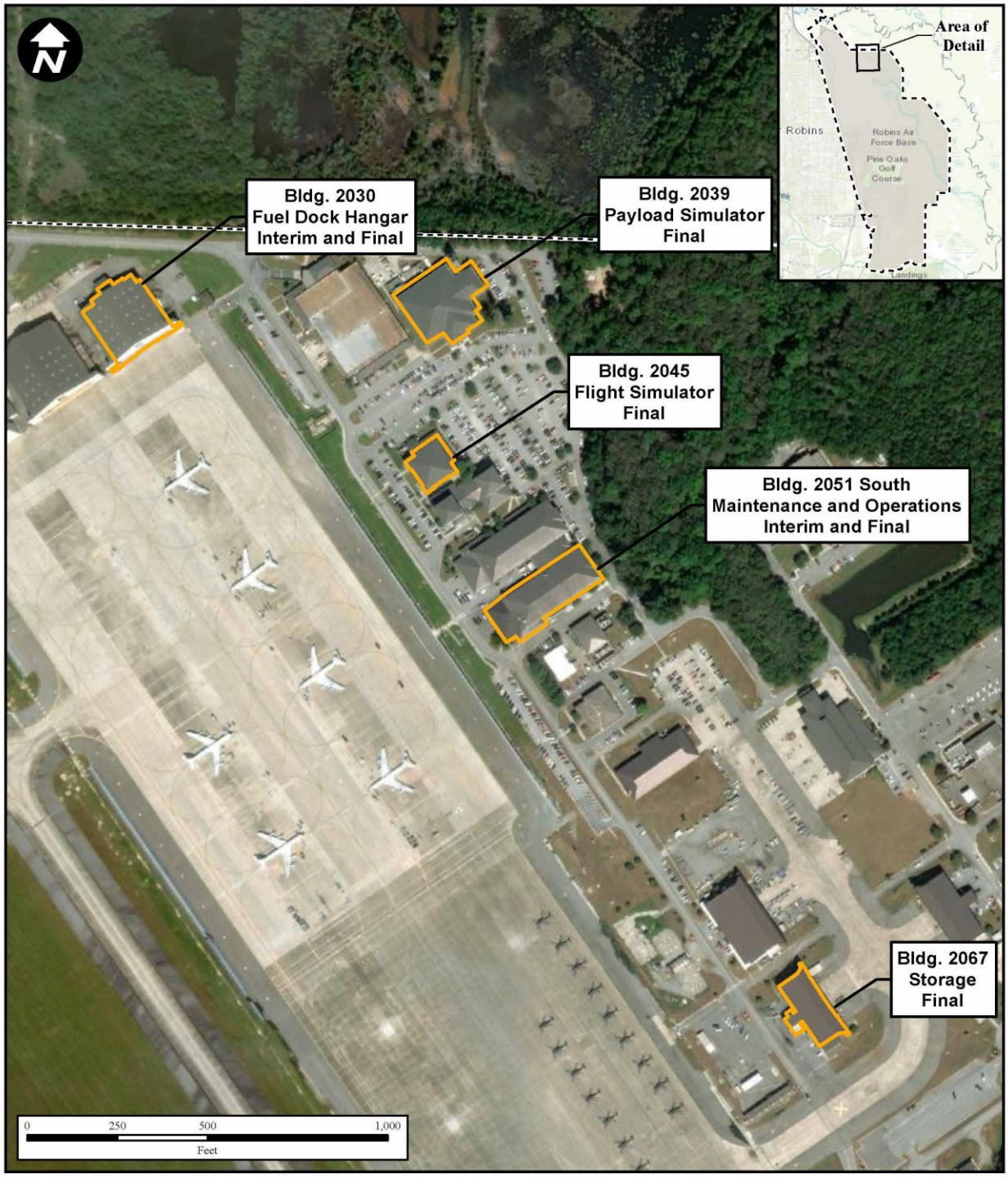
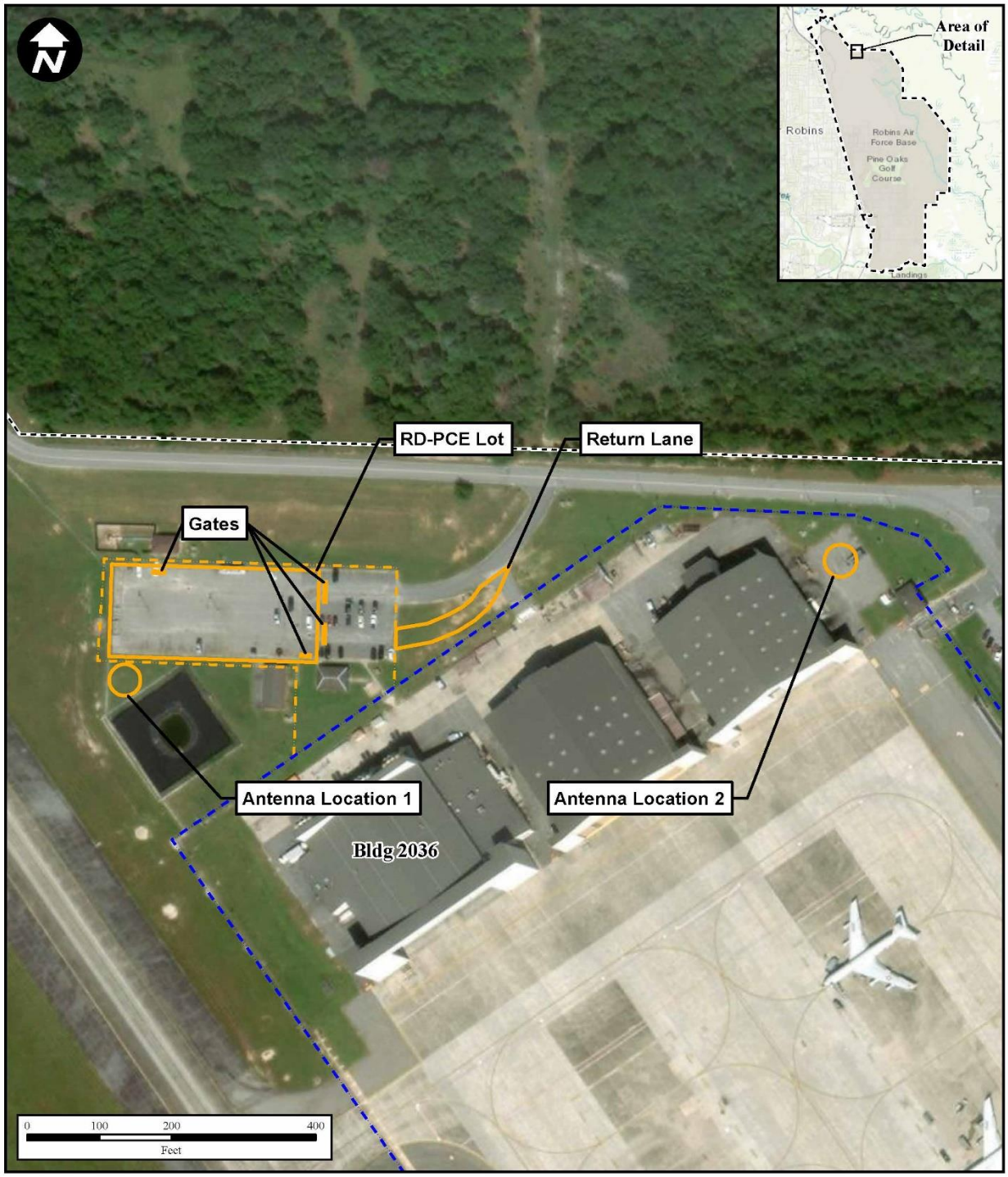


Figure 2-4
E-11A Mission
Interim and Final Facilities
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia



Legend

- RD-PCE Yard Elements
- RD-PCE Yard Fence
- Existing Fence
- Installation Boundary

Figure 2-5
E-11A Mission
RD-PCE Yard
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

2.3.4 Alternatives Eliminated from Further Consideration for E-11A Squadron Beddown

The DAF considered locating the E-11A squadron mission in Building 12. This alternative would have required renovation of the interior of Building 12 to accommodate E-11A operations and maintenance. This alternative was rejected as it did not meet the facility square footage selection standard.

Similar to the analysis for the SWG's requirements for the BMCOC that is described in **Section 2.2.1**, the E-11A squadron's use of the BMCOC requires the location be on the east side of the airfield to maintain efficient mission execution and span of control of E-11A squadron operations. As shown in **Figure 2-4**, the E-11A aircraft operations, maintenance, and flight simulator would operate out of multiple facilities on the east side of the airfield, adjacent to the proposed location of the BMCOC. Locations on the west side of the base were considered for new construction, but these would result in inefficiency by requiring E-11A squadron personnel to travel across base for coordination with and execution of various functions of the mission. Therefore, other alternatives for the location of the BMCOC would not meet the mission selection standard.

A potential location for the RD-PCE Yard and CDL antenna was identified west of the airfield between Mustang Street and Lancer Boulevard. This location was also eliminated from further consideration to avoid inefficiencies caused by travel between east and west sides of the base, and therefore, did not meet the mission selection standard.

All other DAF installations have been eliminated from further analysis for the beddown of the E-11A BACN Squadron because they do not meet the Existing Resources and Operations selection standard. Locating these missions at Robins AFB allows the DAF to reutilize existing JSTARS manpower and avoids the movement of an Air National Guard unit. The divestiture of the JSTARS mission at Robins AFB presents an opportunity for the DAF to take advantage of this highly skilled manpower and reutilize it for the E-11A BACN Squadron, as well as the Kingpin mission and SWG. The reutilization of over 83% of the JSTARS personnel at Robins AFB eliminates the costs and potential environmental impacts associated with moving personnel to another installation and prevents the disruptions to the personnel and their dependents by not forcing them to relocate. It also prevents having to relocate an Air National Guard unit that was performing the JSTARS mission from Robins AFB to another location. In addition, bedding down the mission at another installation and adding 378 personnel for the E-11A BACN Squadron would potentially impact another installation's support capacities.

2.4 SUMMARY OF PROPOSED ACTION

The three proposed mission beddowns are independent proposals with independent No Action Alternatives, as described in **Sections 2.1.4, 2.2.4 and 2.3.4**. Because the three proposed beddowns would share space in the proposed BMCOC and reutilize existing manpower at Robins AFB, this section provides a summary of the three proposed actions cumulatively. The facilities and developments associated with the three proposed mission beddowns are depicted in **Figure 2-6.**

As stated in **Section 2.0**, the DAF proposes to use the manpower that currently supports the E-8C JSTARS mission to support these new additional missions proposed for Robins AFB. While the Kingpin, SWG, and BACN missions require an additional end-state total manpower of approximately 1,283 personnel, the majority of this manpower will be sourced from the JSTARS

mission. Therefore, the potential cumulative end state, where all three new proposed missions are enacted, would result in a total increase of approximately 34 personnel at Robins AFB. These additional 34 personnel would be accompanied by an estimated maximum of 65 dependents per estimation strategies outlined in Air Force Instruction (AFI) 65-503, Financial Management, dated 13 July 2018, resulting in a total increase of approximately 99 persons to the local area (AFI, 2018).

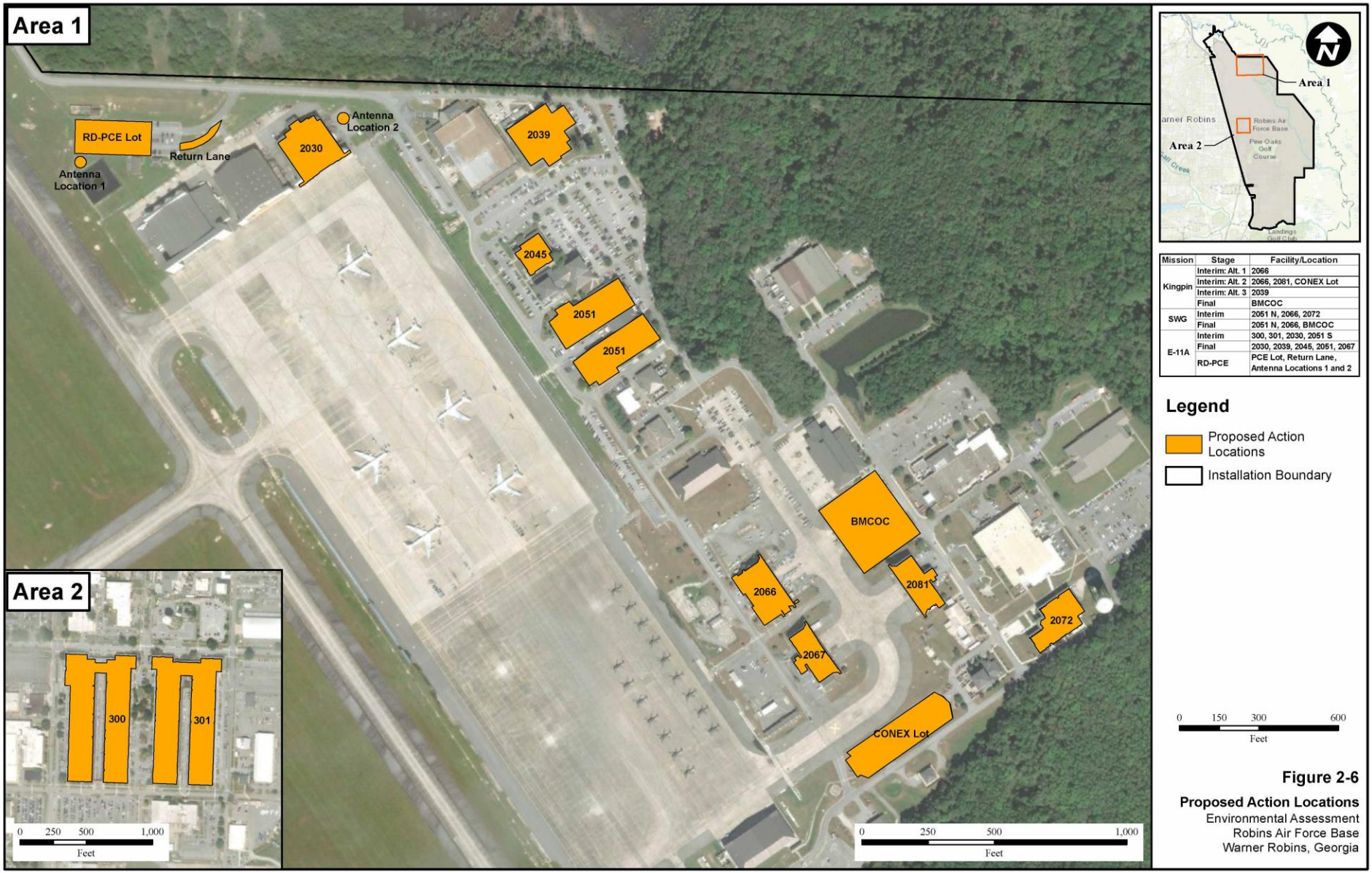


Figure 2-6

Proposed Action Locations
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The Region of Influence (ROI) for the Proposed Action is Warner Robins, Georgia and Robins AFB, Georgia, unless otherwise specified below for a particular resource area where a resource would have a different ROI.

3.1 SCOPE OF THE ANALYSIS

This chapter describes the affected environment, environmental consequences, and cumulative effects for implementation of the Proposed Action, the proposed alternatives, and the No-Action Alternative.

This information will be used to identify the anticipated environmental impacts associated with implementation of the Proposed Action (see **Section 3.0**, Affected Environment and Environmental Consequences). Descriptions of the project elements and environmental resources provide the basis for analysis of potential effects on the environment from the Proposed Action and No-Action Alternative. Site-specific information presented in this section is derived from on-site evaluation and information obtained from Robins AFB personnel, historical reports, and available public information resources. General and relevant background information regarding Robins AFB is also provided in multiple basewide management plans.

Potential effects of the Proposed Action are based on the description of the action as presented in **Section 2.0**, and existing environmental conditions of the Proposed Action area as presented in **Section 3.0**. Potential effects from the No-Action Alternative address impacts as they would be expected to occur in the future without implementation of an action alternative. The table below provides a summary of the Environmental Impacts described in this MPEA.

Table 3-1: Summary of Environmental Impacts

Resource Area	Kingpin Mission Beddown			Spectrum Warfare Group Activation	E-11A Squadron Beddown
	Alt. 1	Alt. 2	Alt. 3		
AICUZ/Land Use/Noise					
AICUZ/Land Use/Noise	--	--	--	--	+
Air Quality					
Air Quality	--	--	--	--	--
Water Resources					
Surface Waters and Water Quality	--	--	--	--	--
Floodplains	--	--	--	--	--
Wetlands	O	O	O	O	O
Stormwater	--	--	--	--	--
Groundwater and Water Supply	--	--	--	--	--
Safety and Occupational Health					
Construction/Renovation Safety	--	--	--	--	--
Transportation Safety	--	--	--	--	--
Hazardous Materials/Waste					
Solid Waste	--	--	--	--	--
Hazardous Materials and Waste	--	--	--	--	--

Resource Area	Kingpin Mission Beddown			Spectrum Warfare Group Activation	E-11A Squadron Beddown
	Alt. 1	Alt. 2	Alt. 3		
Toxic Materials	--	--	--	--	--
Biological/Natural Resources					
Vegetation	--	--	--	--	--
Wildlife	O	O	O	O	O
Endangered, Threatened, and Sensitive Species	O	O	O	O	O
Cultural Resources					
Archaeological Resources	O	O	O	O	O
Architectural Resource	O	O	O	O	O
Earth Resources					
Geology	O	O	O	O	O
Soils	--	--	--	--	--
Topography	O	O	O	O	O
Socioeconomic Resources/Environmental Justice					
Socioeconomics	--	--	--	--	--
Environmental Justice	O	O	O	O	O

+ = Beneficial Impact O = No Impact
-- = Insignificant Adverse Impact X = Significant Adverse Impact

3.2 AICUZ/LAND USE/NOISE

3.2.1 Affected Environment

Noise is defined as unwanted sound or, more specifically, as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying (FICON, 1992). Human response to noise can vary according to the type and characteristics of the noise source, the distance between the noise source and the receptor, the sensitivity of the receptor, and the time of day.

Due to the wide range in sound levels, sound is expressed in decibels (dB), a unit of measure based on a logarithmic scale. As a general rule, a 3-dB change is necessary for noise increases to be noticeable to humans (Bies and Hansen 1988; ABD Engineering & Design 2012). 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.

Day-night sound level (DNL) is a noise metric that averages all A-weighted Sound Exposure Level values over a 24-hour period, with an additional 10-dB penalty added to noise events occurring between 10:00 P.M. and 7:00 A.M. This penalty is intended to compensate for generally lower background noise levels at night and the additional annoyance of nighttime noise events. DNL is the preferred noise metric of the U.S. Department of Housing and Urban Development (HUD), Department of Transportation, Federal Aviation Administration, United States Environmental Protection Agency (USEPA), Veterans Affairs, and Department of Defense (DoD).

Analyses of aircraft noise exposure and compatible land uses around DoD facilities are accomplished using a group of computer-based programs, collectively called NOISEMAP. NOISEMAP, through its program BASEOPS, allows entry of runway coordinates, airfield information, flight tracks, flight profiles (i.e., engine thrust settings, altitudes, and speeds) along each flight track for each aircraft, numbers of flight operations, run-up coordinates, run-up profiles, and run-up operations. Within this MPEA, NOISEMAP was used to develop noise contours associated with all aircraft operations at Robins AFB.

In airfield noise analyses, noise contours are used to help determine compatibility of aircraft operations and local land uses. Although noise resulting from aircraft flight operations represents the greatest contribution to the overall noise environment near the airfield, other noise sources (e.g., highway traffic) may also influence total ambient noise levels. Other activities that may generate substantial amounts of noise at an airport include engine preflight run-ups and aircraft maintenance activities, industrial operations, and construction activities.

Although aircraft maintenance actions and industrial operations may generate large amounts of noise, they are typically confined to the airfield and industrial areas. Construction activities may result in disturbance to on-site personnel or off-site noise-sensitive receptors (e.g., residential areas and schools). However, construction noise tends to be localized and temporary and may be reduced through use of special equipment or scheduling restrictions.

Table 3-2 identifies noise levels associated with some common indoor and outdoor activities and settings. **Table 3-2** also indicates the subjective human judgments of noise levels, specifically the perception of noise levels doubling or being halved. For reference purposes, a baseline noise level of 70 dB is described as moderately loud. As can be seen in the table illustrating the logarithmic dB scale, humans perceive an increase of 10 dB as a doubling of loudness, while an increase of 30 dB corresponds with an eight-fold increase in perceived loudness.

Guidelines established by the Federal Interagency Commission on Noise are used by HUD to determine acceptable levels of noise exposure for various land use categories. Land use categories most sensitive to ambient noise are residential, institutional, cultural, and some recreational uses. Industrial land uses are the least sensitive to surrounding noise, largely due to the inherently high levels of ambient noise associated with industrial activities. Ambient background noise in urbanized areas typically varies from 60 to 70 dBA but can be higher; suburban neighborhoods experience ambient noise levels of approximately 45 to 50 dBA (USEPA, 1974). Noise levels from flight operations exceeding ambient background noise typically occur beneath main approach and departure corridors, or local air traffic patterns around the airfield, and in areas immediately adjacent to aircraft parking ramps and staging areas. As aircraft take off and gain altitude, their noise contribution is reduced.

Table 3-2: Sound Levels of Typical Noise Sources and Noise Environments

	Over-all Level (Noise level, dB(A))		**Community** (Outdoor)	**Home or Industry** (Indoor)	**Loudness** (Human Judgement of Different Sound Levels)
	120-130	Uncomfortably Loud	Military Jet Aircraft Take-Off With After-Burner From Aircraft Carrier @ 50 ft. (130)	Oxygen Torch (121)	32 times as loud as 70 dB(A)
	110-119		Turbo Fan Aircraft @ Take-Off Power @ 200 ft. (118)	Riveting Machine (110) Rock and Roll Band (108-114)	16 times as loud as 70 dB(A)
	100-109		Boeing 707, DC-8 @ 6080 ft. Before Landing (106), Jet Flyover @ 1000 ft. (103), Bell J-2A Helicopter @ 100 ft. (100)		8 times as loud as 70 dB(A)
	90-99	Very Loud	Power Mower (96) Boeing 707, CD-8 @ 6080 ft. Before Landing (97) Motorcycle @ 25 ft. (90)	Newspaper Press (97)	4 times as loud as 70 dB(A)
	80-89		Car Wash @ 20 ft. (89) Propellor Plane Flyover @ 1000 ft. (88) Diesel Truck, 40 mph @ 50 ft. (84) Diesel Train, 45 mph @ 100 ft. (83)	Food Blender (88) Milling Machine (85) Garbage Disposal (80)	2 times as loud as 70 dB(A)
	70-79	Moderately Loud	High Urban Ambient Sound (80) Passenger Car, 65 mph @ 25 ft. (77) Freeway @ 50 ft. From Pavement Edge @ 10 a.m. (76 +/- 6)	Living Room Music (76) TV-Audio, Vacuum Cleaner (70)	
	60-69		Air Conditioning Unit @ 100 ft. (60)	Cash Register @ 10 ft. (65-70)	1/2 as loud as 70 dB(A)
	50-59	Quiet	Large Transformers @ 100 ft. (50)		1/4 as loud as 70 dB(A)
	40-49		Bird Calls (44) Lower Limit of Urban Ambient Sound in daytime (40)		1/8 as loud as 70 dB(A)
		Just Audible	**dB(A) Scale Interrupted**		
	0-10	Threshold of Hearing			

Source: Branch and Beland 1970.

3.2.1.1 Existing Conditions

Regional Setting

Robins AFB is an active DoD installation in central Georgia, 18 miles south of Macon, Georgia. The base occupies 6,935 acres and is bounded on the west by the city of Warner Robins, on the south by unincorporated Bonaire and Sandy Run Creek, and on the north by low-density residential and light commercial businesses and east by wetland areas associated with the Ocmulgee River floodplain. Background noise levels associated with the area and in absence of aircraft operations would be within the proposed action area.

Robins AFB Operations

Aircraft operations dominate the noise environment in the vicinity of Robins AFB. The majority of aircraft operations are conducted by the C-130 Hercules (variations of H- and J- models), C-5 MAX Galaxy, F-15 Eagle (Multiple engine types), C-17 Globe Master III, E-8C JSTARS, and RQ-4 Global Hawk. Additionally, numerous DoD and civilian aircraft utilize Robins AFB airfield and Class D airspace. **Table 3-3** describes Maximum Sound Level (Lmax) noise levels associated with direct overflight of aircraft in takeoff, landing, and cruise configurations. Aircraft typically utilize takeoff and landing configurations during initial ascent from and final descent to the runway. Cruise configuration is typically used when aircraft are flying at pattern altitude or engaged in maneuvers outside of Robins AFB Class D airspace.

Table 3-3: L_{max} Associated With Direct Overflight of Based C-5A, C-17, C-130H, and F-15 (-229), E-8A, and RQ-4 Aircraft

Aircraft	Engine Power Setting	Airspeed (knots)	Altitude (feet AGL)					
			500	1,000	2,000	5,000	10,000	20,000
C-5A								
Takeoff	4.9 EPR	185	114	106	97	83	70	57
Landing	3.0 EPR	150	112	105	96	80	62	42
Cruise	3.1 EPR	165	114	106	97	80	61	41
C-17								
Takeoff	95%NC	200	104	96	88	77	68	57
Landing	86%NC	120	97	89	79	66	56	44
Cruise	92%NC	250	98	89	80	66	57	46
C-130H								
Takeoff	970 C TIT	170	92	85	77	66	57	47
Landing	580 C TIT	140	90	83	75	63	53	42
**Cruise*	505 HP	160	91	84	76	64	54	44
F-15 (-229)								
Takeoff	91%NC	350	124	116	107	95	85	74
Landing	75%NC	170	90	83	76	65	55	44
Cruise	73.5%NC	280	90	83	76	65	55	44

E-8A								
Takeoff	1.8 EPR	300	106	98	88	75	65	53
Landing	1.3 EPR	140	103	95	84	68	56	44
Cruise	1.1 EPR	250	104	96	85	65	48	35
RQ-4								
Takeoff	100% RPM	80	85	81	76	68	61	53
Landing	30% RPM	80	72	67	62	55	49	42
Cruise	50% RPM	80	76	71	66	59	53	46

Notes: L_{max} was calculated under standard acoustic atmospheric conditions (70°F and 59% relative humidity). AGL = Above Ground Level; %NF = Fan Speed; %NC = Core Engine Fan Speed; EPR = Engine Pressure Ratio; C TIT = Celsius Turbine Inlet Temperature; HP = Horse Power; * = C130J. RPM = Revolutions Per Minute. Source: USAF, 2003.

Aircraft operations at Robins AFB were modeled in 2022 using NOISEMAP and the existing fleet mix, Calendar Year 2018 aircraft operations, and existing E-8C aircraft operations (**Table 3-4**). 2018 aircraft operations were used for the model as they are most representative of an average year at Robins AFB. More recent data has deviated from the standard due to recent and temporary coronavirus-related operational changes beginning in 2020, and is therefore does not provide a valid baseline. As shown in **Figure 3-1 and 3-2**, aircraft operations generated noise contours of 65, 70, 75, 80, and 85+ DNL. The 80 and 85+ DNL contours remained within Robins AFB property; however, the 65, 70, and 75 DNL contours extended beyond Robins AFB property. Existing acreage, both the total and off-base, are presented in **Table 3-5**.

Table 3-4: Robins AFB 2018 Aircraft Operations

Aircraft	Day (0700-2200)	Night (2200-0700)	Total
Military	13,784	2,200	15,984
E-8C	*4,800*	*1,728*	*6,528*
Others	*8,984*	*472*	*9,456*
Civilian	4,085	466	4,551
Air Carrier/Taxi	32	3	35
Unmanned Aerial Systems	1	3	4
Helicopters	130	18	148
Total	**18,032**	**2,690**	**20,722**

Source: Robins AFB 2022a.

Table 3-5: Existing Land Area Affected by DNL Noise Levels above 65 dB

Noise Level (DNL)	Existing Total (acres)	Existing Off-Base (acres)
65-69	2,446	1,461
70-74	1,179	222
75-79	656	21
80-84	504	0
85+	475	0
Total	**5,260**	**1,704**

Source: Robins AFB 2022a.

Public annoyance is the most common concern associated with exposure to elevated noise levels. The DNL noise metric has been strongly correlated to public annoyance (Finegold et al., 1994). When subjected to DNL levels of 65 dB, approximately 12 percent of the persons exposed will be "highly annoyed" by the noise. At levels below 60 dB, the percentage of annoyance is substantially lower (less than 8 percent), and at levels above 70 dB, it is substantially higher greater than 25 percent).

Land uses in the vicinity of Robins AFB exposed to aircraft noise levels exceeding 65 dB DNL are predominately industrial and forest. To a lesser extent, low- and medium-density residential, agricultural, and transportation are land uses within the 65+ dB DNL noise contours.

It should be noted that some additional noise results from day-to-day activities associated with operations, maintenance, and the industrial functions associated with the operation of Robins AFB. These noise sources include the operation of ground-support equipment, and other transportation noise from vehicular traffic; however, this noise is generally localized in industrial areas on or near the Base. Noise resulting from aircraft operations remains the dominant noise source in the base vicinity.

Robins AFB maintains an Air Installation Compatible Use Zone (AICUZ) Program intended to promote compatible land uses in nongovernment areas adjacent to Robins AFB (USAF, 2015). The AICUZ study outlines the location of runway clear zones, aircraft accident potential zones, and noise contours. In addition, incompatible land uses are identified and compatible land use recommendations are provided for areas in the vicinity of the base. Three types of planning controls (e.g., compatible zoning, building code modifications, and avigation easements) have been developed to minimize conflicts between military and civilian airfields nearby communities (USAF, 2015).

Robins AFB Noise Abatement

The DAF strives to be a good neighbor and actively pursues operational measures to minimize aircraft noise. Noise abatement procedures apply to flight operations, as well as engine run-up and maintenance operations conducted on station. To the greatest extent possible, flights are routed over sparsely populated areas to reduce the exposure to noise. Through Air Force regulations, commanders are required to periodically review existing traffic patterns, instrument

approaches, weather constrictions, and operating practices in relation to populated areas and other local situations.

Robins AFB has implemented the following noise abatement guidelines (Robins AFB, 2020a):

- Noise abatement is in effect at Robins AFB daily from 2200L-0600L.
- Multiple approaches are not permitted during this period, except for locally assigned aircraft.
- All departing or arriving aircraft shall avoid over-flying base housing areas at all times.
- 78 ABW Public Affairs (78 ABW/PA) keeps the base and community populations advised of flight operations conducted at Robins AFB and explains measures taken to minimize noise and other disturbances associated with aircraft operations.
- When an F-15 files a Macon Echo profile the pilot will specify supersonic or non-supersonic. Robins Airfield Management Operations will inform 78 ABW/PA when an F-15 is performing a supersonic check and the approximate time for the sonic boom. This time will be estimated as take-off time plus 30 minutes. Robins Air Force Base Instruction 13-204 dated 5 March 2020, states Public Affairs will keep the base and community advised of operations conducted at Robins AFB.
- During the noise abatement period (2200L-0600L), engine runs above idle speed are prohibited unless approved by the appropriate authority.
- 78 ABW/PA tracks incidents of noise complaints and will attempt to determine the unit involved.

3.2.2 Environmental Consequences

Noise impact analyses typically evaluate potential changes to the existing noise environment that would result from the implementation of an action. These potential changes may be beneficial if they reduce the number of sensitive receptors exposed to unacceptable noise levels. Conversely, impacts may be significant if they result in an introduction of unacceptable noise levels or 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 the degree of the effects of the action. 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. Some Federal agencies have established noise level criteria for every scenario and airfield. For example, under the Federal Aviation Administration (FAA) a noise impact would be considered significant if the action would cause noise-sensitive areas to experience an increase in noise of 1.5 dB or more at or above the 65 DNL noise exposure when compared to the No-Action Alternative for the same timeframe. The DAF prefers to address noise impacts on a case-by-case basis where the noise exposure to the surrounding area for each specific airfield is assessed without the use of specific criteria applying to all airfields.

For the purpose of this analysis, noise impacts from the Action would be assessed in comparison to existing conditions and the No-Action Alternative. Noise impacts due to construction and renovation activities would be constant for each of the proposed mission sets and their alternatives, as described in **Section 3.2.1**. Noise impacts resulting from aircraft operations associated with E-11A Squadron Beddown would be assessed through looking at the difference in noise exposure in comparison to the existing operations involving the JSTARS E-8C aircraft and the No-Action Alternative that includes the JSTARS mission diversion from Robins AFB.

3.2.2.1 Action Alternative

3.2.2.1.1 Kingpin Mission Beddown

Short-term Construction

Implementation of the Kingpin Mission Beddown would have minor, temporary effects on the noise environment in the vicinity of the site proposed for development and BMCOC construction. Use of heavy equipment for site preparation and development (e.g., vegetation removal, grading, and backfill) would generate short-term noise exposure above typical ambient levels at the installation and within the surrounding vicinity. However, noise generation would be typical of construction activities, short-term, and confined to normal working hours (i.e., between 7:00 A.M. and 5:00 P.M.). Short-term noise-generating activities associated with the Action Alternative would occur within the base boundary located beneath the flightpath, along the airfield, or within developed areas of the base, which contain land uses that are not considered to be noise sensitive. Given the type of construction activities (e.g., sporadic, during daytime hours, short-term, etc.), implementation of the Action Alternative would not be expected to substantially alter the ambient noise environment. Consequently, the impacts of construction-related noise would be negligible and no significant construction-related noise impacts would be expected to occur as a result of the Action Alternative.

Long-term Operational Noise

Implementation for the Kingpin Mission Beddown would add up to 500 active-duty personnel to Robins AFB which would result in a direct negligible increase in surface street noise exposure from additional personnel trips. Activities associated with the proposed action for the Kingpin mission would ultimately occur within the BMCOC, thus no direct or indirect noise impacts are anticipated through long-term operation of the Kingpin Mission.

No-Action Alternative

Selection of the No-Action Alternative where the Kingpin Mission would not beddown at Robins AFB, would not result in any noise impacts, direct or indirect, or any changes to the noise environment when compared with existing conditions.

3.2.2.1.2 Spectrum Warfare Group Activation

Short-term Construction

Implementation of the SWG would have minor, temporary effects on the noise environment in the vicinity of the site proposed for development and BMCOC construction. Use of heavy equipment for site preparation and development (e.g., vegetation removal, grading, and backfill) would generate short-term noise exposure above typical ambient levels at the installation and within the

surrounding vicinity. However, noise generation would be typical of construction activities, short-term, and confined to normal working hours (i.e., between 7:00 A.M. and 5:00 P.M.). Additionally, construction noise could be reduced through use of factory-installed sound reduction equipment such as shrouds, sound enclosures, and mufflers. Short-term noise-generating activities associated with the Action Alternative would occur within the base boundary located beneath the flightpath, along the airfield, or within developed areas of the base, which contain land uses that are not considered to be noise sensitive. Given the type of construction activities (e.g., sporadic, during daytime hours, short-term, etc.), implementation of the Action Alternative would not be expected to substantially alter the ambient noise environment. Consequently, the impacts of construction-related noise would be negligible and no significant construction-related noise impacts would be expected to occur as a result of the Action Alternative.

Long-term Operational Noise

Activation of the SWG would add up to 400 active-duty personnel to Robins AFB, which would have a negligible direct-impacts to surface street noise resulting from additional personnel trips. Activities associated with the proposed action for the SWG would ultimately occur within the BMCOC, thus no direct or indirect noise impacts are anticipated through long-term operation associated with this activation.

No-Action Alternative

Selection of the No-Action Alternative where the SWG would not be activated at Robins AFB, would not result in any noise impacts, direct or indirect, or any changes to the noise environment when compared with existing conditions.

3.2.2.1.3 E-11A Squadron Beddown

Short-term Construction-Related Noise

Implementation of the Alternative would have minor, temporary effects on the noise environment in the vicinity of the proposed construction, demolition, and interior renovation project sites at Robins AFB. Use of heavy equipment for site preparation and development (e.g., vegetation removal, grading, and backfill) for the proposed renovation and demolition activities in FY 2023 would generate short-term noise exposure above typical ambient levels at the installation and within the surrounding vicinity. However, noise generation would be typical of construction activities, short-term, and confined to normal working hours (i.e., between 7:00 A.M. and 5:00 P.M.). Additionally, construction noise could be reduced through use of factory-installed sound reduction equipment such as shrouds, sound enclosures, and mufflers. Short-term noise-generating activities associated with the Action Alternative would occur within the base boundary located beneath the flightpath, along the airfield, or within developed areas of the base, which contain land uses that are not considered to be noise sensitive. Given the type of construction and demolition activities (e.g., sporadic, during daytime hours, short-term, etc.), implementation of the Action Alternative would not be expected to substantially alter the ambient noise environment. Consequently, the impacts of construction-related noise would be negligible and no significant construction-related noise impacts would be expected to occur as a result of the Action Alternative.

Long-Term Operational Noise

Facilities

Under the Action Alternative, additions to existing buildings necessary to support the E-11A operations would be located within the 65+ DNL noise contours. For proposed development and other actions in the immediate vicinity of the AFB, the DoD's noise model NOISEMAP was used to develop noise exposure contours at 65, 70, 75, and 80 DNL (additional noise contours may be provided on a case-by-case basis). Proposed development (e.g., squadron operations facilities) would occur within an airfield environment and noise levels from airfield operations would be considered compatible with proposed facilities.

Aircraft Operations at Robins AFB

Implementation of the Action Alternative would result in the beddown of the E-11A BACN mission. The DAF is also retiring the E-8C JSTARS mission and flight operations at Robin AFB as part of a separate action. Under the Action Alternative, the E-11A would fly an average of 4 sorties per day, which is two more than the E-8C daily sortie counts; however, the number of closed pattern operations the E-11A would complete in comparison to the E-8C at Robins AFB would be reduced (**Table 3-6**). The E-8C JSTARS currently perform 6,258 airfield operations per year (**Table 3-4**), the E-11A would perform 5,292 airfield operations per year. Thus, total aircraft operations at Robins AFB would be reduced through implementation of the Action Alternative and a reduction in noise exposure would occur beyond the Robins AFB boundary when compared to existing conditions (**Table 3-7**) (**Figure 3-1 and 3-2**). Therefore, given that noise exposure would be reduced and no direct or indirect impacts would result. Implementation of the Action Alternative would result in a beneficial noise impact.

Table 3-6: Robins AFB Action Alternative Aircraft Operations

Aircraft	Day (0700-2200)	Night (2200-0700)	Total
Military	12,482	2,266	14,748
E-11A	*3,498*	*1,794*	*5,292*
Others	*8,984*	*472*	*9,456*
Civilian	4085	466	4,551
Air Carrier/Taxi	32	3	35
Unmanned Aerial Systems	1	3	4
Helicopters	130	18	148
Total	**16,730**	**2,756**	**19,486**

Source: Robins AFB 2022a.

Table 3-7: Land Area Affected by DNL Noise Levels above 65 dB

Noise Level (DNL)	Proposed Action Total (acres)	Proposed Action Off-Base (acres)	Existing Off-Base (acres)	Difference Off-Base (acres)
65-69	1,629	571	1,461	-890
70-74	827	52	222	-170
75+	1,218	2	21	-19
Total	**3,673**	**625**	**1,704**	**-1,079**

Source: Robins AFB 2022a.

3.2.2.1.4 No-Action Alternative

If the No-Action Alternative were selected, the E-11A BACN mission would not beddown at Robins AFB. Thus, there would be no operational noise impacts associated with the selection of this alternative. The E-8C JSTARS mission would still be diverted from Robins AFB with the removal of all aircraft and operations by 2024. Overall noise levels would decrease from those described in **Section 3.2.1.1**. Therefore, the no-action alternative would result in no significant direct or indirect impacts to the environment at or near the proposed action area.

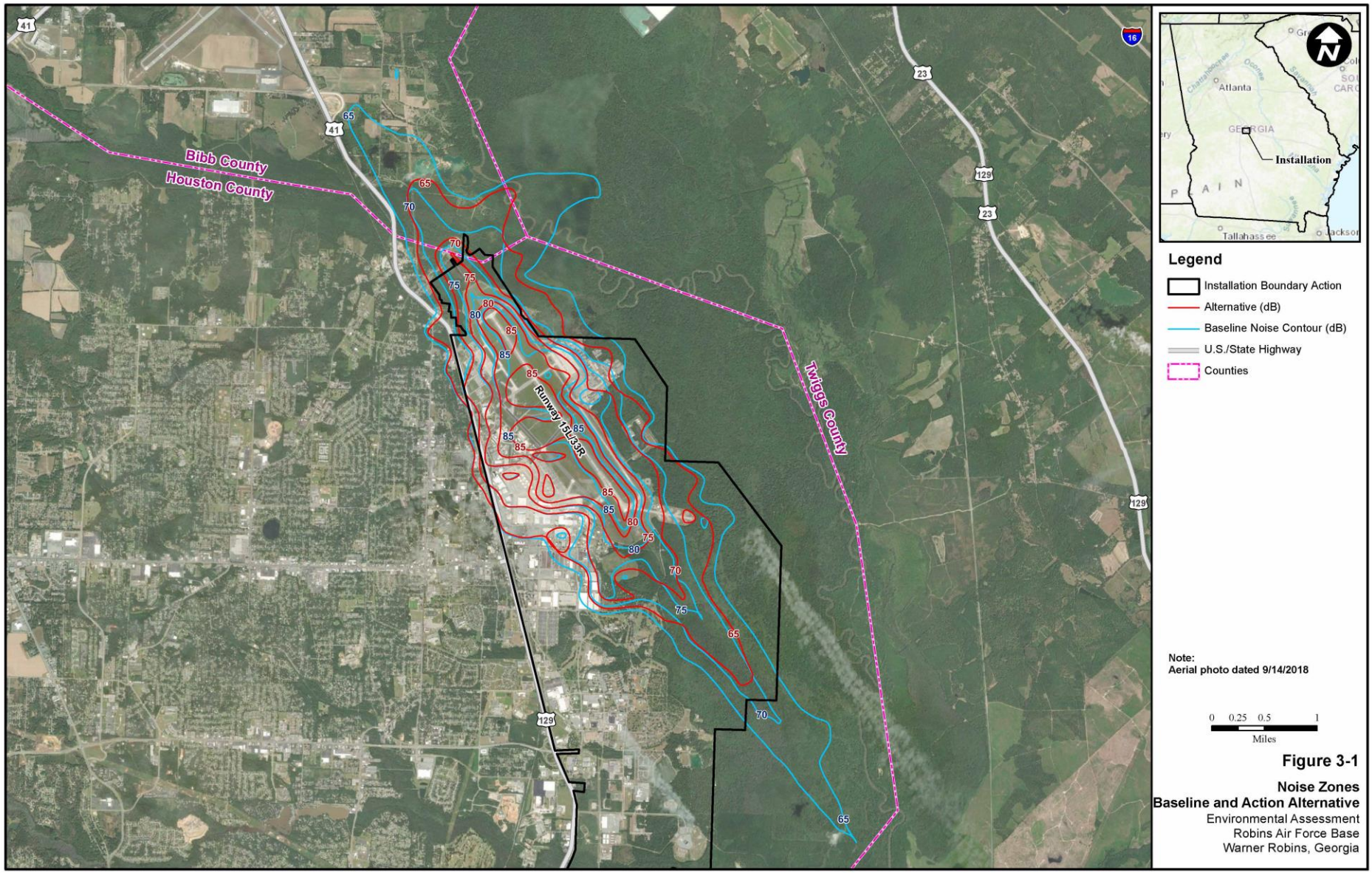


Figure 3-1

Noise Zones
Baseline and Action Alternative
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

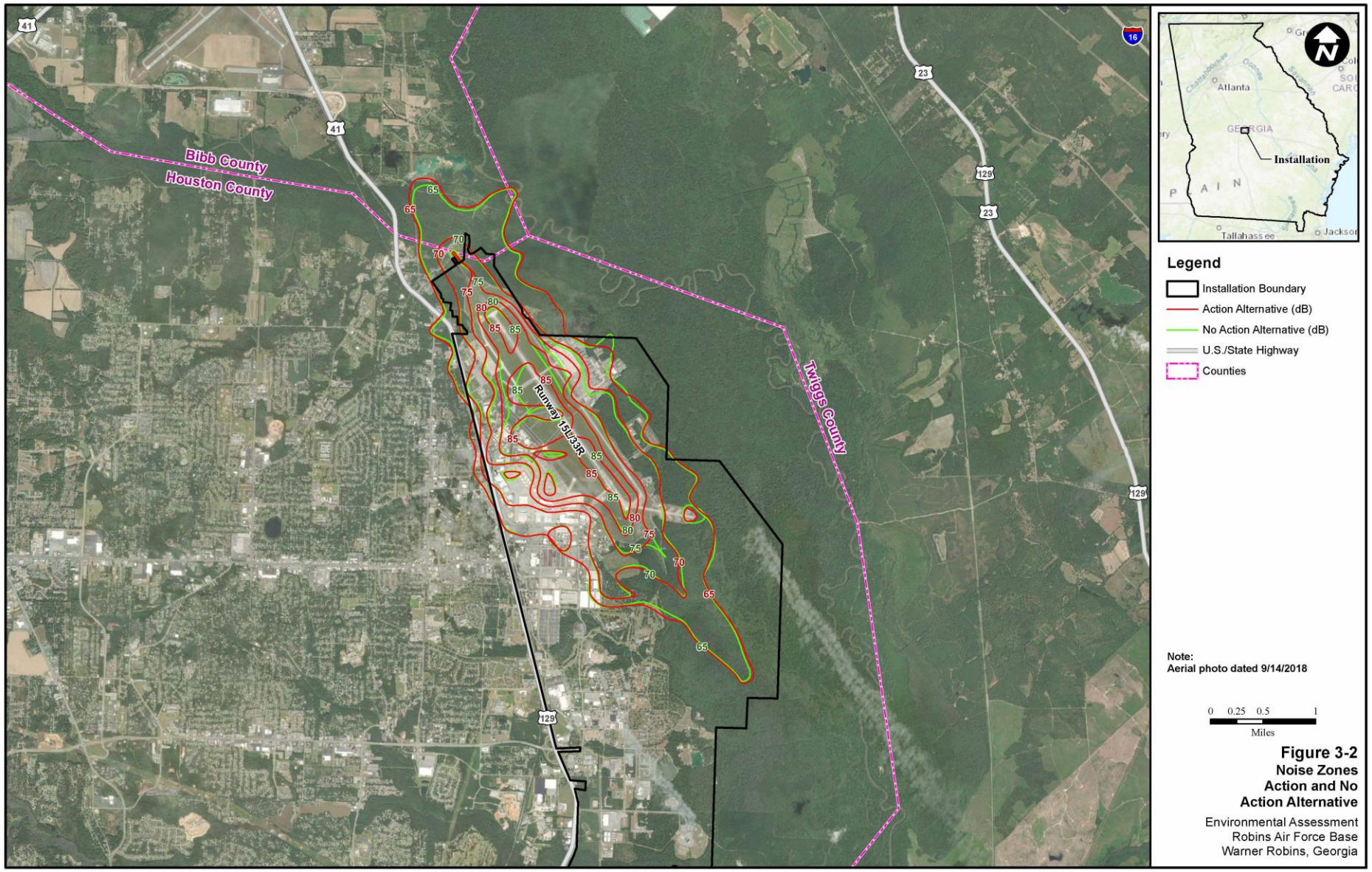


Figure 3-2
Noise Zones Action and No Action Alternative
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

3.3 AIR QUALITY

3.3.1 Affected Environment

3.3.1.1 Ambient Air Quality Standards

Section 108 of the CAA requires that the USEPA establish National Ambient Air Quality Standards (NAAQS) for six common air pollutants (known as criteria air pollutants): carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_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 3-8** provides the ambient air quality standards set forth by the Georgia Air Protection Branch.

Table 3-8: Ambient Air Quality Standards

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

Notes: ppb = parts per billion; ppm = parts per million; µg/m3 = micrograms per cubic meter; Ambient Air Quality Standards per Georgia Rule 391-3-1.02(4)

3.3.1.2 Local Air Quality

Robins AFB is located within the Warner Robins area of Houston County, under the jurisdiction of the Georgia Department of Natural Resources (GADNR), Georgia Environmental Protection Division (GAEPD), which publishes statewide air quality and permitting regulations. Houston 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.

Three air monitoring stations are near Robins AFB. The State and Local Air Monitoring Station (SLAMS) Warner Robins Metropolitan Statistical Area site [Memorial Park, 800 South 1st Street, Warner Robins, GA 31088] is located slightly south of the central area of the Base and west of Highway 247, and monitors $PM_{2.5}$ concentrations. The SLAMS Macon-Georgia Forestry Commission site [Georgia Forestry Commission, 5645 Riggins Mill Road, Dry Branch, GA 31020], is located north of the Base and monitors SO_2, O_3, and $PM_{2.5}$ concentrations. The SLAMS Macon-Allied Chemical site [Allied Chemical, 600 Guy Paine Road, Macon, GA 31206], is located northwest of the Base and monitors $PM_{2.5}$ concentrations.

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 Bibb County based upon data collected at the SLAMS Macon-Georgia Forestry Commission site; county-level design values have not been computed for Houston County. The 2018-2022 design values for SO_2, O_3, and $PM_{2.5}$ are (USEPA, 2022):

- SO_2 2 ppb (1-hour)
- O_3 0.061 ppm
- $PM_{2.5}$ 8.6 µg/m^3 (annual)

Each of these values is less than 95% of the respective NAAQS (see **Table 3-8**). Consequently, as described in Section 5.2.2 of the Air Quality EIAP Guide Volume II (USAF, 2020), the air quality measured in the Robins AFB area is clearly in attainment with the NAAQS.

3.3.1.3 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 using the Air Conformity Applicability Model (ACAM).

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 MPEA.

In addition, the effects of climate change on the proposed action`s and/or the environment (per Section 6.4 of the Air Quality EIAP Guide) should be included to address and document that an informed decision-making process was followed. For smaller projects [i.e., actions generating less than 75,000 short tons per year CO_{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 the ACAM. The results are described in **Section 3.3.2**.

Robins AFB currently operates under Title V Operating Permit Number 9711-153-0033-V-04-1 (the Air Permit). The Air Permit covers emissions generated from stationary air emission sources operated at the Base. These sources include:

- Stationary combustion sources (e.g., boilers, water heaters, furnaces, gasoline and diesel-fueled generators, engine test cells);
- Operational sources (e.g., cleaning/degreasing operations, painting/depainting operations, process tanks, wastewater treatment); and
- Fuel-storage/transfer operations (e.g., fuel storage tanks).

Air pollutants emitted from these sources include PM_{10}, $PM_{2.5}$, SO_2, CO, nitrogen oxides (NO_x), volatile organic compounds (VOC), hazardous air pollutants, and toxic air pollutants. All permitted emission units and control devices are listed in the Permit (Permit Tables 3.1b. and 3.1c., respectively). Permit Attachment B also includes a list of insignificant activities (i.e., air pollution sources/activities that are exempt from permitting requirements but must be listed in the Permit) at the Base.

In addition to stationary sources, Robins AFB operates numerous mobile air emission sources. These sources include ground vehicles (e.g., cars, trucks, construction equipment), aircraft, and aerospace ground equipment. Mobile sources are not regulated under the Title V program.

3.3.1.4 Approach to Analysis

As described in **Section 3.3.1.2**, *Local Air Quality*, the Warner Robins area, in Houston County, is currently designated by the USEPA as an *attainment* area for all NAAQS criteria pollutants. As also described in **Section 3.3.1.2**, in accordance with DAF guidance (USAF, 2020), the Warner Robins area is 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 ton/yr 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 DAF guidance (USAF, 2020), in an area that is clearly in attainment with

the NAAQS, the 250 ton/yr PSD threshold is an indicator of potentially significant air quality impacts for NEPA.

To evaluate criteria pollutant emissions, air emission estimates for the proposed actions were calculated using ACAM. Proposed actions that would emit (or have the potential to emit) less than 250 ton/yr 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.

Each GHG is assigned a global warming potential, which is the ability to trap heat, and is standardized to carbon dioxide (CO_2), which has a global warming potential value of one. A GHG is multiplied by its global warming potential to calculate the total equivalent emissions of carbon dioxide, or CO_{2e}. To evaluate GHG emissions, air emission estimates for the proposed actions were calculated using ACAM in terms of CO_{2e}.

The Significance Indication Analysis as described in Section 6.3.1 of the Air Quality EIAP Guide (CEQ, 2016) 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, USEPA proposed establishing a de minimis value of GHGs or “Significant Emissions Rate” 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 (AFCEC, 2019). 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 additional personnel commuting to and from the Base, renovation activities, construction activities, and aircraft flight operations. The DAF’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 32-7002, Environmental Compliance and Pollution Prevention; and the EIAP 32 CFR Part 989.

Note that ACAM does not estimate emission from building renovation projects that affect building interiors. Air emissions from interior building renovation projects in existing buildings are not considered individually or cumulatively to have a significant effect on human environment based on agency experience. Air emissions generated by exterior renovation projects were estimated using ACAM. Also, note that while air emissions from additional personnel commuting to and from the Base have been estimated as described below, these emissions are off-set by a nearly identical reduction in personnel currently associated with the E-8C JSTARS mission.

3.3.2 Environmental Consequences

3.3.2.1 Kingpin Mission Beddown

The proposed action for the Kingpin Mission Beddown would add up to 500 active-duty personnel to Robins AFB. Activities associated with the proposed action for the Kingpin mission would ultimately occur within the BMCOC proposed for construction in FY24 between Buildings 2063 and 2081. The new construction would include other site development such as parking and road/pavement improvements. Air pollutant emissions would be associated with the additional personnel commuting to and from the Base and with construction activities.

Air emissions from fuel combustion in personal vehicles associated with the additional personnel commuting to and from the Base would include CO, NO_x, PM_{10}, $PM_{2.5}$, SO_2, VOC, and CO_2. An average round trip commuting distance of 20 miles, a 5-day work week, and 52 work weeks per year (all default assumptions within ACAM) were used to quantify potential air emissions associated with personal vehicle use by the additional personnel. Details regarding these calculations are presented in **Appendix B**.

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 construction of the new building and associated infrastructure. 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. Project construction methods for the temporary and permanent facilities would utilize Best Management Practices (BMP) to control fugitive dust. Details regarding the calculation of air emissions from building construction activities are also presented in **Appendix B**.

Comfort heating would be installed in the new building and operation of these heating units would generate air emissions. Potential air quality impacts from the heating units were estimated using ACAM and default assumptions regarding the comfort heating requirements per square foot of building space. Details regarding these calculations are presented in **Appendix B**.

Climate change presents a global problem caused by increasing concentrations of GHG emissions. While climate change results from the incremental addition of GHG emissions from millions of individual sources, the significance of an individual source alone is impossible to assess on a global scale beyond the overall need for global GHG emission reductions to avoid catastrophic global outcomes. Therefore, the quantitative analysis of CO_{2e} emissions in this EIS is for disclosing the net increase of the Proposed Action. The results of this analysis indicates CO_{2e} emissions are well below the 75,000 tpy CO_{2e} indicator and do not warrant further NEPA analysis. Climate change would have a negligible impact on the proposed action.

Three alternatives are being considered to house the Kingpin mission prior to the BMCOC being completed. Each of these alternatives would occur within existing buildings and/or an existing parking lot. Most renovations would be to the building interior only. The only exterior work would be installation of generator pads, installation of generators, and trenching for and installation of

power/utility cables. Air quality impacts associated with the exterior work associated with each of these alternatives are described below.

Facility Alternative 1

Prior to completion of the new building, the Kingpin mission would be supported from an existing building. This alternative would site CONEX structures inside Building 2066 and perform building renovations. As described in **Section 2.1.2**, this alternative would also include the installation and operation of five emergency generators. Air pollutant emissions would be associated with exterior renovation activities associated with the installation of the new generators and generator operations were estimated using ACAM and are described in detail in Appendix B.

Facility Alternative 2

Prior to completion of the new building, the Kingpin mission would be supported from three locations. Under this alternative, 15 CONEX structures would be sited on an existing parking lot, the interior of Building 2081 would be renovated, and space would be used in Building 2066.

Facility Alternative 3

The Kingpin Mission would utilize Building 2039, which is currently available and unoccupied. Prior to completion of the new building, the Kingpin mission would be supported from an existing building. This alternative would use a portion of Building 2039 and perform interior building renovations. Because this alternative would only include interior building renovations, air emissions from implementation of this alternative were not quantified.

3.3.2.1.1 Summary of Air Quality Impacts from Kingpin Mission Beddown

Air emissions that would be associated with each of the Kingpin Mission Beddown facility alternatives are summarized in **Table 3-9**. These emissions include those generated from the additional personnel commuting to and from the Base, construction of the BMCOC, comfort heating of the BMCOC, interim building renovations, and interim generator construction / operations, as appropriate. Emissions from each of the alternatives would be less than the insignificant indicator values, and do not warrant further NEPA analysis.

Air emissions from the construction and renovation activities are transient in nature while those associated with personnel commuting to and from the Base, generator operations, and comfort heating of the BMCOC will continue. The results of the ACAM analyses, as presented in **Appendix B**, incorporate the temporal nature of the air emissions. However, the values presented in **Table 3-9** assume that all air emission generating activities occur during the same calendar year. While this assumption results in conservatively high emissions estimates, **Table 3-9** demonstrates that emissions from each of the Kingpin Mission Beddown alternatives would be less than the insignificant indicator values, and do not warrant further NEPA analysis.

Note that **Table 3-9** includes emissions from the construction of the new building that will also be occupied by the SWG and the E-11A Squadron Beddown. Air emissions generated by the construction of this building are included in **Tables 3-10 and 3-11** to provide a complete and independent analysis of the air emissions associated with each of the three missions and additional personnel associated with each mission that may be located at Robins AFB. Many of these personnel will transition from the existing JSTARS mission to the new missions, resulting in limited additional personnel being stationed at Robins AFB. However, the air emission

estimates presented in these three tables do not account for the JSTARS divestiture. Rather, potential air emissions reductions from the JSTARS divestiture are accounted for separately as described in **Section 3.3.2.3.2**.

Table 3-9: Air Quality Impacts from Proposed Action for the Kingpin Mission Beddown

Description	Air Pollutant Emissions (tons per year)						
	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO_2
Facility Alternative 1	14.66	3.48	0.83	0.15	0.04	2.47	2,087
Facility Alternative 2	14.23	3.08	0.77	0.12	0.01	2.39	1,986
Facility Alternative 3	14.23	3.08	0.77	0.12	0.01	2.39	1,986
Insignificant Indicator	250	250	250	250	250	250	75,000
Significant Impact?	No	No	No	No	No	No	No

3.3.2.1.2 No-Action Alternative

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

3.3.2.2 Spectrum Warfare Group Activation

The proposed action for the SWG activation would add up to 400 personnel to Robins AFB. Activities associated with the proposed action for the SWG activation would ultimately occur within the BMCOC proposed for construction in FY24 between Buildings 2063 and 2081. This is the same facility described in **Section 3.3.2.1** for the proposed Kingpin Mission Beddown. Air pollutant emissions would be associated with the additional personnel commuting to and from the Base, construction activities, and operation of the new building. These emissions were calculated using ACAM as described in **Section 3.3.1.3** and details regarding these calculations are presented in **Appendix B**.

Air emissions from fuel combustion in personal vehicles would be associated with the additional personnel commuting to and from the Base. An average round trip commuting distance of 20 miles, a 5-day work week, and 52 work weeks per year (all default assumptions within ACAM) were used to quantify potential air emissions associated with personal vehicle use by the additional personnel. Details regarding these calculations are presented in **Appendix B**.

Prior to the BMCOC being completed, the proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final facility solution would consist of the use of the BMCOC, Building 2051 North, and Building 2066. Interior renovations to Building 2072, Building 2051 North, and Building 2066 have been assumed to be necessary to accommodate the SWG mission. Because only interior building renovations are included, air emissions from the renovation activities were not quantified.

Air emissions that would be associated with SWG activation are summarized in **Table 3-10**. These emissions include those generated from the additional personnel commuting to and from the Base, construction of the BMCOC, and comfort heating of the BMCOC. As described in **Section 3.3.2.1.1**, the values presented in **Table 3-10** assume that all air emission generating activities

occur during the same calendar year. Emissions from the SWG activation would be less than the insignificant indicator values, and do not warrant further NEPA analysis.

Table 3-10: Air Quality Impacts from Proposed Action for the SWG Activation

Description	Air Pollutant Emissions (tons per year)						
	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO_2
Proposed Action	11.86	2.90	0.77	0.11	0.01	2.19	1,768
Insignificant Indicator	250	250	250	250	250	250	75,000
Significant Impact?	No	No	No	No	No	No	No

3.3.2.2.1 No-Action Alternative

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

3.3.2.3 E-11A Squadron Beddown

The proposed action for the E-11A Squadron Beddown would include the addition of approximately 378 total personnel to Robins AFB. For the reasonably foreseeable future, six E-11A aircraft would be stationed at Robins AFB and would result in the addition of 4,182 airfield operations annually as depicted in **Table 2-2**. Activities associated with the proposed action for the SWG activation would ultimately occur within the BMCOC proposed for construction in FY24 between Buildings 2063 and 2081, and in Building 2030, Building 2051 South, Building 2045, Building 2039, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036 and would include the installation of a 35-kW emergency generator. An antenna would be located either adjacent to the parking lot near Building 2036 or adjacent to Building 2030.

Air pollutant emissions would be associated with the additional personnel commuting to and from the Base, aircraft flight and maintenance operations, construction, and renovation activities, generator operations, and operation of the new building. Air pollutant emissions associated with the additional personnel commuting to and from the Base, construction activities, and comfort heating of the BMCOC were calculated using ACAM as described in **Section 3.3.1.3**; details regarding these calculations are presented in **Appendix B**.

Air emissions from aircraft flight operations would include CO, NO_x, PM_{10}, $PM_{2.5}$, SO_2, VOC, and CO_2. Flight operation data contained in **Table 2-2** were used to quantify potential air emissions associated with aircraft flight operations using ACAM. Details regarding these calculations are presented in **Appendix B**.

Aircraft maintenance operations were assumed to include routine fluid changeouts, and preventive maintenance and inspection. Routine maintenance operations and fluid changeouts will result in minimal air emissions and have not been assessed.

Interior renovations to the various existing buildings that the E-11A Squadron Beddown would occupy have been assumed to be necessary to accommodate their mission. Because only interior building renovations are included, air emissions from the renovation activities were not quantified.

Air pollutant emissions would be associated with exterior renovation activities associated with the installation of the new generator as well as with generator operations. These air emissions were estimated using ACAM and are described in detail in **Appendix B**.

Air emissions that would be associated with E-11A Squadron Beddown are summarized in **Table 3-11**. As described in **Section 3.3.2.1.1**, the values presented in **Table 3-11** assume that all air emission generating activities occur during the same calendar year. Emissions from the proposed action would be less than the insignificant indicator values, and do not warrant further NEPA analysis.

Table 3-11: Air Quality Impacts from Proposed Action for the E-11A Squadron Beddown

Description	Air Pollutant Emissions (tons per year)						
	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO_2
Proposed Action	21.60	43.63	2.22	0.72	3.41	2.86	12,084
Insignificant Indicator	250	250	250	250	250	250	75,000
Significant Impact?	No	No	No	No	No	No	No

3.3.2.3.1 No-Action Alternative

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

3.3.2.3.2 JSTARS Divestiture

As stated in **Section 2.0**, the DAF proposes to use the manpower that currently supports the E-8C JSTARS mission to support the new additional missions proposed for Robins AFB. While the Kingpin, SWG, and E-11A Squadron missions require an end-state total manpower of approximately 1,283 personnel, much of this manpower will be sourced from the JSTARS mission. If all three new proposed missions are enacted, they would result in a total increase of approximately 34 personnel at Robins AFB.

To quantify the net air quality impacts associated with the enactment of all three missions, air emissions from fuel combustion in personal vehicles associated with 1,249 JSTARS personnel that will be transferred to the new missions were removed from the air emission estimates. Air emissions that would be associated with JSTARS divestiture are summarized in **Table 3-12** and details regarding these calculations are presented in **Appendix B**.

Table 3-12: Air Quality Impacts from JSTARS Divestiture

Description	Air Pollutant Emissions (tons per year)						
	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO_2
Proposed Action	-29.43	-2.23	-0.06	-0.05	-0.02	-2.57	-2,702

Net Air Quality Impacts from Enactment of All Three Missions

Net air quality emissions from the enactment of the Kingpin, SWG, and E-11A Squadron missions and the JSTARS divestiture are summarized in **Table 3-13**. Emissions from the proposed action would be less than the insignificant indicator values, and do not warrant further NEPA analysis.

Table 3-13: Net Air Quality Impacts from Proposed Action

Year	Air Pollutant Emissions (tons per year)						
	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO_2
2022	4.47	0.34	0.01	0.01	0.00	0.39	411
2023	15.85	22.67	1.89	0.40	1.72	1.39	6,575
2024	16.15	42.15	0.76	0.69	3.43	2.32	11,356
2025 (steady state)	11.01	40.93	0.72	0.65	3.42	0.77	10,733
Insignificant Indicator	250	250	250	250	250	250	75,000
Significant Impact?	No	No	No	No	No	No	No

3.3.2.3.3 Air Quality Permitting Evaluation

As described in **Section 3.3.1.3**, Robins AFB currently operates under Title V Operating Permit Number 9711-153-0033-V-04-1 (the Air Permit). The Air Permit covers emissions generated from stationary air emission sources operated at the Base.

Air emissions from construction and renovation activities are primarily caused by the operation of mobile air emission source (e.g., construction vehicles), land disturbance activities, paving operations, and application of architectural coatings. These activities are not addressed under the Title V permitting program and Robins AFB will not be required to update their Title V permit to address these activities.

Emergency generators and comfort heating units are stationary sources of air emissions and installation, and operation of these sources will require an update to the Robins AFB Title V permit. A review of the Base's air permit indicates that the emergency generators and comfort heaters that would be installed as part of the proposed action would need to be added to the list of insignificant activities (i.e., air pollution sources/activities that are exempt from permitting requirements but must be listed in the Permit) that is contained in Permit Attachment B.

3.4 WATER RESOURCES

3.4.1 Affected Environment

3.4.1.1 Surface Waters and Water Quality

Surface water features on the Base consist of wetlands, ponds, lakes, and perennial and intermittent streams. Robins AFB is generally drained by four unnamed intermittent creeks into Horse Creek, a tributary of the Ocmulgee River. There are three constructed lakes located on Robins AFB: Duck Lake, Luna Lake, and Scout Lake. Echeconnee Creek also receives drainage from the northernmost portion of the Base. **Figure 3-3** illustrates the surface waters within and in

close proximity to the Base. These creeks, lakes, and the Ocmulgee River shown on **Figure 3-3** would be considered jurisdictional Waters of the U.S. by USACE.

The Ocmulgee River flows outside the eastern boundary of the Base and is one of the dominant watercourses in west-central Georgia and part of the Altamaha River drainage. The Ocmulgee River is more than 0.5 miles from the northeastern corner of the runway. Drainage on Robins AFB flows from west to east into the Ocmulgee River and associated floodplain via Echeconnee Creek and Horse Creek. Horse Creek starts along the eastern perimeter of the airfield area and flows southeast picking up sheet flow from uplands through a ditch network that bisects the airfield before leaving Base property and entering the Ocmulgee River floodplain. Surface water drainage on the Base generally flows from west to east from State Route 247 to Echeconnee Creek and Horse Creek (Robins AFB, 2012). There are no impaired waters (i.e., bodies of water that fail to meet state water quality standards) within the Proposed Action areas.

3.4.1.2 Floodplains

Floodplains, as defined by the Federal Emergency Management Agency (FEMA), are those areas that are susceptible to being inundated by floodwaters from any source. Robins AFB uses Colorado State University (CSU)'s detailed DAF floodplain maps that have been prepared specifically for Robins AFB. These CSU floodplain maps have been developed with high quality topographic and hydrologic data using sophisticated 2-dimensional modeling to provide updated and accurate flood maps at a number of DAF bases, including Robins AFB. The Robins AFB CSU floodplain analysis was completed in 2021 and represents more accurate and updated floodplain data than the FEMA flood map for Robins AFB, which has not been updated since at least September 2007 (Carlson, 2021). CSU's maps satisfy the criteria in EO 13690 and the Office of the Secretary of Defense (OSD) directive-type memorandum (DTM), which was issued on June 7, 2022. These reflect the EO 13690 criteria that floodplain establishment "uses the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding", as well as the OSD DTM that allows for use of better data: ". . .where available FEMA maps do not include observed environmental changes impacting flood hazard, delineate the 1-percent Annual Chance Exceedance (ACE) and 0.2-percent ACE flood hazard areas using a risk analysis that is in accordance with the standards used to inform Federal flood risk assessments." FEMA has endorsed the CSU models and methodology used for the floodplain mapping efforts.

The CSU DAF floodplain map and the FEMA National Flood Insurance Program Flood Insurance Rate Map (FEMA, 2007) indicate that the project area is located near the Ocmulgee River floodplain (**Figure 3-4**). The FEMA designated floodplain is shown on Figure 3-4 for reference purposes, but the CSU DAF designated floodplain has been used for this analysis to determine floodplain impacts as it more accurately depicts the 100-year and 500-year floodplain locations at Robins AFB, per the OSD DTM. The Ocmulgee River floodplain is approximately three miles wide from bluff to bluff at, and adjacent to Robins AFB; the distance from the westernmost bluff of the floodplain on Base to the river averages approximately two miles. There are approximately 2,233 acres of floodplain located within the boundaries of the Base.

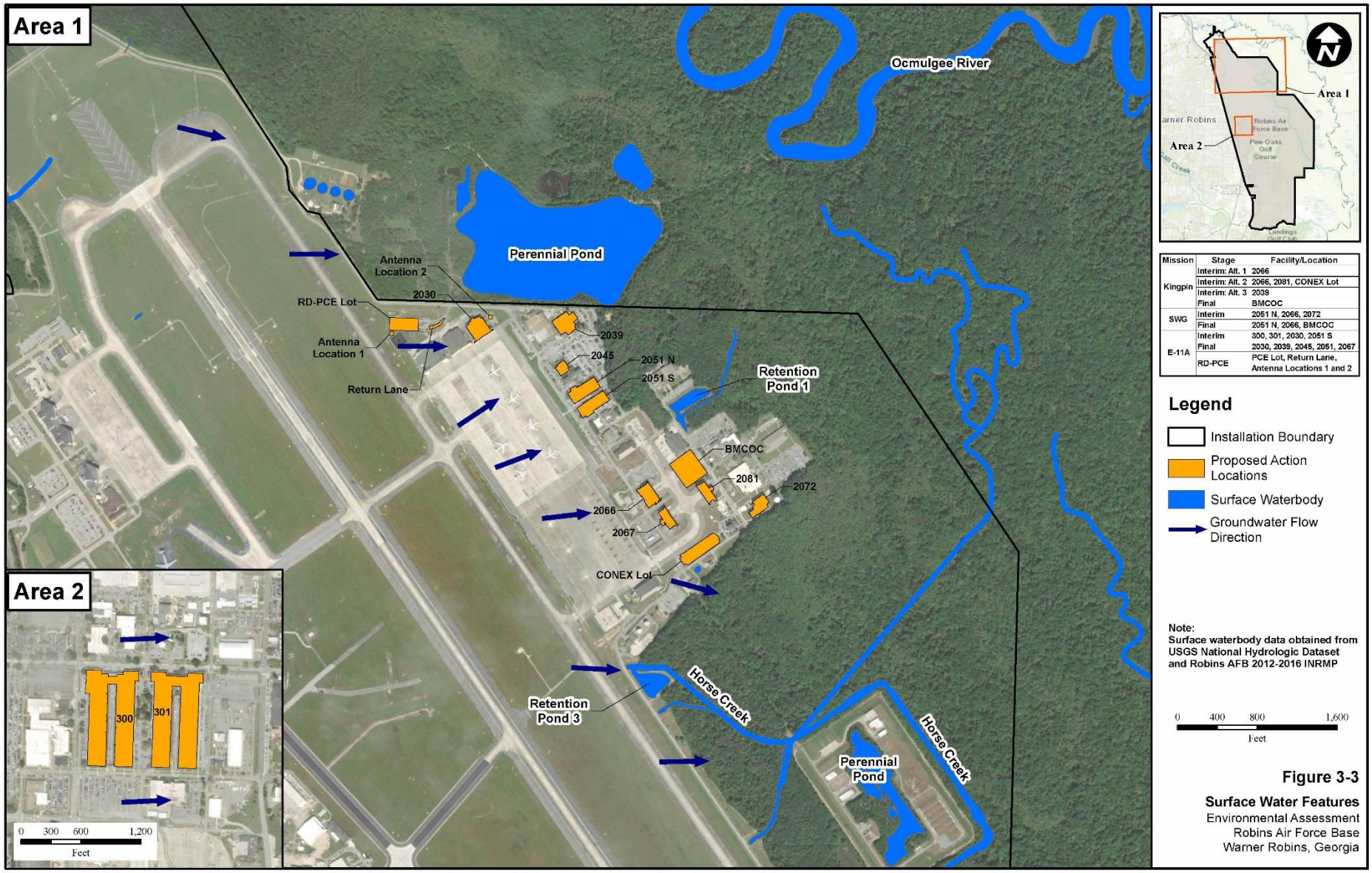


Figure 3-3

Surface Water Features
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

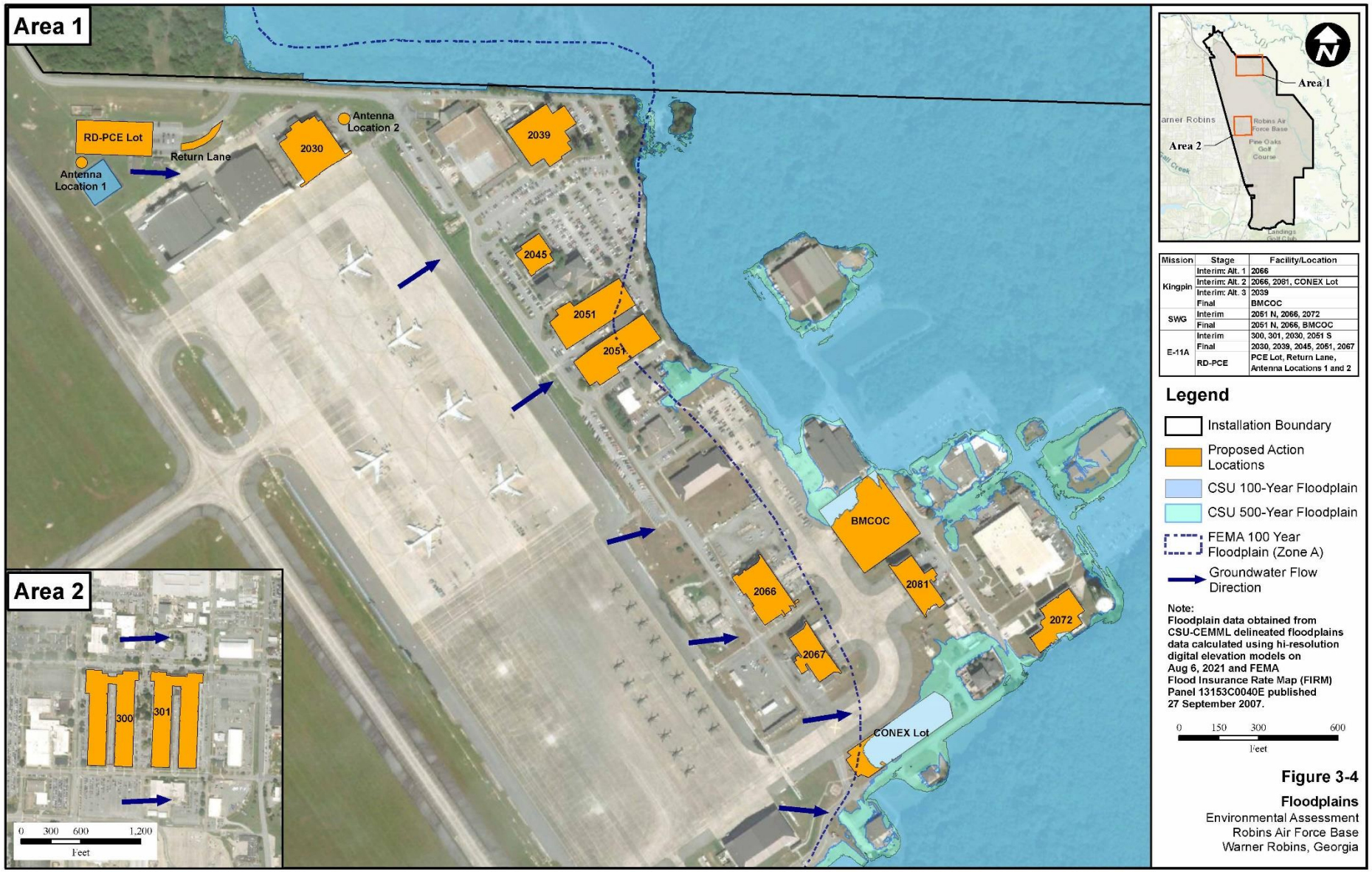


Figure 3-4

Floodplains
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

3.4.1.3 Wetlands

Jurisdictional Waters as defined by 40 CFR Section 120.2(1), include: the territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide; tributaries; lakes and ponds, and impoundments of jurisdictional waters; and adjacent wetlands. As required under Section 404 of the Clean Water Act, the wetlands were delineated using the routine methods described in the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (USACE, 1987) (Manual) and the USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) (USACE, 2010) (Regional Supplement). Delineation criteria and indicators for each of these parameters are outlined in the Manual and the Regional Supplement. The Regional Supplement presents wetland indicators, delineation guidance, and other information that is specific to the Atlantic and Gulf Coast Plain Region. Wetlands are classified according to the USFWS National Wetland Inventory on the basis of vegetation type, topography, and hydrologic regime.

There are approximately 2,250 acres of delineated wetlands located within the boundaries of the Base, occupying approximately 32 percent of the Base. The Palustrine wetland system, one of the five major wetland systems recognized by the USFWS, is dominant at Robins AFB. Palustrine wetlands are shallow, standing-water marsh environments that include swamps and bogs. Wetlands within the Base are depicted on **Figure 3-5**. Wetlands in the project vicinity, as shown on **Figure 3-5**, would be considered jurisdictional wetlands by USACE. Dominant species of vegetation identified in wetlands adjacent to the Proposed Action areas include sweetbay (*Magnolia virginiana*), redbay (*Persea borbonia*), blackgum (*Nyssa sylvatica*), sweetgum, red maple (*Acer rubrum*), and water oak (*Quercus nigra*) (Robins AFB, 2016). These wetlands typically occur in undeveloped areas and are predominantly classified as broad-leaved deciduous, forested wetlands associated with the Ocmulgee River floodplain. Some of these wetlands are located in areas adjacent to the runways and taxiways. There are no wetlands located within the Proposed Action areas.

Figure 3-5

Wetlands
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

3.4.1.4 Stormwater

The stormwater management system at Robins AFB consists of storm drain pipes, culverts, ditches, channels, swales, and detention basins, to convey: (i) runoff generated from the Base; and (ii) runoff conveyed on to the Base from the city of Warner Robins. The runoff from the city of Warner Robins enters the Base at 13 influent locations along GA-247, three of which convey substantial inflow volumes. Runoff captured by the stormwater management system generally flows from west to east across Robins AFB, ultimately discharging to outfalls into Echeconnee Creek on the north, Horse Creek, and the wetlands of the Ocmulgee River floodplain on the east, or Sandy Run Creek on the south. Many discharge points to these waterbodies are located near the perimeter of the Base and include culverts that convey overland flow under roads and taxiways and weir outlet structures on detention basins that collect flows from the storm drain system network.

Stormwater at the Base is managed under multiple National Pollutant Discharge Elimination System (NPDES) permits, including:

- Robins AFB NPDES Permit No. GA0002852 for discharges of industrial wastewater (Wastewater Permit), expiring June 30, 2023;
- NPDES General Permit No. GAR050000 for Stormwater Discharges Associated with Industrial Activity (Industrial General Permit), expiring May 31, 2027;
- NPDES General Permit No. GAG480000 for Stormwater Discharges Associated with Small Municipal Separate Storm Sewer Systems (MS4s) at Military Facilities (MS4 Permit), expiring January 14, 2024; and
- NPDES General Permits for Stormwater Discharges Associated with Construction Activity for Stand Alone Construction Projects (GAR100001), Infrastructure Construction Projects (GAR100002), and Common Developments (GAR100003) (Construction Permits), all expiring July 31, 2023.

For construction stormwater, NPDES Permit GAR100001 would be the applicable permit for the proposed action.

The Energy Independence and Security Act of 2007 Section 438 (42 USC §17094) and 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. The proposed alternatives would exceed the 5,000 sf threshold and would be subject to the requirements of Section 438.

3.4.1.5 Groundwater and Water Supply

Regional groundwater flow at the Base is typically from west to east toward the Ocmulgee River floodplain. Though each is not everywhere present, the following principal hydrogeologic units underlie Robins AFB, listed sequentially by depth starting at the ground surface:

- surficial aquifer;
- Quaternary alluvial aquifer;

- upper Providence aquifer;
- lower Providence aquifer;
- Cusseta aquitard; and
- Blufftown aquifer.

Much of Robins AFB is situated atop an important area of groundwater recharge as defined by the Most Significant Groundwater Recharge Areas of Georgia (Davis et al., 1989). Groundwater depth within the boundaries of the Base varies from within a foot of surface elevation within the boundaries of the jurisdictional wetlands and floodplains to up to approximately 20 to 30 feet below ground surface elevation in the upland areas.

Potable and process water is produced from the Blufftown aquifer using water supply wells at the Base. The Blufftown aquifer, comprised of the Eutaw-Blufftown geologic formation, forms an exceptionally thick unit (thought to exceed 350 ft of productive aquifer). The reported yield of some of the production wells is more than 1,000 gallons per minute (gpm). The upper surface of the unit outcrops in the Echeconnee Creek area northwest of the Base, but it is estimated to dip to nearly 400 ft below ground surface at the southern boundary of the Base.

Groundwater contamination has been identified at Robins AFB within the surficial, alluvial, and Providence aquifers. Perfluorinated hydrocarbons, commonly found in fire-fighting foam, were detected in three shallow groundwater monitoring wells in 2018. Contaminant levels were detected below the USEPA's 2016 interim health advisory of 70 parts per trillion (ppt). The USEPA has since updated the advisory limits for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), two members of the PFAS chemical group, to 0.004 ppt and 0.02 ppt respectively. While detections fall within the new limits, the contaminated wells are not associated with the drinking water obtained from the deeper Blufftown aquifer, and therefore do not pose a risk to groundwater resources. The Base conducts groundwater monitoring and remedial activities in accordance with Corrective Action Plans approved by GADNR, GAEPD or the Record of Decision approved by the USEPA.

The Base maintains a Community Water System to: (i) supply safe drinking water; (ii) support the Base's mission-related activities; and (iii) provide fire protection water. The system is operated under Georgia Permit No. 1530042 (Robins AFB, 2020). By operating in compliance with permit requirements, the Base ensures that it meets both federal and state Safe Drinking Water Act requirements. Six active water supply wells installed in the Blufftown Aquifer are operated to provide potable water; a seventh well is used to supply water to Luna Lake. Each of the wells are capable of producing between 900 and 1,510 gpm (Gordon, 2013). Groundwater withdrawn from the Blufftown Aquifer has already undergone a natural filtration process as it travels through the aquifer. Each groundwater well also has its own treatment system where water is continuously treated to ensure safety and quality of the water supply prior to distribution on Base through the water supply system. Groundwater treatment includes the use of sodium hypochlorite for disinfection, phosphorus for corrosion control, soda ash for pH control, and fluoride for its benefits to human health (Robins AFB, 2020b).

In addition to drinking water, the system also provides water for various uses including industrial processes and irrigation. The Robins AFB water system has a pumping capacity of 8 million gallons per day (MGD), a storage capacity of 1.5 million gallons (Robins AFB, 2020c), and is

currently permitted to withdraw up to 6.2 MGD (GAEPD, 2018). The system includes built-in redundancy and an automated monitoring system to ensure that potential issues are detected immediately (Gordon, 2013). The water usage at Robins AFB for 2020 was reportedly 499 million gallons or approximately 1.4 MGD, which is approximately 22 percent of the permitted maximum withdrawal (Robins AFB, 2020c).

Thirty aqueous film forming foam (AFFF) release areas on Robins AFB have been evaluated to determine whether Per- and Polyfluoroalkyl Substances (PFAS) are present above health advisory levels. Over two dozen areas, predominantly in the north of the installation in the vicinity of the flightline, had samples of groundwater, surface water, sediment, and/or soil media that exceeded screening levels (AFCEC, 2021).

3.4.2 Environmental Consequences

Proximity to water resources is provided in **Table 3-14** for reference in the following sections.

Table 3-14: Proximity to Nearest Water Resource

Mission	Facility/ Location	Surface Water		Floodplain		Wetland	
		Distance (ft)	Direction	Distance (ft)	Direction	Distance (ft)	Direction
Kingpin	Bldg. 2039	110	N	45	N	95	N
	Bldg. 2066	630	NE	400	NE	520	NE
	Bldg. 2081	530	N	415	SE	495	SE
	BMCOC	185	N	50	NE	350	NW
	CONEX Lot	60	SE	50	SE	200	SE
SWG	Bldg. 2051 N	715	E	100	NE	100	E
	Bldg. 2066	630	NE	400	NE	520	NE
	Bldg. 2072	715	SW	*	-	125	SE
	BMCOC	185	N	50	NE	350	NW
E-11A	Bldg. 300	2100	S	1900	S	6030	NE
	Bldg. 301	1890	S	1900	S	5450	NE
	Bldg. 2030	230	N	100	N	200	NE
	Bldg. 2051 S	600	E	60	NE	60	E
	Bldg. 2039	110	N	45	N	95	N
	Bldg. 2045	600	N	360	E	350	E
	Bldg. 2067	460	SE	480	SE	625	SE
	RD-PCE Lot	570	NE	17	S	570	NE
	Return Lane	380	NE	260	SW	350	NE
	Antenna Location 1	850	NE	15	SE	850	NE
	Antenna Location 2	210	NE	105	N	180	N

Notes: * = Floodplain boundary intersects with approximately 14 square feet of a covered area outside of Building 2072. Temporary use and renovations to Building 2072 would be entirely interior and no construction would take place in the floodplain.
CSU 100-year Floodplain Boundary utilized as reference.

3.4.2.1 Surface Waters and Water Quality

The BMCOC would be constructed upon an area that has been previously graded and built upon during the past history of the Base. Construction of the BMCOC would result in ground disturbance of approximately 1.8 acres of land, thus impacts to soil cannot be avoided. With construction projects there is potential for sediment, dust, oils, and other contaminants to impact construction stormwater runoff, adjacent surface waters, and water quality. Increases to impervious surfaces for building footprints and paved surfaces can also affect stormwater runoff quantities, surface waters, and water quality. The construction of the BMCOC would result in an increase of impervious surface of 1.7 acres; however, this increase is minimal as the BMCOC would be constructed in a formerly developed area that contained an aircraft hangar facility up until its demolition in 2017. Additional stormwater volumes generated by the 100-year storm event were estimated by using the Autodesk Hydroflow model. Based on the model results, the proposed BMCOC facility would generate approximately 26,500 cubic feet more runoff than the existing condition during the 100-year storm event. The BMCOC project would be designed to comply with Georgia Stormwater Management Manual standards and EISA Section 438 requirements, which require this additional runoff from the site be retained onsite for stormwater management. The BMCOC would include both above ground and below grade stormwater controls, which would collect and slow runoff during precipitation events and would assist in sediment capture prior to discharge. Design features could include green infrastructure or low impact development management approaches, such as stormwater and sediment management basins, inlet protection and baffles, mulch filter berms, slope stabilization, or other elements determined during the project design. The implementation of BMPs would minimize indirect impacts from the proposed action in compliance with Section 438 requirements.

Construction of the BMCOC would involve soil disturbances from grading and construction site preparation. The entire footprint of the BMCOC and proposed parking area, including the construction laydown area, may be subject to soil disturbances during development activities. The construction contractor would be required to secure permit coverage under the stormwater, NPDES Permit GAR100001 permit, which includes the requirement to develop, maintain, and adhere to an Erosion, Sedimentation and Pollution Control Plan. This plan would outline the specific BMPs to be implemented. Project construction methods would utilize BMPs to control soil erosion, sediment, oil, and other construction related contaminants from being conveyed to surface waters by stormwater runoff during facility construction and demolition activities and minimize direct impacts to surface waters. Specific BMPs to prevent erosion and surface water contamination could be silt fencing and wattles, compost filter berms and socks, sediment traps, straw or hay bales, and designated vehicle washing areas. Specific BMPs would be identified in the plan and adherence would be overseen by Robins AFB engineering and environmental personnel to minimize impacts to surface waters and water quality.

Distance of the proposed facility developments to the nearest surface water resource is shown in **Table 3-14**. As shown on Figure 3-3, permanent construction impacts associated with BMCOC construction would occur within approximately 185 feet from the nearest receiving surface waters. Although the proposed actions are within close proximity to surface waters, surface waters and water quality are not anticipated to be directly impacted, based on implementation of stormwater controls and BMPs discussed previously. Cumulatively among the Kingpin Mission Beddown,

Spectrum Warfare Group Activation, and E11-A Squadron Beddown, the total increase in stormwater runoff is expected to be approximately 30,000 cubic feet, from BMCOC and RD-PCE construction. Based on use of appropriate stormwater controls and BMPs, only negligible, insignificant adverse indirect impacts are anticipated to surface water or water quality as a result of the proposed action for construction of this alternative.

3.4.2.1.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. Temporary use of existing structures is not expected to affect water quality. BMCOC construction could create increases in stormwater runoff, as described above.

As described in **Section 3.4.2.1**, only insignificant adverse impacts are anticipated to surface water or water quality as a result of the proposed action for construction of the temporary and new permanent facilities.

Facility Alternative 2: An existing parking lot would be utilized for placement of 15 CONEX structures. Building 2081 would be renovated and space would be utilized in Building 2066, and an existing parking lot along Beale Drive would be used for CONEX operations. The BMCOC would be constructed between Buildings 2063 and 2081. Temporary use of existing structures is not expected to affect water quality. BMCOC construction could create increases in stormwater runoff, as described above. Surface water and water quality impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (insignificant adverse impacts).

Facility Alternative 3: The Kingpin Mission would temporarily utilize Building 2039, which is currently available and unoccupied, and would result in the BMCOC constructed between Buildings 2063 and 2081. Building proximities to surface waters is described in **Table 3-14**. Surface water and water quality impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (insignificant adverse impacts).

3.4.2.1.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. The implementation of BMPs would minimize impacts from the proposed action in compliance with Section 438 requirements. Temporary use of existing structures is not expected to affect water quality. BMCOC construction could create increases in stormwater runoff, as described above.

Only insignificant adverse impacts are anticipated to surface water or water quality as a result of the proposed action for construction under this alternative, as described in **Section 3.4.2.1**.

3.4.2.1.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036. Construction of the RD-PCE Yard would result in ground disturbance of approximately 1.6 acres of land; thus, impacts to soil cannot be avoided. As the project area is over 5000 sf, BMPs would be

implemented to minimize indirect impacts from the proposed action in compliance with Section 438 requirements.

Temporary use of existing structures is not expected to affect water quality. The construction of the RD-PCE Yard would result in an increase of impervious surface; however, this increase is minimal (approximately 0.2 acres) as the new yard would be constructed mostly within a formerly developed parking area. The expected increase from stormwater runoff is expected to be 3,500 cubic feet, which would be collected within the RD-PCE Yard development footprint. Only insignificant adverse impacts are anticipated to surface water or water quality as a result of the proposed action for construction under this alternative.

3.4.2.1.4 No-Action Alternative

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

3.4.2.2 Floodplains

The Ocmulgee River floodplain adjacent to the base is part of a 2,900 square mile watershed, and the base itself has 2,233 acres of floodplains. The distance of the proposed facility developments to the nearest CSU 100- and 500-year floodplain boundary is shown in **Table 3-14**. The BMCOC is located approximately 50 feet from the CSU 100-year floodplain and, therefore, would not directly impact the 100-year floodplain. The proposed project would result in approximately 1.7 acres of additional impervious area, which would generate an additional 26,500 cubic feet of stormwater volume during the 100-year storm event. This additional impervious area is negligible when compared to the total impervious area at Robins AFB and the overall Ocmulgee River watershed size. The BMCOC design and site construction would include both above ground and below grade stormwater drainage controls, which would collect and slow runoff during precipitation events. The BMCOC project would be designed to comply with Georgia Stormwater Management Manual standards and EISA Section 438 requirements, which require the additional runoff from the site be retained onsite for stormwater management. The minimal amount of stormwater generated from additional impervious areas would be retained onsite and would not increase local flood risk or change flood elevations at Robins AFB. Therefore, the proposed project would result in negligible, insignificant adverse indirect impacts to the 100-year floodplain.

Direct impacts to the 500-year floodplain are expected from project implementation, as approximately 0.26 acres of the BMCOC facility would be located within the 500-year floodplain. However, this site was a previously developed, impervious area with an aircraft hangar facility until it was demolished in 2017, so this additional 0.26 acres of development within the 500-year floodplain would not change the historic or current hydrological properties at Robins AFB or the Ocmulgee River floodplain. Therefore, the proposed project would result in minor, insignificant direct impacts to the 500-year floodplain.

3.4.2.2.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. These areas are not located within the CSU 100-year floodplain. The proposed alternative would have no direct impacts to the CSU 100-

year floodplain, and indirect adverse impacts to the CSU 100-year floodplain would be negligible. Approximately 0.26 acres of the BMCOC facility would be located within the CSU 500-year floodplain, resulting in minor adverse direct impacts. Although the BMCOC would result in approximately 1.8 acres of development, of which roughly 1.7 acres would be impervious, the additional stormwater runoff volume (26,500 cubic feet) would be collected and managed to not result in a change in flood elevations. The proposed parking area would be managed according to these same standards.

Facility Alternative 2: An existing parking lot would be utilized for placement of 15 CONEX structures. Building 2081 would be renovated and space would be utilized in Building 2066, and an existing parking lot along Beale Drive would be used for CONEX operations. Approximately 0.98 acres of the CONEX area is located within the CSU 500-year floodplain, which would result in temporary and negligible adverse direct impacts while the lot is in use for storage. The proposed alternative would have the same negligible adverse indirect impacts to the 100-year floodplain and minor adverse direct impacts to the 500-year floodplain as Facility Alternative 1.

Facility Alternative 3: The Kingpin Mission would utilize Building 2039, which is currently available and unoccupied. The proposed alternative would have the same negligible adverse indirect impacts to the 100-year floodplain and minor adverse direct impacts to the 500-year floodplain as Facility Alternative 1.

3.4.2.2.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. The BMCOC facility would have the same negligible adverse indirect impacts to the 100-year floodplain and minor adverse direct impacts to the 500-year floodplain as explained in the Kingpin alternative. Additionally, a covered area outside of Building 2072 is within the CSU 100-year and 500-year floodplain located southeast of the existing building. Temporary use and renovations to Building 2072 would be entirely interior and no construction would take place, so no additional impacts are expected to designated floodplain areas.

3.4.2.2.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036. These areas are not located within floodplains. The BMCOC facility would have the same negligible adverse indirect impacts to the 100-year floodplain and minor adverse direct impacts to the 500-year floodplain as explained in the Kingpin alternative.

3.4.2.2.4 No-Action Alternative

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

3.4.2.3 Wetlands

3.4.2.3.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. These areas are not located within wetlands, and the nearest wetland is approximately 350 feet from the BMCOC site. Although the BMCOC would result in approximately 1.8 acres of development, of which roughly 1.7 acres would be impervious, the additional stormwater runoff (26,500 cubic feet) would be collected and managed within the BMCOC development footprint. The BMCOC would include both above ground and below grade stormwater controls, which would collect and slow runoff during precipitation events and would assist in sediment capture prior to discharge. The minimal amount of additional stormwater reaching adjacent wetlands would not change wetland functions or values. The proposed alternative would have no direct or indirect effects to wetland areas.

Facility Alternative 2: An existing parking lot would be utilized for placement of 15 CONEX structures. Building 2081 would be renovated and space would be utilized in Building 2066. The BMCOC would be constructed between Buildings 2063 and 2081. These areas are not located within wetlands. However, the proposed CONEX lot (which would be used temporarily for storage) is located approximately 150 feet from wetlands along Beale Drive. Erosion and sedimentation control during any construction activities (utility trenching) would be required to minimize sediment runoff to wetland areas. The minimal amount of additional stormwater reaching adjacent wetlands would not change wetland functions or values. Based on these minimization activities, the proposed alternative would have no effect to wetland areas.

Facility Alternative 3: The Kingpin Mission would utilize Building 2039, which is currently available and unoccupied, and would result in the BMCOC constructed between Buildings 2063 and 2081. The minimal amount of additional stormwater reaching adjacent wetlands would not change wetland functions or values. Similar to Facility Alternative 1 and 2, the proposed alternative would have no effect to wetland areas.

3.4.2.3.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. These areas are not located within wetlands, although Building 2072 is adjacent to a wetland system located southeast of the existing building. Renovations made to accommodate the SWG in this building would be entirely interior, and no impacts to the nearby wetlands are anticipated. Similar to the Kingpin Mission Beddown, construction of the BMCOC could create increases in stormwater runoff. The minimal amount of additional stormwater reaching adjacent wetlands would not change wetland functions or values. The proposed alternative would have no direct or indirect effects to wetland areas.

3.4.2.3.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-

PCE Yard would be located on an existing parking lot adjacent to Building 2036. The expected increase from stormwater runoff is expected to be 3,500 cubic feet. The minimal amount of additional stormwater reaching adjacent wetlands would not change wetland functions or values. The proposed antenna location alternatives are 850 feet and 180 feet, respectively, from the nearest wetland, so neither alternative would impact wetlands. The proposed alternative would have no effect to wetland areas.

3.4.2.3.4 No-Action Alternative

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

3.4.2.4 Stormwater

The Wastewater Permit covers discharges from stormwater runoff, groundwater seepage, noncontact cooling water and cooling tower blowdown, and discharges from oil/water separators, as well as discharges from the wastewater treatment plants. The Industrial General Permit covers stormwater discharges associated from industrial activity in areas of the Base not covered by the Wastewater Permit. The MS4 Permit covers discharges from point sources in areas with municipal type operations. Because the proposed actions focus on industrial activities within the project area, the MS4 Permit is not discussed further herein. The alternatives would require greater than one acre of ground disturbance, so these alternatives would require appropriate stormwater construction permits. As mentioned in **Section 3.4.1.4**, NPDES Stormwater Construction Permit GAR100001 would be the most applicable for the work proposed. Cumulatively among the Kingpin Mission Beddown, Spectrum Warfare Group Activation, and E11-A Squadron Beddown, the total increase in stormwater runoff is expected to be approximately 30,000 cubic feet, from BMCOC and RD-PCE construction.

3.4.2.4.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. Construction of the temporary and BMCOC would result in ground disturbance of approximately 1.8 acres of land, and the parking area would occupy approximately 3.4 acres the existing aircraft taxiway; therefore, coverage under an NPDES Construction Permit would be required. The expected increase from stormwater runoff is expected to be 26,500 cubic feet, which would be collected within the BMCOC development footprint. The BMCOC would include both above ground and below grade stormwater controls, which would collect and slow runoff during precipitation events and would assist in sediment capture prior to discharge.

Soil disturbance would be limited to the extent practicable to the footprints of the new structures. As discussed in **Section 3.4.1.4**, stormwater at the Base is managed under multiple NPDES permits. When required by a permit, stormwater management plans have been developed pursuant to the permit requirements and provisions. The plans identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater and to document BMPs and erosion and sediment control measures implemented at the facility to prevent or minimize the contamination of stormwater discharges by potential pollutant sources.

Operations conducted at the facilities would not require modification to the Wastewater or Industrial General Permits discussed in **Section 3.4.1.4**. Therefore, only insignificant adverse impacts are anticipated to water resources and the environment due to stormwater as a result of the proposed action. No indirect impacts are anticipated.

Facility Alternative 2: An existing parking lot would be utilized for placement of 15 CONEX structures. Building 2081 would be renovated and space would be utilized in Building 2066, and an existing parking lot along Beale Drive would be used for CONEX operations. The BMCOC would be constructed between Buildings 2063 and 2081. Stormwater impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (insignificant adverse impacts).

Facility Alternative 3: The Kingpin Mission would temporarily utilize Building 2039, which is currently available and unoccupied, and would result in the BMCOC constructed between Buildings 2063 and 2081. Stormwater impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (insignificant adverse impacts).

3.4.2.4.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066.

Stormwater at the Base is managed under multiple NPDES permits, and operations conducted at the facilities would not require modification to the Wastewater or Industrial General Permits as discussed in **Section 3.4.1.4**. Therefore, only insignificant adverse impacts are anticipated to water resources and the environment due to stormwater as a result of the proposed action. No indirect impacts are anticipated.

3.4.2.4.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036. The construction of the RD-PCE Yard would result in an increase of impervious surface; however, this increase is minimal (approximately 0.2 acres) as the new yard would be constructed mostly within a formerly developed parking area. The expected increase from stormwater runoff is expected to be 3,500 cubic feet, which would be collected within the RD-PCE Yard development footprint.

Stormwater at the Base is managed under multiple NPDES permits, and operations conducted at the facilities would not require modification to the Wastewater or Industrial General Permits as discussed in **Section 3.4.1.4**. Therefore, only insignificant adverse impacts are anticipated to water resources and the environment due to stormwater as a result of the proposed action. No indirect impacts are anticipated.

3.4.2.4.4 No-Action Alternative

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

3.4.2.5 Groundwater and Water Supply

As discussed in **Section 3.4.1.5**, groundwater from multiple wells sampled in the proposed action area has PFOA and PFOS concentrations above the updated USEPA advisory limits. Surface water and groundwater flows easterly and is intercepted by the Ocmulgee River floodplain and wetlands located to the east and southeast of the installation. There are no drinking water wells within 4 miles and downgradient of Robins AFB that would be impacted by PFAS contaminated groundwater originating from the installation (AFCEC, 2021). There are no pathways for surface water or surficial groundwater to reach off-installation drinking water wells, therefore no direct or indirect impacts to groundwater and groundwater supply are expected.

3.4.2.5.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. Temporary use of existing buildings would not require significant excavation, well installation, or new groundwater withdrawal. Construction of the BMCOC is proposed for an area that has been previously graded and built upon during the past history of the Base. The proposed parking area would occupy 3.4 acres of existing impervious surface on the abandoned taxiway. Construction is not anticipated to require new well installation or new groundwater withdrawal associated with the proposed action. Groundwater resources that currently exist below the project area could be temporarily affected if dewatering during construction is required. Dewatering could lower the water table in the immediate project area during construction, but the water table would be expected to return to normal levels shortly after construction.

Water supply resources that are currently used for the proposed action area would be utilized to service the water supply needs for the additional workload associated with the Kingpin Beddown (approximately 500 personnel maximum). Based on the 2020 1.4 MGD water demand and a 6.2 MGD permitted capacity, which is only 22 percent of the permitted maximum withdrawal, there is ample existing water supply at the Base to support the Proposed Action. Current personnel at the Base is approximately 23,000 (see **Section 3.10.1.1**), so even if the positions from the Proposed Action were all additive, it would be only a small portion of the total base personnel and would not result in more than a negligible increase (a few percent) to water withdrawal. Given the actual net change in personnel is projected to be approximately 34 personnel, there would be negligible direct long-term impacts on the water supply. No indirect impacts to water supply are expected.

Facility Alternative 2: Groundwater and water supply impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (short-term negligible direct impacts from dewatering during construction, no long-term direct or indirect impacts to groundwater; negligible direct impacts to water supply).

Facility Alternative 3: Groundwater and water supply impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (no impacts).

3.4.2.5.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066.

Temporary and permanent use of existing buildings would not require significant excavation, well installation, or new groundwater withdrawal. Construction is not anticipated to require new well installation or new groundwater withdrawal associated with the proposed action. As described above, BMCOC construction could result in short-term, negligible direct impacts from dewatering during construction, but no long-term direct or indirect impacts.

Water supply resources that are currently used for the proposed action area would be utilized to service the water supply needs for the additional workload associated with the SWG Activation (approximately 400 personnel). Similar to the Kingpin alternatives, this alternative would result in no more than a negligible increase to water withdrawal even when assuming 400 additional personnel. Given the actual net change in personnel is projected to be approximately 34 personnel, there would be negligible direct long-term impacts on the water supply. No indirect impacts to water supply are expected.

3.4.2.5.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036. Temporary and permanent use of existing buildings would not require significant excavation, well installation, or new groundwater withdrawal. Construction of the RD-PCE Yard is proposed within an area that has been previously graded and currently serves as a parking area.

An AFFF storage pond is located south of the RD-PCE Yard and to the southeast of Antenna Location 1. Groundwater in this area could potentially contain PFAS. Disposal of contaminated groundwater would be required to be disposed of per the most recent DAF PFAS disposal guidelines at the time of construction, a minor, insignificant adverse impact. Construction of the RD-PCE yard is not anticipated to require new well installation or new groundwater withdrawal associated with the proposed action. Groundwater resources that currently exist below the project area would remain unaffected by the proposed action. The proposed action would not directly or indirectly impact groundwater because implementation would not result in construction that could disturb this resource.

Water supply resources that are currently used for proposed action area would be utilized to service the water supply needs for the additional workload associated with the E-11A squadron beddown (approximately 378 personnel). Similar to the Kingpin alternatives, this alternative would result in no more than a negligible increase to water withdrawal even when assuming 378 additional personnel. Given the actual net change in personnel is projected to be approximately 34 personnel, there would be negligible direct long-term impacts on the water supply. No indirect impacts to water supply are expected.

3.4.2.5.4 No-Action Alternative

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

3.5 SAFETY AND OCCUPATIONAL HEALTH

3.5.1 Affected Environment

At Robins AFB, safety issues are those that directly affect the protection of human life and property, and principally involve aviation, munitions, and fire prevention. In addition, DAF personnel are protected by observing OSHA standards and AFIs, as well as the Robins AFB safety and RCRA requirements, as described in **Section 3.6**, Hazardous Materials/Waste.

A safe environment is one in which there is little to no potential for serious bodily injury or illness, death, or property damage, or the potential risk has been reduced to the maximum extent possible. Safety addresses the well-being, safety, and health of members of the public, contractors, and DAF personnel during project implementation, including demolition and construction, and also during subsequent operations and maintenance.

Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation include the presence of the hazard itself, together with the exposed and susceptible population. The degree of exposure depends primarily on the proximity of the hazard to the population. Hazardous activities can include construction, demolition, transportation, maintenance and repair activities, the creation of noisy environments, and certain military activities. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns. This analysis addresses the safety implications from construction/ renovation and transportation activities associated with the Proposed Actions. The safety-related ROI for this MPEA corresponds to the footprints of the individual Proposed Actions where construction, renovation, and operational activities would occur.

3.5.1.1 Construction/Renovation Safety

Occupational safety and health involve the protection of human life and property. Personnel would follow Environmental, Health and Safety Policy and Procedures and OSHA requirements. Any work on installation also would abide by Robins AFB's health and safety requirements as applicable.

3.5.1.2 Transportation Safety

Robins AFB is located within Houston County, Georgia. The county is traversed by Interstate 75, three U.S. highways, U.S. Route 41, U.S. Route 129, and U.S. Route 341 and several state routes. Major east-west state routes in the vicinity of the Base include Highway 247 to Warner Robins, State Route 96 with access to Bonaire, and State Route 11 to Perry. Other state routes include the north-south 7 and 49, and the east-west 26, 127 and 224.

Ground transportation within the Base is serviced by a network of roadways for vehicular transportation of personnel. Activities associated with the proposed action would occur within or near the existing buildings and/or their adjacent parking areas. These areas are served by a network of existing paved roads and parking areas.

Air transportation at Robins AFB is typically related to the WR-ALC Programmed Depot Maintenance (PDM) operations, to include Base aircraft arrivals and departures and maintenance test flights. Robins AFB has one runway, which is Georgia's largest runway at 12,001 ft long by 300 ft wide. In addition to the runway, the flight line area includes associated aprons, taxiways, and overruns. Operations area for the E-11A includes the existing airfield and taxiways at Robins AFB, which would be used to fly the aircraft into and out of the Base. E-11A aircraft operations would be similar to those already being performed by the JSTARS program.

The Kingpin Mission Beddown, SWG Activation, and E-11A Squadron Beddown would require approximately 500, 400, and 378 personnel to the base, respectively, for a total of 1,283 personnel. However, the net change in personnel would be an increase of approximately 34 personnel.

3.5.2 Environmental Consequences

3.5.2.1 Construction/Renovation Safety

3.5.2.1.1 Kingpin Mission Beddown

Facility Alternative 1. The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081.

During construction and renovation of proposed Kingpin facilities, construction safety would be an inherent priority. Robins AFB requires its contractors and heavy equipment operators to adhere to all applicable safety regulations and guidelines. Direct construction adverse impacts would be negligible, localized, and short-term. No indirect impacts are expected.

During construction, work will be scheduled to minimize any interruptions to utility services and avoid disturbance to on-base personnel. Also, any brief interruptions while switching from old infrastructure will be scheduled through the Base outage process to minimize potential impacts. There are no plans for extended durations of utility outages.

The BMCOC and associated parking area would be constructed to meet OSHA Standards and compatible with the applicable DoD, DAF, and Robins AFB design standards. Additionally, the new facilities would be compatible with the applicable DoD antiterrorism/force protection requirements per the UFC and comply with sustainable design principles as mandated by EO 13834, Efficient Federal Operations.

Facility Alternative 2. Safety impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (negligible short-term impacts).

Facility Alternative 3. Safety impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (negligible short-term impacts).

3.5.2.1.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066.

Construction safety, work scheduling, and utility outages during construction/renovation activities would adhere to all applicable safety regulations and guidelines. Direct adverse impacts would be negligible, localized, and short-term. No indirect impacts are expected.

The BMCOC would be constructed to meet OSHA Standards and compatible with the applicable DoD, DAF, and Robins AFB design standards, applicable DoD antiterrorism/force protection requirements, and sustainable design principles.

3.5.2.1.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036.

Construction safety, work scheduling, and utility outages during construction/renovation activities would adhere to all applicable safety regulations and guidelines. Direct adverse impacts would be negligible, localized, and short-term. No indirect impacts are expected.

The additional personnel would be required to follow DoD, DAF, OSHA, and RCRA regulations; by following these regulations and maintaining normal procedures, no long-term impacts are anticipated to safety at or near the WR-ALC operation area with the proposed action for E-11A operations.

3.5.2.1.4 No-Action Alternative

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

3.5.2.2 Transportation Safety

Temporary minor impacts would be expected for on-base parking and transportation during construction of the BMCOC and interim facility use for each of the proposed actions. Trenching would also have temporary, minor adverse impacts on parking and transportation at Robins AFB. Parking and transportation changes as a result of the proposed actions would follow base procedures for coordination. Approximately 190 parking spaces would occupy approximately 3.4 acres of the abandoned taxiway following completion of construction activities. This taxiway is not currently used as a primary point of access for nearby facilities, therefore no direct or indirect impacts to transportation safety are expected.

3.5.2.2.1 Kingpin Mission Beddown

Facility Alternative 1. The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081.

The campus in the vicinity of Kingpin Alternative 1 is serviced by a network of existing paved roadways. There would be a temporary increase in traffic from vehicles and equipment during construction. These activities would require the temporary employment of workers. Under Kingpin Alternative 1, temporary minor short-term direct adverse impacts are anticipated due to potential reroutes or road closures associated with the proposed construction and renovation. Negligible

long-term direct adverse impacts are anticipated as a result of additional workers and the resulting traffic. No indirect impacts are expected.

Once construction is completed, transportation patterns are expected to revert to pre-construction/renovation direction and frequency. Sufficient parking would be available in the new lot constructed as a part of the BMCOC and within nearby lots, and some parking lot rearrangement/restriping may be conducted if additional parking becomes necessary in the future.

Facility Alternative 2. Transportation safety impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (minor short-term and negligible long-term impacts).

Facility Alternative 3. Transportation safety from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (minor short-term and negligible long-term impacts).

3.5.2.2.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066.

The campus in the vicinity of the proposed SWG facilities is serviced by a network of existing paved roadways. There would be a temporary increase in traffic from vehicles and equipment during construction. These activities would require the temporary employment of workers. There may be temporary reroutes or road closures associated with the proposed construction and renovation, but these impacts would be minor and of short duration.

Once construction is completed, transportation patterns are expected to revert to pre-construction/renovation direction and frequency. Sufficient parking would be available in the new lot constructed as a part of the BMCOC and within nearby lots, and some parking lot rearrangement/restriping may be conducted if additional parking becomes necessary in the future. Similar to Kingpin Alternative 1, negligible long-term adverse impacts are anticipated to transportation as a result of additional workers and the resulting traffic. No indirect impacts are expected.

3.5.2.2.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036.

The campus in the vicinity of the proposed E-11 Squadron facilities is serviced by a network of existing paved roadways. There would be a temporary increase in traffic from vehicles and equipment during construction. These activities would require the temporary employment of workers. There may be temporary reroutes or road closures associated with the proposed construction and renovation, but these impacts would be minor and of short duration.

As the workload increases, transportation associated with aircraft, parts, and maintenance equipment would increase proportionally. The industrial complex of the operation area is serviced by a network of existing paved roadways. Negligible long-term adverse impacts are anticipated

to transportation as a result of additional workers and the resulting traffic. No indirect impacts are expected.

The increase in E-11A aircraft operations would result in increased activity on the existing roadways, airfield, and taxiways; however, these impacts are not expected to require modifications or improvements to existing roadways or construction of additional roadways at Robins AFB. Aircraft operations would be similar to those of the current JSTARS program, so no significant impacts are expected.

3.5.2.2.4 No-Action Alternative

The activities associated with the proposed alternatives are within or adjacent to existing buildings and/or their adjacent parking areas. These areas are served by a network of existing paved roads.

3.6 HAZARDOUS MATERIALS/WASTE

3.6.1 Affected Environment

3.6.1.1 Solid Waste

Solid wastes (municipal and industrial) are generated from all areas of Robins AFB, including housing, municipal operations, office complexes, industrial facilities, and construction/demolition areas. Solid waste is managed in accordance with the ISWMP that establishes an integrated approach to managing solid waste issues at Robins AFB. The approach includes source reduction, recycling, and disposal. Solid waste must be disposed of in accordance with Section 01560 Environmental Requirements, and the Robins AFB ISWMP. Reuse, recycling, and composting are strongly encouraged. Solid wastes destined for recycling are collected at various locations on Base in waste specific containers or can be turned in to the Qualified Recycling Program Building 987 Recycling Center or Building 1555 Scrap Yard.

3.6.1.2 Hazardous Materials and Waste

Hazardous materials on Robins AFB are stored and handled in accordance with OSHA regulations, 29 CFR 1910.1200(e) through (h), *Hazard Communication*. Hazardous materials management at DAF installations is established primarily by AFI 32-7002, *Environmental Compliance and Pollution Prevention*, which establishes procedures and standards that govern identification, authorization, and tracking of hazardous materials at DAF installations (DAF, 2020). 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 welfare or to the environment when released or otherwise improperly managed. Construction and operation of the proposed action would require use of hazardous materials under the action alternatives.

Annual Toxic Release Inventory (TRI) reporting is required by Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986, Public Law 99-499. Under EPCRA and SARA, facilities must report the quantity of routine and accidental releases of TRI chemicals, whether from one-time, small releases or large and catastrophic releases. Robins AFB submits this information to

the USEPA electronically on an annual basis. The calculation and submittal procedures are summarized annually in the TRI documentation.

The Base's Hazardous Material Management Plan (Robins AFB, 2015) supplements AFMAN 32-7002 and further details the process-based authorizing, procuring, issuing, and tracking of hazardous materials. Robins AFB has established a Hazardous Material Management Program (HMMP) Team and a hazardous material (HAZMAT) Cell. The HMMP Team and the HAZMAT Cell monitor and track HAZMAT issued to Robins AFB customers through the use of the Enterprise Environmental Safety and Occupational Health – Management Information System (EESOH-MIS) database. Robins AFB has procedures in place to ensure that all HAZMAT is approved for use on the Base before it can be purchased.

Robins AFB is a large quantity hazardous waste generator and operates under a RCRA Part B permit that covers two hazardous waste storage areas (i.e., Buildings 359 and 352). Storage up to 103,250 gallons of hazardous waste is permitted in these two buildings. Other points of hazardous waste generation include satellite accumulation and 90-day accumulation. Robins AFB also has multiple centralized hazardous material storage areas.

Hazardous waste is managed and disposed of under the RCRA *Standards Applicable to Generators of Hazardous Waste* (40 CFR Part 262), Georgia Rule 391-3-11, *Hazardous Waste Management*, Robins AFB's Hazardous Waste Management Plan (HWMP) (Robins AFB, 2021), and Robins AFB's Hazardous Waste Facility Permit [Hazard Waste Facility Permit HW-064(S)]. Universal waste is stored and handled in accordance with the *Standards for Universal Waste Management* (40 CFR Part 273).

There would likely be an increase in waste types due to the nature of the proposed mission changes and aircraft. The current Robins AFB RCRA permit may require modifications to meet the needs of the proposed mission set developments. Additionally, new satellite accumulation points may be necessary under the new permit.

Robins AFB Environmental Restoration Program (ERP) sites may also be affected by proposed activities. The ERP is used by the DAF 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.

3.6.1.3 Toxic Materials

Toxic materials (asbestos, lead-based paint, polychlorinated biphenyls (PCBs), etc.) are regulated under the Toxic Substance Control Act, as promulgated by the USEPA. All identified and potential asbestos containing materials, lead-based paints, and PCB-containing materials at Robins AFB are addressed and managed in accordance with applicable state and federal regulations. Construction and renovation activities in older buildings and infrastructure could result in the generation of toxic wastes (including refrigerants, mercury, asbestos, and lead-based paint). These toxic wastes would be removed, managed, and disposed of prior to and/or during the demolition in accordance with their respective management plans. The presence of any on-site toxic materials would be addressed as part of construction and demolition efforts.

3.6.2 Environmental Consequences

3.6.2.1 Solid Waste

Construction and renovation under the three proposed mission sets would generate minimal solid waste, and any solid waste generated during construction and renovation would be appropriately recycled or disposed at an appropriately permitted disposal facility. Construction and demolition wastes would be managed in accordance with the Base Integrated Solid Waste Management Plan. Additionally, scrap metals generated during construction and demolition activities would be recycled through the Base Qualified Recycling Program, as possible. Other waste materials, such as asphalt or utility piping, would be separated for reuse and recycling to the extent possible. Existing above-ground piping or piping located within utility access pits would be removed, while below-ground piping would be evacuated, capped, and abandoned in place.

As discussed in **Section 3.6.1.1**, solid wastes that cannot be recycled are collected and transported to the Houston County Landfill for disposal. Houston County has committed to providing solid waste disposal services to Robins AFB and has adequate permitted municipal solid waste (MSW) and construction and demolition (C&D) capacity to handle the county's disposal needs for the foreseeable future, with an additional 200 acres set aside for planned future landfill expansion and borrow areas. Houston County owns 2588 acres of land set aside for solid waste disposal. This landfill receives an average daily tonnage of 354 tons/day and has a 220 year capacity (until 2240) under current tonnage (GAEPD, 2020). 200 acres are currently permitted for landfilling of Municipal Solid Waste. An additional 200 acres have been set aside for waste reduction technologies and additional landfilling, of which 50 acres are permitted for landfilling of C&D waste. 200 acres have been set aside for future landfill expansions and borrow areas. The Houston County Landfill has adequate MSW and MSW and C&D capacity permitted and planned to handle the county's waste for the foreseeable future.

Solid waste would be generated from the construction, renovation, and operation of the action alternatives. Cumulative effects to the Houston County Landfill capacity would be minimal given the low solid waste generation associated with the renovation and construction activities associated with the proposed action.

3.6.2.1.1 Kingpin Mission Beddown

Facility Alternative 1. The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. BMCOC parking areas would be constructed on approximately 3.4 acres of abandoned taxiway south of the proposed BMCOC.

There would be negligible short-term direct impacts on solid waste generation and disposal as a result of Kingpin Alternative 1 based on an increase of solid waste generated during construction and renovation activities. Additional solid waste generated as a result of the beddown operation would result in negligible long-term adverse impacts. No indirect impacts are expected.

Facility Alternative 2. Solid waste impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (negligible short-term and long-term adverse impacts).

Facility Alternative 3. Solid waste impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (negligible short-term and long-term adverse impacts).

3.6.2.1.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. BMCOC parking areas would be constructed on approximately 3.4 acres of abandoned taxiway south of the proposed BMCOC.

There would be negligible short-term or long-term adverse impacts on solid waste generation and disposal as a result of the Proposed Action based on an increase of solid waste generated during construction and renovation activities. No indirect impacts are expected.

3.6.2.1.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036.

The proposed addition of six E-11A aircraft would generate solid waste during aircraft maintenance operations, however the majority of waste generated would be hazardous waste. Solid waste generated would be associated with the general trash items disposed by the workers (e.g., food, paper, plastic, etc.). Solid waste would be handled and managed in accordance with the Base's ISWMP.

There would be negligible short-term or long-term adverse impacts on solid waste generation and disposal as a result of the Proposed Action based on an increase of solid waste generated during construction and renovation activities. No indirect impacts are expected.

3.6.2.1.4 No-Action Alternative

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

3.6.2.2 Hazardous Materials and Waste

All fuels and other hazardous materials associated with the proposed actions would be stored and used in compliance with the regulations and procedures already in place at Robins AFB. Disposal of hazardous waste would be conducted in accordance with applicable regulations and in compliance with Robins AFB's HWMP. No new waste streams or increases to existing waste streams are expected under the three proposed mission sets. Management and recycling of any wastes from proposed buildings would be managed per Robins AFB HWMP as appropriate. No new waste accumulation points would be required for storage, and waste storage exceedances of the current allotted volume of 103,250 gallons would not be expected.

Hazardous waste from construction and renovation activities would be managed and disposed of in a manner consistent with the most current HWMP. By maintaining normal procedures via compliance with the management and operations plans and Robins AFB Specification 01560, Environmental Requirements, only negligible short-term adverse impacts are anticipated. Construction, renovation, and generator maintenance under the proposed actions have the

potential to produce very small amounts of hazardous waste above the current waste levels, which would result in negligible long-term impacts to hazardous waste generation and disposal.

As shown in **Figure 3-6**, several elements under the proposed action are located near existing ERP sites at Robins AFB. ERP sites in the proposed action area are described in **Table 3-15**.

Table 3-15: ERP Sites Near Proposed Action Area

SWMU/ AOC	Solid Waste Management Unit (SWMU) / Area of Concern (AOC) Description	ERP/ MMRP #	Corrective Action Status
16	Well No. 8 TCE Contamination	OT016	NFA
21	Corrosion Control Facility at Bldg. 80	OT021	NFA
33	SAC Drum Site	AOC1	NFA
46	Vehicle Steam Cleaning Area at B 319	CG504	NFA
63	Test Firing Range For M61 20mm Guns	OT038	NFA
73	Bldg. 325 - Old DRMO Haz Waste Container Storage	N/A	NFA
76	Bldg. 2076 Heating Oil Underground Storage Tank	N/A	NFA

Note: NFA = No Further Action; DRMO = Defense Reutilization and Marketing Office; MMRP = Military Munitions Response Program; TCE = Trichloroethylene

The following information is available for ERP sites at Robins AFB:

SWMU/AOC 16 – Trichloroethylene (TCE) contamination detected at ERP site OT16 was identified to originate upgradient from the site. Concentrations were not detected at levels exceeding Maximum Contaminant Levels (MCLs) in soil or groundwater. Robins AFB recommended the site be closed and removed from the Robins AFB ERP list and Hazardous Waste Facility Permit No. HW-064(S) (Robins AFB, 1991). The Georgia GADNR concurred with Robins AFB, recommending no further action (NFA), and that the site be closed since analytical data indicated no soil or groundwater contamination above detected limits (GADNR, 1996a).

SWMU/AOC 21 – GADNR recommended no further action, and that the site be closed since analytical data indicated no soil or groundwater contamination above detected limits (GADNR, 1996a).

SWMU/AOC 33 – GADNR identified that soil contamination attributed to the AOC33 site were consistent with background concentrations. Detected pesticide concentrations were attributed to routine insect spraying operations. GADNR concurred with the Robins AFB recommendation that no further action is identified at the site (GADNR, 1996b).

SWMU/AOC 46, 63, 73, and 76 – No site history was available for these SWMUs/AOCs; however, the sites are listed under the 2018 Hazardous Waste Facility Permit No. HW-064(S)-4 as having received a no further action letter from GADNR (GADNR, 2018).

All ERP sites within close proximity to the proposed action area have received confirmation of no further action. Therefore, no adverse impacts are expected due to proximity to ERP sites.

3.6.2.2.1 Kingpin Mission Beddown

Facility Alternative 1. The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. BMCOC parking areas would be constructed on approximately 3.4 acres of abandoned taxiway south of the proposed BMCOC. The facility operation would result in very small amounts of hazardous waste above the current waste levels.

As described in **Section 3.6.2.2**, negligible long-term impacts to hazardous waste generation and disposal are expected. The proposed actions have the potential to temporarily produce very small amounts of hazardous waste above the current waste levels, which would result in negligible short-term impacts to hazardous waste generation and disposal. No indirect impacts are expected.

Facility Alternative 2. Hazardous materials and waste impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (negligible short-term adverse impacts).

Facility Alternative 3. Hazardous materials and waste impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (negligible short-term adverse impacts).

3.6.2.2.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. The facility operation would result in additional solid waste generation.

No new waste streams or significant increases to existing waste streams are expected during the SWG Activation. Construction, renovation, and generator maintenance under the proposed action has the potential to produce very small amounts of hazardous waste above the current waste levels, which would result in negligible long-term impacts to hazardous waste generation and disposal. No indirect impacts are expected.

3.6.2.2.3 E-11A Squadron Beddown

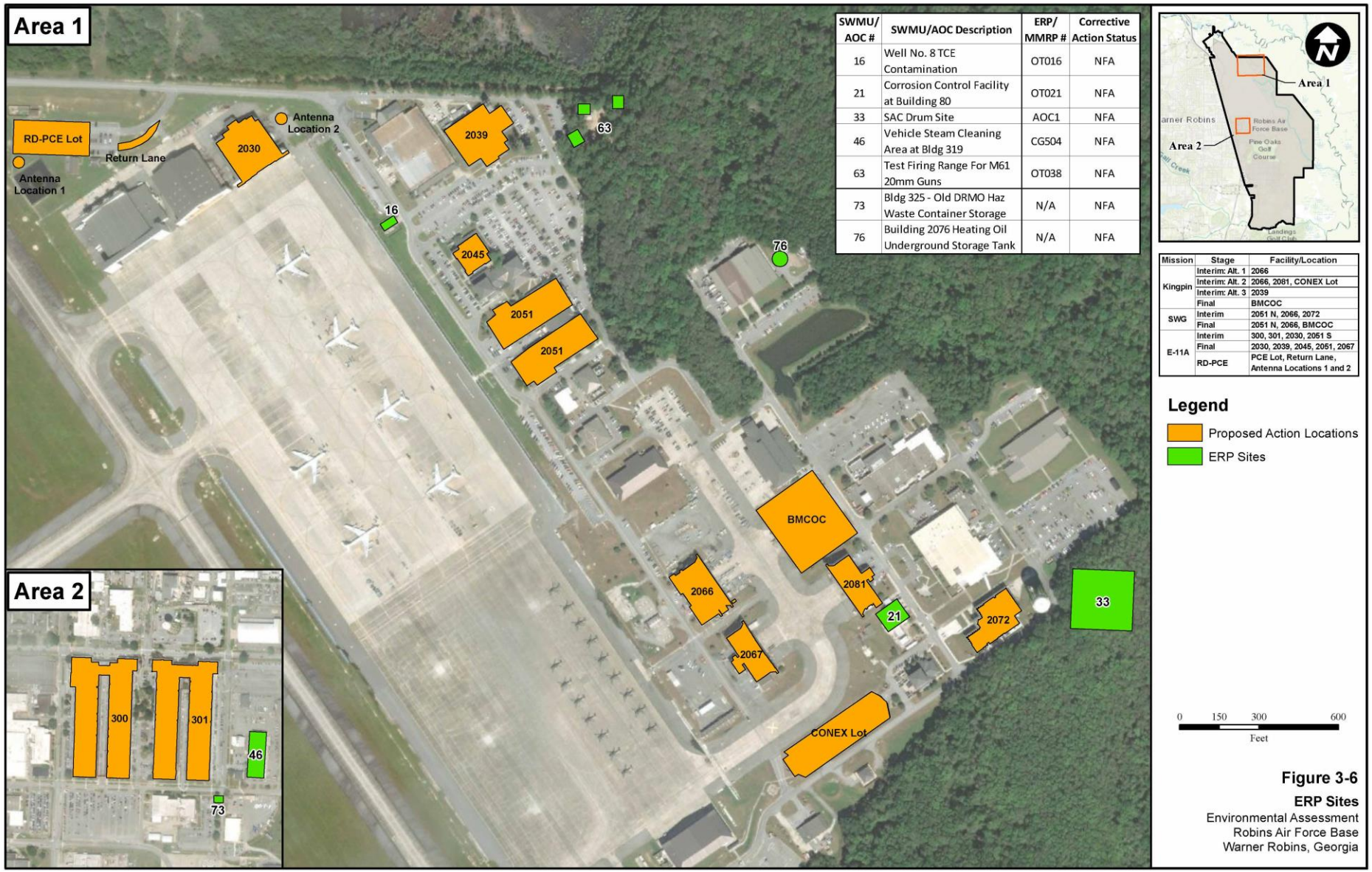
The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036. The activities associated with the proposed mission alternatives would generate hazardous waste during the construction of the RD-PCE yard and renovations of Buildings 2030, 2039, 2045, 2067, 2051 south, and Building 300 or 301. Construction of the RD-PCE lot would require installation of generators, which would utilize hazardous materials in the form of natural gas. Fuel would be stored within the generators and external holding areas in accordance with Robins AFB programs and procedures. By maintaining normal procedures via compliance with the management and operations plans and Robins AFB Specification 01560, *Environmental Requirements*, only negligible short-term adverse impacts are anticipated to the environment related to construction and renovation

The addition of six E-11A aircraft would require the use of hazardous materials. Hazardous materials that would be used to support flight operations and maintenance activities associated with the E-11A beddown are materials already handled at Robins AFB, such as jet fuel, lubricants,

solvents, degreasers, paints and primers, hydraulic fluid, air conditioning coolant, and batteries (Wieher, 2002). Procedures are currently in place to accommodate storage, management, and disposal of these materials. Robins AFB has historically utilized these materials in maintenance operations for the 16 JSTARS aircraft, which are retiring in 2022 through 2024, and usage resulting from the E-11A Squadron Beddown would be less than these baseline levels. Additionally, aircraft hazardous materials are managed according to the HAZMAT Management Plan, and the amount of materials that would be utilized to support the operations of six E-11A aircraft would be negligible compared to the amount used at the base for its existing aircraft maintenance operations. Robins AFB has established goals for reducing hazardous materials on the TRI Chemical List that would reduce overall hazardous waste generation rates. Robins AFB is continually evaluating hazardous waste reduction opportunities through periodic evaluations of each process to identify changes or new technologies and/or procedures that would reduce hazardous waste generation. Only insignificant adverse impacts are anticipated to the environment at or near the operation area from hazardous waste generation as a result of the proposed action for the E-11A Squadron Beddown. No indirect impacts are expected.

3.6.2.2.4 No-Action Alternative

Under the no-action alternative, hazardous material or waste usage and generation would remain. The no-action alternative would result in no significant impacts to the environment at or near the E-11A Beddown operation area from hazardous materials usage.



SWMU/ AOC #	SWMU/AOC Description	ERP/ MMRP #	Corrective Action Status
16	Well No. 8 TCE Contamination	OT016	NFA
21	Corrosion Control Facility at Building 80	OT021	NFA
33	SAC Drum Site	AOC1	NFA
46	Vehicle Steam Cleaning Area at Bldg 319	CG504	NFA
63	Test Firing Range For M61 20mm Guns	OT038	NFA
73	Bldg 325 - Old DRMO Haz Waste Container Storage	N/A	NFA
76	Building 2076 Heating Oil Underground Storage Tank	N/A	NFA

Mission	Stage	Facility/Location
Kingpin	Interim: Alt. 1	2066
	Interim: Alt. 2	2066, 2081, CONEX Lot
	Interim: Alt. 3	2039
	Final	BMCOC
SWG	Interim	2051 N, 2066, 2072
	Final	2051 N, 2066, BMCOC
E-11A	Interim	300, 301, 2030, 2051 S
	Final	2030, 2039, 2045, 2051, 2067
	RD-PCE	PCE Lot, Return Lane, Antenna Locations 1 and 2

Figure 3-6
ERP Sites
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

3.6.2.3 Toxic Materials

Construction/renovation activities in older buildings and infrastructure could result in the generation of toxic wastes (such as fuel oil, refrigerants, mercury, asbestos, and lead-based paint). These toxic wastes would be removed, managed, and disposed of prior to and/or during the demolition in accordance with their respective management plans. Universal wastes (fluorescent bulbs) from light fixtures would be stored and handled in accordance with Robins AFB's HWMP.

3.6.2.3.1 Kingpin Mission Beddown

Facility Alternative 1. The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. BMCOC parking areas would be constructed on approximately 3.4 acres of abandoned taxiway south of the proposed BMCOC.

Construction and renovation activities could result in negligible short-term impacts to toxic materials management related to the identification and disposal of the toxic materials. Operation and maintenance of the proposed action is not expected to require use or disposal of toxic materials, so there is no expected long-term impact to toxic waste management. No indirect impacts are expected.

Facility Alternative 2. Toxic materials use and disposal impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (negligible short-term adverse impacts).

Facility Alternative 3. Toxic materials use and disposal impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (negligible short-term adverse impacts).

3.6.2.3.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066.

Construction and renovation activities could result in negligible short-term impacts to toxic materials management related to the identification and disposal of the toxic materials. Operation and maintenance of the SWG facilities is not expected to require use or disposal of toxic materials, so there is no expected long-term impact to toxic waste management. No indirect impacts are expected.

3.6.2.3.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036.

Construction and renovation activities could result in negligible short-term impacts to toxic materials management related to the identification and disposal of the toxic materials. Operation and maintenance of the E-11A facilities, aircraft, and generators is not expected to require use or disposal of toxic materials, so there is no expected long-term impact to toxic waste management. No indirect impacts are expected.

3.6.2.3.4 No-Action Alternative

Under the No-Action Alternative, toxic materials use and disposal within the project area would remain unchanged because the proposed action would not be implemented.

3.7 BIOLOGICAL/NATURAL RESOURCES

3.7.1 Affected Environment

The biological environment and ecology of Robins AFB is highly diverse, containing several distinctive vegetation communities, as well as numerous wildlife habitats and species. According to the Robins AFB Integrated Natural Resource Management Plan (INRMP) (Robins AFB, 2017), over 400 species of plants and animals have been documented at the Base.

3.7.1.1 Vegetation

Native vegetation on the Base is consistent with that found in the Upper Coastal Plain of Georgia. Dominant forest cover types within the region consist of loblolly and shortleaf pine with hardwoods, including sweetgum, flowering dogwood, elm, red cedar, southern red oak, and hickories (Robins AFB, 2017). The INRMP indicates that the vegetation cover types within unimproved areas on Base include upland forest, bottomland forest, and transitional forest. Landscaping plans will be consistent with Robins AFB guidance for vegetation restoration and grounds maintenance per the INRMP. The Base is classified as within the Southeastern Plains Ecoregion. Within this ecoregion, the Base lies within the Sand Hills and Southeastern Floodplains and Low Terraces sub-ecoregion. The Southeastern Plains Ecoregion is typically that of oak-hickory-pine and mixed forests. The upland areas of the Base are within the Sand Hills sub-ecoregion, and the lowland/wetland areas of the Base are within the Southeastern Floodplains and Low Terraces sub-ecoregion. Bottomland forest occupies the largest portion of undeveloped land on the Base, occupying a total of over 2,000 acres on the eastern side of the Base (Robins AFB, 2017).

In addition to the natural cover types, the Base has turf management areas (semi-improved areas), which include the industrial areas, residential areas, fields dominated by patchy undifferentiated grasses, recreational areas (i.e., golf course, playing fields, picnic areas, etc.); roadside turf areas parallel and directly adjacent to roads; and airfield turf areas (that surround runways, taxiways, and tarmacs). The INRMP indicates that the developed areas and urban land use on the Base are projected to increase. Future projects to support the military mission are anticipated to occur in developed (improved) areas of the Base and may result in some required tree clearing and ground disturbance. These turf management areas are the vegetation type that is found within the project area and adjacent to runways, taxiways, and roadways.

3.7.1.2 Wildlife

Wildlife habitat on the Base is typical of central Georgia on developed, landscaped, low-intensity urban, and commercial/industrial lands. Common mammals occurring at Robins AFB include black bear, feral hogs, white-tailed deer, striped skunk, raccoon, and coyote. Bird species include songbirds, ducks, geese, hawks, and wading birds. Reptiles and amphibians observed within aquatic habitats typically include the yellowbelly slider and the American alligator (Robins AFB

2017). A complete list of animal species recorded at Robins AFB is available in the INRMP. These species primarily utilize suitable habitat around the Base perimeter, wetlands areas, and other undeveloped land areas at the Base.

Robins AFB projects an increase in developed areas and urban land use on base, which may require some vegetation clearing and ground disturbance. Maintained areas, such as turf management areas, are the primary vegetation type found in the project area and immediately adjacent to buildings and roadways. Therefore, wildlife species are limited to small mammals or birds that may forage in these areas, but these areas are not suitable for nesting. The majority of the land is developed with existing buildings and paved surfaces, and available wildlife habitat is limited. In the airfield areas, wildlife habitat must be controlled or removed to minimize Bird/Wildlife Aircraft Strike Hazard risk.

3.7.1.3 Endangered, Threatened, and Sensitive Species

On Robins AFB, as listed under the ESA of 1971, there are no threatened or endangered animal species (Robins AFB, 2017). There is one species, the American alligator (*alligator mississippiensis*), with the designated status of Threatened due to Similarity of Appearance that does occur on the Base. The USFWS continues to protect the American alligator under the ESA classification as threatened due to similarity of appearance to the American crocodile (*Crocodylus actus*). The USFWS thus regulates the harvest of alligators and legal trade in the animals, their skins, and products made from them, as parts of efforts to prevent the illegal take and trafficking of endangered "look-alike" reptiles. Beyond harvest and legal trade regulations, there are no other regulatory requirements for this species under the ESA (Robins AFB, 2017).

Atlantic sturgeon (Acipenser oxyrinchus) populations in this part of Georgia are part of the South Atlantic – Distinct Population Segment [National Oceanic and Atmospheric Association (NOAA), 2012]. The Atlantic sturgeon is anadromous, meaning that adults spawn in freshwater and then migrate into estuarine and marine waters where they spend the rest of their lives. In Georgia and South Carolina, movement begins in February or March (Collins et al., 2000). In some areas, a small spawning migration may also occur in the fall. Spawning populations of Atlantic sturgeon are found in the Altamaha River. In the Ocmulgee River, spawning habitat is believed to be over 60 river kilometers downstream of the Base (Peterson et al., 2006). The location of this project is approximately 1.0 kilometers from the Ocmulgee River. Within the immediate project location the essential physical and biological features described are not present and there have been no documented sightings of the Atlantic sturgeon.

No threatened, endangered, or sensitive plant species are located on Robins AFB. State-protected plant species of concern do occur on Base, but no occurrences have been documented within the project area. A population of the state-protected Ocmulgee skullcap (*Scutellaria ocmulgee*) is present in a wooded area to the south of the proposed project and is not within the project area.

A current list of federally protected species from USFWS that potentially occur in Houston County is provided as **Table 3-16**. As previously noted, none of these species occur at Robins AFB.

Table 3-16: Federally Protected Species

Species	Common Name	Federal Status	Habitat Available in Project Area
Reptiles			
Drymarchon corais couperi	Eastern Indigo Snake	Threatened	No
Gopherus polyphemus	Gopher Tortoise	Candidate	No
Clams			
Medionidus penicillatus	Gulf Moccasinshell	Endangered	No
Pleurobema pyriforme	Oval Pigtoe	Endangered	No
Lampsilis subangulata	Shinyrayed Pocketbook	Endangered	No
Insects			
Danaus plexippus	Monarch Butterfly	Candidate	No
Plants			
Oxypolis canbyi	Canby's Dropwort	Endangered	No
Silene polypetala	Fringed Campion	Endangered	No
Ptilimnium nodosum	Harperella	Endangered	No
Trillium reliquum	Relict Trillium	Endangered	No

Source: USFWS, 2022.

3.7.2 Environmental Consequences

3.7.2.1 Vegetation

Most of the proposed work for temporary facilities as part of the three proposed missions would be constructed within buildings or on adjacent paved or concrete areas. However, approximately 1.8 acres of impact from construction of the BMCOC could involve currently vegetated areas. Vegetated areas that would be disturbed include maintained turf that was previously graded and built upon during the past history of the Base. Additional vegetation will be replanted after construction to provide screening for new infrastructure, as appropriate. No indirect impacts are expected.

3.7.2.1.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. BMCOC parking areas would be constructed on approximately 3.4 acres of abandoned taxiway south of the proposed BMCOC. The spaces surrounding the project areas include paved areas and areas of maintained turf and ornamental landscaping. There would be negligible, localized, short-term and long-term adverse impacts to vegetation under the proposed alternative based on the current industrial land use and urban environmental setting. New landscaping (turf areas, trees, and shrubs) would be installed after construction to offset those removed during construction.

Facility Alternative 2: An existing parking lot would be utilized for placement of 15 CONEX structures. Building 2081 would be renovated and space would be utilized in Building 2066, and an existing parking lot along Beale Drive would be used for CONEX operations. The BMCOC

would be constructed between Buildings 2063 and 2081. Vegetation impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (negligible, localized, short- and long-term adverse impacts).

Facility Alternative 3: The Kingpin Mission would temporarily utilize Building 2039, which is currently available and unoccupied, and would result in the BMCOC constructed between Buildings 2063 and 2081. Vegetation impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (negligible, localized, short- and long-term adverse impacts).

3.7.2.1.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. The spaces surrounding the project areas include paved areas and areas of maintained turf and ornamental landscaping. Impacts attributed to the BMCOC would be the same as described in **Section 3.7.2.1**. There would be negligible, localized, short-term, and long-term adverse impacts to vegetation under the proposed alternative based on the current industrial land use and urban environmental setting. New landscaping (turf areas, trees, and shrubs) would be installed after construction to offset those removed during construction.

3.7.2.1.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036. The spaces surrounding the project areas include paved areas and areas of maintained turf and ornamental landscaping. Impacts attributed to the BMCOC would be the same as described in **Section 3.7.2.1**. There would be negligible, localized, short-term, and long-term adverse impacts to vegetation under the proposed alternative based on the current industrial land use and urban environmental setting. New landscaping (turf areas, trees, and shrubs) would be installed after construction to offset those removed during construction.

3.7.2.1.4 No-Action Alternative

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

3.7.2.2 Wildlife

There is no functional wildlife habitat (e.g., no habitats available to sustain a population or diversity of wildlife species) located within the project areas. Any managed turf areas or vegetation that would be disturbed provide very limited habitat for wildlife. In addition, the high levels of human activity, traffic, and noise in these areas are likely to cause many species of birds and other wildlife to avoid these areas. A limited number of ornamental trees and shrubs could be removed for construction. Only a small area of low-quality habitat utilized by a relatively few, common species

of wildlife would be lost due to potential removal of selected trees and shrubs. No indirect impacts are expected.

3.7.2.2.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. There would be no impacts to wildlife or wildlife habitat under this alternative because of the current industrial land use and urban environmental setting.

Facility Alternative 2: An existing parking lot would be utilized for placement of 15 CONEX structures. Building 2081 would be renovated and space would be utilized in Building 2066, and an existing parking lot along Beale Drive would be used for CONEX operations. The BMCOC would be constructed between Buildings 2063 and 2081. Wildlife and wildlife management impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (no impacts).

Facility Alternative 3: The Kingpin Mission would temporarily utilize Building 2039, which is currently available and unoccupied, and would result in the BMCOC constructed between Buildings 2063 and 2081. Wildlife and wildlife management impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (no impacts).

3.7.2.2.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. There would be no impacts to wildlife or wildlife habitat under this alternative because of the current industrial land use and urban environmental setting.

3.7.2.2.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036. There would be no impacts to wildlife or wildlife habitat under this alternative because of the current industrial land use and urban environmental setting.

3.7.2.2.4 No-Action Alternative

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

3.7.2.3 Endangered, Threatened, and Sensitive Species

Any managed turf areas that would be disturbed provide very limited habitat for wildlife. In addition, the high levels of human activity, traffic, and noise in these areas are likely to cause wildlife to avoid these areas, although this is no different than current levels of activity, traffic, or noise.

There are no protected species within the Proposed Action area. In addition, there are no threatened, endangered, or sensitive plant species located on Robins AFB. In a response to the scoping request for comment on this project, the USFWS Georgia Ecological Services stated no impacts to listed species or jurisdictional wetlands are anticipated from this project. Robins AFB has determined that the proposed actions will have No Effect on threatened and/or endangered species, their habitat, and/or proposed or designated critical habitat. Section 7 consultation with the USFWS is ongoing. A copy of the Section 7 consultation letter is located in **Appendix A**.

3.7.2.3.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. The project area includes paved/concrete areas, areas of maintained turf, and ornamental landscaping. The project area has been previously graded and built upon during the past history of the base. Construction of this alternative would require minor ground disturbance during construction and renovation activities.

The proposed action for construction of this alternative would result in no significant impacts to endangered, threatened, and sensitive species at or near the project area because no federally listed threatened or endangered animal or species are known to exist at the Base (Robins AFB, 2017). Additionally, the current industrial land use and urban environmental setting would not be suitable habitat for protected species. Although the American alligator has been observed at Robins AFB, the project areas are within existing developed areas on the base, so no suitable habitat for the alligator would be disturbed. Due to the distance from the proposed action area to the Ocmulgee River and spawning habitat, and no proposed impacts to the river as part of the proposed action and alternatives, there would be no effects on the Atlantic sturgeon.

Facility Alternative 2: An existing parking lot would be utilized for placement of 15 CONEX structures. Building 2081 would be renovated and space would be utilized in Building 2066, and an existing parking lot along Beale Drive would be used for CONEX operations. The BMCOC would be constructed between Buildings 2063 and 2081. Endangered, threatened, and sensitive species impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (no impacts).

Facility Alternative 3: The Kingpin Mission would temporarily utilize Building 2039, which is currently available and unoccupied, and would result in the BMCOC constructed between Buildings 2063 and 2081. Endangered, threatened, and sensitive species impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (no impacts).

3.7.2.3.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. The project area includes paved/concrete areas, areas of maintained turf, and ornamental landscaping. The project area has been previously graded and built upon during the past history of the Base. Construction of this alternative would require minor ground disturbance during construction and renovation activities.

The proposed action for construction of this alternative would result in no significant impacts to endangered, threatened, and sensitive species at or near the project area because no federally listed threatened or endangered animal or species are known to exist at the Base (Robins AFB 2017). Additionally, the current industrial land use and urban environmental setting would not be suitable habitat for protected species.

3.7.2.3.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036. The project area includes paved/concrete areas, areas of maintained turf, and ornamental landscaping. The project area has been previously graded and built upon during the past history of the Base. Construction of this alternative would require minor ground disturbance during construction and renovation activities.

The proposed action for construction of this alternative would result in no effects to endangered, threatened, and sensitive species at or near the project area because no federally listed threatened or endangered animal or species are known to exist at the Base (Robins AFB, 2017). Additionally, the current industrial land use and urban environmental setting would not be suitable habitat for protected species.

3.7.2.3.4 No-Action Alternative

Under the No-Action Alternative, endangered, threatened, and sensitive species within the project area would remain unchanged because the proposed action would not be implemented.

3.8 CULTURAL RESOURCES

3.8.1 Affected Environment

Archaeological and architectural resources are defined as any prehistoric or historic district, archaeological sites, buildings, structures, shipwrecks, artifacts and objects, records, locations, and remains that are created by, or associated with, human culture and are valued for their cultural and/or historic significance and listed on or eligible for listing on the National Register of Historic Places (NRHP) (36 CFR 800.16[l][1]). Archaeological and architectural resources of cultural significance located within the property boundary of Robins 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 (ICRMP) (Robins AFB, 2016).

Previous cultural resource investigations and architectural surveys have been conducted on the Base, which have been reviewed and accepted by the GADNR, Historic Preservation Division/SHPO. Robins AFB is currently engaged in Section 106 consultations with the Georgia HPD regarding the proposed action in accordance with the memorandum from GA HPD (**Appendix C**) and as described in **Section 3.8.2.2**. No traditional cultural properties (TCP) have been identified at Robins AFB. TCP is defined as a location with traditional religious or cultural significance – derived from the role the property plays in a communities historically rooted beliefs, customs, and practices.

3.8.1.1 Archaeological Resources

Robins AFB contains 1,753 acres of upland property, which have been surveyed for archaeological sites and historic properties. Currently, 58 prehistoric and/or historic archaeological sites (including two historic cemeteries) have been identified on Robins AFB. Sixteen of these sites have been tested and found to be eligible for listing on the NRHP. Thirty-eight have been tested and determined ineligible. Four sites remain untested, and therefore, have not been evaluated for NRHP eligibility. Twenty-nine other archaeological resources, defined as “occurrences,” have been identified on the Base. Reinvestigation of the “occurrences” was undertaken to determine if they were new sites, parts of existing sites, or isolated finds. The reinvestigation resulted in the identification of: (i) four new sites; (ii) three new parts of existing sites; (iii) 18 occurrences defined as isolated finds (areas where no more than two artifacts are recorded within a 30-meter radius); and (iv) four occurrences identified in the Ocmulgee River floodplain in areas where developmental constraints exist, and therefore, considered potentially eligible for the NRHP until they can be evaluated (Robins AFB, 2016). None of the proposed actions are located in areas with known archaeological resources.

3.8.1.2 Architectural Resources

Architectural resources associated with Robins AFB include intact, standing structures associated with the military utilization of the area; therefore, studies and surveys of the built environment on Base concern only military buildings and structures. A total of 1,113 buildings and structures on the Base have been evaluated. Twenty buildings, one historic district (comprised of 6 buildings), and one resource (Strategic Air Command Alert Apron) are currently eligible for listing on the NRHP. The NRHP is the nation's official list of cultural resources worthy of preservation because of their significance to the history of their community, state, or the nation. Historic structures must be at least 50 years old, and must possess one of several qualities, such as having significance in American history or exhibiting architectural or artistic integrity. Structures that are less than 50 years old, such as those that performed unique roles during the Cold War from 1946 to 1991, may also be eligible for listing on the NRHP. Historic buildings on Robins AFB are eligible for the NRHP because of their important or unique roles in defense missions during the World War II and Cold War eras.

The Environmental Division at Robins AFB identifies and protects historic buildings through compliance with NHPA regulations. The Robins ICRMP identifies the cultural resources on the base and emphasizes management goals and objectives (Robins AFB, 2016). Maintenance or modifications to historic buildings are done in a manner that preserves their significant architectural and engineering features, while accommodating necessary changes in function or site operation.

In accordance with the Robins AFB ICRMP, none of the buildings associated with the proposed undertaking are on the NRHP. However, one of the facilities associated with the proposed undertaking, Building 2081, is eligible for the NRHP. Building 2081 is located on Borghese Drive opposite Building 2067 in the East Ramp Campus area of the airfield. The building was used for its original function, aircraft maintenance, until late 2003. The building is important because of its history as a critical component of Robins AFB's Cold War mission. It is a two-story, asymmetrical structure with a concrete foundation and an exterior of corrugated metal. In late 2003, half of the

hangar space became storage space for the Mobility Processing Center, and the other half became office space. In 2013, the office space was renovated to accommodate a need for larger training rooms and restrooms, and exterior roll-up doors were installed in the existing hangar doors. The proposed renovation of this building would include conversion of the existing storage space to additional office space by installation of a modular two-story insert, similar to the existing office space in the facility. The renovation would not require any structural changes to the building, construction or modification of permanent internal walls or materials, or any alterations to the exterior of the building.

3.8.2 Environmental Consequences

3.8.2.1 Archaeological Resources

Based on the ICRMP (Robins AFB, 2016), no known archaeological or cultural resources are located within the proposed project areas. Federally recognized Native American Tribes associated with Robins AFB were invited to consult on this MPEA, as well as on any Section 106 concerns. As part of this consultation, a request was made to each Tribe for assistance in identifying whether there are any properties and concerns of religious or sacred importance that may be affected. To date, no responses have been received. Each Tribe has also received a copy of the Draft MPEA and Draft FONSI/FONPA for review. Tribal correspondence is located in **Appendix A**. No direct or indirect impacts are anticipated to archaeological resources as a result of the proposed alternative because no known archaeological resources are located within the project area.

If there are inadvertent discoveries of cultural items, including traditional cultural properties, human remains, or archaeological resources during the course of this proposed action, project personnel are directed to avoid the site of discovery and immediately contact the Robins AFB CRM. All work in the area of discovery must stop until it can be investigated. The CRM would send a qualified Robins AFB representative to visit the discovery site. The resource would then be recorded and evaluated, and the impacts mitigated as necessary.

The Native American Graves Protection and Repatriation Act of 1990 establishes rights of federally recognized Indian groups to claim ownership of certain cultural items, including human remains. Should human remains be discovered during excavation activities, project personnel would be directed to immediately stop activity at and near the discovery location, contact the CRM, protect the location by establishing a 150-foot buffer zone, and await further instructions. The CRM would follow actions described in Section 7.4, Cultural Discoveries, of the Robins ICRMP (Robins AFB, 2016).

3.8.2.1.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. BMCOC parking areas would be constructed on approximately 3.4 acres of abandoned taxiway south of the proposed BMCOC. These areas have been previously graded and built upon during the past history of the Base. Construction of the proposed alternative would require ground disturbance during construction and renovation activities.

No direct or indirect impacts are anticipated as a result of this Alternative, as described in **Section 3.8.2.1**.

Facility Alternative 2: An existing parking lot would be utilized for placement of 15 CONEX structures. Building 2081 would be renovated and space would be utilized in Building 2066. The BMCOC would be constructed between Buildings 2063 and 2081. Archaeological resource impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (no impacts anticipated).

Facility Alternative 3: The Kingpin Mission would temporarily utilize Building 2039, which is currently available and unoccupied, and would result in the BMCOC constructed between Buildings 2063 and 2081. Archaeological resource impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (no impacts anticipated).

3.8.2.1.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. BMCOC parking areas would be constructed on approximately 3.4 acres of abandoned taxiway south of the proposed BMCOC. These areas have been previously graded and built upon during the past history of the Base. Construction of the proposed alternative would require minor ground disturbance during construction and renovation activities.

No direct or indirect impacts are anticipated as a result of this Alternative, as described in **Section 3.8.2.1**.

3.8.2.1.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036. These areas have been previously graded and built upon during the past history of the Base. Construction of the proposed alternative would require minor ground disturbance during construction and renovation activities.

No direct or indirect impacts are anticipated as a result of this Alternative, as described in **Section 3.8.2.1**.

3.8.2.1.4 No-Action Alternative

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

3.8.2.2 Architectural Resources

Based on the ICRMP (Robins AFB, 2016), none of the buildings described in the proposed actions are on the NRHP. However, Building 2081 is NRHP-eligible and would be adjacent to the proposed BMCOC. The proposed action does not meet an approved exempt activity as defined in Section 3.1.3 of the Robins AFB Programmatic Agreement. Therefore, Robins AFB is

following project review guidelines pursuant to 36 CFR 800.3 through 800.6 and consulting with the GA HPD. The constructions of the BMCOC has the potential to impact the viewshed of Building 2081. The viewshed Area of Potential Effects (APE) consists of the areas with a direct line of sight of the proposed BMCOC construction. The BMCOC construction is proposed on 1.8 acres of grassy open area located just north of Building 2081 and immediately adjacent to Building 2063. The BMCOC facility would be two-story and approximately 80,000-90,000 square feet to house the Kingpin, SWG, and E-11A squadron missions. Construction would begin in 2024 and last approximately two years. The overall design of the building would follow the Robins AFB Installation Facilities Standards (IFS), incorporating brick and metal panels combined with a sloped standing seam metal roof and complementary detailing to achieve architectural compatibility with similar facilities. A two-story aircraft maintenance hangar with a similar footprint was previously located at the proposed construction location and was demolished in 2017. The facilities surrounding the proposed site of the BMCOC, including Buildings 2063, 2066, 2067, 2078, 2079, and 2081 are also two-story structures. These surrounding facilities include a mix of buildings constructed in 1960, such as buildings 2066, 2078, 2079, and 2081, and newer construction, such as Building 2063. The exterior design of the BMCOC would mimic the design characteristics of the existing, more recently constructed structures within the Building 2081 viewshed, including Building 2063. Therefore, the construction of the BMCOC would complement and blend in with the surrounding buildings, and the proposed action would have no adverse effect on the historic viewshed. Based on these factors, Robins AFB has determined that the historic nature of Building 2081 would not be impacted by this project and that there will be no impact to the historic viewshed due to the proposed construction of the BMCOC, leading to a conclusion of *No Adverse Effect* per 36 CFR 800.5(b). Robins AFB has submitted this determination to the GA HPD and requested review and concurrence. Section 106 consultation with the GA HPD is ongoing. A copy of the Section 106 consultation letter to the GA HPD is located in **Appendix A**. No adverse direct or indirect impacts to architectural resources are expected from the construction of the BMCOC.

3.8.2.2.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. These areas have been previously graded and built upon during the past history of the Base. Construction of the proposed alternative would require minor ground disturbance during construction and renovation activities.

No adverse direct or indirect impacts to these resources are expected as a result of this Alternative, as described in **Section 3.8.2.2**.

Facility Alternative 2: An existing parking lot would be utilized for placement of 15 CONEX structures. Building 2081 would be renovated and space would be utilized in Building 2066. The BMCOC would be constructed between Buildings 2063 and 2081.

The renovation of Building 2081 has the potential to impact the historic characteristics of this NRHP-eligible building. The APE for the proposed building renovation consists of the entire footprint of Building 2081, which is an NRHP-eligible structure. Building 2081 is located on Robins AFB, just northeast of the runway and taxiway environment. It is a two-story, asymmetrical structure with a concrete foundation and an exterior of corrugated metal. Building 2081 consists of approximately 21,000 square feet of useable space. The building was used for its original

function, aircraft maintenance, until late 2003. In late 2003, half of the hangar space became storage space for the Mobility Processing Center, and the other half became office space. In 2013, the office space was renovated to accommodate a need for larger training rooms and restrooms, and exterior roll-up doors were installed in the existing hangar doors. Proposed renovations for the Kingpin Mission would include conversion of the existing storage space to additional office space by installation of a modular two-story insert, similar to the existing office space in the facility. The renovation would not require any structural changes to the building, construction or modification of permanent internal walls or materials, or any alterations to the exterior of the building. The proposed renovation is consistent with the current use of the facility, which has contained administrative functions since 2003, and the proposed internal office renovation materials would comply with the current Robins AFB Installation Facilities Standards (IFS). Based on these factors, it has been determined that the proposed renovations will not be performed on historically significant design elements, on intact materials that retain historic integrity, nor will they change the historic function of the resource, leading to a conclusion of *No Adverse Effect* per 36 CFR 800.5(b). Robins AFB has submitted this determination to the GA HPD and requested review and concurrence. A copy of the Section 106 consultation letter to the GA HPD is located in **Appendix A**. No adverse direct or indirect impacts to architectural resources are expected from renovation of Building 2081.

Architectural resource impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (No adverse direct or indirect impacts).

Facility Alternative 3: The Kingpin Mission would temporarily utilize Building 2039, which is currently available and unoccupied, and would result in the BMCOC constructed between Buildings 2063 and 2081. Architectural resource impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (No adverse direct or indirect impacts).

3.8.2.2.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. Construction of the proposed alternative would require minor ground disturbance during construction and renovation activities.

No adverse direct or indirect impacts to architectural resources are expected as a result of this Alternative.

3.8.2.2.3 E-11A Squadron Beddown

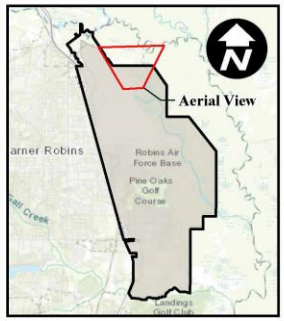
The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036.

The proposed antenna has the potential to impact the viewshed of Building 2081, an NRHP-eligible building. The viewshed APE consists of the areas with a direct line of sight of the proposed antenna alternative locations **(Figure 3-7)**. The height of the tower, as well as specifications for the mounted antenna, are located in **Section 2.3.2**. Military antennas, towers, and buildings are located within the viewshed of Building 2081, so the inclusion of another tower

would not affect the structure's viewshed. Neither of the two tower location alternatives extend further outside the boundaries of existing viewshed-obstructing structures in the area, as shown in **Figure 3-8,** leading to a conclusion of *No Adverse Effect* per 36 CFR 800.5(b). Robins AFB has submitted this determination to the GA HPD and requested review and concurrence. A copy of the Section 106 consultation letter to the GA HPD is located in **Appendix A**. No direct or indirect impacts are anticipated to architectural resources as a result of this alternative.

3.8.2.2.4 No-Action Alternative

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



Mission	Stage	Facility/Location
Kingpin	Interim: Alt. 1	2066
	Interim: Alt. 2	2066, 2081, CONEX Lot
	Interim: Alt. 3	2039
	Final	BMCOC
SWG	Interim	2051 N, 2066, 2072
	Final	2051 N, 2066, BMCOC
E-11A	Interim	300, 301, 2030, 2051 S
	Final	2030, 2039, 2045, 2051, 2067
	RD-PCE	PCE Lot, Return Lane, Antenna Locations 1 and 2

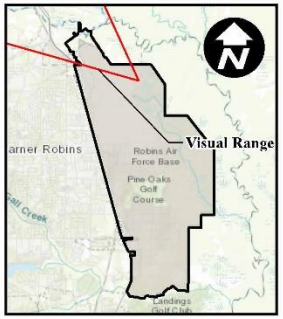
Legend

Installation Boundary

Note:
Three-dimensional imagery obtained from Google Earth 3D buildings view, dated 19 November 2019.

Figure 3-7

Building 2081 Aerial View
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia



Mission	Stage	Facility/Location
Kingpin	Interim: Alt. 1	2066
	Interim: Alt. 2	2066, 2081, CONEX Lot
	Interim: Alt. 3	2039
	Final	BMCOC
SWG	Interim	2051 N, 2066, 2072
	Final	2051 N, 2066, BMCOC
E-11A	Interim	300, 301, 2030, 2051 S
	Final	2030, 2039, 2045, 2051, 2067
	RD-PCE	PCE Lot, Return Lane, Antenna Locations 1 and 2

Legend

Installation Boundary

Note:
Three-dimensional imagery obtained from Google Earth 3D buildings view, dated 19 November 2019.

Image capture facing northwest at altitude of approximately six feet above ground surface.

Figure 3-8

Building 2081 Eye Level View
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

3.9 EARTH RESOURCES

3.9.1 Affected Environment

3.9.1.1 Geology

Robins AFB is underlain by the Coastal Plain Physiographic Province sedimentary formations of mainly Quaternary and Cretaceous age overlying a basement complex of Paleozoic metamorphic rocks. Based on regional information provided by the United States Geological Survey, in the vicinity of the Base, the crystalline basement is estimated to be approximately 700 ft deep (Clarke et al., 1985). Three Cretaceous geologic units have been recognized at Robins AFB, including, from oldest to youngest: the Eutaw-Blufftown Formation (Blufftown), the Cusseta Formation, and the Ripley-Providence Formation (Providence). The older Tuscaloosa Formation may be present beneath the Blufftown at the Base, but no confirming borehole data are available.

The Blufftown Formation consists primarily of white-to-buff colored, medium-to-coarse, moderately well-sorted sand with intercalated kaolinitic clay lenses and sparse gravel. In the vicinity of the Base, the Blufftown Formation has a thickness of approximately 350 to 400 ft.

The overlying Cusseta Formation is finer-grained than the Blufftown and is comprised of graybrown to bluish-gray, and/or reddish colored slightly micaceous, stiff, clay and sandy clay. In some areas of the Base, two relatively continuous clay layers, separated by an intervening middle sandy unit, define the top and bottom of the formation. The estimated thickness of the Cusseta Formation is approximately 100 ft in the vicinity of the Base.

The Ripley and Providence Formations are distinctly separate units at other locations; however, the units are indistinguishable at the Base and, therefore, are combined as the Ripley-Providence Formation (Providence). This unit is comprised of cross-bedded, tan to red-brown, fine to coarse, sand, and clayey sands interbedded with lenses of white, tan, and light purple kaolinitic clay. The thickness of the Providence Formation beneath the Base ranges from 80 to 150 ft.

Quaternary deposits include a variety of surficial fluvial sediments associated with terraces of the Ocmulgee River system, including fluvial gravel, sand, clay, silt, and peat. These deposits range from a few feet to as much as 30 ft thick and cover the eastern surface area of the Base. In many areas, Quaternary alluvial deposits are essentially indistinguishable from the underlying Cretaceous deposits because they mainly consist of these deposits, reworked.

3.9.1.2 Soils

A wide variety of soil types exist in Houston County and on Robins AFB as a result of the gentle slopes, steep bluffs, and diversity of wetland types. The soil underlying Robins AFB were identified and assessed using the Soil Survey Geographic database (USDA-NRCS, 2022) and are depicted on **Figure 3-9**. Additional information about the soil in the proposed action areas was obtained from the Soil Survey of Houston County, Georgia (USDA, 1967).

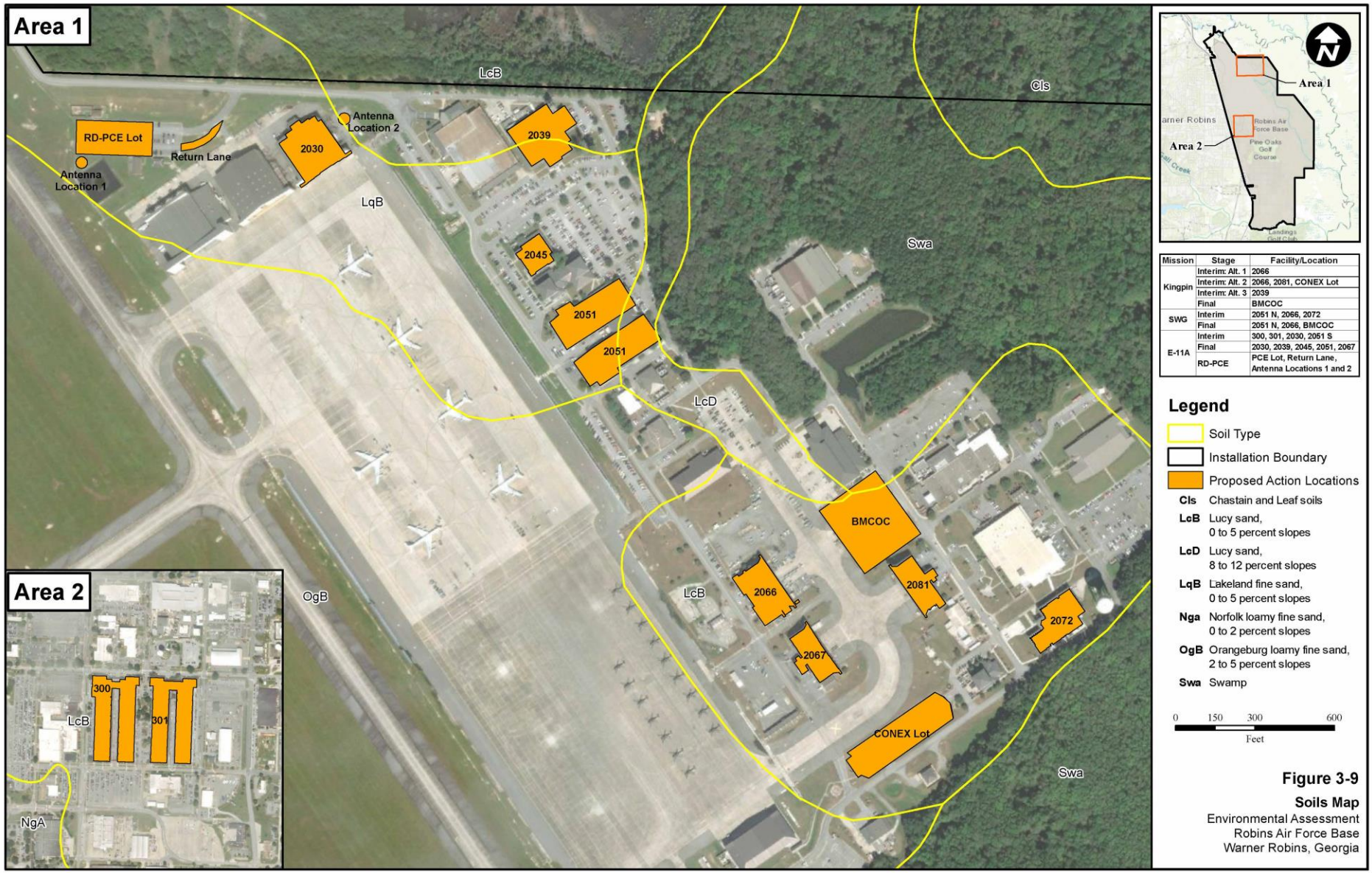
The majority of Houston County soils are classified as Lucy sand, Lakeland fine sand, and Orangeburg sandy loam. The bottomland soils on Base are mapped as either Chastain-Leaf or

Swamp soils. The upland soils are typically sandy and well-drained with low fertility, while the bottomland soils are generally moderately well- to very poorly-drained and subject to flooding.

Potential prime agricultural soils on Base include Bonifay loamy sand, Dothan loamy sand, Fuquay loamy sand, Lynchburg sandy loam, and Orangeburg sandy loam. Hydric soils at the Base include Chastain, Grady, Kingsland, Osier-Kinston, and Tawcaw, and typically not suitable for construction.

3.9.1.3 Topography

Robins AFB is located on approximately 6,935 acres in central Georgia, approximately 20 miles southeast of the Fall Line, within the Atlantic Coastal Plain physiographic province and along the upper margin of the Southeastern Plains Ecoregion (Griffith et al., 2001). The Fall Line is the geomorphologic break that separates the Piedmont Region, characterized by more resistant crystalline rocks, from the less resistant unconsolidated deposits of the Southeastern Plains. The Southeastern Plains Ecoregion is characterized by irregular plains and broad interstream areas dominated by a mosaic of cropland, pasture, woodland, and forests [GADNR, 2015]. The location of the Base within the upper Atlantic Coastal Plain physiography, in conjunction with the geomorphic features of the area, result in gentle, eastward sloping topography between elevations of about 350 feet above Mean Sea Level (ft above MSL) on the west and 245 ft above MSL on the east as depicted on **Figure 3-10**. The eastern portion of the Base is dominated by the broad floodplain of the Ocmulgee River.



Mission	Stage	Facility/Location
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	Interim: Alt. 3	2039
	Final	BMCOC
SWG	Interim	2051 N, 2066, 2072
	Final	2051 N, 2066, BMCOC
E-11A	Interim	300, 301, 2030, 2051 S
	Final	2030, 2039, 2045, 2051, 2067
	RD-PCE	PCE Lot, Return Lane, Antenna Locations 1 and 2

Figure 3-9
Soils Map
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

Figure 3-10

Topographic Map
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

3.9.2 Environmental Consequences

3.9.2.1 Geology

Temporary use of existing buildings as part of the proposed actions would not require substantial excavation. Construction of the BMCOC and associated parking areas is proposed for an area that has been previously graded and built upon during the past history of the Base. Therefore, no significant impacts are identified from proposed actions including development of this facility.

3.9.2.1.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. Geologic resources that currently exist below the proposed locations include the Eutaw-Blufftown Formation, the Cusseta Formation, and the Ripley-Providence Formation. Geologic resources would remain unaffected by the proposed action because there is no substantial excavation associated with this action that would impact site geology. Therefore, the proposed action would not directly or indirectly impact geology.

Facility Alternative 2: Geology impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (no impacts).

Facility Alternative 3: Geology impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (no impacts).

3.9.2.1.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. Geologic resources that currently exist below the proposed locations include the Eutaw-Blufftown Formation, the Cusseta Formation, and the Ripley-Providence Formation. Geologic resources would remain unaffected by the proposed action because there is no substantial excavation associated with this action that would impact site geology. Therefore, the proposed action would not directly or indirectly impact geology.

3.9.2.1.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. Geologic resources that currently exist below the proposed locations include the Eutaw-Blufftown Formation, the Cusseta Formation, and the Ripley-Providence Formation. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036 and include two potential CDL antenna locations: the parking lot near Building 2036, or adjacent to Building 2030. Geologic resources would remain unaffected by the proposed action because there is no substantial excavation associated with this action that would impact site geology. Therefore, the proposed action would not directly or indirectly impact geology.

3.9.2.1.4 No-Action Alternative

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

3.9.2.2 Soils

Soil within the footprint of the proposed BMCOC were disturbed during the construction and demolition of a building previously occupying that parcel. The total disturbed area has been estimated at approximately 1.8 acres. The construction areas have been previously graded and built upon.

Should contaminated soils be encountered during the construction of the proposed upgrades, those soils would be managed according to Robins AFB excavation plans and project-specific plans to be developed. The waste generated by the excavation activities (e.g., nonhazardous, special, and/or hazardous soil) must be managed and disposed of in accordance with Robins AFB Specification 01560, *Environmental Requirements* (Robins AFB, 2018).

Soil disturbance would be limited to the extent practicable during construction of the new structures. Project construction methods would utilize BMPs to control soil erosion. The new facilities would be constructed within previously disturbed areas adjacent to buildings.

3.9.2.2.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. Ground disturbing upgrades could impact soil, as trenching would be required for power lines to generators. There would be negligible, localized short-term effects on soils related to construction of the proposed action because of the disturbance of approximately 1.8 acres for construction activity. No long-term impacts to soils are anticipated. There would however be negligible short-term direct impact to soils due to alteration of existing soils as a result of trenching. Additionally, no indirect impacts are expected.

Facility Alternative 2: Trenching would be required to provide utilities and/or communications to the CONEX structures located in the parking area. Soils impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (short-term negligible impacts).

Facility Alternative 3: No ground disturbing activities are anticipated in this area. Soils impacts from Kingpin Alternative 3 would be reduced from those described for Kingpin Alternative 1 due to the removal of trenching requirements in this (negligible impacts). Therefore, soils would not be indirectly impacted under this alternative.

3.9.2.2.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. Ground disturbing upgrades could impact soil. The total disturbed area has been estimated at approximately 1.8 acres. The construction areas have been previously graded and built upon.

There would be negligible, localized short-term effects on soils related to construction of the proposed action because of the disturbance of approximately 1.8 acres for construction activity. No long-term impacts to soils are anticipated. There would however be negligible short-term direct impact to soils due to alteration of existing soils as a result of trenching. Additionally, no indirect impacts are expected.

3.9.2.2.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036 and include two potential CDL antenna locations: the parking lot near Building 2036, or adjacent to Building 2030. Ground disturbing upgrades could impact soil. The total disturbed area has been estimated at approximately 1.6 acres. The construction areas have been previously graded and built upon.

An AFFF storage pond is located south of the RD-PCE Yard and to the southeast of Antenna Location 1. Groundwater in this area could potentially contain PFAS. Disposal of contaminated soil would be required to be disposed of per the most recent DAF PFAS disposal guidelines at the time of construction.

There would be negligible, localized short-term effects on soils related to construction of the proposed action because of the disturbance of approximately 1.6 acres for construction activity. No long-term impacts to soils are anticipated. There would however be negligible short-term direct impact to soils due to alteration of existing soils as a result of trenching. Additionally, no indirect impacts are expected.

3.9.2.2.4 No-Action Alternative

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

3.9.2.3 Topography

Construction of the BMCOC is proposed for an area that has been previously graded and built upon during the past history of the Base. Construction of the proposed action would not result in topography changes. The topography in the vicinity of this project is not anticipated to be altered during construction, other than the addition of the BMCOC.

3.9.2.3.1 Kingpin Mission Beddown

Facility Alternative 1: The Kingpin Mission would utilize Building 2066 and would result in the BMCOC constructed between Buildings 2063 and 2081. Elevations in these areas generally range from 260 to 265 feet. Temporary use of existing buildings would not require substantial excavation. The proposed action would not directly or indirectly impact topography, as described in **Section 3.9.2.3**.

Facility Alternative 2: Topography impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (no impacts).

Facility Alternative 3: Topography impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (no impacts).

3.9.2.3.2 Spectrum Warfare Group Activation

The proposed interim alternative would have the SWG occupying space in Building 2072, 2051 North, and 2066. The proposed final alternative would consist of the use of the BMCOC constructed between Buildings 2063 and 2081, Building 2051 North, and Building 2066. Elevations in these areas generally range from 260 to 270 feet. Temporary use of existing buildings would not require substantial excavation. Construction of the proposed action would not result in topography changes. The topography in the vicinity of this project is not anticipated to be altered during construction, other than the addition of the BMCOC. The topography in the vicinity of this project is not anticipated to be altered during construction, other than the addition of the BMCOC. Therefore, the proposed action would not directly or indirectly impact topography.

3.9.2.3.3 E-11A Squadron Beddown

The E-11A mission would occupy Building 300 or 301 as an interim facility for operations and maintenance until Building 2051 south is vacated by the JSTARS mission. Final facilities include Building 2030, Building 2051 South, Building 2039, Building 2045, and Building 2067. Elevations of the existing buildings and the RD-PCE yard Alternative range between 260 and 265 feet. The RD-PCE Yard would be located on an existing parking lot adjacent to Building 2036 and include two potential CDL antenna locations: the parking lot near Building 2036, or adjacent to Building 2030. The topography in the vicinity of this project is not anticipated to be altered during construction, other than the addition of the RD-PCE Yard and BMCOC. Therefore, the proposed action would not directly or indirectly impact topography.

3.9.2.3.4 No-Action Alternative

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

3.10 SOCIOECONOMIC RESOURCES/ENVIRONMENTAL JUSTICE

3.10.1 Affected Environment

Socioeconomic resources include the basic attributes and resources associated with the human environment. In particular, this includes population and economic activity. Economic activity typically encompasses employment, personal income, and industrial growth. Additionally, EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* require consideration of environmental justice issues and health and safety risks to children (OFR, 1994 and OFR, 1997).

A minority population is defined as a group of people and/or community experiencing common conditions of exposure or impact that consists of persons classified by the U.S. Census Bureau as black or African-American, Asian, American Indian, or Alaska Native, Native Hawaiian or other pacific Islander, Hispanic or Latino, or other non-white persons, including those of two or more races. A low-income population is defined as a population whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines.

The majority of the Robins AFB population, 73.5 percent, self-identified as white according to the 2020 Census estimates. Among other races, 15.2 percent identified as black or African American, 0.4 percent identified as American Indian or Alaska Native, 3.1 percent identified as Asian, 0.0 percent identified as Native Hawaiian and Other Pacific Islander, 4.9 percent identified as some other race, and 2.9 percent indicated two or more races (U.S. Census Bureau, 2022).

The evaluation of environmental justice is designed to:

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

3.10.1.1 Socioeconomics

Robins AFB is one of Georgia's largest employers, providing jobs to over 23,000 personnel and an approximate $5.46 billion impact on the Georgia economy (Robins AFB, 2022b). The Base plays an important role in the continued growth of the local communities. The nature of the primary mission of Robins AFB, providing logistical support for the DAF, requires a substantial industrial and manpower base. As a result, Robins AFB is the largest industrial complex in Georgia. The Base maintains a significant physical footprint encompassing approximately 11.5 million square feet, including 3.4 million square feet of shop/hangar space, 1.8 million square feet of administrative space, and 5.9 million square feet of warehouse and storage space. In 2020, the annual average unemployment rate for Georgia and Houston County was 5.6 percent and 5.5 percent, respectively (U.S. Census Bureau, 2022).

3.10.1.2 Environmental Justice

An environmental justice analysis was conducted in accordance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, to consider disproportionately high and adverse impacts on minority and low-income populations in the surrounding community resulting from the proposed actions. The nearest low-income population in the vicinity of Robins AFB is located due west of the Base along US-129/Highway 247.

3.10.2 Environmental Consequences

3.10.2.1 Socioeconomics

3.10.2.1.1 Kingpin Mission Beddown

Facility Alternative 1: Construction of this alternative would require temporary construction personnel. Robins AFB, through their construction contractors, would attempt to hire temporary construction staff from the local population, if the local population offers skilled workers in the

fields related to building construction. Hiring of staff from the local community would result in temporary beneficial impacts toward lowering the county unemployment rates. However, beneficial impacts resulting from construction payrolls and materials purchased would be negligible on a regional scale. Expenditures for construction of the BMCOC and associated parking areas are projected to be approximately $70 million, with the current Design Charrette estimating approximately $88 million.

After implementation, the proposed action would provide additional economic stimulus to the regional economy through increased annual expenditures associated with operating and maintaining the BMCOC. Over the long-term, personnel and associated dependents would be relocated to the Houston County area over several years under the Proposed Action.

There would be a negligible population increase at Robins AFB, as current JSTARS 461st Air Control Wing personnel would be assigned to the Kingpin Mission. This would not substantially affect the capacity of existing housing, schools, and emergency services within the Houston County area, which has a population of over 166,800 (U.S. Census Bureau, 2022). There would be less than significant impacts to the community tax base and economic activity. There would be a negligible anticipated population increase and therefore, would result in less than significant socioeconomic impacts. Implementation of the Proposed Action would not disrupt or divide established communities.

Therefore, negligible short-term benefits and minor long-term benefits are anticipated to socioeconomic factors at or near Robins AFB as a result of implementation of this alternative. Additionally, no indirect impacts are expected.

Facility Alternative 2: Socioeconomic impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (negligible short-term and minor long-term benefits).

Facility Alternative 3: Socioeconomic impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (negligible short-term and minor long-term benefits).

3.10.2.1.2 Spectrum Warfare Group Activation

Socioeconomic impacts from the SWG Activation would be similar to those described for Kingpin Alternative 1 (negligible short-term and minor long-term benefits).

3.10.2.1.3 E-11A Squadron Beddown

Socioeconomic impacts from the E-11A Squadron Beddown would be similar to those described for Kingpin Alternative 1 (negligible short-term and minor long-term benefits).

3.10.2.1.4 No-Action Alternative

Under the No-Action Alternative, socioeconomics in Houston County would remain unchanged because the proposed action would not be implemented.

3.10.2.2 Environmental Justice

3.10.2.2.1 Kingpin Mission Beddown

Facility Alternative 1: No significant adverse environmental impacts would occur as a result of constructing the proposed action, and no populations (minority, low-income, or otherwise) would

be disproportionately impacted. Implementation of the Proposed Action would consist of short-term demolition, construction, and renovations within the Robins AFB property boundary. Noise impacts from the proposed action would not affect known minority or low-income populations. Given that no minority or low-income populations would have access to or be within the proposed action boundary, minority or low-income populations would not be disproportionately impacted by the Proposed Action, and there would be no impacts to environmental justice.

Facility Alternative 2: Environmental justice impacts from Kingpin Alternative 2 would be the same as those described for Kingpin Alternative 1 (no impacts).

Facility Alternative 3: Environmental justice impacts from Kingpin Alternative 3 would be the same as those described for Kingpin Alternative 1 (no impacts).

3.10.2.2.2 Spectrum Warfare Group Activation

Impacts to environmental justice from the E-11A Squadron Beddown would be similar to those described for Kingpin Alternative 1 (no impacts).

3.10.2.2.3 E-11A Squadron Beddown

Impacts to environmental justice from the E-11A Squadron Beddown would be similar to those described for Kingpin Alternative 1 (no impacts).

3.10.2.2.4 No-Action Alternative

Under the No-Action Alternative, Environmental justice in the Robins AFB and Houston County area would remain unchanged because the proposed action would not be implemented.

3.11 CUMULATIVE EFFECTS

This cumulative effects analysis was prepared pursuant to regulations at 40 CFR Parts 1500–1508. Cumulative effects, as defined by the CEQ are the "…effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. In accordance with NEPA, a discussion of cumulative effects resulting from projects that are proposed, currently under construction, recently completed, or anticipated to be implemented in the near future is presented below.

Past development projects on Robins AFB and in the community immediately surrounding the project areas that converted open, vegetated lands to industrial or commercial land uses had incremental adverse effects on natural resources and generally beneficial effects on socioeconomics of the region. These individual projects were developed and operated in accordance with environmental rules and regulations designed to prevent significant adverse impacts on human health and the environment. The incremental environmental effects from the proposed alternatives when added to current and foreseeable future environmental effects from other development projects in the area were evaluated to determine if they collectively contribute to significant cumulative impacts.

3.11.1 Relevant Past, Present, and Foreseeable Future Actions

Current and foreseeable future projects on Robins AFB and in nearby communities that could collectively contribute to incremental adverse effects include:

- DoD Sentinel Landscape Program
- Global Hawk PDM
- C-130 Campus
- Robotic Laser Technology for Full Aircraft Depaint
- Aircraft Fire Bottle Maintenance Facility
- Robins International Industrial Park
- Robins AFB Combined Heat and Power (CHP) Projects

No other projects in the area with a reasonable potential for incremental adverse environmental effects in combination with the Proposed Action were identified.

GPC Solar Array Power Plant

Georgia Power Company (GPC) is constructing a solar array power plant north of Robins AFB, on land owned and controlled by the Central Georgia Joint Development Authority that is connected to the Robins AFB #4 W.D. Fowler electrical substation on Robins AFB via the existing Broadway – Echeconnee 115 kilovolt Transmission Line. The proposed solar array power plant would utilize both fixed-tilt and single-axis tracker modules, totaling 464,800 modules located on an approximately 650-acre site.

Based on the scope of the Proposed Action, environmental analyses within the MPEA prepared for the project determined that implementation of the Proposed Action would result in temporary, short-term impacts on air quality, surface waters, hazardous materials/waste, wildlife, soils and from noise. There would be minor, longer-term impacts on visual resources, vegetation, and topography. Overall, the environmental analysis did not identify any significant impacts to any of the above resources.

DoD Sentinel Landscape Program

The DoD designated a large swath of Georgia from Fort Benning in the west to Fort Stewart in the east, including nine military installations, as part of the nation's Sentinel Landscape Program. The program is a collaboration between DoD and the Departments of Interior and Agriculture to sustain military readiness and protect working lands and important wildlife habitats near military bases from fragmentation, development encroachment, and land use changes that are incompatible with military preparedness and mission capabilities.

Global Hawk PDM

The DAF is implementing a PDM program for the RQ-4 Global Hawk unmanned aerial system to extend the service lifespan of the assets. The WR-ALC has been tasked by the DAF to perform these PDM operations on the Global Hawk, which would entail the actions for depot maintenance on approximately six Global Hawk unmanned aerial vehicles per year. Depot maintenance for depaint and corrosion prevention and control of the Global Hawk would be performed in existing, permitted Corrosion Control Facilities, where these processes are currently being performed on other aircraft.

Cumulative impacts to the environment from the insignificant impacts of the proposed action to surface water, stormwater, groundwater and water supply, air quality, solid waste, hazardous materials and hazardous waste, and noise for this proposed action would be inconsequential. Potential direct and cumulative impacts of the above-listed projects would be addressed through environmental reviews, permit requirements, permit modifications as necessary, and via maintaining normal procedures to minimize adverse environmental impacts. The proposed action for Global Hawk PDM does not involve the construction of new facilities, beyond those facilities constructed/modified for the initial study, which qualified for a categorical exclusion under category A2.3.7. There is no significant impact to environmental, cultural, or natural resources at or near the WR-ALC operation area that would intersect with the resource impacts of this proposed action.

C-130 PDM Increase

The WR-ALC is proposing an expansion of the PDM workload capability on C-130 aircraft from the current level of 50 aircraft to 90 aircraft by 2028. This increase is due to legacy aircraft requirements. The depot maintenance activities performed at the WR-ALC for increased workload for PDM for the C-130 would be similar to activities currently being performed for PDM of existing C-130 aircraft and its parts and components. Robins AFB does not currently have any empty (e.g., extra) space to perform the workload increase. Existing space has already been optimized. Construction is proposed to support this increased demand. This construction includes an approximately 166,000 SF multi-bay hangar near Building 91, an approximately 110,600 SF multi-bay hangar near Building 2390, construction of a functional test area on the airfield, a concrete slab foundation for a narrow body paint booth (considered equipment), additional apron parking for 12 C-130 aircraft, a new fuel pit area, a relocated hot cargo pad and vehicle holding area, as well as additional vehicle parking.

Cumulative impacts to the environment from the insignificant impacts of the proposed action to surface water, stormwater, groundwater and water supply, air quality, solid waste, hazardous materials and hazardous waste, noise, architectural resources, and transportation would be inconsequential. Potential direct and cumulative impacts of the above-listed projects would be addressed through environmental reviews, permit requirements, permit modifications as necessary, and via maintaining normal procedures to minimize adverse environmental impacts. There is no significant impact to environmental, cultural, or natural resources at or near the WR-ALC operation area that would intersect with the resource impacts of this proposed action.

Robotic Laser Technology for Full Aircraft Depaint

The WR-ALC is proposing to implement a more efficient, less labor intensive, environmentally friendly, technologically advanced depainting process for aircraft PDM at the WR-ALC by utilizing robotic laser technology for full aircraft depaint. The new robotic laser depaint technology is being considered for full aircraft depainting of up to 24 C-130 aircraft per year and would be located in Building 44. Facility modifications would not be required at Building 44 for installation or operation of the laser.

Since the proposed action area is limited to Building 44, there is no direct correlation or intersection of this proposed action and the pending actions described above or the other proposed actions analyzed in this MPEA. Potential cumulative impacts of the above-listed projects would be addressed through environmental reviews, permit requirements, permit modifications

as necessary, and via maintaining normal procedures to minimize adverse environmental impacts. The proposed action for robotic laser technology for full aircraft depaint does not involve the construction of new facilities. There is no significant impact to environmental, cultural, or natural resources at or near the WR-ALC operation area that would intersect with the resource impacts of this proposed action.

Aircraft Fire Bottle Maintenance Facility

The WR-ALC is proposing to demolish Building 150 and construct a new Aircraft Fire Bottle Maintenance Facility at this same location for providing fire extinguishing support and life raft servicing to aircraft in support of PDM operations. WR-ALC would construct a temporary Aircraft Fire Bottle Maintenance Facility, demolish Building 150 and adjacent Building 151 to provide additional space for the BMCOC, construct the new Aircraft Fire Bottle Maintenance Facility in the location of Buildings 150 and 151, and then demolish the temporary Aircraft Fire Bottle Maintenance Facility. The temporary facility would be constructed at a turf management area south of Building 321 and include construction of a 14,500-sf concrete pad with utilities and a tension fabric building with temporary demountable partitions. This area has been previously disturbed and built upon during the past history of the Base.

Cumulative impacts to the environment from the temporary and insignificant impact of the proposed action to soils, land use, surface water, stormwater, air quality, solid waste, hazardous materials and hazardous waste, toxic materials, noise, vegetation, and traffic during construction would be inconsequential. Potential direct and cumulative impacts of the above-listed projects would be addressed through environmental reviews, permit requirements, permit modifications as necessary, and via maintaining normal procedures to minimize adverse impacts. Furthermore, it is unlikely that the projects would be constructed simultaneously, further reducing the potential for cumulative adverse impacts. There is no significant impact to environmental, cultural, or natural resources at or near the WR-ALC operation area that would intersect with the resource impacts of this proposed action.

Robins International Industrial Park

The Robins International Industrial Park was certified as a “Georgia Ready for Accelerated Development” site in November 2020. The 600-acre site is located east of I-75 between Watson Boulevard, near exit 146 and Russell Parkway, near exit 144. The site is approximately 10 miles from Robins AFB. The industrial park is home to the new 60,000 sq ft Pure Flavor Distribution Center that was constructed in Spring 2019.

Robins AFB CHP Projects

The WR-ALC is investigating the suitability of CHP technology for several workloads. These projects are in the Investment Grade Audit stage of consideration. The energy requirements for the workloads has not been finalized, nor has the prospective equipment. Building 59 (paint/depaint operations), Building 58 (paint/depaint hangars at Building 50, Building 54, and Building 89 as well as the Building 80 chiller plant), Building 229 (402d Software Engineer Group operations), and replacement of the existing Central Steam Plant (Building 644) distribution system across multiple buildings are potential locations for future CHP projects. These CHPs would have a combined ground disturbance of roughly 2 acres, with most of the project area already being disturbed and impervious. None of these projects would trigger PSD permitting.

These projects are being considered through the use of the Utility Energy Service contract vehicle. Other projects under consideration by the WR-ALC using this contract vehicle focus on internal building energy upgrades such as LED lighting and general heating, ventilation, and air control upgrades. These other projects do not pose environmental concern and would therefore not contribute to any adverse cumulative environmental effects.

3.11.2 Magnitude and Significance of Cumulative Effects

The Proposed Action would have negligible or no effect on floodplains or wetlands, groundwater, wildlife, threatened or endangered species, archaeology, geology, topography, or environmental justice. The Proposed Action would result in insignificant adverse effects on air quality, surface waters, stormwater, transportation safety, solid waste, hazardous/toxic materials, vegetation, architectural resources, and soils. There also would be beneficial effects to noise and socioeconomics.

Noise Environment

There would be negligible incremental beneficial cumulative effects on the noise environment. Construction related activities would result in a temporary increase in noise. The respective past, current and future projects reviewed for the cumulative effects evaluation were not individually significant contributors to the overall noise environment. The respective current and future projects are separated by distance, and it is unlikely that construction activities would take place at the same time.

Air Quality

All construction projects have the potential for temporary, adverse effects on air quality due emissions from construction equipment, although it is unlikely that all present and future construction projects would occur at the same time as the Proposed Action. Construction activity would comply with appropriate local, state and federal environmental regulations and permits to minimize adverse air quality impacts. Further, air emission model results showed that the applicable NEPA impact indicators for criteria pollutants would not be exceeded under the Proposed Action. There would be no significant incremental adverse cumulative effects on air quality from implementation of the Proposed Action.

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.

Safety and Transportation

Implementation of the Proposed Action would have a negligible beneficial effect on safety and a negligible impact on transportation. The proposed Robins AFB Gate 5 entry and control rework would have beneficial effects on safety and transportation, and CHP system implementations would enhance Base safety. Overall, there would be an insignificant incremental beneficial effect on safety from implementation of these relevant actions when combined with implementation of the Proposed Action.

Process Materials and Solid 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 to local landfills from implementation of the Proposed Action.

Biological and Natural Resources

All construction projects have the potential for adverse effects on wildlife from habitat alteration and from noise and human activity during construction. The relevant actions are generally in areas of marginal wildlife habitat because of past land practices and development. The negligible amount of vegetation to be cleared as a result of the Proposed Action site consists of maintained turf and ornamental landscaping. Streams, wetlands, and their regulated buffers would be avoided, and there would be a negligible adverse effect on vegetation. There would be no significant incremental adverse cumulative effects on biological resources from implementation of the Proposed Action.

Cultural Resources

There would be no significant incremental adverse cumulative effects on to cultural resources. The other relevant projects are not known to have cultural resources impacts, and the Proposed Action does not occur in an area with known archaeological resources. No adverse impacts to architectural resources would occur from the proposed action. The respective past, current and future projects reviewed for the cumulative effects evaluation were not individually significant contributors to cultural resource impacts. The Proposed Action (and any of the action alternatives in this MPEA) would have no adverse cumulative effect to cultural resources.

Physical Environment

The Proposed Action would have no effect to topography or geology and negligible impacts to soils. There would be no significant incremental adverse cumulative effects on earth resources from implementation of the Proposed Action.

Socioeconomics and Environmental Justice

All of the development projects would involve the purchase of goods and services and short-term employment during construction. Longer-term effects on the local economy would derive from permanent workforce expansion due to new or expanded commercial operations and tax revenues. No minority, low-income, or other populations would be disproportionately impacted as a result of the cumulative impact of these projects. Overall, there is expected to be a minor incremental beneficial cumulative effect on the local economy.

3.11.3 Summary of Cumulative Effects

There would be no incremental adverse cumulative effects on floodplains or wetlands, groundwater, wildlife, threatened or endangered species, archaeology, architectural resources, geology, topography, or environmental justice when compared to past, present, and foreseeable future effects from other relevant actions in the project area due to avoidance of the resource from implementation of the Proposed Action or any of the action alternatives in this MPEA.

The Proposed Action would result in insignificant adverse effects on air quality, surface waters, stormwater, transportation safety, solid waste, hazardous/toxic materials, vegetation, and soils. When compared to past, present, and foreseeable future effects from other relevant actions in the project area, there would be no significant incremental adverse cumulative effects due to the small magnitude and/or short, temporary duration of effects from implementation of the Proposed Action or any of the action alternatives in this MPEA.

4.0 LIST OF PREPARERS

Name/Organization	Degree	Contribution	Years of Experience
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Josh Sandige NEI	B.S. Environmental Science	Project Scientist	3
Jonathan Bourdeau, PWS 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.	BS, Mechanical Engineering	Senior Air Quality Analyst	28
Richard Harmon Wood E&IS, Inc.	M.S. Coastal Ecology B.S. Marine Biology	Senior Technical Reviewer	33

5.0 PERSONS AND AGENCIES CONSULTED/COORDINATED

Tribal Consultation

Eastern Band of Cherokee Indians

United Keetoowah Band of Cherokee

Seminole Tribe of Florida

Seminole Nation of Oklahoma

Thlopthlocco Tribal Town

Poarch Band of Creek Indians

Muscogee Creek Nation

Kialegee Tribal Town of Oklahoma

Coushatta Tribe of Louisiana

Alabama-Coushatta Tribe of Texas

Alabama-Quassarte Tribal Town

Agency Consultation

Historic Preservation Division, Georgia Department of Community Affairs

Environmental Protection Division

Georgia Environmental Protection Division

Georgia Department of Community Affairs

Georgia Department of Natural Resources

Georgia Department of Transportation

Houston County Board of Commissioners

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APPENDIX A

Public, Tribal, and Agency Reviews, Comments, and Consultations

Public Comment

Houston Home Journal

Houston County's Legal Organ Since 1870
1210 Washington Street P.O. Box 1910
Perry, Georgia 31069
478 987-1823
Legal Fax 478 988-9193
Legal E-mail: legals@hhjnews.com

Georgia, Houston County

Personally appeared before me this date, Cheri M. Adams, Publisher of Houston Home Journal, Perry, Georgia, the Official Legal Organ of Houston County, Georgia who certifies that the Display Notice

4x5 Display ad

was published in Houston Home Journal on the following dates:

6/01/2022

This June 1, 2022

Cheri M. Adams
Publisher of the
Houston Home Journal
Perry, GA 31069

Sworn and subscribed before me
This June 1, 2022

KERRI CROSBY NOTARY PUBLIC Exp. Nov. 23, 2022 HOUSTON COUNTY, GA.

Kerri Crosby
Notary Public, Houston County
My Commission expires November 23, 2022

168732
4x5 EPN Display Notice
Nicklaus Engineering, Inc.

LIFESTYLE

Did a well-known psychologist beat a 1950s quiz show which really wanted her to lose?

By Jack Bagley

My e-mail recently has been full of spam from people trying to match me up with other people. Like they assume I'm all kinds of lonely or something. (I am, but that's another story.)

I get at least one a day offering me the "love match of a lifetime" if I just click on their website and scroll through the pictures of lonely singles needing companionship.

Funny... that's how I found my cat, Boris. Well, it was the Humane Society website, and Boris was looking for a new home, but hey - it's the same thing, right?

If I need companionship, I think I'm perfectly capable of going out and finding it all by myself. I don't have to spend money to have a friend. (Isn't that sort of against the law, anyway?)

Besides, I might find my own picture in there somewhere. Embarrassing.

Just so you know, you don't have to spend money to enjoy some trivia - well, not more than what it cost to buy this newspaper, anyway. Here it is... so have a good time!

Did you know ...

...a difference exists between a nook and a cranny? If you didn't know, a nook is a corner, while a cranny is a crack in the wall. (I didn't know. I'm not really all that sure that I cared, but I certainly didn't know.)

... bees in France produced different colors of honey in 2012? In the area around Mulhouse, France, beekeepers discovered their hives turning out honey in odd shades of blue and green. Concerned about some unheard-of disease running amok in the colonies, the beekeepers eventually discovered the reason – the bees were bringing back to the hives small particles of coloring from a nearby candy plant, which produced M&Ms™. The colored honey could not be sold, and that meant a financial hit for the beekeepers. (I think they missed a great marketing opportunity here, you know.)

...a world-championship duck calling contest is held each year in Arkansas? Tracing its history back to 1936, the contest takes place every Thanksgiving weekend in Stuttgart, Arkansas. Anyone wishing to enter has to first win a sanctioned preliminary duck-calling contest, and the winner takes home a nice $15,000. (And all the ducks they can call, I suppose.)

...a well-known psychologist beat a quiz show which wanted her to lose? In 1955, Dr. Joyce Brothers (1927-2013) auditioned to become a contestant on the quiz program, The $64,000 Question. She won a spot on the show but under the rules could not use her expert knowledge in psychology. In fact, the producers of the show thought they could get big ratings by giving her a topic she shouldn't know anything about, like, say, boxing. As it turned out, Brothers' husband Milton (1926-1989) was a big boxing fan, and between the two of them the doctor - who used her photographic memory - was able to prepare for the show. She not only won the top prize of $64,000, she appeared on the show's spin-off, The $64,000 Challenge, and walked off once again with the top prize. The producers – caught up in the resulting quiz show scandals – admitted later that they selected boxing for Brothers in an effort to keep her from winning, and also admitted that the doctor had beaten them fair and square. (The fix was in either way, I guess.)

...sharks are the only fish that can blink with both eyes at the same time? (I'm not sure why that matters, but there you are.)

...you could experience a thundersnow? What's a thundersnow, you ask? Well, it's one of the rarest events in weather – a snowstorm accompanied by thunder and lightning. (What else would you call it?)

...greeting cards on store shelves are touched an average of 25 times before someone buys them? (Who figures out this stuff, anyway?)

...in Oklahoma, state law makes it illegal to wrestle a bear? (What if you win? The idea is bear-ly believable.)

...two popular brands of the same candy are made by competing companies? The popular candy brands of Rolo™ and KitKat™ are made and marketed globally by the Nestlé company – except in the United States, where competitor Hershey's makes the candy.

...fireworks have a patron saint? Saint Barbara (273 AD-306 AD) was murdered, apparently, by her own father. And immediately after she was killed, her father was struck by lightning and died. St. Barbara thus became associated with lightning, and logically with the later developments of explosives and fireworks. (So if you want to call the Fourth of July "St. Barbara's Day," it's okay with me.)

...one woman served as First Lady of two different nations? Grace Simbine (born 1945) is the widow of two African leaders. Her first husband, Samora Machel (1933-1986), served as president of Mozambique from 1975 until his death. She later married Nelson Mandela (1918-2013), who at the time was serving as president of South Africa. (Thus making her a Double First Lady, it seems.)

...scorpions glow under ultraviolet light? (I'm not sure why this matters, but it is a fascinating thing to know.)

...a meteor, a meteorite, and a meteoroid are all the same thing? Picture, if you will, a rock out in space. While that rock is out there away from Earth, it's called a meteoroid. Once captured by Earth's gravity and pulled into the atmosphere, it begins to burn up, and is called a meteor. If, by chance, some portion of the rock survives the trip through the atmosphere and strikes the ground, then it's called a meteorite. (Call it Irving if that makes you feel better about it.)

...one plain bar of milk chocolate has more protein than a banana? (Bananas, however, don't melt in your mouth. Life is full of little trade-offs.)

Now... you know!

This week in American history

By Andy Kober

Here is what happened this week in American History.

• June 2. On this day in 1919, bombs explode in eight US cities resulting in two deaths and two injuries. Sent through the mail, the packages appeared innocuous enough with a label indicating they were from "Gimbel Brothers – Novelty Samples." Each package actually contained a stick of dynamite with a detonating device activated when the package was opened. One of the bombs was sent to Georgia Senator Thomas Hardwick and opened by a housekeeper. The explosion blew off one of her hands and injured Hardwick's wife, who suffered severe burns to her face and neck. The bombings were blamed on followers of Italian anarchist Luigi Galleani.

• June 3. Today in 1781, Jack Jouett – sometimes referred to as the "Paul Revere of the South" begins a midnight ride to warn Thomas Jefferson and the Virginia legislature of an impending raid by the British. The ride lasted until dawn.

• June 4. In 1855, US Army Major Henry C. Wayne departs New York aboard the sailing vessel USS Supply. His mission is to obtain camels for use by the US Camel Corps in the American desert. The experiment was abandoned with the outbreak of the American Civil War. The camels were eventually sold at auction though some sources report that some of the animals escaped. The last reported sighting of one of the camels was in 1891 in Arizona.

• June 5. On this day in 1851, "Uncle Tom's Cabin" written by Harriet Beecher Stowe begins being published in the National Era newspaper. In is a 10-month run. While the novel is anti-slavery, today the name "Uncle Tom" is considered derogatory describing a person as excessively subservient especially when based on race.

• June 6. Today in 1912, the volcano Novarupta erupts in what is now the Katmai National Park and Preserve, southwest of Anchorage, Alaska. The violent series of eruptions lasted about 60 hours and is recorded as the largest volcanic eruption of the 20th centry.

• June 7. In 1965, the US Supreme Court issues a decision in Griswold v. Connecticut that prohibits the states from making use of birth control by married couples a criminal offense.

• June 8. On this day in 2009, journalists Euna Lee and Laura King are in Korea working for Current TV are detained after crossing into North Korea. They were tried and sentenced to twelve years of hard labor. They would be pardoned after a visit by former President Bill Clinton reportedly on behalf of then President Barack Obama.

The U.S. Constitution — Part Two

America's Greatness

Tim Lewis
Columnist

In Part One of this series on the U.S. Constitution, we saw that in post-Revolutionary War America, the U.S. government was operating under the Articles of Confederation. Under these Articles, there was no federal executive or judicial branch. Congress, therefore, had little power to enforce or interpret laws. The country seemed headed toward economic disaster. With each state essentially operating independently, it had become glaringly evident that a stronger government was needed to bring about cohesion and stability.

Help was soon on the way. On May 25, 1787, a Constitutional Convention got underway inside Philadelphia's Independence Hall, where only eleven years earlier, the Declaration of Independence had been signed. This new convention was for the "sole and express purpose of revising the Articles of Confederation" and intended to "render the federal constitution adequate to the exigencies of government and the preservation of the Union."

Fifty-five delegates were present, representing twelve of the thirteen states. The daunting task before them was to strengthen the national government while also limiting its power. Little did the participants know that it would take them over four exhausting months to laboriously work out the details of compromises which would establish an extraordinary system of government flexible enough to withstand over two centuries of change.

With the doors and windows shut to bar the press and public, they met in one small room for up to six hours a day. The summer heat was suffocating. Some delegates gave speeches lasting for hours, and the absence of individual delegates tending to their own private matters meant that a state's delegation vote could quickly change. As the convention wore on, tempers flared such that there was an "ever-present danger that the convention might dissolve and the entire project be abandoned."

Several issues rose to the forefront, one of which was slavery. Some northern states had already begun to outlaw slavery, and sentiments ran high. Another controversial topic was that of state representation in the national legislature. The Federalists were led by James Madison and presented the Virginia Plan, which was based solely on proportional representation among the states by population. This favored the interests of the more populous states. The Anti-Federalists proposed the New Jersey Plan, which provided each state with equal representation.

By the end of June, the friction between the Federalists and the Anti-Federalists had deteriorated into threats and accusations. During this spectacle, Dr. Benjamin Franklin rose to address George Washington and the entire delegation, appealing to the words of Psalm 127:1. The following is a portion of his speech:

"I have lived, sir, a long time, and the longer I live, the more convincing proofs I see of this truth, that God governs in the affairs of men. And if a sparrow cannot fall to the ground without His notice, is it probable that an empire can rise without His aid? We have been assured, sir, in the Sacred Writings, that 'except the Lord builds the house, they labor in vain that build it.' I firmly believe this: and I also believe that without His concurring aid we shall succeed in this political building no better than the builders of Babel: we shall be divided by our partial local interests: our projects will be confounded, and we ourselves shall become a reproach and bye word down to future ages...I therefore beg leave to move that henceforth prayers imploring the assistance of Heaven, and its blessings on our deliberations, be held in this assembly every morning before we proceed to business, and that one or more of the clergy of this city be requested to officiate in that service."

However, with no funds to hire a chaplain, the delegation could not enact Franklin's proposal. So the intense debate continued throughout the summer, and eventually the most divisive issues were resolved by the Connecticut Compromise, or the Great Compromise.

To answer the serious differences over state representation, they agreed in this compromise to a bicameral legislature with proportional representation of the states in the lower house (House of Representatives) and equal representation in the upper house (Senate). As for the hot-button issue of slavery, the northern states yielded to the southern states' demand that slavery was a matter for the individual states, not the Constitution. Many believed the South would not join the Union without this compromise. For purposes of taxation and determining the number of representatives a state could send to Congress, it was decided to count individual slaves as three-fifths of a person. It also required states to return fugitive slaves to their owners and agreed that Congress could not act to prohibit the slave trade prior to 1808.

Through great adversity, the Framers managed to laboriously work out the details of a Constitution for an entirely new form of government. Stay tuned for more about how this came about.

Tim Lewis may be reached at timlewis1@windstream.net.

Notice for Early Public Review of a Proposed Activity Near a Floodplain

The Department of the Air Force (DAF) proposes three mission realignments including the beddown of the Kingpin mission, beddown of the E-11A Battlefield Airborne Communication Node (BACN) mission, and the establishment of a Spectrum Warfare Group (SWG) mission at Robins Air Force Base (AFB). This effort would involve construction of new facilities in previously disturbed areas located in close proximity to a 100-year floodplain. This notice satisfies the requirement of Executive Order (EO) 11988, Section 2(a)(3) and has been prepared and made available to the public by the USAF in accordance with Title 32, *Code of Federal Regulations*, Part 989.24(c) and Air Force Manual 32-7003, *Environmental Conservation*, for actions proposed in floodplains. Interagency scoping has also been initiated with Georgia Department of Community Affairs, Georgia Historic Preservation Division, Georgia Department of Natural Resources, US Fish & Wildlife Service, Georgia Department of Transportation, Georgia Environmental Protection Division, and the Houston County Board of Commissioners.

The Kingpin mission is currently located in close proximity to combat areas, which exposes troops to the threat of attack by nearby adversaries. Today's advances in communications and data technology make distance virtually irrelevant and allows shifting the mission to the continental United States to capitalize on the advantage of distance. Activation of an SWG would consolidate and modernize DAF electronic warfare capabilities by providing cheaper and more effective enemy deterrent systems for the defense and attack capabilities of the United States. Warfare in the electromagnetic spectrum (EMS) has been proliferated more in modern times than ever before Therefore, developing resilient, agile, and efficient technologies and techniques is essential to ensure the DAF's dominance in the EMS. Beddown of an E-11A squadron would improve the readiness of the E-11A BACN by conducting personnel training, growing expertise, stabilizing the associated career fields, and better managing rotational deployments. A stateside based E-11A unit is needed to eliminate anomalous aircraft and mission management and normalize mission operations.

The three proposed mission realignments would involve facilities developments in the northeastern section of the base, which is partially located within a 100-year floodplain. For ease of communications and logistics, the proposed mission developments are required to be in close proximity to the flightline, access roads, and other related missions. The northeast section of the campus was selected to house the majority of the proposed developments as the existing facility space within this area best meets these requirements. There are three facility alternatives for Kingpin mission. Alternative 1 would include renovations to Bldg. 2066. Five backup generators adjacent to Bldg. 2066 would be constructed, requiring trenching for power lines. Alternative 2 would site 15 mobile Container Express (CONEX) structures in a parking lot adjacent to Bldg. 2083, which may require trenching for power utilities. Partial renovations would be made to Bldg. 2081 and 2066. Alternative 3 would utilize portions of Bldg. 2039. SWG activation would require construction of a new facility with an approximate footprint of 80,000 to 90,000 square feet. Renovations of Bldg. 2072 and 2051 north would enable an interim solution. The final facility solution would use the new facility as well as space in Bldg. 2066 and Bldg. 2051 north. Beddown of the E-11A mission would involve temporary location in either Bldg. 300 or Bldg. 301. The final location would utilize Bldg. 2039, 2045, 2067, and 2051 south. The mission would also require construction of Rapidly Deployable Payload Control Element (PCE) units in a PCE Yard. Placement of the PCE yard would utilize a parking lot for installation of PCEs, communications antenna, and security fence.

These projects would conform to applicable state and local floodplain protection standards. Other alternatives involved renovating or expanding into other facilities or dislocating mission requirements across Robins AFB, or using other DAF installations, but were dismissed from further consideration because they did not meet selection standards outlined in the assessment. These selection standards included Mission Operability, Facility and Utilities Capacity, Communications Capacity, Base Support, and Operational Timing. The two overarching alternatives considered are Alternative 1 and the No-Action Alternative. Alternative 1 would select all three proposed actions, constructing or renovating all proposed facilities. The USAF is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to analyze the potential environmental impacts of the Proposed Action.

The USAF is seeking advance public comment on the Proposed Action to determine if there are any public concerns regarding the project's potential impacts and is soliciting public input or comment on potential project alternatives during the next 30 days. The full draft EA will also be available for public review when complete. A location map for the proposed action can be found in the public notice at https://www.robins.af.mil/Units/78th-Air-Base-Wing/78th-Civil-Engineer-Group/Environmental/. Please provide written comments to 78 ABW/PA, 620 9th St., Bldg. 905, Rm 230, Robins AFB, GA 31098. Comments can also be provided by phone at (478) 926-2137 or by email at 78.abw.pa.office@us.af.mil. Comments will be accepted for 30 days from the publication of this notice.

168732

Tribal Review

Name/Title of Organization	Comments
Chairman Osceola Seminole Tribe of Florida	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander
Principal Chief Lambert Eastern Band of Cherokee Indians	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander
Chief Bunch United Keetoowah Band of Cherokee	5/27/22: Invalid mailing address resulted in inability to deliver consultation letters via mail. Ms. Kimberly Baker indicated that email is the preferred method of communication. Email sent to Ms. Baker on 6/3/22.
Chief Lewis Johnson Seminole Nation of Oklahoma	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander
Mekko Morrow Thlopthlocco Tribal Town	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander
Tribal Chair Bryan Poarch Band of Creek Indians	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander
Principal Chief Floyd Muscogee Creek Nation	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander
Town King Givens Kialegee Tribal Town of Oklahoma	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander

Chairman Sickey Coushatta Tribe of Louisiana	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander
Chairwoman Flores Alabama-Coushatta Tribe of Texas	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander
Chief Yargee Alabama-Quassarte Tribal Town	5/27/22: Request for tribal consultation sent to Federally Recognized Tribes associated with Robins AFB via certified mail, including CD of Final DOPAA and letter signed by Installation Commander
Principal Chief Bill John Baker Elizabeth Toombs, Special Projects Officer Cherokee Nation of Oklahoma	24 Sept 18- Via phone, CRM was notified by Elizabeth Toombs, THPO, Cherokee Nation of Oklahoma, that Robins AFB was outside of the area of interest for the Cherokee Nation of Oklahoma, and they were not interested in future requests to consult. 24 Sept 18- 78th Wing Commander was notified by Elizabeth Toombs, THPO, Cherokee Nation of Oklahoma, that Robins AFB was outside of the area of interest for the Cherokee Nation of Oklahoma, and they were not interested in future requests to consult.
Chairman Billy Cypress Fred Dayhoff, Section 106 & NAGPRA Miccosukee Indian Tribe of Florida	September 20, 2016, the Miccosukee Indian Tribe of Florida, per Mr. Fred Dayhoff (Section 106 & NAGPRA Coordinator, (239-695-4360) has requested that Robins AFB discontinue correspondence with the Tribe. Mr. Dayhoff, per phone conversation with Jacob Tuttle (Robins AFB Cultural Resources Manager), has said that the Miccosukee Indian Tribe of Florida is only interested in undertakings in the State of Florida.

DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

MAY 2 5 2022

Colonel Lindsay C. Droz
Commander
78th Air Base Wing
620 Ninth Street, Suite 230
Robins AFB GA 31098-2255

Chairwoman Flores
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston TX 77351

RE: Final DOPAA Robins Mission Transformation

Dear Ms. Flores

On behalf of Robins Air Force Base (AFB), I am writing to invite the Alabama-Coushatta Tribe of Texas to enter into government-to-government consultation, pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and Title 36 Code of Federal Regulations (CFR), Part 800, Protection of Historic Properties.

The Department of the Air Force (DAF) is proposing to implement changes to mission sets at Robins Air Force Base in Warner Robins, Georgia. The purpose of the proposed federal action is to improve U.S. troop safety abroad; to consolidate and modernize the DAF's Electronic Warfare capabilities; and improve the readiness of the E-11A BACN mission. To evaluate the potential environmental consequences of these actions, the Air Force is preparing a Description of Proposed Action and Alternatives (DOPAA), pursuant to the Environmental Impact Analysis Process (32 CFR § 989), and the National Environmental Policy Act (NEPA) of 1969, as amended. This DOPAA would become Sections 1 and 2 of an Environmental Assessment (EA), should USAF proceed with that level of the Environmental Impact Analysis Process (EIAP) for the Proposed Action. A copy of the Final DOPAA is attached for your information and review.

With this letter, Robins AFB invites the Alabama-Coushatta Tribe of Texas to consult and comment on any NHPA Section 106 concerns, or any concerns regarding the NEPA attached DOPAA. As part of this request for consultation, we request your assistance in identifying whether you have any concerns regarding traditional cultural properties and any concerns regarding religious or sacred importance to your Tribe that may be affected. If any such properties or concerns are present, we would like to work with you in protecting them. We would like to start these actions soon, so we ask that you correspond with us with your concerns at your earliest convenience.

For correspondence with Robins AFB, you may send written comments or consultations to me at the above address. Alternatively, I can be reached at (478) 926-2177. I look forward to any input you may have regarding this endeavor.

For questions, comments, or input regarding the NEPA review matters or regarding the NHPA Section 106 review and consultation matters, or if your staff wishes to correspond directly with Environmental Management staff, please contact the Cultural Resources Program Manager, Leanne Morrow at (478) 472-8411 or leanne.morrow@us.af.mil.

Sincerely

LINDSAY C. DROZ, Colonel, USAF
Commander

Attachment:
Final DOPAA Robins Mission Transformation

Agency Review

DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING
ROBINS AIR FORCE BASE GEORGIA

26 May 2022

78 CEG/CEIE
380 Robins Parkway Building 359
Robins AFB, GA 31098

Georgia Environmental Protection Division
2 Martin Luther King Drive
Suite 1456 E
Atlanta GA 30334

SUBJECT: Scoping for Robins AFB Mission Transformation Environmental Assessment (EA)

This letter forwards a proposed action that we would normally send to the Georgia Clearing house, and they would send to you for review. However, because the Clearing House website now indicates that we are to send proposed projects directly to potentially interested agencies, we are sending this directly to you for your review and comment.

We respectfully request that you review the attached document by 30 June 2022. We ask that you make your comments as specific as possible to aid our analysis. If you do not have comments, we request that you let us know via email (shannie.williams@us.af.mil) to ensure continuity of documentation. If we do not receive your comments by 5 July 2022, we will assume that you do not have comments.

If you have any questions, please contact me at (478) 327-7439.

WILLIAMS.SHANNIE.H.1277894633
Digitally signed by WILLIAMS.SHANNIE.H.1277894633
Date: 2022.05.26 15:33:16 -04'00'

SHANNIE H. WILLIAMS
Environmental Branch Chief
78th Civil Engineer Group

Attachment:
Robins Mission Transformation EA Scoping Notice

From:	SWICK, NOLAN T GS-13 USAF AFMC AFCEC/CZN
To:	Eric Gardner; Josh Sandige
Cc:	Janocha, Erica A CIV USARMY CESAS (USA); Stotler, Shauna L CIV USARMY CESAS (USA)
Subject:	FW: [Non-DoD Source] Scoping for Robins AFB Mission Transformation Environmental Assessment (EA)
Date:	Tuesday, June 7, 2022 2:38:00 PM
Attachments:	Species List_RobinsAFB_MissionTransformatonEA.pdf

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Please see below and attached comment/info from the USFWS.

-----Original Message-----
From: HARTLEB, MARISSA E NH-03 USAF AFMC 78 CEG/CEIE
<marissa.hartleb@us.af.mil>
Sent: Tuesday, June 7, 2022 2:32 PM
To: SWICK, NOLAN T GS-13 USAF AFMC AFCEC/CZN <nolan.swick@us.af.mil>
Subject: FW: [Non-DoD Source] Scoping for Robins AFB Mission Transformation Environmental Assessment (EA)

Nolan,

Please see the species list attached and interagency comment below.

Thank you,

Marissa Hartleb
NEPA Planner (All WR-ALC Actions)
78 CEG/CEIE
Cell: (814) 232-1938

-----Original Message-----
From: WILLIAMS, SHANNIE H NH-04 USAF AFMC 78 CEG/CEIE
<shannie.williams@us.af.mil>
Sent: Tuesday, June 7, 2022 3:16 PM
To: HARTLEB, MARISSA E NH-03 USAF AFMC 78 CEG/CEIE
<marissa.hartleb@us.af.mil>
Cc: PONCIANO, YECENIA GS-11 USAF AFMC 78 CEG/CEIE
<yecenia.ponciano@us.af.mil>
Subject: FW: [Non-DoD Source] Scoping for Robins AFB Mission Transformation Environmental Assessment (EA)

Marissa,
FYSA

Respectfully,
Shan

Sent with BlackBerry Work
(www.blackberry.com)

From: GAES Assistance, FW4 <gaes_assistance@fws.gov
<mailto:gaes_assistance@fws.gov> >
Date: Tuesday, Jun 07, 2022, 1:00 PM

To: WILLIAMS, SHANNIE H NH-04 USAF AFMC 78 CEG/CEIE <shannie.williams@us.af.mil <mailto:shannie.williams@us.af.mil> >
Subject: [Non-DoD Source] Scoping for Robins AFB Mission Transformation Environmental Assessment (EA)

Shannie,

Thank you for your May 26, 2022 letter in regards to the scoping for Robins AFB mission transformation Environmental Assessment. We do not anticipate any impacts to listed species or jurisdictional wetlands resulting from this project. I do want to make you aware that we have instituted a streamlined process for consultations and technical assistance that runs through our Information for Planning and Consulation website (https://ipac.ecosphere.fws.gov/). All projects for review should request an official species list through this platform first (I did this for you to save you the time; see attached), which provides some basic but useful information for the planning process and begins a case file that allows us to track the project review. When submitting projects for review in the future, please include the IPaC species list or the project code associated with the project (provided in the species list). For more information on the consultation process, please visit our newly revamped website (https://www.fws.gov/office/georgia-ecological-services/project-planning-review). Thank you for the opportunity to review this project.

-Eric

Eric F. Bauer, PhD
Fish and Wildlife Biologist
Georgia Ecological Services
U.S. Fish and Wildlife Service
gaes_assistance@fws.gov
www.fws.gov/office/georgia-ecological-services/
<http://www.fws.gov/office/georgia-ecological-services/>
Check out our new project planning & review guidance <https://www.fws.gov/office/georgia-ecological-services/project-planning-review> and tools <https://www.fws.gov/story/planning-and-consultation-tools-georgia> pages!

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Georgia Ecological Services Field Office
355 East Hancock Avenue
Room 320
Athens, GA 30601-2523
Phone: (706) 613-9493 Fax: (706) 613-6059

In Reply Refer To: June 07, 2022
Project Code: 2022-0051126
Project Name: Robins AFB mission transformation Environmental Assessment

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Thank you for your request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design if you determine those species or designated critical habitat may be affected by your proposed project.

FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency, project proponent, or their designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make “no effect” determinations. If you determine that your proposed action will have “no effect” on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally listed threatened or endangered fish or wildlife species without the appropriate permit. If you need additional information to assist in your effect determination, please contact the Service.

If you determine that your proposed action may affect federally listed species, please consult with the Service. Through the consultation process, we will analyze information contained in a biological assessment or equivalent document that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a Habitat Conservation Plan) may be necessary to exempt harm or harass federally listed threatened or endangered fish or wildlife species. For more information regarding formal consultation and HCPs, please see the Service's Section 7 Consultation Library and Habitat Conservation Plans Library Collections.

Action Area. The scope of federally listed species compliance not only includes direct effects, but also any indirect effects of project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations). The action area is the spatial extent of an action's direct and indirect modifications or impacts to the land, water, or air (50 CFR 402.02). Large projects may have effects to land, water, or air outside the immediate footprint of the project, and these areas should be included as part of the action area. Effects to land, water, or air outside of a project footprint could include things like lighting, dust, smoke, and noise. To obtain a complete list of species, the action area should be uploaded or drawn in IPaC rather than just the project footprint.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. An updated list may be requested through IPaC.

If you determine that your action may affect any federally listed species and would like technical assistance from our office, please send us a complete project review package (refer to Georgia Ecological Services' Project Planning and Review page for more details), including the following information (reference to these items can be found in 50 CFR§402.13 and 402.14):

1. A description of the proposed action, including any measures intended to avoid, minimize, or offset effects of the action. Consistent with the nature and scope of the proposed action, the description shall provide sufficient detail to assess the effects of the action on listed species and critical habitat, including:
    - The purpose of the action;
    - The duration and timing of the action;
    - The location of the action;
    - The specific components of the action and how they will be carried out;
    - Description of areas to be affected directly or indirectly by the action;
    - Maps, drawings, blueprints, or similar schematics of the action
2. An updated Official Species List

3. Biological Assessments (may include habitat assessments and information on the presence of listed species in the action area);
4. Description of effects of the action on species in the action area and, if relevant, effect determinations for species and critical habitat;
5. Conservation measures and any other available information related to the nature and scope of the proposed action relevant to its effects on listed species or designated critical habitat (examples include: stormwater plans, management plans, erosion and sediment plans). Please see our Georgia Planning and Consultation Tools page for recommendations.

Please submit all consultation documents via email to gaes_assistance@fws.gov or by using IPaC, uploaded documents, and sharing the project with a specific Georgia Ecological Services staff member. If the project is on-going, documents can also be sent to the Georgia Ecological Services staff member currently working with you on your project. For Georgia Department of Transportation related projects, please work with the Office of Environmental Services ecologist to determine the appropriate USFWS transportation liaison.

WETLANDS AND FLOODPLAINS

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value. We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website (https://www.fws.gov/program/national-wetlands-inventory) integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

MIGRATORY BIRDS

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's Migratory Birds Program (https://fws.gov/program/migratory-birds). To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction. It can be found at the Service's Migratory Birds Conservation Library Collection (https://fws.gov/library/collections/migratory-bird-conservation-documents).

Information related to best practices and migratory birds can be found at the Service's Avoiding and Minimizing Incidental Take of Migratory Birds Library Collection (https://fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds).

BALD AND GOLDEN EAGLES

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at the Service's Bald and Golden Eagle Management Library Collection (https://fws.gov/library/collections/bald-and-golden-eagle-management).

NATIVE BATS

If your species list includes Indiana bat (*Myotis sodalis*) or northern long-eared bat (*M. septentrionalis*) and the project is expected to impact forested habitat that is appropriate for maternity colonies of these species, forest clearing should occur outside of the period when bats may be present. Federally listed bats could be actively present in forested landscapes from April 1 to October 15 of any year and have non-volant pups from May 15 to July 31 in any year. Non-volant pups are incapable of flight and are vulnerable to disturbance during that time.

Indiana, northern long-eared, and gray (*M. grisescens*) bats are all known to utilize bridges and culverts in Georgia. If your project includes maintenance, construction, or any other modification or demolition to transportation structures, a qualified individual should complete a survey of these structures for bats and submit your findings via the Georgia Bats in Bridges cell phone application, free on Apple and Android devices. Please include these findings in any biological assessment(s) or other documentation that is submitted to our office for technical assistance or consultation.

Additional information on bat avoidance and minimization can be found at Georgia Ecological Services' Planning and Consultations Tools and Bat Conservation in Georgia pages.

MONARCH BUTTERFLY

On December 20, 2020, the Service determined that listing the Monarch butterfly (*Danaus plexippus*) under the Endangered Species Act is warranted but precluded at this time by higher priority listing actions. With this finding, the monarch butterfly becomes a candidate for listing. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

As it is a candidate for listing, the Service welcomes conservation measures for this species. Recommended, and voluntary, conservation measures for projects in Georgia can be found at our Monarch Conservation in Georgia page.

STATE AGENCY COORDINATION

Additional information that addresses at-risk or high priority natural resources can be found in the State Wildlife Action Plan (https://georgiawildlife.com/WildlifeActionPlan), at Georgia Department of Natural Resources, Wildlife Resources Division Biodiversity Portal (https://

georgiawildlife.com/conservation/species-of-concern), Georgia's Natural, Archaeological, and Historic Resources GIS portal (https://www.gnahrgis.org/gnahrgis/index.do), and the Georgia Ecological Services HUC10 Watershed Guidance page.

Thank you for your concern for endangered and threatened species. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please email gaes_assistance@fws.gov and reference the project county and your Service Project Tracking Number.

This letter constitutes Georgia Ecological Services' general comments under the authority of the Endangered Species Act.

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Georgia Ecological Services Field Office
355 East Hancock Avenue
Room 320
Athens, GA 30601-2523
(706) 613-9493

Project Summary

Project Code: 2022-0051126
Event Code: None
Project Name: Robins AFB mission transformation Environmental Assessment
Project Type: Military Development
Project Description: Construction and renovation of facilities on previously developed/ disturbed land. Some trenching required for power lines.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.6165512,-83.57711359275649,14z

Counties: Houston County, Georgia

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Reptiles

NAME	STATUS
Gopher Tortoise *Gopherus polyphemus* Population: eastern No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6994	Candidate

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Canby's Dropwort *Oxypolis canbyi*	Endangered
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/7738	
Harperella *Ptilimnium nodosum*	Endangered
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/3739	
Relict Trillium *Trillium reliquum*	Endangered
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/8489	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

NAME	BREEDING SEASON
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

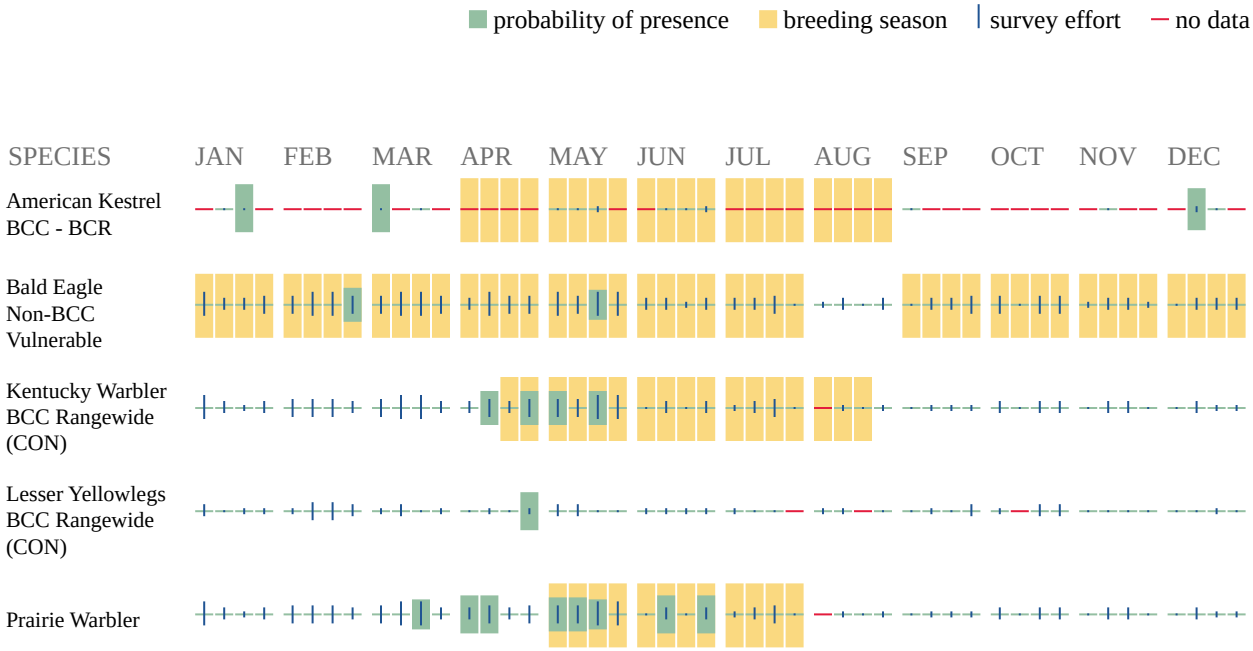
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

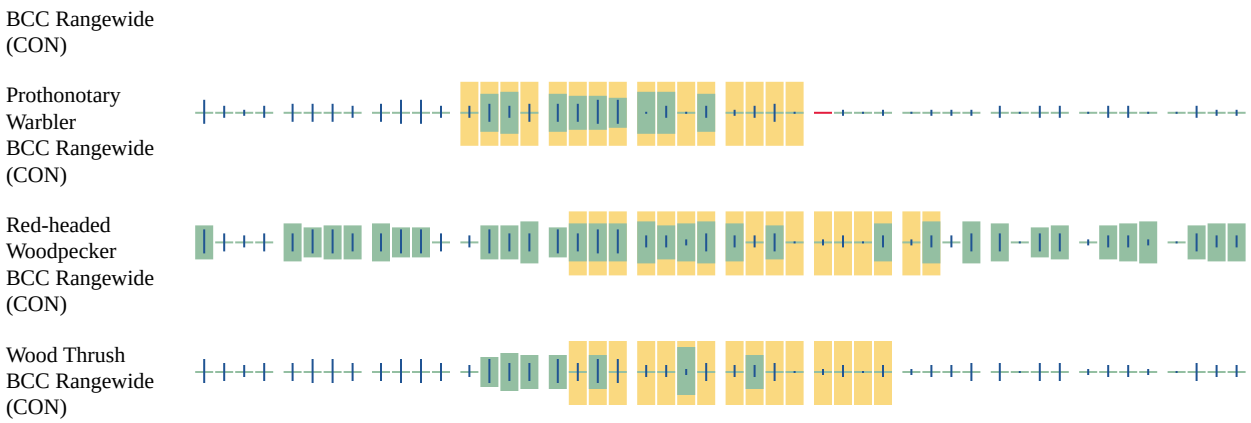
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides

birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- Palustrine

RIVERINE

- Riverine

LAKE

- Lacustrine

IPaC User Contact Information

Agency: Fish and Wildlife Service
Name: Eric Bauer
Address: 355 East Hancock Avenue
City: Athens
State: GA
Zip: 30601
Email eric_bauer@fws.gov
Phone: 7066139493

Lead Agency Contact Information

Lead Agency: Air Force
Name: Shannie Williams
Email: shannie.williams@us.af.mil
Phone: 4783277439

Brian P. Kemp
Governor

Georgia® Department of Community Affairs

Christopher Nunn
Commissioner

June 10, 2022

Shannie Williams
Environmental Branch Chief
78th Civil Engineer Group
380 Robins Parkway, Building 359
Robins Air Force Base, Georgia 31098

RE: Robins AFB: Beddown Kingpin and E-11A Missions, Establish SWG Mission
Houston County, Georgia
HP-220609-002

Dear Ms. Williams:

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

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

Please refer to project number **HP-220609-002**in future correspondence regarding this project. If we may be of further assistance, please contact me at (404) 486-6376 or Jennifer.dixon@dca.ga.gov.

Sincerely,

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

Josh Sandige

From: SWICK, NOLAN T GS-13 USAF AFMC AFCEC/CZN <nolan.swick@us.af.mil>
Sent: Monday, June 13, 2022 11:58 AM
To: Eric Gardner; Josh Sandige
Cc: Janocha, Erica A CIV USARMY CESAS (USA)
Subject: FW: Robins AFB Mission Transformation EA

Below is another agency response.

-----Original Message-----
From: HARTLEB, MARISSA E NH-03 USAF AFMC 78 CEG/CEIE <marissa.hartleb@us.af.mil>
Sent: Monday, June 13, 2022 1:56 PM
To: SWICK, NOLAN T GS-13 USAF AFMC AFCEC/CZN <nolan.swick@us.af.mil>
Subject: FW: Robins AFB Mission Transformation EA

Nolan,

Please see response below.

Thank you,

Marissa Hartleb
NEPA Planner (All WR-ALC Actions)
78 CEG/CEIE
Cell: (814) 232-1938

-----Original Message-----
From: WILLIAMS, SHANNIE H NH-04 USAF AFMC 78 CEG/CEIE <shannie.williams@us.af.mil>
Sent: Monday, June 13, 2022 2:54 PM
To: HARTLEB, MARISSA E NH-03 USAF AFMC 78 CEG/CEIE <marissa.hartleb@us.af.mil>
Cc: AIKEN, LEAH NH-03 USAF AFMC 78 ABW/JA <leah.aiken@us.af.mil>
Subject: FW: Robins AFB Mission Transformation EA

FYSA

-----Original Message-----
From: Greg Boike <gboike@mg-rc.org>
Sent: Monday, June 13, 2022 2:25 PM
To: WILLIAMS, SHANNIE H NH-04 USAF AFMC 78 CEG/CEIE <shannie.williams@us.af.mil>
Subject: [URL Verdict: Neutral][Non-DoD Source] RE: Robins AFB Mission Transformation EA

Good Afternoon Ms. Williams,

The Middle Georgia Regional Commission, as a local partner of the Georgia Department of Community Affairs, has received your request for intergovernmental review on the mission realignments including the beddown of the Kingpin

mission, beddown of the E-11A Battlefield Airborne Communication Node (BACN) mission, and establishment of the Spectrum Warfare Group (SWG) mission at RAFB. Provided that new construction within the floodplain is avoided, as is currently proposed, then no adverse effects on the natural environment should be expected as a result of any of the project alternatives.

Best Regards,

Greg Boike

Director of Public Administration

Middle Georgia Regional Commission

175 Emery Highway, Suite C

Macon, Georgia 31217

Direct: 478-722-6945

Main: 478-751-6160

Fax: 478-751-6517

From: Tonya Mole <tonya.mole@dca.ga.gov>
Sent: Thursday, June 2, 2022 11:48 AM
To: Greg Boike <gboike@mg-rc.org>
Subject: FW: Certified Mail

I think this may need to go to you???

Tonya Mole

Region 6 Representative

Georgia Department of Community Affairs

Mobile 404-852-6876

tonya.mole@dca.ga.gov <mailto:tonya.mole@dca.ga.gov>

<https://twitter.com/GA_DCA>

-----Original Message-----
From: Hembree, Kim <Kim.Hembree@dnr.ga.gov>
Sent: Friday, July 1, 2022 9:51 AM
To: WILLIAMS, SHANNIE H NH-04 USAF AFMC 78 CEG/CEIE
<shannie.williams@us.af.mil>
Subject: [Non-DoD Source] FW: RAFB Mission notice

Shannie,

The above letter was reviewed by the Georgia Environmental Protection Division's Land Branch and Watershed Protection Branch and no concerns were identified.

-Kim

From: Ashworth, Jim <Jim.Ashworth@dnr.ga.gov>
Sent: Thursday, June 30, 2022 12:12 PM
To: Hembree, Kim <Kim.Hembree@dnr.ga.gov>
Subject: RAFB Mission notice

Kim, we received this letter on the 10th floor today (it may have gone upstairs first). This is a letter from Robins notifying us of a proposed activity near a floodplain. If I'm not mistaken, these are the same areas we looked at in a notice several weeks ago. We do not have any active remediation sites in any of these areas.

Jim Ashworth

GA Environmental Protection Division

Department of Defense Unit

2 Martin Luther King, Jr. Drive, SE

Suite 1054 East

Atlanta, GA 30334

Phone: (470) 524-2883 (New)

jim.ashworth@dnr.ga.gov <mailto:jim.ashworth@dnr.ga.gov>

DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING
ROBINS AIR FORCE BASE GEORGIA

26 May 2022

78 CEG/CEIE
380 Robins Parkway Building 359
Robins AFB, GA 31098

Georgia Environmental Protection Division
2 Martin Luther King Drive
Suite 1456 E
Atlanta GA 30334

SUBJECT: Scoping for Robins AFB Mission Transformation Environmental Assessment (EA)

This letter forwards a proposed action that we would normally send to the Georgia Clearing house, and they would send to you for review. However, because the Clearing House website now indicates that we are to send proposed projects directly to potentially interested agencies, we are sending this directly to you for your review and comment.

We respectfully request that you review the attached document by 30 June 2022. We ask that you make your comments as specific as possible to aid our analysis. If you do not have comments, we request that you let us know via email (shannie.williams@us.af.mil) to ensure continuity of documentation. If we do not receive your comments by 5 July 2022, we will assume that you do not have comments.

If you have any questions, please contact me at (478) 327-7439.

WILLIAMS.SHANNIE.H.1277894633
Digitally signed by WILLIAMS.SHANNIE.H.1277894633
Date: 2022.05.26 15:33:16 -04'00'

SHANNIE H. WILLIAMS
Environmental Branch Chief
78th Civil Engineer Group

Attachment:
Robins Mission Transformation EA Scoping Notice

From: HARTLEB, MARISSA E NH-03 USAF AFMC 78 CEG/CEIE
To: SWICK, NOLAN T GS-13 USAF AFMC AFCEC/CZN
Subject: FW: RAFB Mission notice
Date: Friday, July 8, 2022 11:59:20 AM
Attachments: Floodplain Encroachment Review Robins Air Force Base.pdf
FW_ RE_ Scoping for Robins AFB Mission Transformation Environmental Assessment .pdf

---

Nolan,

There was a little more interagency correspondence from scoping evidently.
See attached/below.

Thank you,

Marissa Hartleb
NEPA Planner (All WR-ALC Actions)
78 CEG/CEIE
Cell: (814) 232-1938

-----Original Message-----
From: WILLIAMS, SHANNIE H NH-04 USAF AFMC 78 CEG/CEIE
<shannie.williams@us.af.mil>
Sent: Friday, July 8, 2022 12:53 PM
To: HARTLEB, MARISSA E NH-03 USAF AFMC 78 CEG/CEIE
<marissa.hartleb@us.af.mil>; LEACH, ROLAND W GS-12 USAF AFMC 78 ABW/PA
<roland.leach@us.af.mil>
Subject: FW: RAFB Mission notice

-----Original Message-----
From: Hembree, Kim <Kim.Hembree@dnr.ga.gov>
Sent: Friday, July 8, 2022 11:55 AM
To: WILLIAMS, SHANNIE H NH-04 USAF AFMC 78 CEG/CEIE
<shannie.williams@us.af.mil>
Subject: [Non-DoD Source] RE: RAFB Mission notice

Shannie,

I failed to include correspondence from Georgia EPD's Floodplain Unit. Since the property is federal land, the Floodplain Unit has no regulatory oversight, however they went ahead and provided a Floodplain Encroachment Review. I've attached the review and an email from Haydn Blaize explaining EPD's stance.

I apologize for the delay in sending this.

-Kim

From: Hembree, Kim
Sent: Friday, July 1, 2022 9:51 AM
To: WILLIAMS, SHANNIE H NH-04 USAF AFMC 78 CEG/CEIE <shannie.williams@us.af.mil>
Subject: FW: RAFB Mission notice

Shannie,

The above letter was reviewed by the Georgia Environmental Protection Division's Land Branch and Watershed Protection Branch and no concerns were identified.

-Kim

From: Ashworth, Jim <Jim.Ashworth@dnr.ga.gov <mailto:Jim.Ashworth@dnr.ga.gov> >
Sent: Thursday, June 30, 2022 12:12 PM
To: Hembree, Kim <Kim.Hembree@dnr.ga.gov <mailto:Kim.Hembree@dnr.ga.gov> >
Subject: RAFB Mission notice

Kim, we received this letter on the 10th floor today (it may have gone upstairs first). This is a letter from Robins notifying us of a proposed activity near a floodplain. If I'm not mistaken, these are the same areas we looked at in a notice several weeks ago. We do not have any active remediation sites in any of these areas.

Jim Ashworth

GA Environmental Protection Division

Department of Defense Unit

2 Martin Luther King, Jr. Drive, SE

Suite 1054 East

Atlanta, GA 30334

Phone: (470) 524-2883 (New)

jim.ashworth@dnr.ga.gov <mailto:jim.ashworth@dnr.ga.gov>

From:	Blaize, Haydn
To:	Hembree, Kim
Cc:	Truszczynski, Anna; Welte, Jennifer; Craw, Veronica
Subject:	FW: RE: Scoping for Robins AFB Mission Transformation Environmental Assessment
Date:	Tuesday, June 28, 2022 11:48:36 AM
Attachments:	image002.png image003.png Floodplain Encroachment Review, Robins Air Force Base.docx

Kim,

Typically, the floodplain unit prepares Floodplain Encroachment Reviews to identify flood risks and specifically whether a project is located in a mapped special flood hazard area or regulatory floodplain. These are normally requested by financers and project sponsors such as USDA, Boards of Education, GDOT, regional commissions, DCA etc. Projects are usually located in areas where floodplain development permits may be required by local jurisdictions, and for State properties, by GSFIC. In this case, the property is federal property, so there is no local jurisdiction or state floodplain development permitting requirement. We have not in the past been requested to prepare floodplain encroachment reviews for projects on federal lands, since such activity is governed by Executive Order 11988. I have attached a Floodplain Encroachment Review for the project should it be deemed necessary to have one submitted.

Thanks

Haydn Blaize
Program Manager
GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
Floodplain Unit
2 Martin Luther King Jr. Dr., Suite 1152 E, Atlanta, GA 30334
NEW NUMBER
Direct – (470) 607-2604
Email: Haydn.Blaize@dnr.ga.gov | Web: http://www.georgiadfirm.com/
Find your Flood Risk: http://www.georgiadfirm.com/default.htm | Facebook: https://www.facebook.com/GAFloods
YouTube: http://www.youtube.com/user/georgiafloodmap/feed

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

Watershed Protection Branch
Nonpoint Source Program
Floodplain Unit
2 Martin Luther King, Jr. Drive
Suite 1152, East Tower
Atlanta, Georgia 30334

FLOODPLAIN ENCROACHMENT REVIEW

To: Shannie Williams
Email: shannie.williams@us.af.mil

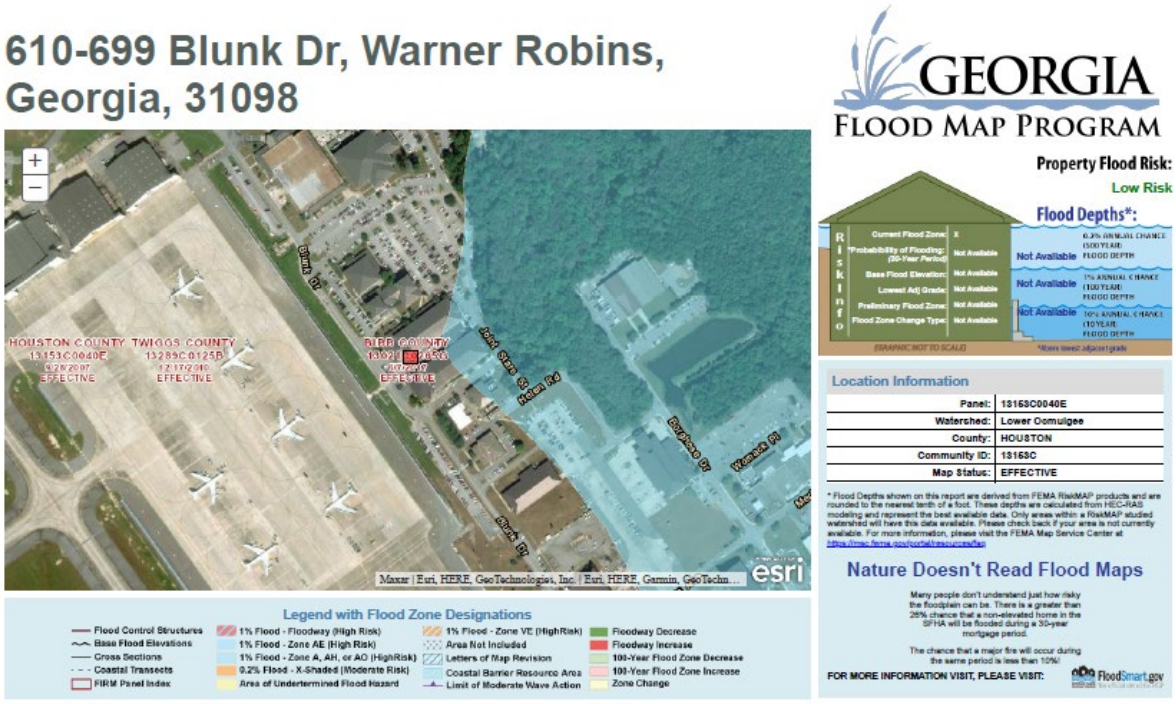
PROJECT NAME:	Robins Air Force Base Mission Transformation	COUNTY:	Houston	COMMUNITY:	Robins Air Force Base
LOCATION:	Please also refer to the project location map provided by the applicant.				
BRIEF PROJECT DESCRIPTION:	The applicant proposes to construct new facilities and renovate several existing facilities in previously disturbed areas located near a 100-year floodplain.				
APPLICANT:	US Air Force	APPLICATION DATED:	05/26/2022	APPLICATION RECEIVED:	06/13/2022

SFHA* ENCROACHMENT:	No	EFFECTIVE PANEL(S):	13153C0040E, 13153C0105E (Effective Date: 09/28/2007)	FLOOD RISK ZONE(S):	X
www.georgiadfirm.com		PRELIMINARY PANEL(S):	N/A	FLOOD RISK ZONE(S):	N/A
https://msc.fema.gov/portal		LETTER OF MAP CHANGE (S):	N/A	FLOOD RISK ZONE(S):	N/A
WATERSHED(S):		Lower Ocmulgee (8 Digit HUC: 03070104)	COMMUNITY CONTACT:	Robins Air Force Base Shannie Williams 380 Robins Parkway Building 359 Robins AFB, GA31098 (407) 327-7439	

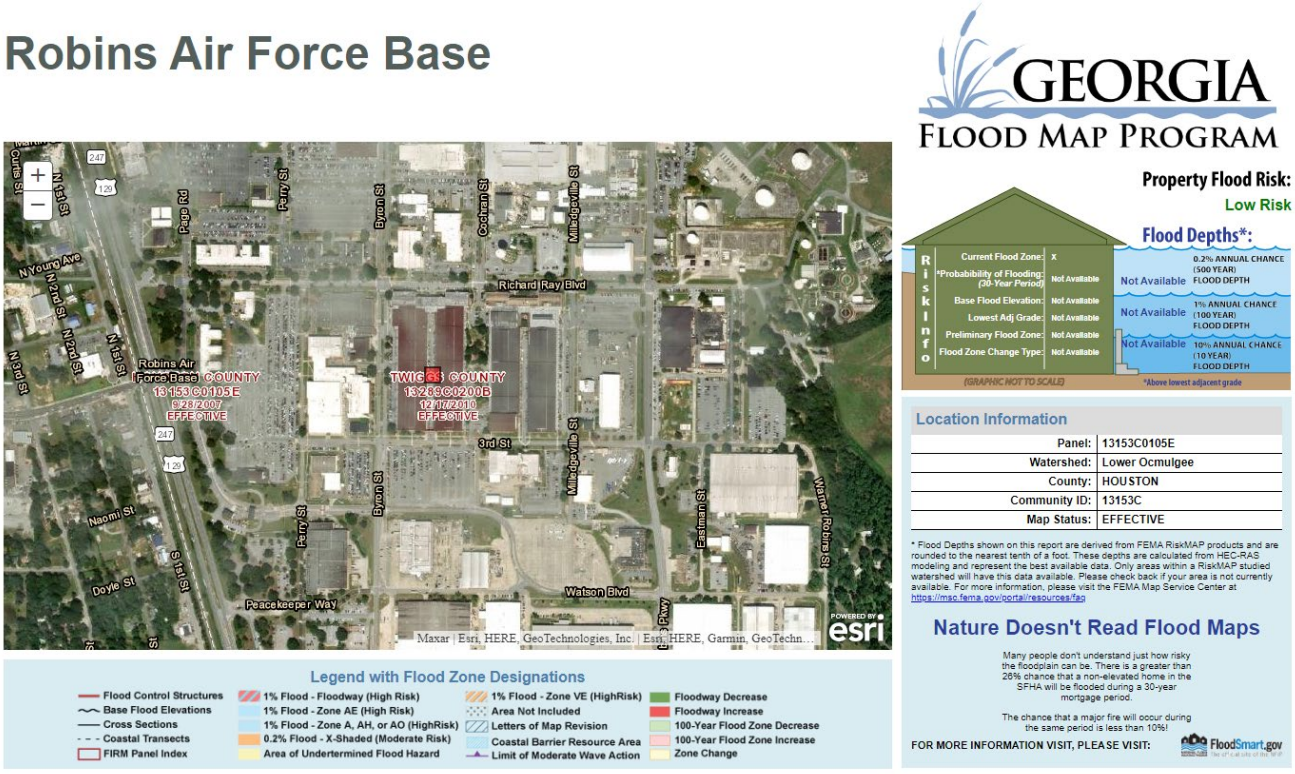
COMMENTS:	From inspection of the effective Flood Insurance Rate Maps (FIRMs) developed by the Federal Emergency Management Agency (FEMA) Agency, the project footprint is located close to the mapped Special Flood Hazard Area (SFHA), Zone A, an area of high flood risk. The applicant has however indicated that all construction activity is planned for areas outside of the mapped SFHA, in Zone X, an area of low flood risk. A Floodplain Snapshot Map showing the designated floodplain impacts in the vicinity of the project location, accompanied by the relevant extract of FEMA's FIRM are attached. The project is on federal property and the "Community" is a federal entity, Robins Air Force Base. Should there be any future consideration to undertake developmental activity in the mapped SFHA, responsibility for enforcing floodplain development regulations lies with Robins Air Force Base for compliance with the provisions of the National Flood Insurance Program and in particular 44 CFR 60.3. The applicant also indicated that "these projects would conform to applicable state and local floodplain protection standards." In addition, federally funded activities in or affecting the floodplain are regulated under relevant Executive Orders, including Executive Order 11988, and it is the responsibility of the sponsoring Federal Agency to assure compliance.

Prepared By:	Haydn Blaize	Telephone:	(470) 607-2604	Email:	Haydn.blaize@dnr.ga.gov
Signature:				Date:	06/27/2022

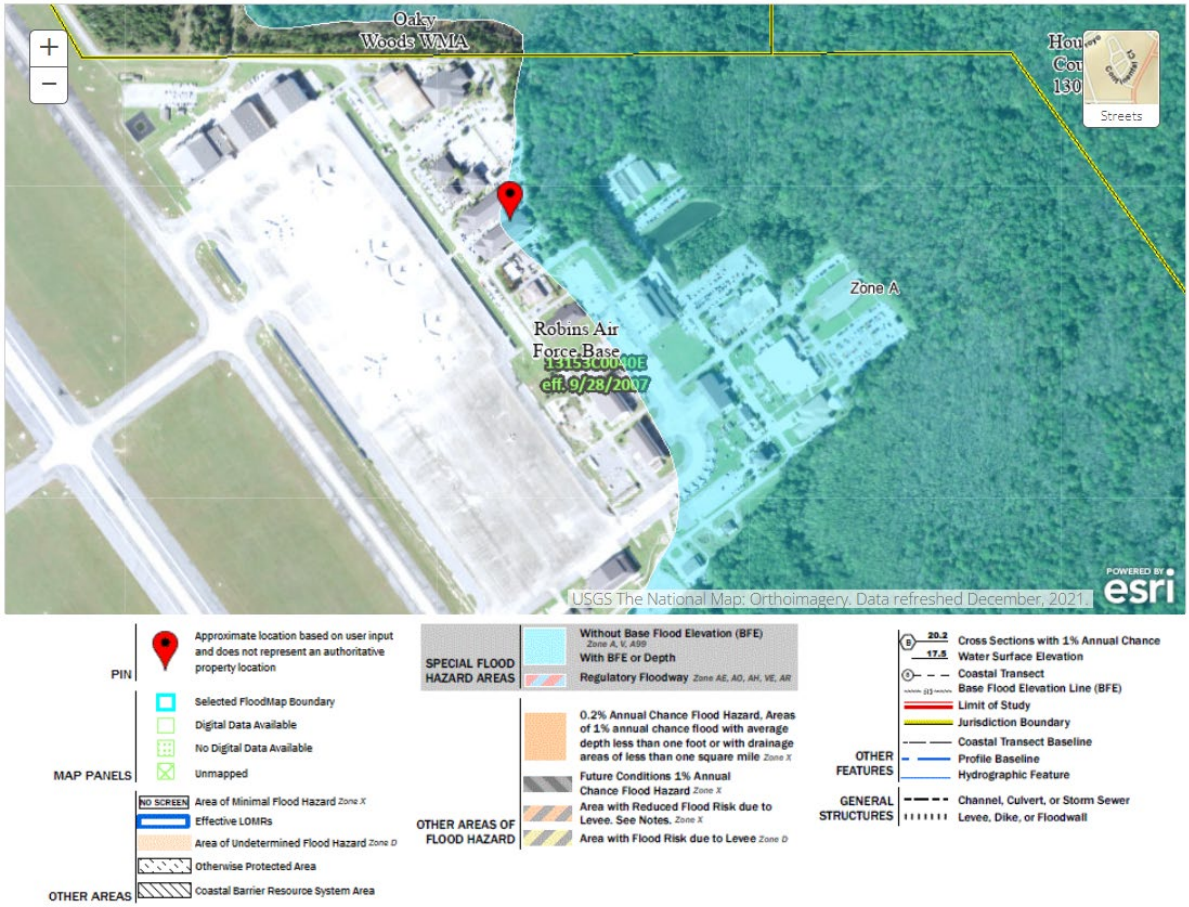
*Special Flood Hazard Area – Area Inundated by the 1% Annual Chance Flood (Often Referred to as the 100-year Flood)
Attachments:



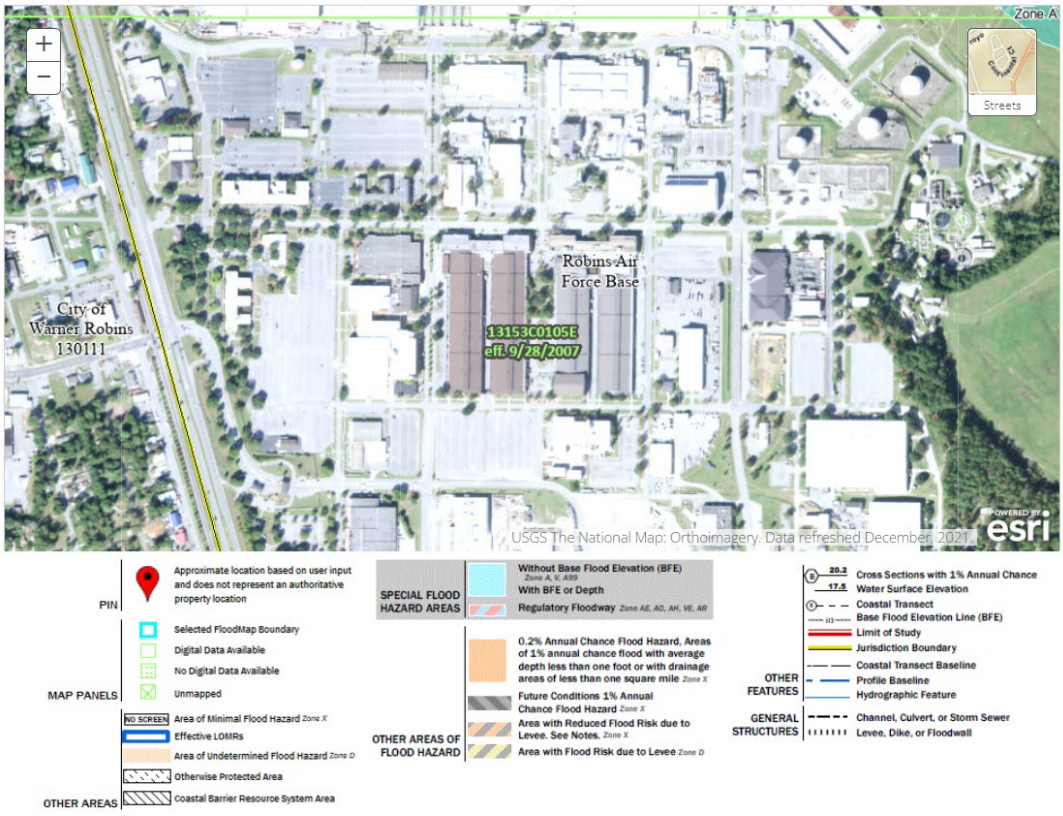
Floodplain Snapshot for the proposed project area, Area 2-1



Floodplain Snapshot for the proposed project area, Area 2-2

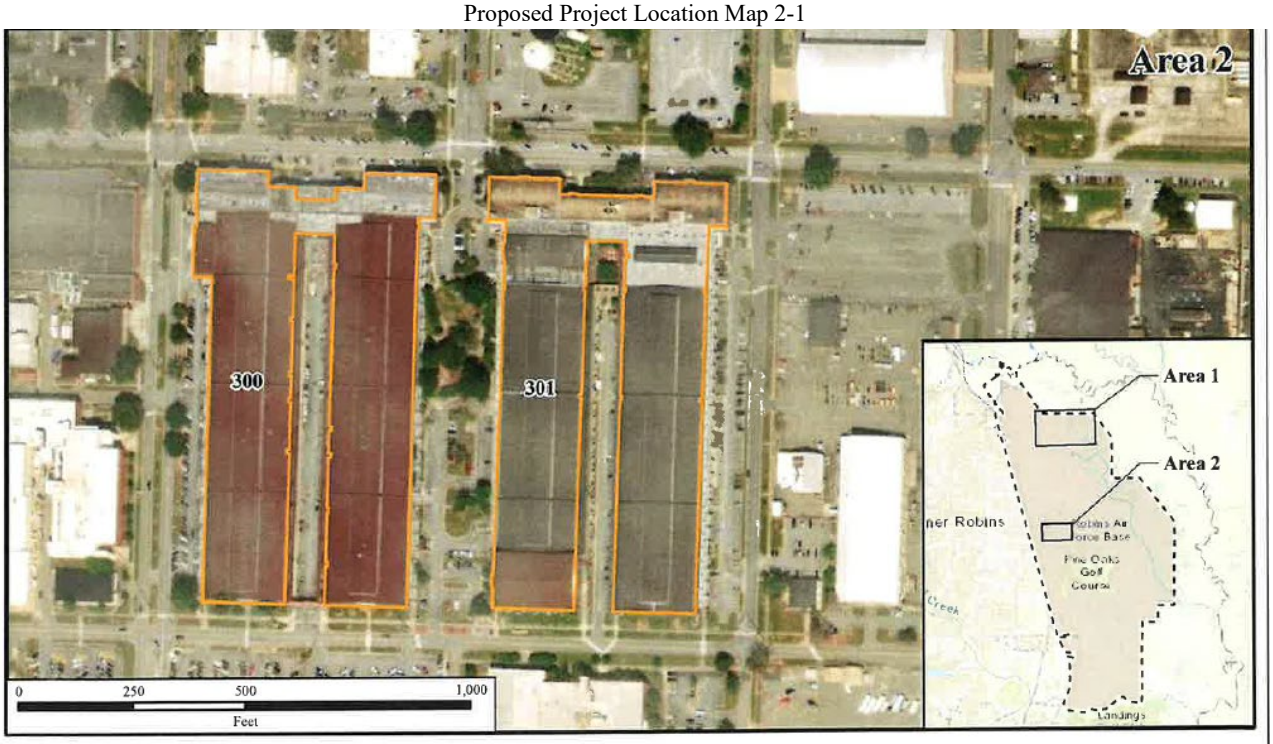


FEMA FIRM Extract



FEMA FIRM Extract

Proposed Project Location Map 2-1



Legend

- Proposed Action Development Location
- Installation Boundary
- 100-Year Floodplain

Proposed Action Location Map

Robins Mission Transformation
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

Proposed Project Location Map 2-2

Section 106 Consultations with Georgia
Historic Preservation Division

DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

4 August 2022

78 CEG/CEIE
775 Macon Street
Robins AFB GA 31098

Ms. Stacy Rieke
Historic Preservation Division
Environmental Review
60 Executive Park S
Atlanta, GA 30329

SUBJECT: HP-220609-002: Robins AFB Beddown Kingpin and E-11A Missions, Establish SWG Mission

Dear Ms. Rieke

Robins Air Force Base (AFB) is conducting an Environmental Assessment (EA) for mission changes at the 78th Air Base Wing for the following projects: (i) beddown of the Kingpin mission; (ii) the establishment of a Spectrum Warfare Group (SWG) mission; and (iii) beddown of the E-11A Battlefield Airborne Communication Node (BACN) mission at Robins Air Force Base (AFB), Georgia. We previously requested your participation during the scoping period in a letter sent on May 27, 2022. Thank you for your response during the scoping period (letter sent on June 10, 2022) which acknowledged your notification of this federal undertaking.

In accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 Code of Federal Regulations (CFR) Part 800, Robins AFB is initiating consultation and advising you of a proposed undertaking that has the potential to affect historic properties.

The proposed undertaking would consist of internal renovation and use of several existing facilities, the construction of one new facility to provide the necessary infrastructure for the new missions, and the installation of an antenna with a radome mounted on top. According to the Robins AFB Integrated Cultural Resources Management Plan (ICRMP), none of the buildings associated with the proposed undertaking are on the National Register of Historic Places (NRHP). However, one of the facilities associated with the proposed undertaking, Building 2081, is eligible for the NRHP. The building is important because of its history as a critical component of Robins AFB's Cold War mission. The Kingpin mission beddown would potentially require interior renovation of Building 2081, and the three new missions would require construction of the Battle Management Combined Operations Complex (BMCOC) just north of Building 2081, potentially impacting its viewshed. The E-11A BACN mission beddown

would require the construction of an antenna, also potentially impacting the Building 2081 viewshed.

The Area of Potential Effect (APE) for the proposed building renovation consists of the entire footprint of Building 2081, which is an NRHP-eligible structure. Building 2081 is located on Robins AFB, just northeast of the runway and taxiway environment. It is a two-story, asymmetrical structure with a concrete foundation and an exterior of corrugated metal. Building 2081 consists of approximately 21,000 square feet of useable space. The building was used for its original function, aircraft maintenance, until late 2003. In late 2003, half of the hangar space became storage space for the Mobility Processing Center, and the other half became office space. In 2013, the office space was renovated to accommodate a need for larger training rooms and restrooms, and exterior roll-up doors were installed in the existing hangar doors. Proposed renovations for the Kingpin Mission would include conversion of the existing storage space to additional office space by installation of a modular two-story insert, similar to the existing office space in the facility. The renovation would not require any structural changes to the building, construction or modification of permanent internal walls or materials, or any alterations to the exterior of the building. The proposed renovation is consistent with the current use of the facility, which has contained administrative functions since 2003, and the proposed internal office renovation materials would comply with the current Robins AFB Installation Facilities Standards (IFS). Based on these factors, it has been determined that the proposed renovations will not be performed on historically significant design elements, on intact materials that retain historic integrity, nor will they change the historic function of the resource.

The viewshed APE consists of the areas with a direct line of sight of the proposed BMCOC construction and proposed antenna location alternatives. The BMCOC construction is proposed on 1.8 acres of grassy open area located just north of Building 2081 and immediately adjacent to Building 2063 (Attachment 2). The BMCOC facility would be two-story and approximately 80,000-90,000 square feet to house the Kingpin, SWG, and E-11A squadron missions. Construction would begin in 2024 and last approximately two years. The overall design of the building would follow the Robins AFB IFS, incorporating brick and metal panels combined with a sloped standing seam metal roof and complementary detailing to achieve architectural compatibility with similar facilities. A two-story aircraft maintenance hangar with a similar footprint was previously located at the proposed construction location and was demolished in 2017. The facilities surrounding the proposed site of the BMCOC, including Buildings 2063, 2066, 2067, 2078, 2079, and 2081 are also two-story structures. These surrounding facilities include a mix of buildings constructed in 1960, such as buildings 2066, 2078, 2079, and 2081, and newer construction, such as Building 2063. The exterior design of the BMCOC would mimic the design characteristics of the existing, more recently constructed structures within the Building 2081 viewshed, including Building 2063. Therefore, the construction of the BMCOC would complement and blend in with the surrounding buildings, and the proposed action would have no adverse effect on the historic viewshed.

There are two alternative locations for the proposed antenna structure. Antenna location alternative 1 is adjacent to the parking lot near Building 2036. Antenna location alternative 2 is adjacent to Building 2030 (Attachment 2). The antenna tower would be constructed at least 15 feet higher than the surrounding hangars, which reach an apex of approximately 105 feet above ground surface. Therefore, the antenna would be at least 120 feet high. The antenna tower would be a steel lattice structure similar in design to existing antenna towers on Robins AFB (Attachment 4). The apex of the tower would include a 90-pound antenna enclosed within a 101-

inch wide, 102-inch high protective radome. The radome would appear as a 52 inch high cylinder capped with a 101 inch diameter, 50 inch high half sphere. These specifications were used to create a 3D rendering displaying the antenna's prominence within the viewshed to further analyze potential impacts (Attachment 3). As shown in the rendering, military antennas, towers, and buildings are located within the viewshed of Building 2081, so the inclusion of another tower would not affect the structure's viewshed. Neither of the two tower location alternatives extend further outside the boundaries of existing viewshed-obstructing structures in the area. Additionally, given the presence of historic resources surrounding this area, we have also taken into consideration the indirect visual effects that may result from this action and determined there would be no adverse effect on the historic viewshed.

After carefully assessing these undertakings, we have determined that the historic nature of Building 2081, including the property's location, design, setting, materials, workmanship, feeling, and association, would not be directly or indirectly impacted by this project and that there will be no impact to the historic viewshed due to the proposed construction of the antenna or the BMCOC north of Building 2081, leading to a conclusion of No Adverse Effect. We request your review and concurrence on the finding of No Adverse Effect pursuant to 36 CFR Part 800.5(b).

Robins Air Force Base acknowledges a 30-day calendar review period from the date we receive the return receipt. Should we not receive any comments within that time frame, we will consider the document as approved. Should you have any questions, please do not hesitate to contact Ms. Leanne Morrow at 478-222-8411 or leanne.morrow@us.af.mil.

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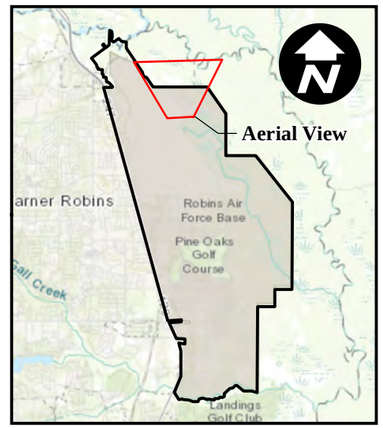
Date: 2022.08.04 16:26:50 -04'00'

SHANNIE H. WILLIAMS, NH-04, USAF
Chief, Environmental Management Branch
78th Civil Engineer Group

Attachment:

1. Draft Multi-Project Environmental Assessment for Mission Transformation at Robins Air Force Base, Georgia (Provided on CD)
2. Figure 1: Building 2081 Aerial View
3. Figure 2: Building 2081 Eye Level View
4. Figure 3: Antenna Tower Structure Depiction

Attachment 2.



Mission	Stage	Facility/Location
Kingpin	Interim: Alt. 1	2066
	Interim: Alt. 2	2066, 2081, CONEX Lot
	Interim: Alt. 3	2039
	Final	BMCOC
SWG	Interim	2051 N, 2066, 2072
	Final	2051 N, 2066, BMCOC
E-11A	Interim	300, 301, 2030, 2051 S
	Final	2030, 2039, 2045, 2051, 2067
	RD-PCE	PCE Lot, Return Lane, Antenna Locations 1 and 2

Legend

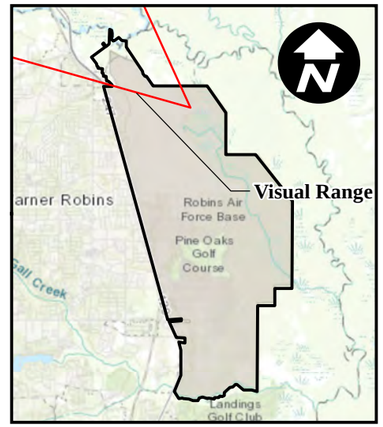
Installation Boundary

Note:
Three-dimensional imagery obtained from Google Earth 3D buildings view, dated 19 November 2019.

Figure 1

Building 2081 Aerial View
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

Attachment 3.



Mission	Stage	Facility/Location
Kingpin	Interim: Alt. 1	2066
	Interim: Alt. 2	2066, 2081, CONEX Lot
	Interim: Alt. 3	2039
	Final	BMCOC
SWG	Interim	2051 N, 2066, 2072
	Final	2051 N, 2066, BMCOC
E-11A	Interim	300, 301, 2030, 2051 S
	Final	2030, 2039, 2045, 2051, 2067
	RD-PCE	PCE Lot, Return Lane, Antenna Locations 1 and 2

Legend

Installation Boundary

Note:
Three-dimensional imagery obtained from Google Earth 3D buildings view, dated 19 November 2019.

Image capture facing northwest at altitude of approximately six feet above ground surface.

Figure 2

Building 2081 Eye Level View
Environmental Assessment
Robins Air Force Base
Warner Robins, Georgia

Attachment 4.

Figure 3. Antenna Tower Structure Depiction

Section 7 Consultations with U.S. Fish and Wildlife Service

DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

3 August 2022

78 CEG/CEIE
775 Macon Street
Robins AFB GA 31098-2201

Ms. Gail Martinez
US Fish and Wildlife Service
Georgia Ecological Services Field Office
4980 Wildlife Drive NE
Townsend Georgia 31331

SUBJECT: Project Code: 2022-0051126: Robins AFB Mission Transformation

Dear Ms. Martinez

Robins Air Force Base (AFB) requests informal consultation per Section 7 of the Endangered Species Act regarding the proposed mission changes at Robins AFB in Houston County, Georgia. We previously requested your participation during the scoping period in a letter sent on May 27, 2022. Thank you for your response during the scoping period (email sent on June 7, 2022) which indicated that you do not anticipate any impacts to listed species or jurisdictional wetlands resulting from this project.

Robins AFB has prepared an Environmental Assessment (EA) for mission changes at the 78th Air Base Wing for the following projects: (i) beddown of the Kingpin mission; (ii) the establishment of a Spectrum Warfare Group (SWG) mission; and (iii) beddown of the E-11A Battlefield Airborne Communication Node (BACN) mission at Robins AFB, Georgia. The EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations. The proposed action would reutilize existing manpower at Robins AFB, resulting in the addition of approximately 34 personnel to the base, and include facility construction and renovation under all proposed missions. Additionally, six E-11A BACN aircraft would be added to Robins AFB under the E-11A Squadron Beddown mission. In a separate action, the Department of the Air Force is retiring 16 E-8C Joint Surveillance Target Attack Radar System aircraft from Robins AFB from 2022 through 2024.

Facility renovation activities would occur exclusively in industrial areas. Construction activities would occur in paved/concrete areas, areas of maintained turf, and/or areas with ornamental landscaping. These areas are either currently paved or have been previously graded and built upon during the past history of the base. Ground disturbance would be required during construction and renovation activities.

Species Summary:

Per Information for Planning and Conservation (IPaC) Trust Resources Report from the U.S. Fish and Wildlife Service (USFWS), threatened and endangered species information and resources from the National Oceanic and Atmospheric Administration (NOAA), and the Integrated Natural Resources Management Plan (INRMP, 2017), it has been determined that the species with the designated status of threatened and endangered (T&E), per the Endangered Species Act of 1971 (ESA), that may be present within or adjacent to the project area include Canby's dropwort (*Oxypolis canbyi)*, harperella (*Ptilinmium nodosum)*, relict trillium (*Trillium reliquum)*, gopher tortoise (*Gopherus polyphemus)*, eastern indigo snake (*Drymarchon corais couperi)*, and one species with the designated status of Threatened due to Similarities of Appearance (T(S/A)), the American alligator (*Alligator mississippiensis*).

Canby's Dropwort (*Oxypolis canbyi)*, Harperella (*Ptilimnium nodosum)*, and Relict Trillium (*Trillium reliquum)*:

Basewide surveys for plants were conducted on Robins AFB by the United States Department of Agriculture (USDA) Soil Conservation Service (SCS) in 1989. Basewide rare plant surveys were performed in 1993-1994 by the Georgia Department of Natural Resources (GADNR) and again in 1997-1998 by a private contractor, and again most recently in 2014. Several state-listed rare and special concern plant species have been identified on the installation, but no federally threatened or endangered plant species have been recorded on the installation.

Gopher Tortoise (*Gopherus polyphemus)* and Eastern Indigo Snake *(Drymarchon corais couperi)*:

Basewide surveys for federal and state endangered, threatened, or rare animal species were conducted in 1989, 1994 and 2000 (USDA SCS, 1989; Heyman, 1994; Earth Tech, 2000, 2008). Between 2003 and 2008, several ecological surveys and studies have been conducted including:

- Baseline Reptile and Amphibian Survey (URS, 2003),
- Fish and Wildlife Habitats Inventory (URS, 2007b),
- Baseline Fish Survey (URS, 2008a), and
- Rare, Threatened, and Endangered Species Inventory (URS, 2008b).

Although these studies did not specifically target the presence of T&E wildlife species on Robins AFB, all were carried out with attention to the potential occurrence of threatened, endangered, or rare federal, or state-listed wildlife species. URS Group Inc. conducted the most recent T&E wildlife species survey in 2010. Gopher tortoise and eastern indigo snake were not observed in any of these conducted surveys.

Atlantic sturgeon *Acipenser oxyrinchus*:

There are six essential physical and biological features of critical habitat (spawning/reproduction and recruitment) for the Atlantic sturgeon. Spawning habitat are: (1) spawning substrate composed of hard substrate that includes rock, pebbles, cobble, gravel, limestone, and boulders, (2) salinity in the 0.0 – 0.5 parts per thousand (ppt) range, and (3) water depth of 1.8 to 27 meters. Reproduction and recruitment habitat are: (1) water depth greater than

1.8 meters, (2) adequate water quality, and (3) unobstructed pathways that are free of physical barriers hindering passage up and down the river (NOAA, 2017).

The location of this project is approximately 1.0 kilometers from the Ocmulgee River just outside the 100 year flood zone. Within the immediate project location the essential physical and biological features described are not present and there have been no documented sightings of the Atlantic sturgeon. The closest seasonal spawning activity occurs in the Ocmulgee River, approximately 60 kilometers downstream of the proposed project area (Ingram, 2016).

American alligator (*Alligator mississippiensis*):

In 1987, the Fish and Wildlife Service pronounced the American alligator fully recovered and consequently changed its status to T(S/A). For this reason, the U.S. Fish and Wildlife Service (USFWS) continues to protect the American alligator under the ESA classification as threatened due to similarity of appearance to the American crocodile (*Crocodylus acutus*). The Service thus regulates the harvest of alligators and legal trade in the animals, their skins, and products made from them, as part of efforts to prevent the illegal take and trafficking of endangered "look-alike" reptiles. Due to the designated T(S/A) status, consultation with the USFWS is not required under Section 7 of the ESA. The species has been observed at Robins AFB. The project areas are within existing developed areas on the base, so no suitable habitat for the alligator would be disturbed.

Conclusion:

None of the species listed under the ESA have critical habitat identified, have been observed during threatened and endangered species surveys conducted on Robins AFB, or are known to occur within the project area. The proposed projects would occur within populated and highly developed areas. These areas contain no natural habitat to support plant or animal populations. For the reasons described, Robins AFB has determined that the projects described in the EA will have *No Effect* on threatened and/or endangered species, their habitat, and/or proposed or designated critical habitat.

I am requesting your participation in the review and comment process, and written concurrence with our no effect determination. Copies of the draft EA and the proposed Finding of No Significant Impact (FONSI) are available at https://www.robins.af.mil/Units/78th-Air-Base-Wing/78th-Civil-Engineer-Group/Environmental/. Please provide any comments or additional information concerning the Proposed Action and Alternatives within 30 days of the receipt of this correspondence. Robins AFB will consider the 30-day calendar review period to commence from the date we receive the return receipt. Should you have any questions, please do not hesitate to contact me at 478-327-7439 or shannie.williams@us.af.mil.

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SHANNIE H. WILLIAMS, NH-04, USAF
Chief, Environmental Management Branch
78th Civil Engineer Group

References

National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce. Atlantic Sturgeon Critical Habitat Map and GIS Data. Accessed online at: https://www.fisheries.noaa.gov/resource/map/atlantic-sturgeon-critical-habitat-map-and-gis-data. Accessed 2022.

National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce, 2017. *Endangered and Threatened Species; Designation of Critical Habitat for the Endangered New York Bight, Chesapeake Bay, Carolina and South Atlantic Distinct Population Segments of Atlantic Sturgeon and the Threatened Gulf of Maine Distinct Population Segment of Atlantic Sturgeon.* July.

Ingram E.C., and Peterson D.L. 2016. Annual Spawning Migrations of Adult Atlantic Sturgeon in the Altamaha River, Georgia.

Robins AFB, 2017. *Integrated Natural Resources Management Plan (INRMP).* September.

U.S. Fish and Wildlife Service (USFWS), 2022. *Information for Planning and Consultation (IPaC) Resource List, Houston County, Georgia.* April.

U.S. Fish and Wildlife Service (USFWS), 2022. *Information for Planning and Consultation (IPaC) Resource List, Proposed Action Area, Georgia.* April.

APPENDIX B

Air Quality Analysis

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

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform 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: ROBINS AFB
State: Georgia
County(s): Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Environmental Assessment for Mission Transformation at Robins Air Force Base, Georgia

c. Project Number/s (if applicable):

d. Projected Action Start Date: 7 / 2022

e. Action Description:

The Kingpin mission would permanently transfer to Robins AFB starting in July 2024 and continuing through FY27, with some equipment and facility renovations occurring prior to that. The sensors in the AOR, consisting of ground-based radars, air traffic control systems, and networked surveillance platforms, would remain in the AOR.
The SWG would be activated in FY24 with a small number of personnel and would grow to full scope through FY27.
• FY24: SWG activates with two detachments
• FY25: Growth to three detachments and five Group staff personnel
• FY26: Two detachments convert to squadrons
• FY27: SWG reaches full scope with either three or four squadrons
The E-11A beddown would occur in four phases:
• Phase 0 (FY22): Advance Echelon team arrives at Robins AFB
• Phase 1 (FY23): Maintenance and Maintenance Support arrive at Robins; first aircraft arrival
• Phase 2 (FY23): Initial Operating Capability; begin flying operations
• Phase 3 (FY26): Full Operational Capability

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:

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 CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

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:

2022

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.390	250	No
NOx	0.339	250	No
CO	4.471	250	No
SOx	0.003	250	No
PM 10	0.009	250	No
PM 2.5	0.008	250	No
Pb	0.000	25	No
NH3	0.026	250	No
CO2e	410.6		

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.393	250	No
NOx	22.665	250	No
CO	15.846	250	No
SOx	1.722	250	No
PM 10	1.886	250	No
PM 2.5	0.399	250	No
Pb	0.000	25	No
NH3	0.054	250	No
CO2e	6575.0		

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.317	250	No

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

NOx	42.146	250	No
CO	16.147	250	No
SOx	3.429	250	No
PM 10	0.759	250	No
PM 2.5	0.691	250	No
Pb	0.000	25	No
NH3	0.030	250	No
CO2e	11355.8		

2025 - (Steady State)

Pollutant	**Action Emissions (ton/yr)**	**INSIGNIFICANCE INDICATOR**	
		Indicator (ton/yr)	**Exceedance (Yes or No)**
NOT IN A REGULATORY AREA			
VOC	0.771	250	No
NOx	40.928	250	No
CO	11.012	250	No
SOx	3.423	250	No
PM 10	0.715	250	No
PM 2.5	0.648	250	No
Pb	0.000	25	No
NH3	0.005	250	No
CO2e	10733.3		

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: ROBINS AFB
State: Georgia
County(s): Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Environmental Assessment for Mission Transformation at Robins Air Force Base, Georgia

- Project Number/s (if applicable):

- Projected Action Start Date: 7 / 2022

- Action Purpose and Need:

The purpose of the proposed Kingpin mission beddown is to increase troop safety by relocating Kingpin out of the forward area, where threat of attack by adversaries exists, and back to CONUS. The purpose of the proposed SWG activation at Robins AFB is to consolidate and modernize DAF EW capabilities by providing cheaper and more effective enemy deterrent systems for the defense and attack capabilities of the United States. The purpose of the proposed E-11A squadron beddown is to improve the readiness of the E-11A BACN by conducting personnel training, growing expertise, stabilizing the associated career fields, and better managing rotational deployments with a stateside E-11A unit.

The proposed Kingpin mission beddown is needed because advancements in ballistic missile, cruise missile and unmanned aerial systems capabilities, and foreign adversaries' proven willingness to use them, have put troops executing the Kingpin mission at an unnecessary safety risk. When AFCENT C2 missions were originally placed in the forward area, the idea of conducting operational C2 from the United States was untenable. The DAF did not have the bandwidth or the connectivity in place to move data at the speed of need. Today's advances in communications and data technology make distance virtually irrelevant and allows shifting posture to capitalize on the advantage of distance. The proposed SWG activation is needed to ensure the DAF EW/EMS requirements are met. Warfare in the EMS has been more proliferated in modern times than ever before. Development of resilient, agile, and efficient technologies and techniques are essential to ensure the DAF's dominance in the EMS. The proposed action would support the 350 SWW and DAF Program Guidance Letter PGL 20-02 as directed by the Secretary of the Air Force. The proposed E-11A squadron beddown is needed because the mission is currently executed entirely in theater with Temporary Duty (TDY) and contractor personnel. There is no stateside E-11A unit, so the aircraft and equipment are continuously deployed. This is an anomalous way to manage an aircraft fleet and mission, which was a result of fielding a quick-reaction capability directly into theater. A stateside based E-11A unit is needed to normalize the mission.

- Action Description:

The Kingpin mission would permanently transfer to Robins AFB starting in July 2024 and continuing through FY27, with some equipment and facility renovations occurring prior to that. The sensors in the AOR, consisting of ground-based radars, air traffic control systems, and networked surveillance platforms, would remain in the AOR.

The SWG would be activated in FY24 with a small number of personnel and would grow to full scope through FY27.

- FY24: SWG activates with two detachments
- FY25: Growth to three detachments and five Group staff personnel
- FY26: Two detachments convert to squadrons
- FY27: SWG reaches full scope with either three or four squadrons

The E-11A beddown would occur in four phases:

- Phase 0 (FY22): Advance Echelon team arrives at Robins AFB
- Phase 1 (FY23): Maintenance and Maintenance Support arrive at Robins; first aircraft arrival
- Phase 2 (FY23): Initial Operating Capability; begin flying operations
- Phase 3 (FY26): Full Operational Capability

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.	Personnel	Kingpin Mission Beddown: Personnel
3.	Personnel	Spectrum Warfare Group Activation: Personnel
4.	Personnel	E-11A Squadron Beddown: Personnel
5.	Personnel	JSTARS Divestiture
6.	Emergency Generator	Installation of 5 backup generators in Building 2066
7.	Emergency Generator	35-kW commercial generator for E-11A Squadron Beddown
8.	Construction / Demolition	Office Facility for Kingpin, Spectrum Warefare Group, and E-11A Squadron Missions
9.	Construction / Demolition	Kingpin Mission Beddown Facility Alternative 1
10.	Construction / Demolition	Paved Area for E-11A Squadron Beddown
11.	Aircraft	E-11A Squadron Beddown: Aircraft Operations
12.	Heating	Comfort heating for the new 90,000 sf building

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. Personnel

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Kingpin Mission Beddown: Personnel

- Activity Description:
The proposed distribution of personnel supporting the Kingpin mission at Robins AFB would initially be approximately 150 rotational or TDY personnel. There would also be one initial permanent party position at Robins AFB for the Kingpin mission.
As the DAF would transition the manning from rotational to permanent party, the number of manpower positions at Robins AFB would increase to transform from a rotational work schedule to a steady state work schedule. The largest potential long-term manpower solution would add 500 active-duty personnel to Robins AFB. It is undetermined at this point whether those additional positions would be rotational or permanent. For the purposes of this EA, it is assumed the additional positions would be permanent, as that constitutes the greatest potential for environmental impacts.

- Activity Start Date
Start Month: 7
Start Year: 2024

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

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

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	1.032795
SO_x	0.007529
NO_x	0.897308
CO	11.828580
PM 10	0.024610

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.021636
Pb	0.000000
NH_3	0.069248
CO_2e	1086.1

2.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 500
Civilian Personnel: 0
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

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

2.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

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

2.4 Personnel Emission Factor(s)

- On Road Vehicle 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 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year
$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year
$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year
$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

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

3. Personnel

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Spectrum Warfare Group Activation: Personnel

- Activity Description:
The SWG would activate with two detachments and approximately 30 personnel in FY24, increasing to approximately 95 personnel in FY25 and would increase manpower until reaching full scope in FY27. The SWG would have 400 personnel assigned to Robins AFB by FY27, including the 87th Electronic Warfare Squadron. The 87th EW Squadron, consisting of approximately 100 personnel, would possibly move from Eglin AFB to Robins AFB as part of the SWG standup. The Air Force intends to provide at least some of that manpower from the active-duty E-8C mission as those aircraft retire. However, there are some unknowns in Air Force resource allocation, therefore this analysis assumes that all 400 personnel would be additive to Robins AFB.

- Activity Start Date
Start Month: 7
Start Year: 2024

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

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

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.826236
SO_x	0.006023
NO_x	0.717846
CO	9.462864
PM 10	0.019688

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.017309
Pb	0.000000
NH_3	0.055398
CO_2e	868.9

3.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 400
Civilian Personnel: 0
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

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

3.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

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

3.4 Personnel Emission Factor(s)

- On Road Vehicle 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

3.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year
$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year
$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year
$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

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

4. Personnel

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: E-11A Squadron Beddown: Personnel

- Activity Description:
The E-11A beddown would include the addition of approximately 378 total personnel to Robins AFB.

- Activity Start Date
Start Month: 7
Start Year: 2022

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

- Activity Emissions:

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Pollutant	Emissions Per Year (TONs)
VOC	0.780793
SO_x	0.005692
NO_x	0.678365
CO	8.942407
PM 10	0.018605

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.016357
Pb	0.000000
NH_3	0.052352
CO_2e	821.1

4.2 Personnel Assumptions

- Number of Personnel

Active Duty Personnel: 378
Civilian Personnel: 0
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule

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

4.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

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

4.4 Personnel Emission Factor(s)

- On Road Vehicle 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

4.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year

AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

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

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_{C}: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

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

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

5. Personnel

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: JSTARS Divestiture

- Activity Description:
The DAF proposes to use the manpower that currently supports the E-8C JSTARS mission to support these new additional missions proposed for Robins AFB. While the Kingpin, SWG, and BACN missions require an end-state total manpower of approximately 1,278 personnel, the majority of this manpower will be sourced from the JSTARS mission. Therefore, Alternative 1, where all three new proposed missions are enacted, would result in a total increase of approximately 34 personnel at Robins AFB. These additional 34 personnel would be accompanied by an estimated maximum of 65 dependents per estimation strategies outlined in Air Force Instruction (AFI) 65-503, Financial Management, resulting in a total increase of approximately 99 persons to the local area.

- Activity Start Date
Start Month: 7
Start Year: 2024

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

- Activity Emissions:

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Pollutant	Emissions Per Year (TONs)
VOC	-2.569595
SO_x	-0.018732
NO_x	-2.232502
CO	-29.429507
PM 10	-0.061231

Pollutant	Emissions Per Year (TONs)
PM 2.5	-0.053830
Pb	0.000000
NH_3	-0.172289
CO_2e	-2702.3

5.2 Personnel Assumptions

- Number of Personnel

Active Duty Personnel: 1244
Civilian Personnel: 0
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule

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

5.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

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

5.4 Personnel Emission Factor(s)

- On Road Vehicle 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

5.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year

AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

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

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_{C}: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

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

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

6. Emergency Generator

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Installation of 5 backup generators in Building 2066

- Activity Description:
Conservatively assuming Diesel generators. Default energy consumption data.

- Activity Start Date
Start Month: 7
Start Year: 2023

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

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.028249
SO_x	0.023794
NO_x	0.116438
CO	0.077760
PM 10	0.025414

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.025414
Pb	0.000000
NH_3	0.000000
CO_2e	13.5

6.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 5

- Default Settings Used: Yes

- Emergency Generators Consumption
Emergency Generator's Horsepower: 135 (default)
Average Operating Hours Per Year (hours): 30 (default)

6.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

6.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

7. Emergency Generator

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: 35-kW commercial generator for E-11A Squadron Beddown

- Activity Description:
35-kW commercial generator (similar to a Briggs & Stratton 76130)
Conservatively assuming diesel fueled.

- Activity Start Date
Start Month: 7
Start Year: 2023

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

End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.002511
SO_x	0.002115
NO_x	0.010350
CO	0.006912
PM 10	0.002259

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.002259
Pb	0.000000
NH_3	0.000000
CO_2e	1.2

7.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 1

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 60
Average Operating Hours Per Year (hours): 30

7.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

7.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

8. Construction / Demolition

8.1 General Information & Timeline Assumptions

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Office Facility for Kingpin, Spectrum Warefare Group, and E-11A Squadron Missions

- Activity Description:
The DAF has planned for and programmed Military Construction funding for the construction of an 80,000-90,000 square feet (sf) facility to house the Kingpin, SWG, and E-11A squadron missions. Because all three missions require Special Access Program Facility (SAPF)/Sensitive Compartmentalized Information Facility

(SCIF) space for their missions, cost and execution efficiencies are gained by constructing a single facility for these units. The new facility would be constructed to the northeast of the runway on an open plot of land between Buildings 2063 and 2081. The new construction would include other site development such as parking and road/pavement improvements. The facility size would be based on Kingpin, SWG, and E-11A squadron requirements plus any remaining SAPF/SCIF requirements for other Air Combat Command tenant units on Robins AFB. The DAF intent would be to consolidate any other Air Combat Command missions on Robins AFB that require SAPF/SCIF space but are either short of their requirements, performing workarounds, or in temporary-type facilities. Unclassified and secure communications infrastructure will be required in the new facility. The new construction is proposed to start in FY24.

- Activity Start Date
Start Month: 7
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 7
End Month: 2024

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.342703
SO_x	0.005193
NO_x	1.864571
CO	2.130028
PM 10	0.722647

Pollutant	Total Emissions (TONs)
PM 2.5	0.071660
Pb	0.000000
NH_3	0.003156
CO_2e	516.1

8.1 Site Grading Phase

8.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

8.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 65340
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 2420

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6

Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^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

8.1.3 Site Grading Phase Emission Factor(s)

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

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
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

8.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

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

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (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

8.2 Building Construction Phase

8.2.1 Building Construction Phase Timeline Assumptions

- Phase Start Date

Start Month: 8

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Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 10
Number of Days: 0

8.2.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 90000
Height of Building (ft): 40
Number of Units: N/A

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

- Construction Exhaust (default)

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

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

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

- Vendor Trips Vehicle Mixture (%)

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

8.2.3 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

8.2.4 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

8.3 Architectural Coatings Phase

8.3.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 0
Number of Days: 10

8.3.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 90000
Number of Units: N/A

- Architectural Coatings Default Settings

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

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

- Worker Trips Vehicle Mixture (%)

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

8.3.3 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

8.3.4 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

8.4 Paving Phase

8.4.1 Paving Phase Timeline Assumptions

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- Phase Start Date
Start Month: 6
Start Quarter: 2
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

8.4.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 43560

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

8.4.3 Paving Phase Emission Factor(s)

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

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
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

8.4.4 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)

9. Construction / Demolition

9.1 General Information & Timeline Assumptions

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Kingpin Mission Beddown Facility Alternative 1

- Activity Description:
o Interior renovations on Building 2066
o Installation of generator pads: 400 sf
 Soil excavation for generator pads: 400 sf; 15 cy
 Trenching for power lines to the generators: 600 sf; 67 cy
o Installation of five backup generators

- Activity Start Date
Start Month: 7
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 9
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.051536
SO_x	0.000910
NO_x	0.286801
CO	0.356368
PM 10	0.031493

Pollutant	Total Emissions (TONs)
PM 2.5	0.011588
Pb	0.000000
NH_3	0.000150
CO_2e	88.1

9.1 Site Grading Phase

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9.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

9.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 1000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 82

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^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

9.1.3 Site Grading Phase Emission Factor(s)

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

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
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

9.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

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

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (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

9.2 Trenching/Excavating Phase

9.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 8
Start Quarter: 1
Start Year: 2023

- Phase Duration

Number of Month: 1
Number of Days: 0

9.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft^2): 1000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 87

- 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

9.2.3 Trenching / Excavating Phase Emission Factor(s)

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

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
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

9.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

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

- Construction Exhaust Emissions per Phase

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

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (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

9.3 Paving Phase

9.3.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 0
Number of Days: 10

9.3.2 Paving Phase Assumptions

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- General Paving Information
Paving Area (ft^2): 400

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

9.3.3 Paving Phase Emission Factor(s)

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

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
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

9.3.4 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)

10. Construction / Demolition

10.1 General Information & Timeline Assumptions

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Paved Area for E-11A Squadron Beddown

- Activity Description:
• 15 units/shelters
o Construction of a paved area (1.5 acres): 65,340 sf
• Tower required for a Common Datalink Antenna (CDL) system
• Trenching for perimeter security fencing: 6,000 sf; 667 cy
• Intrusion Detection System
• Trenching for electrical service and NIPR/SIPR communications connections: 600 sf; 67 cy

- Activity Start Date
Start Month: 7
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 9
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.060972
SO_x	0.001029
NO_x	0.338097
CO	0.401732
PM 10	0.795354

Pollutant	Total Emissions (TONs)
PM 2.5	0.013972
Pb	0.000000
NH_3	0.000291
CO_2e	100.8

10.1 Site Grading Phase

10.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

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10.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft^2): 71940
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 2664

- Site Grading Default Settings

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^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

10.1.3 Site Grading Phase Emission Factor(s)

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

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
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

10.1.4 Site Grading Phase Formula(s)

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

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

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

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

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (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

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

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

10.2 Trenching/Excavating Phase

10.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 8
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

10.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 6600
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 734

- 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

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10.2.3 Trenching / Excavating Phase Emission Factor(s)

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

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
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

10.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

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

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (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

10.3 Paving Phase

10.3.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 0
Number of Days: 15

10.3.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 65340

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6

Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

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

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

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

- Worker Trips Vehicle Mixture (%)

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

10.3.3 Paving Phase Emission Factor(s)

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

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
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

10.3.4 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)

11. Aircraft

11.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: E-11A Squadron Beddown: Aircraft Operations

- Activity Description:
The E-11A fleet is projected to consist of a total of nine aircraft. For the reasonably foreseeable future, six of those aircraft would be stationed at Robins AFB while three would remain in theater. If in future the DAF were to release those three aircraft in theater from their commitment and were to propose bedding them down at Robins AFB, supplemental environmental analysis would need to be performed. The E-11A beddown would result in the addition of 6,080 airfield operations annually as shown in Table 2-2 of the EA.

- Activity Start Date
Start Month: 7
Start Year: 2023

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

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.652257
SO_x	3.395078
NO_x	40.421317
CO	9.855557
PM 10	0.661096

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.594191
Pb	0.000000
NH_3	0.000000
CO_2e	10261.4

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Emissions Per Year (TONs)
VOC	0.652257
SO_x	3.395078
NO_x	40.421317
CO	9.855557
PM 10	0.661096

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.594191
Pb	0.000000
NH_3	0.000000
CO_2e	10261.4

11.2 Aircraft & Engines

11.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: C-37A
Engine Model: BR700-710A1-10
Primary Function: General - Business Jet
Aircraft has After burn: No
Number of Engines: 2

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? No
Original Aircraft Name:
Original Engine Name:

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

11.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	706.00	2.28	1.07	4.00	26.09	0.05	0.05	3234
Approach	1746.00	0.05	1.07	8.20	4.24	0.04	0.04	3234
Intermediate	4667.00	0.04	1.07	13.93	0.66	0.25	0.22	3234
Military	5611.00	0.00	1.07	17.07	0.52	0.28	0.26	3234
After Burn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3234

11.3 Flight Operations

11.3.1 Flight Operations Assumptions

- Flight Operations

Number of Aircraft: 6
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft: 1536
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft: 1110
Number of Annual Trim Test(s) per Aircraft: 12

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)

Taxi/Idle Out [Idle] (mins): 7
Takeoff [Military] (mins): 1.2
Takeoff [After Burn] (mins): 0
Climb Out [Intermediate] (mins): 10
Approach [Approach] (mins): 5
Taxi/Idle In [Idle] (mins): 6

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner. (Exception made for F-35 where KARNES 3.2 flight profile was used)

- Trim Test

Idle (mins): 12
Approach (mins): 27
Intermediate (mins): 9
Military (mins): 12
AfterBurn (mins): 0

11.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year

$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year

$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year

$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

11.4 Auxiliary Power Unit (APU)

11.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer

11.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e

11.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

12. Heating

12.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Houston
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Comfort heating for the new 90,000 sf building

- Activity Description:

- Activity Start Date
Start Month: 8
Start Year: 2023

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

- Activity Emissions:

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Pollutant	Emissions Per Year (TONs)
VOC	0.017514
SO_x	0.001911
NO_x	0.318429
CO	0.267480
PM 10	0.024201

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.024201
Pb	0.000000
NH_3	0.000000
CO_2e	383.4

12.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 90000
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 ($MMBtu/ft^2$): 0.0743

- Default Settings Used: Yes

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

12.3 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

12.4 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

APPENDIX C

GA SHPO Memo March 2022

Brian P. Kemp
Governor

Christopher Nunn
Commissioner

Georgia® Department of Community Affairs

MEMORANDUM

TO: Leanne Morrow
78 CEG/CEIEC
Natural and Cultural Resources Program Manager
Water Quality Support
Robins AFB, Georgia

FROM: Jennifer Dixon
Environmental Review Program Manager
Historic Preservation Division

RE: NEPA Documentation

COUNTY: Houston

DATE: March 30, 2022

The Historic Preservation Division (HPD) role, as the State Historic Preservation Office (SHPO) is to assist federal agencies in complying with the provisions of Section 106 of the National Historic Preservation Act, as amended (NHPA). As such, HPD utilizes modified procedures when requested to comment on projects under the National Environmental Policy Act (NEPA).

HPD advises the following approach for these common NEPA situations:

NEPA is <u>not</u> being used to fulfill NHPA Section 106 requirements:

- If any impacts to historic buildings/sites are anticipated by the base Cultural Resources Program Manager, ensure the Section 106 process is completed, typically during the design stage of the project. HPD recommends NEPA documents address this process by including a paragraph in the cultural resource section stating that the Section 106 process is in progress with HPD and the project will be required to comply with Section 106 and the NEPA document. However, NEPA coordination with HPD for the project is unnecessary and not desired.
- If the base Cultural Resources Program Manager determines that the project scope does not have the potential to impact historic buildings/sites, neither NEPA nor Section 106 coordination with HPD are required.

NEPA <u>is</u> being used to fulfill NHPA Section 106 requirements:

- Notify HPD and the Advisory Council on Historic Preservation (ACHP) from the beginning of the NEPA process of the intent to combine NEPA and Section 106 requirements. HPD should be sent all applicable NEPA documentation for review and comment.

As a general note, Federal agencies typically separate NEPA and Section 106 processes.