Development of a C-130 Campus

Draft Environmental Assessment at Robins Air Force Base, Georgia

Prepared for:

Warner Robins Air Logistics Complex (WR-ALC)
At Robins Air Force Base, Georgia

21 September 2023

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

116 ACW	116th Air Combat Wing
339 FLTS	339th Flight Test Squadron
402 AMXG	402nd Aircraft Maintenance Group
402 CMXG	402nd Commodities Maintenance Group
402 EMXG	402nd Electronics Maintenance Group
402 MXSG	402nd Maintenance Support Group
402 SWEG	402nd Software Engineering Group
5 CCG	5th Combat Communications Group
638 SCMG	638th Supply Chain Maintenance Group
78 ABW	78th Air Base Wing
78 CEG	78th Civil Engineering Group
94 APS	94th Aerial Port Squadron
ABMS FoS	Advanced Battle Management System Family of Systems
ACAM	Air Conformity Applicability Model
ACHP	Advisory Council on Historic Preservation
ABDR	Aircraft Battle Damage Repair
AE	Ammunition and Explosives
AF	Air Force
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFFF	Aqueous Film-Forming Foam
AFMAN	Air Force Manual
AFMC	Air Force Materiel Command
AFMC/A4C	Air Force Materiel Command Civil Engineers Directorate
AFSAS	Air Force Safety Automated System
AGL	Above Ground Level
AGM	Aboveground Magazine
AICUZ	Air Installation Compatible Use Zone
APE	Area of Potential Effect
BAH	Basic Allowance for Housing
BASH	Bird/Wildlife-Aircraft Strike Hazards
BOD	Biological Oxygen Demand
CCRPI	College and Career Read Performance Index
C&D	Construction and Demolition
CEQ	Council on Environmental Quality
CF	Cubic Feet
CFE	Carbon-Free Electricity
CFR	Code of Federal Regulations
CHP	Combined Heat and Power
COC	Community of Comparison
COD	Chemical Oxygen Demand
CREAT	Climate Resilience Evaluation and Awareness Tool
C TIT	Celsius Turbine Inlet Temperature
CY	Calendar Year or Cubic Yard
DAF	Department of the Air Force
DAFI	Department of the Air Force Instruction
DB	Decibel
DBA	A-weighted Decibel
DLA	Defense Logistics Agency
DNL	Day-Night Sound Level
DoD	Department of Defense
DSOR	Depot Source of Repair Decision
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EO	Executive Order

EPCRA	Emergency Planning and Community Right-to-Know Act
EPN	Early Public Notice
ERP	Environmental Restoration Program
ESA	Endangered Species Act
EV	Electric Vehicle
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FOM	Facilitate Other Maintenance
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FT, ft	Feet
FY	Fiscal Year
GA	Georgia
GA DNR	Georgia Department of Natural Resources
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Graphical Information System
GOV	Government Owned Vehicle
GPC	Georgia Power Company
GRAPHI	Gross Rent as a Percent of Household Income
GSWCC	Georgia Soil and Water Conservation Commission
GWP	Global Warming Potential
HI	Hazard Index
HM	Hazardous Materials
HMMP	Hazardous Materials Management Process
HP	Horsepower
HQ AFRC	Headquarters Air Force Reserve Command
HW	Hazardous Waste
IAW	In Accordance With
IBD	Inhabited Building Distance
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IPCC	Intergovernmental Panel on Climate Change
IWTP	Industrial Wastewater Treatment Plant
JSTARS	Joint Surveillance Target Attack Radar System
KGAL	Thousand Gallons
LBS	Pounds
LF	Linear Feet
MGD	Million Gallons Per Day
MPEA	Multi-Project Environmental Assessment
MSL	Mean Sea Level
MSW	Municipal Solid Waste
MWH	Megawatt Hour
NAAQS	National Ambient Air Quality Standards
NBPB	Narrow Body Paint Booth
NCEI	National Centers for Environmental Information
NEPA	National Environmental Policy Act
NFA	No Further Action
NFPA	National Fire Protection Association
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
OIB	Organic Industrial Base
OSHA	Occupational Health and Safety Act
OWS	Oil-Water Separator
PA	Programmatic Agreement
PCB	Polychlorinated Biphenyls

PDM	Programmed Depot Maintenance
PFAS	Per- and Polyfluoroalkyl Substances
POI	Point of Interest
POV	Privately Owned Vehicle
PPE	Personal Protective Equipment
PPM	Parts Per Million
PPB	Parts Per Billion
QD	Quantity Distance
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
ROI	Region of Influence
SAF/AQD	Secretary of the Air Force, Logistics and Product Support
SF	Square Feet
SHPO	State Historic Preservation Officer
SIP	State Improvement Plan
SLAMS	State and Local Air Monitoring Stations
SPO	System Program Office
SRES	Special Report on Emission Scenarios
STP	Sanitary Treatment Plant
SW	Solid Waste
TMO	Traffic Management Office
TPY	Tons Per Year
TRC	Technology Repair Center
TSDF	Treatment, Storage, and Disposal Facility
TSS	Total Suspended Solids
UDLM	Unscheduled Depot-Level Maintenance
USC	United States Code
USDA	United States Department of Agriculture
US EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
US HUD	United States Department of Housing and Urban Development
WIP	Work in Progress
WNS	White-Nose Syndrome
WR-ALC	Warner Robins Air Logistics Complex
WTP	Wastewater Treatment Plant

1.0 Purpose and Need for Action

1.1 Introduction

The Warner Robins Air Logistics Center (WR-ALC) at Robins Air Force Base (AFB), Georgia has identified a need to develop a C-130 Campus to support growing maintenance needs for C-130 aircrafts, particularly C-130J models. Through coordination with the 78th Air Base Wing (ABW), the WR-ALC proposes to execute the associated component projects over five fiscal years (FY24-FY28). This C-130 Campus Environmental Assessment (EA) was prepared to evaluate potential environmental impacts of these proposed projects in compliance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [USC] 4331 et seq.), regulations of the President's Council on Environmental Quality (CEQ) that implement NEPA procedures (40 Code of Federal Regulations [CFR] 1500-1508), Air Force Environmental Impact Assessment Process Regulations at 32 CFR Part 989, and Air Force Manual 32-7002 (Secretary of the Air Force, 2020).

The information presented in this document will serve as the basis for deciding whether the Proposed Action would result in a significant impact to the human environment, requiring preparation of an environmental impact statement (EIS), whether no significant impacts would occur, in which case a finding of no significant impact (FONSI) would be appropriate, or if the Proposed Action would be abandoned at this time. If execution of the Proposed Action would involve "construction" in a wetland as defined in Executive Order (EO) 11990, *Protection of Wetlands*, or "action" in a floodplain under EO 11988, *Floodplain Management*, a Finding of No Practicable Alternative (FONPA) would be prepared in conjunction with the FONSI.

1.2 Campus Development Overview

Campus development would provide infrastructure improvements necessary to efficiently support the WR-ALC's C-130 requirements. This development would occur through the implementation of four component projects (see **Figures 1-1** and **1-2** in **Appendix A**).

Table 1-1: Campus Component Projects

Project ID	Project Name	Short Name	Description of Project	Approx. Construction Start
UHHZ220042	Narrow Body Paint Booth	NBPB	• Construct NBPB concrete pad • Correct stormwater drainage in immediate area • Install electrical circuit for campus • Install paint booth (equipment)	FY24
UHHZ200253	C-130J 4-Dock Maintenance Hangar	Heavy Maintenance Hangar	• Construct new Maintenance Hangar northeast of Building 2390 • Relocate Hazardous Cargo Pad and Vehicle Holding Area • Relocate fuel line • Construct vehicle parking lot(s)	FY26

			• Upgrade/correct area stormwater system and other utility infrastructure as needed	
UHHZ200190	C-130J 4-Dock Multi-Purpose Hangar	Multi-Purpose Hangar	• Construct new Multi-Purpose Hangar southwest of Building 91 • Demolish and relocate sheds/small facilities	FY27
UHHZ200254	C-130J Aircraft Aprons	Aircraft Aprons	• Construct Aircraft Aprons • Construct Functional Test Area • Construct Fuel Pits	FY27

1.3 Background

Robins AFB is in Middle Georgia near the city of Warner Robins, approximately 100 miles southeast of Atlanta, and occupies about 6,935 acres of land (see **Figure 1-3** in **Appendix A**). It was established in 1941 and has hosted a variety of missions and aircrafts throughout its history. Robins AFB is home to the 78th ABW and hosts more than 60 tenant units, including the WR-ALC, 94th Aerial Port Squadron (94 APS), 116th Air Control Wing (116 ACW), 339th Flight Test Squadron (339 FLTS) "Rogues", 638th Supply Chain Maintenance Group (638 SCMG), Detachment A, 5th Combat Communications Group (5 CCG), Defense Logistics Agency (DLA), Headquarters Air Force Reserve Command (HQ AFRC), and other units.

The mission of the WR-ALC is to support the warfighter by providing programmed depot maintenance (PDM), engineering support, and software development to major weapon systems. Currently, the WR-ALC services F-15, C-5, C-130, C-17, RQ-4 Global Hawk, and E-8 Joint Surveillance Target Attack Radar System (JSTARS) aircraft, E-11A, and parts and components of these and other Department of Defense (DoD) assets. PDM consists of inspection, repair, overhaul, and/or modification or rebuild of parts, assemblies, subassemblies, and end items to return asset condition to the DoD standards for operational readiness in support of the warfighter.

The WR-ALC includes the Aircraft Maintenance Group (402 AMXG), Commodities Maintenance Group (402 CMXG), Electronics Maintenance Group (402 EMXG), Maintenance Support Group (402 MXSG), and Software Engineering Group (402 SWEG). The 402 AMXG provides PDM and unscheduled repair activities on F-15, C-130, C-5 and C-17 aircraft. The 402 AMXG is also responsible for repair, modification, reclamation, and rework of over 200 aircraft worldwide. The 402 AMXG prepares and deploys combat Aircraft Battle Damage Repair (ABDR), crash recovery and supply and transportation teams worldwide.

The C-130 Hercules is a four-engine turboprop military transport aircraft manufactured by Lockheed Martin. The C-130 primarily performs the tactical portion of the airlift mission and is the prime transport for airdropping troops and equipment into hostile areas. The C-130's flexible design allows it to be configured for many different missions, allowing one aircraft to perform many roles. The first production model, the C-130A, entered service in 1956. The C-130 has continued to evolve through newer models. The Department of the Air Force (DAF) uses the C-130 extensively, including C-130E/H/J and C-130J-30 models. The C-130J-30 model is a stretch version of the C-130J with an additional 15 feet on the fuselage. The C-130J, the newest model in the C-130 family, joined the inventory in 1999. The C-130

fleet requires consistent maintenance. The WR-ALC, one of three Air Force depots, is the Technology Repair Center (TRC) for all C-130J variants and has been completing PDM and unscheduled depot-level maintenance (UDLM) on all C-130J variants since 2011. Existing flightline facilities dedicated to C-130 depot work are shown in **Figure 1-4** in **Appendix A**.

1.4 Purpose of Campus Development

The Purpose of the Proposed Action is to provide appropriate government-owned infrastructure (also known as the organic industrial base, OIB) to reliably support projected increases in DoD C-130 depot maintenance demand. The WR-ALC must meet the increased C-130 depot maintenance demand, particularly for the C-130J model, in accordance with the final Depot Source of Repair (DSOR) Decision on the C-130J and Variants approved 27 March 2020 by the Secretary of the Air Force, Logistics and Product Support (SAF/AQD). The 2020 DSOR approved WR-ALC for organic repair of the hardware workload (see **Appendix B**).

1.5 Need for Campus Development

The Need for the Proposed Action arises from the inadequacy and unreliability of using only existing WR-ALC facilities to meet currently projected C-130 workload levels. The increase is primarily associated with aging aircraft requirements growth as well as ongoing requirements for newer C-130J variants. All potential existing facility changes have been explored, as well as potential staffing increases. Action is needed to meet as much of the projected demand as is realistically achievable to minimize adverse mission impacts. In order to support increased C-130 maintenance workload, capabilities for heavy maintenance, corrosion control, and other support infrastructure must be increased/modified. The component projects each help meet one or more of these requirements, as detailed in Chapter 2.

Current C-130 heavy maintenance and corrosion control on-Base capacities are 48 aircraft per year, with total demand currently being 60 aircraft per year at the WR-ALC. Demand is projected to increase over the next decade. By Fiscal Year (FY) 2028 the C-130 depot workload is projected to reach a peak of 90 C-130s per year (See **Table 1-2**). WR-ALC also usually sees between 2 and 3 UDLMS a year.

Existing WR-ALC aircraft maintenance hangars are at full capacity performing PDM on F-15, C-5, C-17, Global Hawk, Special Operation Forces aircraft, and current C-130 PDM workload. In support of increases in demand for C-130 PDM, the System Program Office (SPO) awarded an offload contract in November 2020, which allows up to 12 C-130 PDMs per year to be handled by contractors as well as up to 16 UDLM and some corrosion control over the 5-year contract period. The contract will expire after FY25 at the latest, at which time the workload previously handled off Base would need to be accommodated. Additional offload contract(s) would not be cost effective or fundamentally reliable since they would depend on availability and pricing of the commercial industrial base to meet military upkeep requirements.

Table 1-2: Projected C-130 Depot Workload at Robins AFB

Fiscal Year	# of C-130 Aircraft
2023	60
2024	60
2025	51
2026	54
2027	54
2028	90
2029	64
2030	69

2031	73
2032	65
2033	54
2034	68
2035	74
2036	75
2037	72
2038	60

1.5.1 Corrosion Control Capacity

Of the existing corrosion control facilities on Robins AFB, only two are dedicated to C-130 aircraft: Building 50 (B50) and Building 89 (B89). C-130 corrosion control demand has not allowed these facilities to go temporarily out of service for necessary routine renovation and repair. Due to this persisting situation, both buildings need extensive repair as soon as possible. While C-130s could theoretically fit into corrosion control facilities which serve other airframes, corrosion control demand for other airframes is expected to increase as well. Proposed new corrosion control facility space would be able to support all C-130 models, as well as potentially other airframes which fit in the corrosion control spaces. This flexibility would allow the WR-ALC to shift workloads to allow proper facility maintenance and support dynamic demands. Each corrosion control dock/booth would meet corrosion control requirements for 14-25 C-130s a year. Existing and projected C-130 corrosion control capacity and demand is shown in **Figure 1-5** in **Appendix A**.

1.5.2 Heavy Maintenance Capacity

C-130 heavy maintenance is performed in dedicated C-130 facilities, specifically Building 2390 (B2390) and Building 91 (B91), as well as on the apron under structures which provide a level of protection from the elements. Each heavy maintenance dock/spot provides sufficient space to perform heavy maintenance on 3.24 C-130s a year. Existing and projected C-130 heavy maintenance capacity and demand is shown in **Figure 1-5** in **Appendix A**.

1.5.3 Support Infrastructure

Increases in C-130 depot requirements drive an increase in depot maintenance space, which in turn drives requirements for support infrastructure and area improvements. More apron space is needed for C-130 parking, testing, and fueling operations. More parking space is needed for increases in personnel. Utility systems are also expected to need modification.

1.5.3.1 Aircraft Apron Area

Currently available C-130 aircraft parking is about half a mile away from the C-130 Campus area (see **Figure 1-4** in **Appendix A**). Sixteen apron parking spots and eight functional test spots are currently dedicated to C-130s. The existing fuel pit area can support up to two C-130s at a time but is shared among all airframes at Robins AFB. Twelve additional C-130 apron parking spots, four additional functional test spots, and two additional fuel pit areas are needed for the projected throughput based on squadron-level work in progress (WIP) calculations for each stage of PDM.

1.5.3.2 Personnel Parking and Transportation

Approximately 392 parking spots (new and existing available spots combined) are needed for the estimated 766 new C-130 Campus personnel. This parking must be within the C-130 Campus area. Existing nearby parking cannot support the full requirement, as shown in **Figure 1-6** in **Appendix A**.

Most parking areas immediately next to flightline facilities, such as areas D and F in **Figure 1-6** in **Appendix A**, are already fully utilized. Other less conveniently located parking areas, such as areas C and E in **Figure 1-6** in **Appendix A**, take on existing overflow. Based on information from the Traffic Management Office (TMO), approximately 290-325 parking spots are available near the proposed campus area. Based on existing available parking, a minimum of approximately 67-102 new parking spots would be needed to support the proposed area development.

Historically, flightline facilities on Robins AFB have had issues with inadequate parking. Potential for future manning changes in nearby facilities presents additional uncertainty regarding available parking for proposed development. Based on these concerns and contextual information, a planning safety factor of two was applied to the potential parking need analyzed in this document. As a result, this EA considers the new parking need to be 204 parking spots.

The C-130 Campus development would increase traffic in the immediate area on Base. Most of the transportation network would be able to support this increase. Perimeter Road (particularly between Lancer Blvd and Crash Rescue Drive) has substantial root infiltration and upheaving which needs to be addressed through a pavement reconstruction effort (approximately 54,250 square feet, SF) (see **Figure 1-7** in **Appendix A**).

1.5.3.3 Facility and Area Utilities

The C-130 Campus is expected to necessitate broad utility improvements/modifications involving the electrical network, stormwater system, fire protection system, and wastewater systems.

Electrical Network

Based on expected demand from component project facilities, a dedicated circuit for the C-130 Campus would be required. The substation serving this section of the Base is in the process of being expanded and upgraded to serve projected area demands, including the C-130 Campus.

Stormwater System

Based on the general siting of the C-130 Campus, extensive stormwater system work is expected to avoid aggravating existing issues and to ensure the system is updated as necessary based on holistic area analysis. Existing issues include a high-erosion area near Building 2336 (B2336, near the proposed NBPB location, see **Figure 1-8** in **Appendix A**), two high-erosion areas near B2390 (see **Figure 1-8** in **Appendix A**), and high exit velocity and scouring at Weir #3 (which is also in general need of repair/replacement). Drainage system inadequacies around B2390 results in flooding in the facility as well as environmental compliance issues. Drainage below B2390's retractable sliding doors inappropriately drains to a nearby ditch instead of industrial wastewater treatment plant 1 (IWTP#1).

It is expected that some stormwater lines, inlet culverts, and associated detention ponds as well as outfall culverts would be modified, as appropriate, to account holistically for stormwater runoff from the relevant drainage areas. Some of the stormwater work expected due to the campus development would be on the eastern side of the Base, within or near the 100-yr floodplain[1] (see **Figure 1-9** in **Appendix A** and **Appendix G** for more information on the floodplain determination). These upgrades/repairs include Weir

[1] As determined in the September 2021 report on environmental Graphical Information System (GIS) data floodplain area analysis by the Center for Environmental Management of Military Lands at Colorado State University

#3. Given the industrial nature of the Campus, oil-water separators would be modified or installed where needed.

Fire Protection Water

Due to the notable increase in facility footprint in the area and based on previous substantial development on Base, the Base anticipates vicinity fire pumps and water storage for Campus fire protection flow requirements would be needed. For planning purposes within this EA, this potential requirement is estimated based on a similar existing facility on Base: Building 95 (B95), which has an approximately 1,400 SF footprint, and an associated 500 kgal (thousand gallon) water tank (see **Figure 1-10** in **Appendix A**). This EA addresses the impacts of constructing such a facility generally (i.e., programmatically), but does not include specific siting. The facility would be within the general C-130 Campus vicinity. Given the uncertainty regarding if such infrastructure would be needed, as well as the specific sizing and location, this portion of the C-130 Campus development is not ripe for decision.

Wastewater Systems

Industrial wastewater produced at AMXG facilities is pretreated for solids and metals at IWTP#1 before undergoing further general treatment at the sanitary treatment plant (STP) (see **Appendix F**). This treatment train does not include targeted treatment suitable for the relatively high levels of chemical and biological oxygen demand (COD and BOD, respectively) or total suspended solids (TSS) sometimes present in the Base's industrial wastewater. This lack of design foresight has generally been compensated for through higher residence times (lower flow, longer time in the system allowing additional treatment). However, the flows received by IWTP#1 and the STP are expected to increase over time as OIB demand and development increase. The industrial wastewater conveyance system is also not designed for such concentrated industrial wastewater, leading to increased wear as well as risk of leaks. Due to infrastructure limitations, concentrated industrial wastewater must be pumped out and disposed of at appropriate facilities off Base. Ongoing awareness training at industrial facilities on Base is implemented to reduce the likelihood of operator errors which result in concentrated industrial wastewater, namely the disposal of concentrated waste chemicals via the industrial wastewater system.

Industrial wastewater pretreatment to avoid substantial variation in wastewater treatment plant influent characteristics, particularly COD, BOD, and TSS, would be required for the C-130 Campus if appropriate. Pretreatment could potentially be designed into individual facilities, into a new IWTP within the area, and/or through retrofitting IWTP#1. Reasonable site-specific alternatives would be addressed under NEPA once relevant details are available, if applicable.

The wastewater conveyance system and treatment plants (sanitary and industrial) would be improved/modified as necessary. No mains would be relocated but would be resized if/where appropriate to account for the increase in area flow.

1.6 External Scoping and Review

Scoping is an early and open process for developing the breadth of issues to be addressed in an EA and for identifying potentially significant concerns related to a proposed action. Per requirements of Intergovernmental Cooperation Act of 1968 (42 United States Code (U.S.C). 4231(a)) and EO 12372, federal, state, and local agencies with jurisdiction that could be affected by the Proposed Actions were notified during development of this EA.

Appendix C contains the list of agencies consulted during this analysis.

1.6.1 Government to Government Consultations

Consistent with National Historic Preservation Act of 1966 implementing regulations (36 CFR Part 800), DoD Instruction 4710.02, Interactions with Federally-Recognized Tribes, Department of the Air Force Instruction (DAFI) 90-2002, Air Force Interaction with Federally-Recognized Tribes, and Air Force Manual 32-7003, Environmental Conservation, the DAF is also consulting with federally recognized tribes that are historically affiliated with the geographic region being considered for the Proposed Action regarding the potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the intergovernmental coordination processes and 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 Program Manager.

A list of Native American tribal governments affiliated historically with the Robins AFB geographic region is provided below. Except for the two tribes which previously indicated they no longer desire to receive consultation requests from Robins AFB (see **Appendix C** for details), scoping requests were sent to these tribes on 13 January 2023 (see **Appendix C** for Tribal letters). No responses were received.

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

These tribes indicated they are no longer interested in correspondence from Robins AFB. See **Appendix C for details.*

1.6.2 Interagency Consultations

The C-130 Campus undertaking includes three areas of potential effect (APEs) on cultural resources. One APE results from the facility footprints being constructed, demolished, and/or relocated. One APE results from utility work needed to appropriately support the campus. The last APE applies to potential impacts related to altered flying activities and requires additional coordination. Because this undertaking includes a non-exempt activity, consultation with the State Historic Preservation Officer (SHPO) was initiated on 16 August 2023 pursuant to 36 CFR 800.3. SHPO concurred with the no adverse effect determination on 15 Sep 2023 (see **Appendix C** for correspondence).

Because the Proposed Action areas coincide with floodplains, it is subject to the requirements and objectives of EO 11988, *Floodplain Management*, and Air Force Manual (AFMAN) 32-7003, *Environmental Conservation*. Potentially relevant agencies were sent a scoping notice on 13 January 2023. Interagency scoping notices as well as the list of consulted agencies and responses can be found in **Appendix C**.

Per requirements of 50 CFR 402, which implements sections 7(a)-(d)[16 U.S.C. 1536(a)-(d)] of the Endangered Species Act (ESA) of 1973, as amended, findings of effect and request for concurrence were transmitted to the US Fish and Wildlife Service (USFWS) on 13 Jan 2023. After some discussion, the USFWS provided written conditional concurrence with the DAF's "not likely to adversely affect" determination on 13 Mar 2023 (see **Appendix C** for correspondence). As noted in the 13 Mar 2023 letter,

obligations under Section 7 must be reconsidered if 1) new information reveals impacts of this action may affect listed species or critical habitat in a manner not previously considered, 2) this action is subsequently modified in a manner which was not considered in this assessment, or 3) a new species is listed or critical habitat is determined that may be affected by this action.

1.6.3 Public Involvement

The Air Force published an early public notice (EPN) that the Proposed Action would occur in a floodplain in the Houston Home Journal and on the Robins AFB public website (https://www.robins.af.mil/Units/78th-Air-Base-Wing/78th-Civil-Engineer-Group/Environmental/) on 18 January 2023. The notice identified state and federal regulatory agencies with special expertise that had been contacted and solicited public comment on the Proposed Action and any reasonable alternatives. No public comments were received during the 30-day scoping period. A Notice of Availability (NOA) was published in the same locations on 4 October 2023 indicating the draft EA and FONSI were available at the Robins AFB public website as well as the Nola Brantley Memorial Library in Warner Robins, GA for a 30-day public review period.

1.7 Decision to be Made

Based on analysis in this EA, the Air Force Materiel Command Civil Engineers Directorate (AFMC/A4C) will make an informed decision regarding the Proposed Action in a manner consistent with Air Force standards for environmental stewardship.

The potential choices for the decision are as follows:

1. Determine the potential environmental impacts associated with the Proposed Action and sign a FONSI, if all environmental impacts are less than significant
2. Initiate preparation of an EIS if it is determined significant impacts would occur through implementation of the Proposed Action
3. Abandon the Proposed Action.

2.0 Description of the Proposed Action and Alternatives

2.1 Proposed Action

This EA evaluates potential environmental impacts of four projects comprising the C-130 campus area development plan, which the WR-ALC projects to occur in FY24-FY28 at Robins AFB (see **Figure 1-2** in **Appendix A**). This document treats each project as a component of C-130 Campus development (the Proposed Action). These projects include initiatives for facility construction, infrastructure construction, and demolition/relocation. The campus development would also result in approximately 766 additional WR-ALC personnel with an estimated 915 dependents.

2.2 Impacts of Climate Change on the Proposed Action

Climate change is expected to have several impacts on proposed development. All component projects involve increasing impervious area. Stormwater on the north end of Base exits the Base within the 100-yr floodplain. Climate change is expected to increase the frequency of intense storm events and associated flooding. Even if the conveyance system were to be adjusted for the storm surge increases, at a certain point the Ocmulgee River would flood the floodplain and obstruct stormwater discharge. The stormwater system would back up and eventually cause flooding in affected areas outside the floodplain, particularly in the absence of nearby stormwater storage. The designs for the new facilities would consider engineering solutions, such as constructing the facilities at higher elevations, to prevent floodwaters from entering the facilities. However, flooding around facilities may obstruct safe access to and from facilities. Climate change is also expected to increase the frequency of adverse weather in general, which would reduce the effectively available number of days for flying operations. Overall, climate change would somewhat reduce the ability to use/access the proposed facilities as well as the ability to conduct required functional flight checks.

2.3 Selection Standards

The scope and location of the campus, and each component project, have undergone extensive review by the WR-ALC, the 78th Civil Engineering Group (78 CEG) personnel, and supporting installation and Air Force staff specialists. The WR-ALC and 78 CEG determined the following standards must be met for the Proposed Action to be effective and viable.

1. C-130 Campus must be sited on the flightline, near existing C-130 facilities, and with sufficient open space (approximately 28.9 acres) for needed operational facilities space and support infrastructure.
2. Provide additional C-130 corrosion control space and heavy maintenance facility space, including associated administrative and backshop space, approximately 7.7 acres combined.
3. Ensure explosives safety distances are implemented between maintenance facilities and hot cargo pad and associated vehicle holding area.
4. Provide C-130 support infrastructure including personnel parking, apron parking, fuel pits, and functional test spots, approximately 21.2 acres combined, in close vicinity to new facility space to ensure effectiveness.
5. Ensure industrial wastewater operationally generated would not create elevated compliance risks and that wastewater infrastructure conveying and treating the wastewater from the C-130 Campus area is upgraded/modified as appropriate to ensure NPDES permit compliance.

6. Ensure sufficient conveyance and treatment capacity for sanitary wastewater generated by new facilities/personnel to ensure NPDES permit compliance
7. Ensure stormwater infrastructure is upgraded holistically as appropriate and that deficiencies, which would be aggravated by the proposed development, are corrected.
8. Ensure adequate fire protection water and pump capacity for increased area facility footprint.
9. Ensure Base transportation network can support increase in traffic.
10. Ensure building codes and standards are met and existing/projected facilities/operations are not adversely impacted.

2.4 No-Action Alternative

Under the No-Action Alternative, the C-130 Campus projects would not be implemented. No additional organic capacity to support C-130 maintenance would be developed at Robins AFB. The offload contract (discussed in Section 1.5) would expire by FY25, further increasing the effective demand on existing facilities. C-130 aircraft would continue to age and need more maintenance over time. C-130 maintenance would bottleneck, leading to substantial mission impacts and delays. Other reasonably foreseeable independent actions would still potentially occur.

2.5 Proposed Action Components and Component Alternatives

The NEPA and CEQ regulations (40 CFR §1500-1508) mandate consideration of reasonable alternatives to the Proposed Action. Reasonable alternatives are those that the DAF could use to meet the purpose of and need for campus development.

The NEPA process supports flexible, informed decision-making. Analysis provided by this EA and feedback from the public and other agencies will inform decisions made about whether, when, and how to execute the Proposed Action. The No-Action alternative substantively analyzes the consequences of not undertaking the Proposed Action, does not simply conclude no impact, and serves to establish a comparative baseline for analysis.

The Proposed Action's scope and location are described here. This section also presents reasonable alternatives, for aspects of projects where multiple potentially viable courses of action exist. Those alternatives are assessed using selection standards. Alternatives that met all selection standards were considered reasonable and retained for consideration. Alternatives that did not meet one or more of the standards were considered unreasonable and are not retained for further consideration in the EA.

2.5.1 NBPB

2.5.1.1 Project Scope

This action would install a NBPB and associated foundation, taxiway connection, and utility connections. This action would construct an approximately 28,800 SF slab foundation south of Building 2336 and install a NBPB composed of either sheet metal or fabric on the foundation (see **Figure 2-1** in **Appendix A**). The NBPB would support corrosion control operations on one C-130 aircraft at a time, and up to 14-25 C-130 aircraft per year. The NBPB would help meet current C-130 mission demands for corrosion control especially in the short term, thus allowing needed repairs on B89 and B50, and would support overall narrow body corrosion control demand in the long term. The WR-ALC would purchase and install the NBPB first out of the component projects. Approximately 20 additional personnel would be needed for the booth. Approximately 24 dependents are expected.

Support infrastructure would involve several aspects. A new electrical circuit would be installed from the Fowler Street Substation. Total utility line work for the NBPB is currently estimated at 2,590 linear

feet (LF) (7,770 SF of disturbance). There would also be stormwater work (grading, installation of an inlet, collar, etc.) to address existing drainage issues in the immediate area, which the NBPB would aggravate if not addressed (see **Figure 1-8** in **Appendix A**). The extent of grading needed as part of the stormwater correction is conservatively expected to be no more than 275,000 SF in area.

Corrosion control operations would institute a wet de-paint process with organic solvents to loosen paint and employ the same techniques and materials currently used for de-paint in B50. The paint process would be the same as currently used in B89.

An approximately 11,250 SF taxiway connection would also be constructed. Total ground disturbance from this project is estimated to be approximately 322,820 SF or 7.41 acres. Considering the road section (approximately 1,050 SF) and spur section (approximately 1,500 SF) that are already impervious, this project would create approximately 37,500 SF (or 0.86 acres) of new impervious area. The following table summarizes the ground disturbance for this project.

Table 2-1: NBPB Ground Disturbance Estimate Summary

Project Component	Area Disturbance (SF)
NBPB Footprint	28,800
Taxiway Connection	11,250
Electrical Circuit (2,400 LF)	7,200
Other Facility Utility Lines (other than electric, 190 LF)	570
Stormwater Corrective Grading	275,000
Total Ground Disturbance	322,820
New Impervious Area	37,500

2.5.1.2 Facility Alternatives Considered but Eliminated from Further Analysis

Pad 8 was considered for the NBPB, but this location would displace existing/planned operations (see **Figure 2-1** in **Appendix A**). Therefore, this alternative failed to meet Selection Standard 10 and was thus removed from further consideration.

The WR-ALC considered locating the NBPB between Building 54 (B54) and Building 89 (B89) but this location would violate NFPA (National Fire Protection Association) codes/standards (see **Figure 2-1** in **Appendix A**). The area is also currently used to collect runoff from the airfield, the loss of which would require a substantial retention pond to be constructed. Therefore, this location alternative failed to meet Selection Standard 10 and was thus removed from further consideration.

2.5.2 Heavy Maintenance Hangar

2.5.2.1 Project Scope

This project would construct a heavy maintenance aircraft hangar near Building 2390 (B2390) (see **Figure 2-2** in **Appendix A**). This hangar would be able to support both wide and narrow-body airframes maintained at the depot, especially the C-130, and ensure that the supporting infrastructure can adapt to current and future requirements. The hangar would be approximately 140,000 SF. The highest point of the roof (excluding typical roof penetrations such as vents) would be roughly 100 feet above ground level. The hangar would be a single-story structural steel framed hangar bay with interior steel columns and trusses on a cast-in-place concrete slab.

The hangar would include a hangar bay, backshops and shop support, administrative space and support, Facilitate Other Maintenance (FOM) space, restrooms and lockers, classified vault storage, and building

support, as well as production support cages, hazardous material requirements with mixing booth and exhaust to the outside, and a breakdown area for landing gear door and tires. Approximately 280 additional personnel would support the hangar. Approximately 334 dependents are expected.

Supporting facilities/work include relocation of existing JP-8 fuel line, all other necessary utilities and connections, site demolition and earthwork, taxiway pavements (approximately 100,000 SF), and area improvements.

Hot Cargo Pad and Vehicle Holding Area Relocation

This siting for the heavy maintenance hangar would require the "hot" cargo pad and associated Vehicle Holding Area/Yard to be relocated (see **Figure 2-2** in **Appendix A**). A hot cargo pad is a location where an aircraft carrying "hot" cargo can be temporarily parked. Hot cargo consists of unexpended munitions or other explosives. A Quantity Distance (QD) arc delineates the standoff area around the pad and is used to reduce the collateral damage to aircraft if those explosives unexpectedly detonate. The exact size of the QD arc depends on the mass of the explosives on the hot cargo pad. Aside from the siting requirements/restrictions, a hot cargo pad is like any other apron pavement. It would be a loop or a solid circle connected by a segment to existing apron as shown in **Figure 2-2** in **Appendix A**. The quantity-distance arc would have an approximate radius of 932 FT. The majority of the current hot cargo pad is expected to be used to offset the new hot cargo pad to the east and provide a connection to existing airfield pavement, if viable. The precise siting of the hot cargo pad and the heavy maintenance hangar would meet QD arc distance and the Inhabited Building Distance (IBD) requirements. Conservatively using the solid circle concept, the new hot cargo pad would result in approximately 312,800 SF (7.18 acres) of soil disturbance and up to 305,000 SF (7.00 acres) of new impervious area.

Holding Yard 65A would need to be relocated as well (see **Figure 2-2** in **Appendix A**). Building 65, located adjacent to the current holding yard, would need to be demolished. Holding yards are considered aboveground magazines (AGMs), uninhabited structures used only for storage of ammunition and explosives (AE) with less than two feet of earth cover, if any. The new holding area would be approximately 25 FT wide by 125 FT long for an area of 3,125 SF. A chain link fence around the concrete pad would be required for security. The currently planned location would have the IBD arc (red in **Figure 2-2** in **Appendix A**) in close proximity to Building 131. The yard would be placed such that the 1,250 FT IBD is met for Building 131.

Personnel Parking and Transportation Network

There are three siting alternatives for parking that would be considered, depending on viability (see **Figure 2-3** in **Appendix A**). The figure shows the maximum space that could be used for parking in those locations. The maximum sizes for Parking Locations 1, 2, and 3 are approximately 81,000 SF, 210,000 SF, and 113,000 SF, respectively. The new facilities are estimated to need 204 new privately-owned vehicle (POV) and/or government-owned vehicle (GOV) parking spots, requiring a total of about 88,990 SF. The new parking lot(s) would result in 88,990 SF (or 2.04 acres) of new impervious area regardless of what combination of the areas is used. Developing a parking area at Location 2 or Location 3 individually, or with a combination of the locations, if viable, would provide adequate POV parking space for personnel at the NBPB and the proposed hangars. Location 3 is preferred since it would meet the space requirement alone and it would be least affected by the Gate 15/Air National Guard (ANG) gate reconstruction tentatively planned to occur toward the end of this decade. Location 3 is also more centralized relative to other C-130 Campus facilities, making it most efficient.

The heavy maintenance hangar project would also reconstruct the section of road discussed in Section 1.5.3.2 (about 2,170 LF, or 54,250 SF at 25 ft wide) (see **Figure 1-7** in **Appendix A**). The new taxiway connections would disrupt Eagle Avenue Extension Road (indicated in **Figure 1-7** in **Appendix A**). Traffic previously using this road would instead use Perimeter Road (part of the section to be reconstructed) and Mustang Street.

Stormwater System

The heavy maintenance hangar project would address existing stormwater issues in and affected by the campus area as described in Section 1.5.3.3, except for the one stormwater correction included under the NBPB project. The proposed campus development project would include a hydrologic study to address the associated increase in impervious area (and changes in stormwater runoff). This study would take a holistic look at the existing condition of the stormwater system and determine specific necessary improvements/corrections with consideration to relevant projects, particularly the C-130 campus development projects.

This EA conservatively estimates corrective grading at approximately 180,000 SF for the northern high erosion area and 53,000 SF for the southern high erosion area. Compliance with applicable permitting requirements would be noted in the hydrologic study. Based on previous redesign consideration, up to approximately 68,000 SF would be disturbed during the repair/renovation of Weir #3 and, if required, the associated retention pond. All appropriate flood-proofing and flood protection measures would be incorporated for the stormwater features. A conversative ground disturbance (191,657 SF) is estimated based on the existing stormwater lines and channels in the area and connections to relevant outfalls (45,000 LF).

Fire Protection Water Supply

This project would address any required improvements regarding fire protection water supply, as described in Section 1.5.3.3.

Wastewater Systems

This EA assumes new sanitary and industrial mains would be installed from the C-130 Campus area to the wastewater treatment plant areas, involving about 13,500 LF of utility work and up to about 40,500 SF of ground disturbance. This estimate assumes conservatively that the entire length would use open trenches, and not lateral boring or some other form of trenchless pipe replacement. Lift stations would also be modified/installed as necessary.

Ground Disturbance Summary

The heavy maintenance hangar project addresses a variety of requirements. A summary of the ground disturbance expected for the various project components is shown in the following table. The heavy maintenance hangar project would disturb about 1,199,901 SF or 27.55 acres. However, there would only be an increase of approximately 522,409 SF (or 11.99 acres) of impervious area.

Table 2-2: Heavy Maintenance Hangar Ground Disturbance Estimate Summary

Project Component	Area Disturbance (SF)
Heavy Maintenance Hangar Footprint	140,000
General Facility Utility Connections and Fuel Line Relocation (7,395 LF)	11,202
Taxiway Connections	100,000
Industrial and Sanitary Wastewater Main Upgrades (13,500 LF)	40,500
New Hot Cargo Pad	312,800
Vehicle Holding Area Demolition and Replacement	3,926
Personnel Parking and Transportation Network Repair	152,180
Stormwater Corrective Grading	233,000
Stormwater Conveyance Upgrades (45,000 LF + channels/outfalls)	191,657
Weir #3 Renovation	68,000

Vicinity Fire Protection Building and Water Tank	5,930
Total Ground Disturbance	1,259,195
New Impervious Area	522,409

2.5.2.2 Facility Alternatives Considered but Eliminated from Further Analysis

The construction of B2390, a hangar currently used for C-130 PDM, was analyzed in the 2008 EA, "Final Environmental Assessment, Construction and Operation of Aircraft Maintenance Hangar." The EA briefly described, but did not analyze, potential expansion of the hangar for future increases in C-130 operations. The WR-ALC previously considered this expansion (see **Figure 2-2** in **Appendix A** for the planned and actual location of B2390 as well as the potential hangar expansion). However, expanding the facility would require stopping production in the facility during construction. While the facility is not in use, existing mission needs would not be met. As described in Section 1.5 and shown in **Figure 1-5** in **Appendix A**, existing heavy maintenance capability on Robins AFB is 48 C-130 aircraft a year while the current demand is 60 C-130 aircraft a year. Only through the full utilization of existing heavy maintenance facilities on Base and the temporary offload contract are substantial PDM delays and mission impacts being avoided. B2390 has four heavy maintenance hangars, allowing it to support heavy maintenance requirements for 12.96 C-130s a year, over 20% of the existing C-130 heavy maintenance capacity. Due to the inability of this alternative to meet Selection Standard 10, it was eliminated from further consideration.

2.5.3 Multi-Purpose Hangar

2.5.3.1 Project Scope

This project would construct a multi-purpose hangar southwest of Building 91 (see **Figure 2-4** in **Appendix A**). Industrial wastewater pretreatment would be included as part of the project, if necessary. The hangar would be a single-story, approximately 166,031 SF multi-bay hangar with a concrete slab foundation, structural steel frame, masonry walls, and a metal roofing system would be constructed. Two bays would be dedicated to PDM while two bays would be corrosion control docks. The corrosion control portion of the hangar would either have two docks designed for C-130s, or one dock that accommodates a C-17 size aircraft. Corrosion control requirements necessitate more than one, but less than two full docks sized for C-130s. By not separating the two docks and effectively having one large dock, the facility would be more fully utilized. This approach also provides long-term flexibility to help accommodate unknown future shifts in mission requirements.

Construction would begin around FY2026 with a two-year construction period. The corrosion control bay(s) are expected to increase current C-130 aircraft throughput by meeting corrosion control requirements for up to 50 C-130 aircraft per year. Corrosion control operations would institute a wet de-paint process with organic solvents to loosen paint and employ the same techniques and materials currently used for de-paint in B50. The paint process would be the same as currently used in B89. Each PDM bay would increase heavy maintenance production output by about 3.24 C-130 aircraft each year. Approximately 360 personnel would support the hangar. Approximately 430 dependents are expected.

Several small existing facilities would be demolished to make space for the new hangar. Some of the demolished facilities would be replaced (see **Figure 2-4** in **Appendix A**). Buildings 86, 20094, 20121, 20093, and 32 are currently in the proposed site area and would be demolished. S-76 (a shed) and aircraft tents T9 and T10 would also be demolished. The administrative trailers behind B91 would also be demolished.

The footprint for facilities needing replacement would be relocated in the manner depicted in **Figure 2-4** in **Appendix A**. Aircraft tent T9 would be relocated north-northwest of B91. Building 20094, a shack,

and Building 20121 would be relocated east of B91. Building 86, a shack, would be relocated across the taxiway east-northeast of B91. Replacement facility siting would ensure the route for aircraft movement to the Museum of Aviation, which passes between B91 and B2390, would not be obstructed. The 402 AMXG plans to have a new annex built onto the side of B91 to replace the administrative space provided by the administrative trailers behind B91.

The following table summarizes the ground disturbance from the multi-purpose hangar project. Overall, the project would disturb about 288,988 SF or 6.63 acres. Most of the project areas are already impervious. The total net increase in impervious would be about 37,550 SF (0.86 acres).

Table 2-3: Multi-Purpose Hangar Ground Disturbance Estimate Summary

Project Component	Area Disturbance (SF)
Multi-Purpose Hangar Footprint	166,031
General Facility Utility Connections (2,063LF)	6,189
Demolitions (within proposed hangar footprint)	63,268
Relocations	40,169
Total Ground Disturbance	212,389
New Impervious Area	37,550

2.5.4 Aircraft Aprons

2.5.4.1 Proposed Scope

This project would construct all needed aircraft parking, functional test areas, and fuel pits in the vicinity of the C-130 Campus, as described in Section 1.5.3.1 (see **Figure 2-5** in **Appendix A**). Approximately 106 personnel would be needed to operate the new apron areas. Approximately 127 dependents are expected.

As summarized in the following table, this project would disturb about 855,256 SF or 19.63 acres. The project would result in a net increase of 598,335 SF (or 13.74 acres) of impervious area.

Table 2-4: Aircraft Aprons Ground Disturbance Estimate Summary

Project Component	Area Disturbance (SF)
Apron Footprint	834,046
Utility connections (7,070 LF)	21,210
Total Ground Disturbance	855,256
New Impervious Area	598,335

2.5.5 Construction Considerations

As part of the construction process, temporary features such laydown/staging areas and, in some cases, concrete batching plants are used. While such details would not be finalized until well into the design process, the generalities of what would be expected and the resulting impacts can be and are included. Notable variations from what has been included in the EA would be addressed appropriately under NEPA.

2.5.5.1 Laydown and Staging Areas

Based on previous projects at Robins AFB, the C-130 Campus projects are expected to use 1-3 acres for material laydown and staging. Based on the development location, this space could be in one of the potential personnel parking areas and/or in the proposed north apron area, all of which are currently vacant turf grass areas (see **Figure 2-6** in **Appendix A**). Laydown areas would not disturb the soil since no site grading or trenching would be involved. The existing grass could be somewhat damaged from being covered for an extended period of time, but would be restored to previous conditions at the end of construction as appropriate. Standard best management practices (BMPs) would be used to manage and contain materials.

2.5.5.2 Concrete Batching Plants

Temporary concrete batching plants are sometimes used when substantial amounts of concrete are being created, particularly if the location makes delivery from off-site unfeasible. Batching concrete on site can help ensure concrete quality and consistency. The choice to use a temporary concrete batching plant is generally up to the construction contractor, with coordination and approval from the Base required. Based on previous projects, if more than 10,000 tons of concrete would be needed, a batch plant may be appropriate. Based on preliminary estimates, the Heavy Maintenance Hangar and Aircraft Apron projects are likely to consider using a concrete batching plant. The NBPB footprint is too small to warrant such equipment. The Multi-Purpose Hangar is unlikely to warrant such equipment unless the entire existing impervious foundation would be replaced. Any concrete batching plant(s) would be located in the laydown/staging area.

Expected total C-130 Campus concrete is under 120,000 tons and would be constructed over multiple years. Operational dust control would still be required to the extent feasible/appropriate. The temporary batch plant would either be connected to the Base's electrical network or have built in power via generators. Based on a recent project considering a concrete batching plant, the built-in generator is assumed to use an approximately 173-horsepower diesel engine.

The temporary batch plant would use a backflow prevention device when it connects to the Base's water supply. Associated vehicles would generally be stored and washed off-Base. Any associated washing on base would require a concrete washout area sufficiently sized/designed to meet washout demand for the entire duration of project(s). Site run-off must be restricted/treated prior to operation of the batch plant to ensure runoff does not adversely affect water quality. All applicable BMPs from the Georgia Soil and Water Conservation Commission (GSWCC) 2016 Manual for Erosion and Sediment Control in Georgia and all other applicable regulations would be required. Required BMPs would include dust control, stabilization of stockpiles, and protection of storm drains/inlets.

2.6 Summary of Proposed Action

The Proposed Action is composed of four projects. All of the projects support the Purpose and Need for Campus development. Some parts of the Proposed Action are not yet sufficiently well-defined regarding if they would be required, their size, and/or location and are thus not ripe for decision. The EA includes these parts programmatically to provide a complete picture of the anticipated scope and impacts given the available information.

Table 2-5: Breakdown of Scope Ripe for Decision

Project	Section	Ripe for Decision?
General	Laydown Yard(s) (applicable for all projects)	Yes
	Concrete Batching Plant(s) (applicable for 2-3 projects)	Yes
NBPB	NBPB Footprint	Yes

	Taxiway Connection	Yes
	Electrical Circuit	Yes
	Other Facility Utility Lines	Yes
	Stormwater Corrective Grading	Yes
Heavy Maintenance Hangar	Heavy Maintenance Hangar Footprint	Yes
	General Facility Utility Connections and Fuel Line Relocation	Yes
	Taxiway Connections	Yes
	Industrial and Sanitary Wastewater Main Upgrades	Yes
	Campus-level Industrial Wastewater Pretreatment	**No**
	Old Vehicle Holding Area Demolition	Yes
	New Hot Cargo Pad and Vehicle Holding Area	Yes
	Personnel Parking and Transportation Network Repair	Yes
	Stormwater Corrective Grading	Yes
	Stormwater Conveyance Upgrades	Yes
	Weir #3 Renovation	Yes
	Vicinity Fire Protection Building and Water Tank	**No**
Multi-Purpose Hangar	Multi-Purpose Hangar Footprint	Yes
	General Facility Utility Connections	Yes
	Demolitions	Yes
	Relocations	Yes
Aircraft Aprons	Apron Footprint	Yes
	Utility Connections	Yes

This section provides a cumulative summary for ground disturbance, impervious area changes, and increases in personnel from these projects and overall campus development.

Table 2-6: Summary of Ground Disturbance and Impervious Area Increases

Project	Ground Disturbance (acres)	Additional Impervious Area (acres)
NBPB	7.41	0.86
Heavy Maintenance Hangar	28.91	11.99
Multi-Purpose Hangar	4.88	0.86
Aircraft Aprons	19.63	13.74
Total	**60.83**	**27.45**

Table 2-7: Summary of Personnel Increases

Project	Personnel	Dependents
NBPB	20	24
Heavy Maintenance Hangar	280	334
Multi-Purpose Hangar	360	430
Aircraft Aprons	106	127
Total	**766**	**915**

3.0 Affected Environmental and Consequences

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

3.1 Scope of Analysis and Impact Summary

This assessment focuses on resources of concern based on the Proposed Action. The Region of Influence (ROI) for each resource area is described within the resource section. Impact analyses include direct, indirect, and cumulative impacts. Direct impacts are those resulting from construction and operation of proposed facilities, which would be performed by 402 AMXG. Any increase in C-130 throughput would necessitate increases in all related PDM activities (indirect effects), including commodities maintenance (by 402 CMXG) and electronics maintenance (by 402 EMXG). However, both these groups generally handle components for multiple airframes at each facility, and airframes may also use some of the same components. Furthermore, the PDM requirements for each aircraft (i.e., painting, depainting, heavy maintenance, commodities maintenance, electronics maintenance, functional testing, etc.) is highly variable. Based on preliminary information gathering and analysis, CMXG and EMXG operations (including utilities such as electricity and water) do not correlate clearly with C-130 throughput or with overall aircraft throughput. Maintenance support activities (by 402 MXSG) and general industrial wastewater treatment (industrial wastewater treatment plant, IWTP #1) also support a large mix of facilities and associated airframes. Therefore, quantitative analyses of these expected indirect increases in PDM-related activity are generally unavailable, except where otherwise specified.

Cumulative impacts are considered in each relevant resource area. Relevant resources for cumulative impact analyses are those which the Proposed Action (the C-130 Campus) would adversely impact. The intent of cumulative impacts analysis is to determine if a significantly adverse impact would occur on a resource area as a result of incremental adverse impacts. For resource areas which the Proposed Action does not have an adverse impact, the Proposed Action is incapable of contributing to a significant adverse cumulative impact. Impacts are described quantitatively regarding cases for which applicable data is available. Any unavailable data is noted and relevant projects are discussed qualitatively. Projects deemed relevant for this Proposed Action regarding one or more resource areas are listed below (details available in **Appendix H**). Due to the nature of these contributing cumulative impacts being independent from the Proposed Action, they apply to both the Proposed Action and the No-Action Alternative.

- Georgia Power Company (GPC) Solar Array (past/present)
- Sentinel Landscape Partnership (past/present)
- Building 59 Bay D Conversion (future)
- SWEG Campus (future)
- DAF Climate Action Plan (future)
- Advanced Battle Management System Family of Systems (ABMS FoS) Mission (present/future)
- Local Housing Development (present/future)
- Robotic Laser Technology for Full Aircraft Depaint (future)
- Transition to Zero-Emission Technologies (future)
- Ocmulgee River Corridor Potential Redesignation as a National Park and Preserve (future)
- JSTARS Divestiture and E-11A, Kingpin, and SWG Beddowns (Mission Transformation, present/future)
- Local Education System Development (present/future)
- Combined Heat and Power (CHP) Projects on Base (future)
- National Network of Electric Vehicle Chargers; Electric Vehicle (EV) Adoption by Consumers (future)

Climate change continues to influence and be influenced by human activity, necessitating consideration of these influences within NEPA analyses. Most of the temperature increases since 1950 have been caused by human greenhouse gas (GHG) emissions. This rate of warming is over ten times that at the end of an ice age, the fastest naturally occurring sustained change on a global scale. As GHGs and temperatures rise, Artic sea ice continues to melt away, global sea levels rise, flooding along coasts increases, natural disasters become more frequent, and many other effects of climate change (feedbacks) cause related processes to increase or decrease (National Research Council, 2020). The United States, and the rest of the world, faces an urgent, inherently complex climate crisis. The impact of federal actions on climate change, and of climate change on proposed actions must be considered, and as the January 2023 interim guidance from CEQ reiterates, such analysis and consideration fall within the purview of NEPA (CEQ 2023). Climate change considerations are discussed in applicable sections and include three types of considerations:

1. Effects of the Proposed Action on climate change via GHG emissions (Section 3.4),
2. Effects of climate change on the Proposed Action itself (Section 2.2), and
3. Implications of climate change on the environmental effects of the Proposed Action (Sections 3.5, 3.8, 3.9, and 3.11)

Per established guidelines[2], description of affected environments and associated impact analyses in this EA focus on only those aspects potentially subject to impacts from the Proposed Actions. The following resource areas are discussed in detail in the EA and are summarized below:

Table 3-1: Summary of Impacts

Resource Category	Resource	No-Action Alternative	Proposed Action	
			Alone	Cumulatively
AICUZ/Noise	AICUZ	No impact	No impact	Not applicable
	Noise	Positive impact	Less than significantly adverse impact	Positive impact
Cultural Resources	Cultural Resources	No impact	No impact	Not applicable
Air Quality	Air Emissions	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Climate Change	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
Water Resources	Surface Waters and Water Quality	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Stormwater	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact

[2] Established by the NEPA CEQ regulations and 32 CFR 989, *Environmental Impact Analysis Process*

	Groundwater and Water Supply	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
Safety and Occupational Health	Safety	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Occupational Health	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
Hazardous Materials/ Waste	Hazardous Materials	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Hazardous Waste	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Solid Waste	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Wastewater	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
Biological Resources	Threatened and Endangered Species	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Other Vegetation	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Other Wildlife	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Floodplains	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Wetlands	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
Earth Resources	Soils	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
	Topography	Less than significantly adverse impact	Beneficial impact	Not applicable
Other Base Infrastructure	Electrical Network	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact

	Transportation Network	Less than significantly adverse impact	Less than significantly adverse impact	Less than significantly adverse impact
Socioeconomics and Environmental Justice	Economy	Beneficial impact	Beneficial impact	Not applicable
	Housing	Beneficial impact	Less than significantly adverse impact	Beneficial impact
	Education	Beneficial impact	Less than significantly adverse impact	Beneficial impact
	Environmental Justice	No impact	No impact	Not applicable

Resources with no/negligible relevance for the Proposed Actions are only discussed briefly below.

Land Use: The primary development area is entirely on the flightline, in areas zoned as Aircraft Operations and Airfield Pavement. The new facilities would be similar to existing facilities in the area and would be compatible with existing land uses. Supporting development of utilities would modify existing utility systems in developed areas. Overall, there would be no impact to land use on Robins AFB.

Toxic Materials: The majority of the proposed development would involve constructing new facilities and modifying related utilities. No asbestos or lead-based paint would be used during the construction of new facilities. A few structures would be demolished, most of which would be relocated. Except for one facility (Building 32, liquid oxygen storage, approximately 665 SF, constructed in 1969), all the facilities were constructed in the 1990s or later are not expected to contain any asbestos of lead-based paint. Building 32 is a metal facility and is not expected to contain toxic materials. Demolition would be conducted in accordance with Robins AFB procedures, and would include testing for any toxic materials as applicable. Any toxic materials, if found, would be disposed of in accordance with the Robins AFB Hazardous Waste Management Plan. Negligible impact regarding toxic materials is expected from the proposed development because little to no toxic waste would be generated, and any toxic waste generated would be disposed of in accordance with all applicable laws and regulations.

Geology: The Proposed Action would not involve any activity that would adversely affect subsurface geological formations. Excavation/ground disturbance is expected to be conducted only to depths necessary for facility foundations, utility connections, site grading, and retention pond renovation – no more than approximately 5 feet below ground surface. Soils in the project area have over 80 inches of depth above bedrock (see Section 2.9 for soil details). Therefore, no impact on geology is expected as a result of area development.

Visual Resources: The Proposed Action would only involve long-term visual changes near and on the flightline, specifically new airfield pavement, personnel parking, and aircraft facilities/equipment. These changes would align with the general industrial look and use in the area. Short-term construction activities would result in some utility work in other developed areas of the Base. Maintenance and modification of utilities are inherent characteristics of developed areas. Therefore, there would be no visual incongruity/impact as a result of the Proposed Actions.

Recreational Resources: The Proposed Action has no potential to impact recreational resources because the project areas are not in or near recreational areas on Base.

3.2 AICUZ/Noise

3.2.1 Background

3.2.1.1 Definitions

Sound is energy transferred through the air, which human ears detect as small air pressure changes. Noise is unwanted sound and can be identified by the negative effects (ranging from unpleasant/disruptive sensation to physically damaging) it has on its recipients. Sound is objective while noise has a subjective component. In other words, which sounds are unwanted (i.e., noise) vary according to the type and characteristics of the noise source, the distance between the noise source and the observer, the sensitivity of the observer, and the time of day.

Sound levels vary widely and are expressed using decibels (dB), a unit of measure using the logarithmic scale. Generally, a 3-dB change (a doubling of sound intensity) is necessary for humans to notice noise increases while 10-dB increase in sound level corresponds to an approximate doubling of perceived loudness. The human ear responds differently to various pitches or frequencies of sound. To account for these differences in perception, the "A-weighted" scale (dBA) is used, which focuses on the frequency spectrum parts where we hear most (see **Appendix D** for more information).

Day-night sound level (DNL) is a sound metric which averages all A-weighted sound exposure level values over a 24-hour period, with an additional 10-dB penalty added to sound events occurring between 10:00 PM and 7:00 AM. This penalty helps account for the generally lower background sound levels at night and the additional annoyance of nighttime sound events. DNL is the preferred noise metric for the Department of Transportation, Federal Aviation Administration (FAA), U.S. Department of Housing and Urban Development (US HUD), U.S. Environmental Protection Agency (US EPA), and DoD.

3.2.1.2 Analysis Approach

Noise generally does not limit land use until 65+ DNL (see **Appendix D** for more information). Therefore, the ROI for this resource is the area affected by Robins AFB within the 65+ DNL contours. Existing conditions use the calendar year (CY) 2018 as a reference since it is considered the most representative. Flying operations decreased by approximately 21-35% during the COVID19 pandemic. Since a 3-db increase is needed to be noticeable to humans, the same level of change is used as an indicator of *de minimis* significance. The change in DNL at key points of interest (POIs), such as churches and schools, was also considered by checking if any such POIs would have DNL $\geq$ 65.

3.2.2 Existing Conditions

The proposed development on Robins AFB would be within the existing flightline area, which includes ground level static noise sources, such as engine testing operations, as well as flying operations. Aircraft operations are primarily conducted by the C-130 Hercules, C-5 MAX Galaxy, F-15 Eagle, C-17 Globe Master III, E-8C JSTARS, and RQ-4 Global Hawk. Wetlands and the Ocmulgee River lie to the east of the flightline for several miles. Robins AFB stretches to the south of the runway for approximately 3 miles. North of the runway is a Warner Robins wastewater treatment plant (industrial) followed by more wetlands and the Ocmulgee river. The city of Warner Robins lies to the west of the flightline area.

Existing noise contours are depicted in **Figure 2** in **Appendix D**. The majority (approximately 67%) of the currently affected area in the 65+ DNL areas is on Robins AFB.

Robins AFB actively works with surrounding communities to reduce the risk and impact of its flying operations. These collaborative efforts include the purchase of easements and over 300 properties by the Central Georgia Joint Development Authority (CGJDA) within the accident potential zones and noise contours, which has substantially reduced incompatible uses within these areas. The CGJDA continues to

purchase such properties from willing sellers as opportunities arise (Stantec, 2022). Sections within the Houston County Land Development Regulations, the city of Centerville's Code of Ordinances, the city of Warner Robins, and the Macon-Bibb County Comprehensive Land Development Resolution are directly supportive of Robins AFB operations. Measures includes regulation of areas within different noise contours and accident potential zones. The Warner Robins regulations include additional review, including by the Robins AFB civil engineer office, of proposed development in areas within the 65+ DNL noise contours and the accident potential zones.

3.2.3 Consequences

3.2.3.1 No-Action Alternative

Under the No-Action Alternative, there would still be changes from the existing noise environment. Robins AFB is in the process of divesting the E-8C aircraft and fully establishing the E-11A aircraft, as was previously analyzed in the Mission Transformation EA. The ABMS mission will also be fully operational in the next few years and would involve new flying operations. Data on the ABMS mission was unavailable. Given the available information, the noise environment is expected to be quieter under the No-Action Alternative compared to existing conditions (a positive impact, see **Appendix D**, **Figure 2** for noise contours).

Table 3-2: No-Action Alternative Noise Impacts

Noise Level (DNL)	Existing Off-Base (acres)	No-Action Off-Base (acres)	Net Change (acres)
65-69	1,491	587	--904
70-74	233	61	-173
75-79	22	2	-20
80-84	0	0	0
85+	0	0	0
Total	1,747	649	-1,097

Note: Areas were calculated using GIS and included nuanced corrections, resulting in minor differences from the total contour areas calculated within the NoiseMap suite of programs. Column may not add to the totals shown due to rounding.

3.2.3.2 Proposed Action

Short-Terms AICUZ/Noise Impacts

Each project would involve new facility construction in the flightline area. Use of heavy equipment for site preparation and development (e.g., vegetation removal, grading, and backfill) for each proposed facility, as well as for associated utilities on the northern half of the Base, would generate short-term noise exposure above typical ambient levels. However, noise generation would be typical of construction activities, short-term, and confined to normal working hours (i.e., between 7 AM and 5 PM.). Short-term noise-generating activities would occur within the base boundary on the airfield or within other developed areas of the base, which contain land uses that are not considered to be noise sensitive. Construction activities would not be expected to substantially alter the ambient noise environment. Therefore, the impacts of construction-related noise would be negligible (less than significantly adverse) and would not necessitate any changes under the Air Installation Compatible Use Zone (AICUZ) program.

Long-Term AICUZ/Noise Impacts

The construction of the C-130 Campus would allow the overall C-130 throughput to increase by 21 C-130s a year, meeting the conservative estimate for the total PDM throughput demand (approximately 75, the number below which 90% of the expected annual throughput values fall, also called the 90th percentile). C-130 flying operations would increase by approximately 39%. This PDM throughput increase would lead to a negligible increase in noise from maintenance activities on the flightline as well as associated flying operations. There would be an imperceptible change in off-Base noise contours.

In addition to C-130 flying operations scaling up, static operations (engine testing at functional test spots) would also scale up and be distributed across existing and the four new C-130 functional test pad locations. There would be a negligible change in off-base noise contours (see **Appendix D**, **Figure 2**).

Table 3-3: Off-Base Area Affected by Noise Levels above 65 DNL under the Proposed Area Development

Noise Level (DNL)	No-Action Alternative Off-Base (acres)	Proposed Action Off-Base (acres)	Net Change (acres)
65-69	587	589	2
70-74	61	61	<1
75-79	2	2	<1
80-84	0	0	0
85+	0	0	0
Total	649	652	2

Noise levels at nearby points of interest (schools, residential areas, places of worship) would all remain below the 65 DNL compatibility threshold.

Table 3-4: Noise (DNL) at Points of Interest under the Proposed Actions

Point of Interest	Existing	No-Action Alternative	Proposed Action
Christian Fellowship Church	61.7	61.5	61.5
Residential Northwest	57.8	56.4	56.4
First Baptist Church	53.8	51.9	52.0
Huntington Middle School	53.1	51.2	51.3
Warner Robins High School	50.4	49.9	49.9
Residential South	46.2	45.8	45.9

3.3 Cultural Resources

3.3.1 Background

3.3.1.1 Definitions

Cultural resources definitions are based on applicable laws, as described in AFMAN 32-7003 Section 2.2. The Robins AFB Integrated Cultural Resources Management Plan (ICRMP, Robins AFB, 2021) also covers such definitions. In short, a historic site is any building, landscape, site, or structure that is of local, regional, national, or global significance. Sites are usually required to be at least 50 years old to undergo consideration for historic status. Prehistoric and historic archaeological sites are also managed under the cultural resources program.

3.3.1.2 Programmatic Agreement and Discovery Contingency

Programmatic agreements (PAs) support a more streamlined process for entities like Robins AFB to satisfy their historic preservation requirements with minimum to no consultation with the SHPO based on the type of activity being undertaken. A comprehensive PA between Robins AFB, the GA SHPO, and the Advisory Council on Historic Preservation (ACHP) was signed 10 September 2014. Two sections of the PA are of particular note for this Proposed Action:

In accordance with Section 4.4 of the PA, no coordination with the GA SHPO is required for construction or other land clearing activities planned for sites that have been surveyed and determined not to contain National Register of Historic Places (NRHP)-eligible archaeological sites, as long as a report of said survey was previously provided to the SHPO for review and concurrence.

In accordance with Section 3.2 of the PA, construction (i.e. renovation or demolition) or land clearing activities planned for buildings, structures, or objects that have been surveyed and determined not to be NRHP-resources do not require coordination with the SHPO, as long as a report of said survey was previously provided to the SHPO for review and concurrence.

If cultural resources are inadvertently discovered during construction, project personnel would follow standard Base procedures. Specifically, project personnel would avoid the site of discovery and immediately contact the Base Cultural Resources Program Manager. All work in the area of discovery would stop until the site can be investigated. The Base environmental office would send out a qualified representative to the site and the source would be recorded and evaluated, and the effects mitigated as necessary. All appropriate coordination would also be performed.

3.3.1.3 Analysis Approach

There are three APEs for this undertaking. The APEs for ground disturbing activities include one APE for direct disturbance from construction of new facilities and demolition/relocation of structures and one APE for indirect disturbance resulting from associated area utility work. The area of primary development (purple area in **Figure 1-1** in **Appendix A**), including structures to be demolished, contains no NRHP-eligible structures. Supporting development activities (i.e., utility work, blue and green areas in **Figure 1-2** in **Appendix A**) are expected to create ground disturbances near historic properties, specifically Buildings 110, 125, 220, 2067, and 2081. The APE for flying operations would include all areas potentially affected by the force of resulting sound waves.

As the only non-exempt part of the undertaking is the change to flying operations, the indicator for *de minimis* significance is a likelihood of sound damaging historic structures, either due to a higher maximum level of sound or a notably noisier environment (as indicated by DNL contours).

3.3.2 Existing Conditions

The area being proposed for further development as well as the facilities proposed for demolition (and in some cases relocation) were surveyed in 2003. The report was amended in 2004 and, after additional information was provided, the GA SHPO responded on Oct 3, 2005, with concurrence on the report. No historic facilities or archaeological sites were determined to be in the area proposed for development. No traditional cultural properties, sacred sites, or historic landscapes have been identified on Robins AFB (Robins AFB, 2022). There are no known existing issues regarding vibration from flying operations and historic sites on Robins AFB.

3.3.3 Consequences

3.3.3.1 No-Action Alternative

No development related to the C-130 workload would occur. There would be no impacts to cultural resources.

3.3.3.2 Proposed Action

The construction activities within the primary development area would fall under Section 4.4 of the PA and is thus exempt from further consultation with the GA SHPO. Some utility work expected as a result of the proposed development would occur near historic buildings. In accordance with Section 3.1.2 of the PA, such work is exempt from further consultation with the GA SHPO.

Although the patterns/routes of C-130 flying operations would be unchanged, the increase in frequency warrants analysis and consultation, pursuant to 36 CFR § 800.5(a)(2)(v). Several NRHP-eligible sites lie within the current and expected 65+ DNL contours. The C-130 aircraft cannot achieve supersonic speed, and thus, does not generate sonic booms. The maximum sound levels (L_{max}) in decibels (dB) for individual C-130 aircraft at Robins, detailed in a recent noise study supporting an Environmental Assessment in 2022, are shown in the table below.

Table 3-5: L_{Max} (dB) Associated with Direct Overflight of C-130 Aircraft at Robins AFB

Model	Configuration	Engine Power Setting	Airspeed (knots)	Altitude (feet above ground level)					
				500	1,000	2,000	5,000	10,000	20,000
C-130H	Takeoff	970 C TIT	170	92	85	77	66	57	47
C-130H	Landing	580 C TIT	140	90	83	75	63	53	42
C-130J	Cruise	505 HP	160	91	84	76	64	54	44

Notes: L_{max} was calculated under standard acoustic atmospheric conditions (70°F and 59% relative humidity). C TIT = Celsius Turbine Inlet Temperature; HP = Horsepower.

Robins AFB has one pair of runways, with which no more than two C-130 aircraft can takeoff at a time. This undertaking would not change number of aircraft which can takeoff simultaneously. If two C-130 aircraft takeoff simultaneously, the maximum resulting noise at 500 above ground level (AGL) would be 95 dB. Generally, sound pressure levels must exceed 130 dB for more than one second to be potentially damaging to structures (Committee on Hearing, Bioacoustics, and Biomechanics, 1977). The C-130 aircraft would not cause such sound pressure levels. The increase in C-130 operations would have a negligible impact on the overall sound environment, as portrayed in **Figure 2** in **Appendix D**. The noise environment is expected to become somewhat quieter as the E-8 aircraft is divested and replaced with the E-11A.

Pursuant to 36 CFR §800.5(b), the DAF has determined the proposed C-130 Campus would not adversely affect historic properties on Robins AFB. Ground disturbances would be of a nature previously determined to cause no adverse impacts to historic structures. Peak operational sound pressure would be unchanged. Representative noise contours, which capture the frequency and nature of operations, would be negligibly different from the no-action alternative. Overall, no impact to historic sites is expected as a result of the undertaking, individually and cumulatively.

3.4 Air Quality

3.4.1 Background

3.4.1.1 Ambient Air Quality Standards

National Ambient Air Quality Standards (NAAQS) are established by the US EPA for six common air pollutants (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 which protect public health, including "sensitive" populations such as asthmatics, children, and the elderly, as well as decreased visibility and damage to property such as animals and crops. Each state has the authority to adopt more stringent standards than the federal NAAQS. Georgia Ambient Air Quality Standards are the same as the federal NAAQS.

The US EPA routinely calculates statistics that describe the air quality of a given location relative to the NAAQS, called a design value. If the value is less than 95% of the respective NAAQS, the air quality is clearly in attainment.

Table 3-6: Georgia Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	Level	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/m³	Not to be exceeded more than once per year on average over 3 years
$PM_{2.5}$	24 hours	35 µg/m³	98th percentile, averaged over 3 years
	Annual	12.0 µg/m³	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/m³	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

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

Individual states are responsible for achieving NAAQS. Areas, typically at the county level, can be determined to be in *attainment* (meeting the NAAQS) or in *nonattainment*. Each state is required make efforts, detailed in a State Improvement Plan (SIP), to improve the air quality in their *nonattainment*

areas. *Nonattainment* areas that have achieved attainment pollutant levels are documented as in Maintenance, and must consistently meeting the NAAQS for at least two consecutive 10-year periods for each applicable criteria pollutant. Air quality procedures and requirements vary somewhat depending on the attainment status of an area.

3.4.1.2 Greenhouse Gases (GHG) and Climate Change

The Earth's temperature depends on a balance between energy entering and leaving Earth's system. Certain gases slow or prevent the loss of heat to space, acting like a blanket, and are known as "greenhouse gases" (GHGs). There are several especially notable GHGs, specifically carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ground-level ozone (O_3), and fluorinated gases.

3.4.1.3 Analysis Approach

In order to maintain analytical meaningfulness, the ROI for air quality is Robins AFB. However, it is understood that climate change is a global and cumulative problem in nature. The indicator levels for *de minimis* significance for criteria pollutants are noted in **Table 3-8** as well as **Appendix E**. Proposed actions that would emit, or have the potential to emit, less than 250 tons per year (or 25 tons per year for lead) are deemed insignificant.

Construction/demolition, facility heating, personnel transportation, corrosion control, and aircraft air emissions were estimated using the Air Force's Air Conformity Applicability Model (ACAM) software in accordance with Air Force Manual (AFMAN) 32-7002 § 4.4.5. Based on guidance from Air Quality staff at the Air Force Civil Engineer Center (AFCEC), ACAM alone was deemed appropriate and sufficient for this Proposed Action. Therefore, any expected impacts which cannot be analyzed with ACAM are not analyzed quantitatively. In accordance with AFCEC guidance, air quality cumulative impacts are discussed only qualitatively.

Emissions from the potential concrete batch plant(s) were considered but deemed unnecessary to include for several reasons. The air permitting throughput threshold would not be reached even if all batch plant activity were to occur in the same year. Furthermore, ACAM is conservative and is generally considered to sufficiently account for such emissions within the various construction phases despite not explicitly addressing batch plant emissions. At the permitting annual throughput threshold value of 120,000 tons of concrete, only approximately 2 tons of particulate matter would be generated. The projected batch plant demand would be below this threshold, meaning the resulting particulate matter generated would be even less than 2 tons. Based on the above information, emissions from concrete batch plant(s) do not warrant inclusion for this Proposed Action.

GHG Emissions and Impacts

GHGs are measured in standard units (such as tons per year) and can be combined into one metric based on their individual global warming potentials (GWPs) based on the functionally equivalent amount of carbon dioxide (CO_{2e}). GWP measures how much energy the emissions of one ton of a gas would absorb over a given period of time, usually 100 years, relative to the emissions of one ton of CO_2. CO_2 has a GWP of 1 since it the reference GHG. CH_4 has a GWP of 27-30 over 100 years. N_2O has a GWP of 273 over 100 years.

ACAM provides CO_{2e} estimates for activities it analyzes. General GHG trends are discussed briefly in **Appendix H**. Per the CEQ interim guidance released January of 2023, "Agencies should exercise judgment when considering whether to apply this guidance to the extent practicable to an on-going NEPA process." The DAF guidance on applying and conducting a Social Cost of GHG analysis was under development during the development of this EA and is not intended to be applied to in progress documents, such as this EA.

3.4.2 Existing Conditions

3.4.2.1 Local Climate

Robins AFB lies in Middle Georgia adjacent to Warner Robins, in a humid subtropical region in US Department of Agriculture (USDA) Plant Hardiness Zone 8a, with an average annual extreme minimum temperature of 10-15 degrees Fahrenheit (°F). The information in **Table 3-12** was obtained from the 1991-2020 climate normals from the National Oceanic and Atmospheric Administration's (NOAA's) National Centers for Environmental Information (NCEI). A climate normal is the 30-year average of a particular variable's measurements.

Table 3-7: NOAA NCEI US Climate Normals for Warner Robins, GA (1991-2020)

Season	Max Temp (°F)	Min Temp (°F)	Average Temp (°F)	Precipitation (in)
Annual	75.6	54.4	65.0	51.79
Winter	59.6	38.1	48.9	14.26
Spring	76.2	52.9	64.6	11.27
Summer	90.0	71.0	80.5	15.29
Autumn	76.5	55.3	65.9	10.97

3.4.2.2 Local Air Quality

Robins AFB is located within Houston County in Georgia. Houston County is currently designated as in *attainment* for all six criteria pollutants, meaning the ambient air quality meets established standards. Based on design value information from the three state and local air monitoring stations (SLAMS) near Robins AFB, Robins AFB is clearly in attainment.

3.4.2.3 Robins AFB Air Emissions

Robins AFB currently produces emissions from stationary and mobile sources. The Base operates under a Title V Operating Permit Number 9711-153-033-V-04-2 which covers stationary air emission sources. Robins AFB also indirectly causes emissions via purchased electricity whenever solar power is unavailable (approximately half the time).

3.4.3 Consequences

3.4.3.1 No-Action Alternative

Under each No-Action Alternative, other reasonably foreseeable actions would still potentially occur, affecting emissions at Robins AFB.

Robins AFB Emissions

Regarding criteria pollutants, the No-Action Alternative impact (and comparative baseline for action alternatives) for the Proposed Action is expected to be less than significantly adverse based on available information. It is expected that no additional PDM would be contracted off-Base and that on-Base C-130 PDM levels would be unchanged, resulting in delays and mission impacts, but no increase in air emissions relating to Air Force C-130 maintenance.

Other development at Robins AFB is expected to affect air emissions, generally by increasing emissions. Construction activities would typically cause temporary, less than significant, adverse impacts to air quality. Increases in flying activities, many industrial activities, facility heating would also increase air emissions. If battery storage is implemented on-Base, the indirect emissions from purchased electricity would be reduced from 50% down to as low as 0%, depending on extent of implementation. The general shift toward electric vehicles, both Federal and general consumer, would reduce CO and CO_2 emissions

as well. Approximately 28% of U.S. Federal Government direct and certain indirect (purchased utility related) GHG emissions are from DoD installations including Robins AFB. Approximately 60% of these DoD installation emissions are from purchased electricity while 28% are from stationary combustion. Key Results in the DAF Climate Action Plan include achieving net-zero emission installations by FY46 as well as achieving 100% carbon-free electricity on a net annual basis by FY30, which aligns well with the modeling results from Intergovernmental Panel on Climate Change (IPCC) (see **Appendix H**).

For the criteria pollutants, the overall stationary source emission levels are expected to increase along with increases in OIB and other mission developments on Base (see **Appendix H** for qualitative discussion). The use of pollution control devices and operational controls, committed to and enforceable via permitting, would ensure no significant cumulative deterioration in air quality.

3.4.3.2 Proposed Action

All construction criteria pollutant air emissions for the proposed area development would be below the indicator threshold of 250 tpy (and 25 tpy threshold for lead) even when considered as a whole. Construction would occur over several years, with the highest emissions occurring for PM_{10} in 2026 (43.69 tons, 17.5% of the indicator threshold). **Table 3-8** includes the total tons of each criteria pollutant and CO_{2e} that would be produced by construction involved in implementing the Proposed Action, as determined by the ACAM analysis. Therefore, construction air quality impacts from the proposed area development would be short-term and less than significantly adverse.

Operational emissions for criteria pollutants were also all below the insignificance indicator levels, as detailed in the ACAM report in **Appendix E**. The annual values for each category of operational emissions were summarized in **Table 3-8**. The DoD is working towards net-zero GHG installations consistent with EO 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, through reducing energy demand, scaling clean energy solutions, as well as leveraging technology innovations (DoD 2023). Although the C-130 Campus would increase electrical consumption, the use of renewable energy and on-site energy storage in the future would substantially reduce or eliminate the associated indirect GHG emissions. Personnel transit is also expected to become relatively less impactful. The DoD continues to pursue initiatives to increase operational energy efficiency, including improving propulsion and aerodynamic drag, electrification of rotorcraft and small mobility aircraft, and anti-idle and hybrid propulsion ground vehicles (DoD 2023). Considering these ongoing and reasonably foreseeable future factors, the cumulative impact of the increased GHG emissions from the C-130 Campus would be less than significantly adverse.

Table 3-8: ACAM C-130 Campus Emissions and Cumulative Emissions

Activity	VOC	NO_X	CO	SO_X	PM_{10}	Pb	$PM_{2.5}$	CO_{2e}
Construction (tons)	41.25	22.15	26.31	0.17	107.25	0	0.84	8,130
Operational Total (tpy)	22.78	12.79	20.56	0.91	2.04	0	1.85	6,194
Corrosion Control (tpy)	21.35	-	-	-	-	0	-	-
Facility Heating (tpy)	0.09	1.67	1.40	0.01	0.13	0	0.13	2,009
Personnel Transit (tpy)	1.11	0.70	15.98	0.01	0.02	0	0.02	1,591
Flying Operations (tpy)	0.23	10.42	3.17	0.89	1.89	0	1.70	2,595
Worst Case Year Value for Each Pollutant (tons)	27.93	13.46	20.56	0.91	43.69	0	1.85	6,194
Insignificance Indicator (tpy)	250	250	250	250	250	25	250	Not Applicable

The NBPB has already been added to the Title V permit. One other source under the Proposed Action would still need to be added to the Base's Title V permit prior to operation, specifically the corrosion control activity in the Multi-Purpose Hangar. Based on expected concrete requirements, any concrete batching plant(s) needed for the C-130 Campus is expected to be exempt from air permitting requirements per Georgia Rules for Air Quality Control 391-3-1-.03(6)(h)1 as less than 120,000 tons of concrete a year would be produced. However, in accordance with the 2020 Air Emissions Guide for Air Force Transitory Sources (AFCEC 2020), if a concrete plant is in place for longer than one year, it must be considered a stationary source and would be added to the stationary source inventory.

3.5 Water Resources

3.5.1 Background

3.5.1.1 Groundwater and Water Supply

Georgia's Comprehensive Statewide Water Management Plan (State Water Plan) established regional water planning councils to help manage Georgia's water resources sustainably through 2060 (Georgia Water Planning 2008). Robins AFB, within Houston County, falls under the Middle Ocmulgee Region. Therefore, the ROI for the groundwater and water supply resource is the Middle Ocmulgee Region. According to the draft 2023 Middle Ocmulgee Regional Water Plan (Georgia Water Planning 2023), this region receives between 40 and 52 inches of rain per year and has an abundant water supply to support long-term growth. In the southern area of the state, including Robins AFB, the Cretaceous and Floridan Aquifer systems provide a substantial portion of the water supply. Within the Middle Ocmulgee Region, an average of approximately 76 million gallons per day (MGD) of groundwater was withdrawn from the Cretaceous Aquifer (Georgia EPD 2017). The 2012 low-end sustainable yield simulation result for the Cretaceous Aquifer in the study area (with Houston County in the center) was 104 MGD, meaning an increase of up to 28 MGD would be sustainable. Even after accounting for further growth, the Regional Water Plan notes room for, and an intent to encourage, further economic development (Georgia Water Planning 2023). Given the abundant state of this resource, the indicator of *de minimis* significance is defined as exceeding current permitted withdrawal limits on Base.

Robins AFB maintains a groundwater withdrawal permit for each of three purposes: drinking water supply, groundwater treatment (under the environmental restoration program, ERP), and maintaining recreational lake levels in Luna Lake. The groundwater treatment system is a closed loop, withdrawing groundwater, treating it, and then releasing it to the Ocmulgee River under a National Pollution Discharge Elimination System (NPDES) permit. For the Luna Lake permit, groundwater is withdrawn and pumped directly into Luna Lake, resulting in no unaccounted-for water or wastewater. The Cretaceous Aquifer supplies potable water to Robins AFB via six wells. Robins AFB incorporates water conservation measures into facility designs and renovations wherever feasible to best manage this abundant but finite resource.

3.5.1.2 Stormwater

Stormwater on Base is managed in accordance with the Robins AFB Stormwater Pollution Prevention Plan (Geosyntec Consultants, 2022) and can generally be considered at the drainage area level, with 15 total drainage areas total (composed of 20 watersheds altogether). Each drainage area contains one or more watersheds. The scope of the primary development area (i.e., where new facilities would be constructed) falls within three drainage areas, two of which run alongside the border between the Base and the city of Warner Robins (see **Figure 3-1** in **Appendix A**).

The stormwater ROI is comprised of Drainage Areas 4, 5, and 7, as well as associated inlets and outlets. The indicator of *de minimis* significance for stormwater is if applicable permit limits would be exceeded

somewhat regularly and/or facilities would be expected to flood somewhat routinely despite potential engineering solutions (beyond when the Ocmulgee River floods the 100-yr floodplain).

3.5.1.3 Surface Waters and Water Quality

Robins AFB has one representative outfall within a mile upstream of an impaired stream segment, Sandy Run Creek. The outfall is in Drainage Area 15, at the south end of Base, which none of the proposed development would affect. There are two waterbodies within the expected influence of the proposed development, both of which are currently assessed as "good" according to EPA's "How's My Waterway" (see **Figure 3-2** in **Appendix A**), although the Ocmulgee River does have a restoration plan for polychlorinated biphenyls (PCBs) in fish tissue (GA EPD, 2007). Robins AFB is PCB-free and not expected to contribute to PCB concerns. Both waterbodies are designated for fishing.

Discharges to surface waters from stormwater and wastewater are monitored in accordance with the associated NPDES permits. Stormwater discharges from outfalls 001-006 are regulated under the industrial wastewater NPDES permit. Of these outfalls, two are within the expected influence of the proposed development: 001 (Weir #1, Drainage Area 5) and 002 (Weir #3, Drainage Area 7). Other stormwater discharge is regulated under the general stormwater NPDES permit. Two general stormwater permit sampling locations (SLs) are within the expected influence of the proposed development: SL-14A (Drainage Area 4), SL-13 (Drainage Area 5).

The surface waters and water quality ROI is comprised of Drainage Areas 4, 5, and 7 and their associated outfalls, as well as the outfalls at the end of the industrial and sanitary wastewater treatment trains (outfalls 8, 9, and 11). The indicator of *de minimis* significance for surface waters and water quality is somewhat regular exceedance of applicable permit limits. It is expected that as long as Robins AFB normally meets these permit limits, it would not drive the two downstream water bodies from "good" to "impaired."

3.5.2 Existing Conditions

3.5.2.1 Groundwater and Water Supply

Robins AFB operates well below its permitted drinking water withdrawal limits and system capacity. The annual average consumption in CY18-21 ranged from 35% to 39% of the permit limit.

Table 3-9: Robins AFB Drinking Water Supply Average Usage and Withdrawal Limits

Average Type	Robins AFB CY18-21 Average	Withdrawal Limit	Current Usage (% of Limit)
Annual	1.448 MGD	3.870 MGD	37%
Monthly	1.888 MGD *(highest monthly average in time frame)*	5.010 MGD	38%

MGD = millions of gallons per day

3.5.2.2 Stormwater

The primary inlet for the large amount of runoff from the city of Warner Robins connects to Drainage Area 4 (see **Figure 3-1** in **Appendix A**). As noted in Section 1.5.3.3, there are areas on the flightline with inadequate drainage, leading to increased erosion and associated increased suspended solids in stormwater runoff during heavy rainfall events.

Table 3-10: Current Characteristics of Relevant Drainage Areas under Existing Climate Conditions

Drainage Area (watersheds)	Area (acres)	Percent Impervious	Potential Annual Run-Off (kgal)	Outlet
4 (W4)	279	38%	149,108	Echeconnee Creek
5 (W5)	270	54%	205,055	Wetlands/Ocmulgee River
7 (W7)	516	76%	551,538	Horse Creek
4, 5, and 7	1,065	60%	905,700	See above

3.5.2.3 Surface Waters and Water Quality

Water quality at both SL-13 and SL-14A are well below benchmark values for monitored parameters (oil/grease, total suspended solids) based on CY18-22 benchmark monitoring data. Outfalls 001 and 002 are monitored for flow, pH, BOD, oil/grease, fecal coliforms, total phosphorus, temperature, and total cadmium. Weir #3 (Outfall 002) releases directly into the northern end of Horse Creek. Effluent from Industrial Wastewater Treatment Plants #1 and #2 (IWTP #1 and #2) as well as the sanitary wastewater treatment plant (STP) typically meets permit requirements, see **Appendix F** for details.

3.5.3 Consequences

3.5.3.1 No-Action Alternative

Under the No-Action Alternative for the Proposed Action, changes from existing conditions would still be expected due to other projects and climate change.

Groundwater and Water Supply

The groundwater supply which supports Robins AFB is expected to be affected by regional growth and further development on Robins AFB.

Construction of other new facilities on Base would correspond to increases in personnel and water consumption, resulting in an estimated increase of 7,566 kgal/yr (see **Appendix H** for estimates). However, the allotted available water for the Base substantially exceeds expected demand, and is expected to reach only approximately 38% of the permit limit (a 1.4% increase from existing conditions). Therefore, cumulatively water supply impacts would be less than significantly adverse.

Stormwater

Impacts to stormwater, specifically drainage areas on Base, are expected from reasonably foreseeable development on Base, actions by/within Warner Robins, which is up gradient from Base, and from climate change. Construction of other new facilities on pervious area would increase potential stormwater runoff by approximately 4.2 acres or 2.9% in Drainage Area 5 (see **Appendix H** for available and/or preliminary estimate details). Adherence to the Energy Independence and Security Act (EISA) and appropriate facility designs would ensure no significant cumulative stormwater impacts. As noted in the Middle Georgia Robins AFB Sustainability Plan, flooding on Base is caused by stormwater either from the city of Warner Robins or from rain falling on the Base itself, making effective coordination with Warner Robins essential to address current and prevent future flooding issues (Stantec, 2022). Based on the EPA's Climate Resilience Evaluation and Awareness Tool (CREAT), annual precipitation may increase by 10.8% (51.79 in to 57.38 in) by the year 2060 (warm/wet scenario) while the 100-year storm

intensity may increase by 25.7% (8.16 (Houston County, 2019) to 10.26 in) by that time (stormy scenario).

Table 3-11: Projected Characteristics of Relevant Drainage Areas

Drainage Area (watersheds)	Area (acres)	Percent Impervious	Potential Annual Run-Off (kgal)		Outlet
			Existing Climate	Year 2060	
4 (W4)	279	38%	149,108	165,211	Echeconnee Creek
5 (W5)	270	56%	210,962	233,745	Wetlands/Ocmulgee River
7 (W7)	516	76%	551,538	611,104	Horse Creek
4, 5, and 7	1,065	61%	911,607	1,010,061	See above

Surface Waters and Water Quality

The increased water consumption from other projects noted above would correspond to an increase in wastewater generation. Wastewater would continue to be treated to meet permit requirements. In support of that requirement, new facilities and substantial facility renovations would be required to consider potential need for pretreatment before going to the Base's wastewater treatment plants or, alternatively, the need for routine pump outs and treatment/ disposal off Base.

EPA's CREAT estimates an annual average local temperature increase of 4.8ºF (from 65 ºF to 69.8 ºF) by 2060 (hot/dry scenario). Temperature increases are a factor in potential increases in adverse surface water events like toxic blue-green algal blooms because algal prefers warmer water.

3.5.3.2 Proposed Action

Groundwater and Water Supply

Construction would consume water from the Base's water supply if any concrete batch plants are used. If all projects except the NBPB were to use a concrete batching plant, up to 14,672 kgal of water would be needed to mix the concrete. The projects are expected to start construction in different years, but would have about a year of construction overlap. Even if all potential concrete work was done in the same year, it would only result in a 0.068 MGD average increase (1.05% increase, with the Base at 39% of permit limit), a less than significant adverse impact.

Maximum usage of the proposed facilities comprising the C-130 Campus would use approximately 12,690 kgal of water per year and would have a negligible adverse impact (2.4% increase compared to No-Action Alternative, with the Base at 39% of permit limit) on water consumption on Base.

Table 3-12: Groundwater and Water Supply Impact Summary

Proposed Action	New Water Consumption (kgal/yr)	% Basewide Increase	Concrete Batching Plant Consumption (kgal)
NBPB	4,142	0.78%	NA
Heavy Maintenance Hangar	158	0.03%	8,720
Multi-Purpose Hangar	8,363	1.56%	2,648

Aircraft Aprons	28	0.01%	13,303
Total	12,690	2.34%	24,672

Stormwater and Surface Waters Overview

All proposed facility construction is on the flightline and would increase impervious area. Due to concerns regarding bird/wildlife-aircraft strike hazards (BASH), standing water (for example, retention basins) is avoided on the flightline to minimize wildlife appeal. These concerns generally limit options for meeting requirements such as Section 438 of EISA, which would apply to each of the Proposed Actions. On-site retention is typically limited to below ground cisterns or to compensatory efforts on other parts of Base. This analysis conservatively assumes little to no retention would be constructed on the flightline and that most if not all increases in runoff would discharge at outfalls associated with the three drainage areas noted in Section 3.4.1.2. However, designs would still be required to meet EISA requirements to the maximum extent technically feasible, using any appropriate methods.

Design regulations, including Section 438 of EISA, help ensure surface waters are protected by minimizing increases in stormwater runoff and setting design requirements for the water quality of stormwater that is unavoidably released. Part of the design effort for all the proposed actions would be considering appropriate placement of oil-water separators (OWSs). Proper placement and operation of OWSs would reduce potential discharge of oil and grease from airfield operations via stormwater runoff. Adherence to NPES permit limits at all outfalls (stormwater and wastewater) would protect surface water quality.

Stormwater

The C-130 Campus area development would convert approximately 1,195,794 SF (4.3% of existing, 4.2% of No-Action Alternative conditions) to impervious area and result in notable increases in stormwater runoff. Stormwater retention on Base would be required under EISA, which would minimize the general impact of the Base's stormwater runoff at the installation level (less than significant long-term adverse impact).

Table 3-13: Stormwater Impact Summary

Proposed Action	New Impervious Area (SF)	Proposed Action Only		Proposed Action with Climate Change	
		(kgal/yr)	% increase	(kgal/yr)	% increase
NBPB	37,500	1,211	0.13%	1,342	0.13%
Heavy Maintenance Hangar	522,409	16,867	1.85%	18,689	1.85%
Multi-Purpose Hangar	37,550	1,212	0.13%	1,343	0.13%
Aircraft Aprons	598,335	19,318	2.12%	21,405	2.12%
Total	1,195,794	38,608	4.24%	42,778	4.24%

Surface Waters and Water Quality

The C-130 Campus area development includes substantial stormwater system corrections/upgrades, which would reduce TSS and appropriately control outfall discharge velocity. Wastewater generation would increase but would continue to be treated to NPDES permit standards. Overall, a long-term less than significant adverse impact on surface water quality is expected.

3.6 Safety and Occupational Health

3.6.1 Background

Under Safety and Occupational Health, protection of human life, health, and property is addressed. On Robins AFB, potential concerns include BASH, munitions safety, construction and standard building safety, transportation safety, as well as general operational safety. Safety and occupational health are supported (i.e., related risks are managed and reduced) through adherence to federal safety requirements, such as Occupational Safety and Health Administration (OSHA) standards, as well as Department of the Air Force Regulations and Robins AFB procedures.

The ROI for this resource area is Robins AFB. While all construction and industrial activities have inherent risks, these risks can generally be addressed through adherence to applicable regulations, standards, plans, and procedures. Such inherent safety and occupational health impacts are considered *de minimis*. Any safety and occupational risks which are new and not well understood, or which occur in a manner for which such standards do not exist, would warrant further investigation before a determination of significance can be made.

3.6.2 Existing Conditions

Construction

All construction projects have similar construction-related safety impacts. Construction activities have inherent risks (considered a short-term negligible adverse potential impact) which are managed and minimized through adherence to applicable regulations, standards, plans, and procedures, including OSHA standards. Contractors performing work on Base are required to have a health and safety plan and are solely responsible for their compliance with OSHA standards.

Operations

The safety and occupational health specialists on Base review all design deliverables and conduct industrial hygiene assessments in new facilities once constructed as appropriate to ensure operational safety standards are met. Existing operations on Base are well understood and have applicable safety and occupational health standard, plans, etc., which are enforced. Therefore, although there are inherent risks (a less than significant adverse impact) for Base operations, they are considered *de minimis*.

3.6.3 Consequences

3.6.3.1 No-Action Alternative

Safety and Occupational Health scopes for involvement and oversight are expected to expand due to further development on Base. Other foreseeable on-Base development would have similarly negligible adverse impacts on this area because although more people would be exposed to general safety/occupational health hazards, they would also adhere to required regulations and procedures, as described under Section 3.6.2.

Foreseeable new facility projects would involve construction (and an associated short-term increase in on-Base traffic) as well as an increase in personnel (a long-term increase in on-Base traffic), resulting in negligible adverse impacts to transportation safety due to increased traffic activity.

No reasonably foreseeable actions include construction or operations which do not have well developed safety measures. Each project would be addressed through standard procedures to ensure all appropriate safety and occupational health measures are in place. Therefore, there would be a less than significant adverse impact on safety and occupational health under the No-Action Alternative.

3.6.3.2 Proposed Action

Overall, related operations would increase but operational safety would be maintained in accordance with all applicable regulations, procedures, and standards, minimizing the overall risk (considered a negligible adverse safety/occupational health impact).

Construction Safety

All of the projects would involve construction and would have the same construction-related safety impacts, as described in Section 3.6.2 (a short-term negligible adverse potential impact).

Transportation Safety

Traffic impacts would be the same as for other new facility projects described in Section 3.6.3.1 (less than significantly adverse impacts from short-term and long-term increases in on-Base traffic).

Corrosion Control Operations

The C-130 Campus would support expansion of corrosion control operations, which are well-established on Base. Specifically, it would use the paint process and procedures currently used in B89 and a wet depaint process and associated procedures currently used in B50. The safety and occupational health specialists on Base would review all design deliverables and would conduct industrial hygiene assessments in the new facilities as appropriate to ensure operational safety standards are met.

General PDM Operations

PDM operations in the new maintenance docks would be the same as those in Building 2390 (B2390), implementing the same procedures and safety measures to minimize risks (considered a negligible adverse long-term impact).

Flightline Operations

The increase in overall PDM throughput would result in associated increases in aircraft flying and flightline testing operations. Aircraft would arrive from and depart to their established home stations using existing flight profiles and procedures. While on Robins AFB, aircraft would undergo static testing (i.e., engine run-ups) as well as mid-air testing (i.e., functional check flights) using existing procedures.

Other Increases in C-130 Related WR-ALC Operations

Other C-130 related WR-ALC operations, such as commodities maintenance (CMXG) and electronics maintenance (EMXG) activities, would also increase in existing facilities using existing processes and procedures to support the throughput increase.

3.7 Hazardous Materials/Waste

3.7.1 Background

3.7.1.1 Hazardous Materials

Hazardous materials (HM) include all items covered under the Emergency Planning and Community Right-to-Know Act (EPCRA) and 29 CFR Part 1910.1200 and are managed under the Hazardous Materials Management Process (HMMP, see Chapter 3 of AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*, for details). The HMMP endeavors to minimize HM and use safer (environmentally and occupationally) HM to the maximum extent possible. All HM is tracked and each new HM undergoes review before being authorized for acquisition and use, in accordance with (IAW) the HM Management Plan (Robins AFB 2020b). Spent HM is reused or recycled whenever possible. The ROI for HM is Robins AFB. HM consumption is generally a precursor of potential issues and impacts to other areas, such as hazardous waste (HW), wastewater, air emissions, and safety and occupational health.

Therefore, the indicator of *de minimis* significance for HM would be the use of new HM which presents occupational or environmental hazards the Base cannot, for any reason, appropriately address.

3.7.1.2 Hazardous Waste

Hazardous waste (HW) is a substance first determined to be solid waste (SW) as defined in 40 CFR Part 261 which has not been excluded from EPA solid or HW regulations and is either a characteristic HW (i.e., ignitable, corrosive, reactive, or toxic) or a listed HW (see Chapter 5 of AFMAN 32-7002 for details). Minimizing the use of HM leads to a reduction in HW while the use of environmentally safer HM results in less toxic HW. All HW is and shall continue to be managed IAW the Robins AFB HW Management Plan (HWMP, Robins AFB 2021c). The ROI for HW is Robins AFB. The indicator of *de minimis* significance for HW is estimated generated HW exceeding 80% of the Base Treatment, Storage, and Disposal Facility (TSDF) permitted capacity: 1,065 55-Gal containers (58,564 gal). Due to inherent variability in HW generation/disposal, a 20% buffer is conserved.

3.7.1.3 Solid Waste

Solid waste[3] includes both municipal solid waste (MSW) and construction and demolition solid waste (C&D). Solid waste is managed in accordance with the Robins AFB 2022 Integrated Solid Waste Management Plan (ISWMP; Robins AFB 2022). The multi-faceted SW diversion approach includes recycling whenever financially viable. The ROI for SW is Robins AFB and the corresponding indicator of *de minimis* significance is generated SW overwhelming local disposal site capabilities and plans.

3.7.1.4 Wastewater

Wastewater from most industrial facilities is pretreated at IWTP #1 and is then further treated at the STP, which also treats sanitary wastewater (bathrooms, kitchens, etc.). Electroplating wastewater (a subset of CMXG operations) are fully treated at IWTP #2. Under the NPDES permit, effluent must be monitored at certain parts of the overall wastewater system, with monitored parameters depending on effluent at that location. The ROI for wastewater is the industrial and sanitary wastewater system sections downstream of the primary development area and other facilities supporting C-130 PDM, including IWTP#1, IWTP#2, and the STP. The indicator of *de minimis* significance for wastewater would be the somewhat regular exceedance of applicable permit limits (outfalls 8, 9 and 11).

3.7.2 Existing Conditions

Existing PDM operations include a range of activities, not all of which apply to each C-130 during each PDM cycle, and each of which have their own variability (see **Figure 1** in **Appendix F**). Each WR-ALC group can be broken down into work elements (called "shops") which perform a certain type of work. These shops may or may not be associated with a specific airframe.

3.7.2.1 Hazardous Materials

Robins AFB uses approximately 5,014,971 pounds (lbs) (about 2,507 tons) of hazardous materials each year (CY17-20 average, Enterprise Environmental, Safety, and Occupational Health (EESOH-MIS) database). The WR-ALC uses approximately 80.9% of this HM by weight, with CMXG being the dominant consumer at group level.

[3] For regulatory purposes, solid wastes are defined in 40 CFR 261.2. Solid waste collection, storage, and disposal (i.e., burning, fuel material, landfilling) are performed in accordance with Subtitle D of the Resource Conservation and Recovery Act (RCRA) and its amendments.

Table 3-14: CY17-20 Average Hazardous Material Usage by Organization

Organization	Lbs	Gal	% of Total Lbs	% of Total Gal
402 CMXG	2,183,833	269,741	43.5%	43.8%
402 AMXG	891,120	117,401	17.8%	19.0%
402 EMXG	904,759	134,642	18.0%	21.8%
402 MXSG	78,211	10,166	1.6%	1.6%
Others	957,048	84,436	19.1%	13.7%
Total (Basewide)	5,014,971	616,387	100%	100%

Approximately 90.4% of the hazardous materials used by AMXG are used by shops associated with a specific airframe. CMXG, EMXG, and MXSG have almost purely mixed-airframe shop workloads (see **Appendix F** for breakdown by WR-ALC group).

Estimates for C-130 painting, depainting, and heavy maintenance material usage were based on existing facilities (B50 for depainting, B89 for painting, and B2390 for heavy maintenance).

Table 3-15: Average Hazardous Material Usage by AMXG for Select C-130 PDM Activities (CY17-20)

PDM Activity	Lbs/C-130	% of Total Lbs
Depaint	5,432	84.3%
Paint	556	8.6%
Heavy Maintenance	459	7.1%
Total	6,447	100%

3.7.2.2 Hazardous Waste

Robins AFB generates approximately 1,413 tons of hazardous waste a year, approximately 2% of all hazardous waste generated in Georgia (CY19, CY21 average). The hazardous waste from PDM operations for CY19 and 21, data from which was used to develop the Hazardous Waste Reduction Plans for 2020 and 2022, were used to determine reasonable estimates for hazardous waste generated on a per C-130 aircraft scale. Data was weighted to best represent typical waste generation per aircraft. The portion of CMXG hazardous waste from mixed airframe waste streams attributable to C-130 PDM was estimated as discussed in **Appendix F**. Currently, the TSDF is approximately 31% utilized.

Table 3-16: Robins AFB Hazardous Waste Streams

Group/ Category	CY19 HW (lbs)	% of CY19 Total Lbs	CY21 HW (lbs)	% of CY21 Total Lbs	Weighted Average per C-130 aircraft (lbs)
402 AMXG	754,341	25.7%	388,541	14.3%	4,575
402 CMXG	295,763	10.1%	245,928	9.0%	1,483
402 EMXG	33,915	1.2%	11,574	0.4%	-
402 MXSG	143,557	4.9%	65,399	2.4%	-
IWTPs	740,990	25.3%	385,420	14.2%	-
Others	963,014	32.8%	1,623,348	59.7%	-
Total	2,931,580	100%	2,720,210	100%	6,057

Average hazardous waste generation rates per C-130 during depaint, paint, and heavy maintenance operations were estimated similarly to the hazardous materials consumption rates.

Table 3-17: Weighted Average Hazardous Waste Generation by AMXG for C-130 PDM

PDM Activity	CY19 Lbs/ C-130	CY21 Lbs/ C-130	Weighted CY19, CY21 Average per C-130 aircraft (lbs)
Purge Station	37	10	23
Wash/Depaint	1,373	1,921	1,647
Component strip/repair	1,322	784	1,053
Paint	1,527	2,174	1,851
Total	4,260	4,889	4,575

3.7.2.3 Solid Waste

Currently, Robins AFB recycles industrial scrap metal, metal containers, various paper materials, spent munitions, C&D solid waste, and wood waste. Current diversion goals are 40% for MSW and 60% for C&D solid waste by 2025. MSW diversion rates were relatively consistent across FY18-21, varying from 33.3% to 40.5%. C&D waste division rates for this time period varied much more noticeably, varying from 21.2% to 80.4%.

Table 3-18: FY18-21 Average SW Disposal and Diversion Quantities and Rates

SW Type	Disposal Quantity (tons)	Diversion Quantity (tons)	Diversion Rate (%)
MSW	6,460	3,280	35%
C&D Waste	1,215	2,143	49%

3.7.2.4 Wastewater

The wastewater from all treatment systems meets at the river lift station (outfall 011). Robins AFB has had five exceedances in the last four years (CY19-22) at Outfalls 008, 009, and 011 combined for TSS, BOD, and COD. The wastewater treatment system is generally adequate for the wastewater influent currently received (see **Appendix F** for details).

Table 3-19: Wastewater Treatment Plants Flow Overview (CY18-22)

Facility	Design Flow Rate (Average) (MGD)	Estimated Current Flow Rate (MGD)	Remaining Capacity (MGD)	Current Utilization (%)
IWTP #1	0.29	0.139	0.151	47.8%
IWTP #2	0.46	0.076	0.384	16.6%
STP	2.87	1.008	1.862	35.1%
GWTP	N/A	N/A	N/A	N/A

MGD = Million Gallons per Day, MGY = Million Gallons per Year, N/A = Not Applicable.

3.7.3 Consequences

3.7.3.1 No-Action Alternative

Under the No-Action Alternative, hazardous materials consumption and waste generation rates would still be affected by reasonably foreseeable actions on Base, namely construction and operation of other new facilities. Quantitative estimates were not available for these other reasonably foreseeable actions. Due to

adherence to applicable regulations, plans, and procedures, only less than significant adverse impacts are expected for this resource area.

Hazardous Materials Consumption and Waste Generation from Construction

Construction activities would temporarily consume relatively small quantities of hazardous materials such as paint and welding gases and generate smaller quantities of hazardous and solid waste (less than significant short-term adverse impact).

Operational Hazardous Materials Consumption and Waste Generation

Industrial development would increase consumption of hazardous materials and generation of hazardous waste. All development is expected to generate at least a minimal level of solid waste (i.e., office waste).

Increases in personnel would increase sanitary wastewater generation (and associated demand on the STP). Increases in industrial processes which produce industrial wastewater would increase demand on IWTP #1 (for general industrial activity) and/or IWTP #2 (for plating operations). A total of approximately 7,566 kgal/yr more wastewater is expected, although the breakdown between sanitary and industrial wastewater is unavailable (see **Appendix H** for more information). IWTP #1 is currently at roughly 47.8% design flow rate while IWTP #2 is at approximately 16.6% of its design flow rate. The STP is at approximately 35.1% of its design flow rate. As long as pretreatment is used appropriately to avoid spikes in industrial wastewater parameters (particularly COD, BOD, and TSS) and wastewater system infrastructure is maintained and upgraded when appropriate, effluent should continue to meet permit requirements (cumulatively, a less than significant adverse impact).

3.7.3.2 Proposed Action

Hazardous Materials Consumption and Hazardous Waste Generation from Construction

Construction activities (welding, painting) would consume hazardous materials and generate hazardous waste. All construction would adhere to the Base HMMP and HWMP, minimizing short-term less than significant adverse impacts. Estimates for soil which would be reused elsewhere on Base or removed from Base as either C&D waste or hazardous waste depending on testing results as discussed in Section 3.9.3.

EMXG, MXSG, and IWTP Operational Hazardous Materials and Waste

EMXG, MXSG, and IWTP hazardous material usage and waste generation rates are expected to increase as well, but the attribution to C-130 PDM was not obtainable, so there is no quantitative estimate for increases. However, based on total EMXG operations constituting only about 0.8% of the Base's hazardous waste and having about the same amount of hazardous materials consumption as AMXG (17.8%), EMXG operations are expected to result in less than significant impacts in these areas. Overall, the long-term impact from these indirect activities is considered negligible to less than significantly adverse.

Hazardous Materials

Hazardous material consumption would increase due to operations within the new facilities (458,006 lbs/yr) as well as increases in existing PDM activities in other facilities on Base, which support C-130 PDM (333,696 lbs/yr), resulting in an overall less than significant long-term adverse impact due relative magnitude and adherence to applicable plans and regulations.

Table 3-20: Campus Operational Hazardous Material Impacts

Type - Source	Activity	Lbs/Year	Lbs/Year Combined by Type
Direct (new facility space operations)	Depainting	407,398	458,006
	Painting	41,688	

	Heavy Maintenance	8,920	
Indirect (other AMXG)	Various	109,042	333,696
Indirect (CMXG)	Various	224,654	
	Total	791,702 (16% Base Total)	

Hazardous Waste

Hazardous waste generation would increase directly (238,396 lbs/yr) and indirectly (203,865 lbs/yr). This relatively small increase in hazardous waste (16% of current Base levels) would be managed in accordance with existing plans and regulations (less than significant long-term adverse impact). The density of containers varies substantially, disallowing any reasonable estimate for the number of HW storage space that would be occupied. However, based the 16% increase by weight and the 31% TSDF utilization, the increase would be easily accommodated.

Table 3-21: Campus Operational Hazardous Waste Impacts

Type - Source	Activity	Lbs/Year	Lbs/Year Combined by Type
Direct (new facility space operations)	Depainting	123,556	238,396
	Painting	114,531	
	Heavy Maintenance	464	
Indirect (other AMXG)	Various	166,903	205,931
Indirect (CMXG)	Various	40,028	
	Total	445,327 (16% Base Total)	

Solid Waste

The Campus would generate approximately 5,904 tons of C&D waste. During operations, approximately 244 tons of MSW/year is expected with 159 tons disposed (2.5% of Base annual MSW disposal average). These solid waste impacts are considered less than significantly adverse.

Table 3-22: Campus Solid Waste Impacts

Project	C&D Waste (tons)			MSW (tpy)		
	Generated	Diverted	Disposed	Generated	Diverted	Disposed
NBPB	62.5	30.6	31.9	6.4	2.2	4.1
Heavy Maintenance Hangar	402	197	205	89.2	31.2	58.0
Multi-Purpose Hangar	5,440	2,666	2,774	114.7	40.1	74.5
Aircraft Aprons	-	-	-	33.88	11.8	21.9
Total	5,904	2,893	3,011	244.0	85.4	158.6

Wastewater

The campus development would generate approximately 12,690 kgal of wastewater a year (1.6% from personnel, 98.4% from PDM operations). IWTP #1 would have an average total demand of approximately 0.173 MGD, 59.6% of its design average flow rate. The STP would have a total average demand of 1.008 MGD, 36.3% of its design average flow rate. Overall, the wastewater system would be able to support the increases in demand, as long as pretreatment is implemented, if/where necessary, and general infrastructure is adequately maintained (less than significant long-term adverse impact).

Table 3-23: Campus Wastewater Impacts in kgal/yr

Project	Sanitary Wastewater	Industrial Wastewater	Total
NBPB	5	4,136	4,142
Heavy Maintenance Hangar	73	86	158
Multi-Purpose Hangar	94	8,269	8,363
Aircraft Aprons	28	0	28
Total	199	12,491	12,690

3.8 Biological Resources

3.8.1 Background

The biological environment on Robins AFB, located within the Southeastern Mixed Forest Province, is diverse with a range of distinctive plant communities and wildlife habitats and is described in detail in the Robins AFB Natural Resource management Plan (INRMP) (Robins AFB, 2022). The eastern side of Robins AFB is also part of the Ocmulgee River Corridor, which the National Park Service (NPS) is investigating for potential designation as a park unit (NPS 2021). See **Appendix H** for additional details. The general ROI for species is any preferred habitat on Base near/in the potential disturbance areas as well as related corridors, namely the Ocmulgee River Corridor. The ROI for the Atlantic Sturgeon is any preferred habitat as well as upstream water bodies which may affect that habitat. The ROI for floodplains and wetlands is their location on Robins AFB as well as areas which may affect their characteristics, such as uphill areas. The indicator of *de minimis* significance for species would be substantial reduction in prevalence, range, or general likelihood of survival. The indicator of *de minimis* significance for floodplains and wetlands would be a substantial negative alternative of their characteristics.

The existing climate is predicted to change, which will affect some species/resources. In temperate broadleaf and mixed forests biomes, the velocity of temperature change (in degrees Celsius) was estimated to be 0.35 km/yr (approximately 0.12 miles/yr per degree Fahrenheit, based on the Special Report on Emission Scenarios (SRES) A1B scenario: a relatively integrated world with a balanced emphasis on all energy sources) (Loarie et al, 2009). Areas with greater topographic change, such as mountains, have lower climate change velocities since increases in altitude would provide a cooling influence. Increases in surface water temperature would decrease available dissolved oxygen required by fish and other animals.

Table 3-24: Summary of Anticipated Climate Changes (CREAT, EPA)

Metric	Current Value	Predicted (2060)
Average Annual Temperature (°F)	65	69.8 (+4.8, hot/dry scenario)
Number of Days over 100°F a year	2	22 (+20, hot/dry scenario)
Annual Average Precipitation (in)	51.79	57.38 (+5.59, warm/wet scenario)
100-yr 24-hr Storm Intensity (in)	8.16	10.26 (+2.1, stormy scenario)

Climate change impacts on biological resources such as species are inherently complex, involving both direct impacts (i.e., drought-induced declines in survival/reproduction) and indirect impacts (i.e., a predator species may become active sooner and for more of the year, increasing the overall rate of predation experienced by a prey species). Species at greatest risk from climate change tend to have restricted geographic ranges, fragmented habitats, limited dispersal ability, low genetic diversity, aquatic habit affinity, narrow physiological tolerance, late maturation, and/or occur at the margins of their ranges (Wear and Greis, 2013).

3.8.2 Existing Conditions

3.8.2.1 General Vegetation

Based on previous surveys, 413 plant taxa have been found on Base. Forested areas can be grouped into three types: upland forest, bottomland forest, and transitional forest. The undeveloped areas east and north of the primary development area contain bottomland forest, which is also a type of forested wetland, and are part of the bottomland hardwood swamp natural community (one of eight significant natural communities identified previously by Georgia (GA) Department of Natural Resources (DNR). Bottomland hardwood forests reduce the risk and severity of flooding by providing water storage. Forested wetlands also improve water quality by filtering pollutants such as excess nutrient loads and sediments (Mahaffey and Evans, 2016). The forested areas near the airfield are intermittently harvested to maintain certain height clearances for airfield safety purposes. The pervious areas on the airfield (i.e., within the primary development area) are managed as turf grass.

Based on a study of 16 plant taxa, 75% exhibited consistent climate fidelity throughout the past 18,000 years, managing to shift their ranges to match their climatic niche across time (Wang et al, 2023). Many plant species are expected to be able to shift their ranges locally initially, especially wherever there are topographic gradients. Once this initial buffering capacity is exceeded, however, habitat fragmentation and inherent dispersal ranges may become issues, especially given the current and projected levels of urbanization.

As climate change impacts become more pronounced, including an increase in extreme weather such as extended droughts and more intense storms, stress on forest populations will also increase. This stress will make them more vulnerable to insect damage while extended droughts will increase risk associated with wildfires (Anderegg et al, 2022). As bottomland forests are strongly tied to hydrologic conditions, they are also at elevated risk from hydrological changes associated with climate change. Bottomland forest compositions will shift in favor species with greater drought and flood tolerance. There is also a noted trend of flood-tolerance and shade-tolerance being somewhat mutually exclusive for bottomland hardwood species, and a possibility of floods and droughts synergistically increasing overall tree mortality (King and Keim, 2019). With more frequent extreme weather events, such as hurricanes, vulnerability to invasive species is expected to increase as well because invasive species are often able to outcompete native species when extensive disturbances provide such opportunities (Mahaffey and Evans, 2016).

3.8.2.2 General Wildlife

On/near the airfield, wildlife includes local and migratory birds, wild mammals, reptiles, and amphibians. Some birds such as Eastern Meadowlarks and Savannah Sparrows, forage in airfield turf grass. Wildlife habitat on the airfield is controlled to minimize hazards to aircrafts. All of North America is divided into migratory flyways, with Georgia falling under the Atlantic Flyway. Migratory birds at Robins AFB are mostly small birds which can be found along the airfield-forest border. A few larger bird species also migrate to the area, including the Greater Sandhill Crane. Wild mammals include coyotes, foxes, and bobcats which pose little aircraft hazard and help control rodent and rabbit densities on the airfield. White-tailed deer and feral hogs often enter the airfield. Reptiles and amphibians can be found to the east of the primary development area in the bottomland hardwood swamp natural community.

Birds are expected to experience numerous climate change impacts, both directly and indirectly. Birds may be forced to use more energy for thermoregulation, potentially reducing survival or fitness. If vegetation associated with appropriate habitats cannot keep up with the velocity of climate change, birds may be forced into marginal habitats. With migratory birds especially, there may be desynchronization between reproductive timing and food availability (King and Finch, 2013).

Mammals will likely have greater difficulty than many plant taxa since they cannot effectively hide in microhabitats and some have distributions heavily dependent on climate (McKelvey et al, 2013). Without including the increased dispersal challenges associated with human land use or the reduced reproductive rates and survival typical of dispersal, 87% of mammals will likely experience range size reductions averaging 37% (Schloss et al, 2012).

Cold-blooded animals (ectotherms) such as amphibians and reptilians are especially vulnerable to climate change impacts. Increased temperatures may reduce the window of the day, which has temperatures suitable for activity. Increased temperatures may also reduce reproduction rates and long-term fitness of reptiles due to skewed gender ratios (Olson and Saenz, 2013b). Gender of many reptiles is determined by the temperature during egg nesting. Amphibians are generally regarded as "canaries in the coal mine," early indicators of environmental change/concern as they depend on both aquatic and terrestrial environments (Olson and Saenz, 2013a). Habitat fragmentation and more erratic surface water quantities and quality would also pose risks. Some ectothermic species may have limited benefits due to range expansion into higher latitudes, increased winter revival, and faster development (Winter et al, 2016).

3.8.2.3 Threatened and Endangered Species

As discussed during interagency consultation with the USFWS (see **Appendix C**), several species with threatened or endangered status (as well as proposed threatened, proposed endangered, and candidate status) are found on Robins AFB.

Table 3-25: Species of Concern with Potential to be Found on Robins AFB

Common Name	Scientific Name	Federal Status	State Status	Preferred Habitat	Preferred Habitat on Robins AFB? (distance from primary development area)	Species Documented on Robins AFB?
Plants						
Canby's Dropwort	*Oxypolis canbyi*	E	E	Wetlands with acidic loamy soil, high organic content, and a clay hardpan	Yes (<1 mile)	No
Harperella	*Ptilimnium nodosum*	E	E	Rocky riverbeds, upland depression ponds, and in seepage of granite outcrops	Yes (<1 mile)	No
Relict Trillium	*Trillium reliquum*	E	E	Forested habitat on slopes, bluffs, and floodplains	Yes (<1 mile)	No
Ocmulgee Skullcap	*Scutellaria Ocmulgee*	PT	T	Forested terraces, hardwood slopes and riverbanks of tributaries to the Ocmulgee, Oconee, and Savannah Rivers	Yes (4+ miles)	Yes
Animals						
American Alligator	*Alligator mississipiensis*	T (S/A)	NA	Rivers, lakes, ponds, swamps	Yes (<1 mile)	Yes
Monarch Butterfly	*Danaus plexippus*	C	S4	Open habitats with native milkweed species	Yes (<1 mile)	Yes
Tricolored Bat	*Perimyotis subflavus*	PE	S2	Open forests with large trees and woodland edges; roost in tree foliage; hibernate in caves or mines with high humidity	Yes (4 miles)	Yes
Gopher Tortoise	*Gopherus polyphemus*	NA	T	Sandhills; dry hammocks; longleaf pine-turkey oak woods; old fields	Yes (4 miles)	No
Atlantic Sturgeon	*Acipenser oxyrinchus*	E	E	Rivers and coastal waters along the Atlantic coast	No	No

E = endangered, T = threatened, PE = proposed endangered, PT = proposed threatened, C = candidate, T (S/A) = threatened due to similarity in appearance, NA = not applicable, R = rare, S2 = imperiled (S indicates rarity rank, no State protection), S4 = apparently secure in state (of no immediate conservation concern).

Canby's Dropwort, Harperella, and Relict Trillium (Endangered)

These species are not currently found on Base, but climate change is generally expected to drive changes in distribution, which may result in these species being found on Base in the future. All three of these species have habitat heavily dependent upon hydrological characteristics. Increased hydrologic variability may reduce suitable habitat and aggravate dispersal challenges.

Ocmulgee Skullcap (Proposed Threatened)

This species was found on Base during a 2004 botany survey at two locations over four miles from the primary development area in the upland hardwood bluff natural community. This species may drift northward along the Ocmulgee River Corridor over time, if climate velocity, dispersal rates, and dispersal barriers allow.

American Alligator (Threatened due to Similarity in Appearance)

This species is found in rivers, lakes, and ponds, including retention ponds, such as the retention pond associated with Weir #3 near the primary development area. Limited restrictions apply for this species (Robins AFB 2022d). Climate change is expected to have noticeable impacts on offspring gender for this species since it has temperature-dependent sex determination. Climate change may cause potential losses in overall reproductive rates and long-term fitness, in addition to general impacts from climate change (changes in available habitat, available water, and water quality, among others) (Bock et al, 2020).

Monarch Butterfly (Candidate for listing)

This migratory species has been spotted on Base. This species performs a substantial annual migration over multiple generations from central Mexico up to southeastern Canada. Climate change impacts on migratory species can be extensive given the multiple locations (summer breeding grounds and overwintering sites) which the species depend upon. This species has declined by more than 80% over the last few decades (Zylstra et al, 2022). Loss of suitable habitat/food due to climate change and human activities (agriculture, commercially motivated deforestation, etc.) poses a substantial risk (Malcom et al, 2018). Invasive milkweed species (such as *asclepias curassavica*) can disrupt migration and may contain damaging levels of cardenolide (a cardiac steroid/glycoside, which monarch butterflies sequester as a secondary chemical defense), especially at higher temperatures (Falydn et al, 2018). Invasive milkweed species currently found in southern areas may expand/move northward, further disrupting monarch butterfly population dynamics and damaging general abundance.

Tricolored Bat (Proposed Endangered)

The Tricolored Bat is found on Base. This bat was included in a survey in 2017 at five locations on the southern half of Base, with an average of 85.7 passes/detector-night (11% of the observed mean bat activity) (see **Appendix G** for details) (USAF 2019). Since the year 2000, only nines strike events are known to have occurred with this species, indicating a relatively low and infrequent adverse impact under existing conditions (Air Force Safety Automated System, AFSAS).

The main threat to this species is a cold-loving fungal disease called white-nose syndrome (WNS), which can reduce affected populations by over 90%. The populations in the vicinity of the Base are not yet affected by WNS (Perea et al, 2023). Increased temperatures may drive some populations northward, toward WNS-positive areas. Heat waves and lack of available food when arousing from torpor[4] may cause mass mortalities (Festa et al, 2022). However, increases in temperature and shorter winters are also projected to lessen the negative impact of WNS (McClure et al, 2022).

[4] Torpor: a state of lowered body temperature and metabolic activity assumed by many animals in response to adverse environmental conditions, especially cold and heat.

Gopher Tortoise (eastern population no longer a candidate for listing)

This species has not been found on Base but its habitat does occur on the south end of the Base in the longleaf pine restoration area. Robins AFB is near the current northernmost extent of this species' range. According to USFWS findings, while climate change may or may not impact this species' range, any substantial change will likely occur beyond their projected 80-year timeframe. Urbanization and development continue to be primary risks, with total populations expected to decline by up to 33% by 2080 compared to current total population size (USFWS 2022).

Atlantic Sturgeon (endangered)

The Atlantic Sturgeon does not have potential to exist on Base but was included as stormwater discharges and wastewater effluent from Base flow into the Ocmulgee River, which connects to critical habitat for this endangered fish species (Altamaha River, GA). Findings by the USFWS anticipate a range of adverse impacts from climate change, such as decreased water availability, exacerbated nutrient-loading and pollution inputs, and low dissolved oxygen content (USFWS 2017).

3.8.2.4 Floodplains

As shown in **Figure 1-9** in **Appendix A**, the primary development area does not contain 100-yr or 500-yr floodplains. However, associated stormwater upgrades/modifications are expected to fall partially within floodplains. These floodplain areas currently contain bottomland forest of several types (see **Figure 4** in **Appendix G**).

3.8.2.5 Wetlands

Wetlands largely overlap with floodplains on Base (see **Figure 6** in **Appendix G**). Similarly, the primary development area is not in or close to wetlands.

3.8.3 Consequences

3.8.3.1 No-Action Alternative

Threatened and Endangered Species

The Sentinel Landscape program and the potential redesignation of Ocmulgee River Corridor as a national park and preserve are expected to have positive impacts on threatened and endangered species by increasing their effective protection within that area. Dispersal corridors are expected to be important for enabling species to move with their desired climate during climate change. Overall, it is expected that the positive impacts of the Sentinel Landscape program and potential redesignation of the Ocmulgee River Corridor would somewhat dominate the cumulative impacts and reduce the potential adverse impacts of climate change on species as well as other development on Base.

Other Vegetation

Development on Base often involves the conversion of pervious area to impervious, resulting in the removal of turf grass and sometimes forested areas. Of the considered projects, only the SWEG Campus is expected to lead to the removal of a notable size of forested area. Overall, the impacts on general vegetation are currently expected to be less than significantly adverse in the long term.

Other Wildlife

Development on Base may affect wildlife by removing or disturbing suitable habitat and through conflicts such as BASH strike events. Much of the expected development is developed areas of Base, except for the SWEG Campus. Overall, a long-term less than significant adverse impact on general wildlife is expected.

Floodplains and Wetlands

The SWEG project would be subject to the NEPA process, including consideration of alternatives not in the floodplain/wetlands. New construction in the floodplain/wetlands would only be pursued in the absence of any other practicable alternative. If that becomes the case, all reasonable efforts to minimize the impact on floodplains/wetlands would be implemented. Increased impervious area in connected drainages would increase received runoff and associated potential pollutant loading. Increased runoff would be managed using stormwater Best Management Practices. Currently, the impact to these areas is expected to be less than significantly adverse.

3.8.3.2 Proposed Action

Threatened and Endangered Species and Species of Concern

No construction impacts to the Canby's Dropwort, Harperella, Relict Trillium, and Gopher Tortoises species are expected as they are not currently found on Base. Although preferred habitat for the plant species may be disturbed by construction of this Campus, these species are not presently in the area of potential disturbance. If the plant species shifts northward, they could potentially be found in the forested area east of the airfield. However, stormwater system modification would be complete and the habitat would not be disturbed by Campus operation. Potential Gopher Tortoise habitat is not found near the flightline, allowing no foreseeable future impact to the species from this Proposed Action. These species would be unaffected by this Proposed Action.

The American Alligator is found within this Proposed Action's disturbance area (the retention pond by Weir #3) and would be avoided as much as possible and handled in accordance with existing Base procedures (may affect but not likely to adversely affect). Habitat suitable for the Monarch Butterfly in the forest area east of the airfield may be slightly affected during stormwater system work but is expected to recover once work (disturbance) ends (short-term negligible adverse impact).

The Tricolored Bat is found on Base and has relatively rare BASH strike incidents (see **Appendix G**). Existing BASH plan procedures seek to minimize strike events. C-130 operations only occur during the day while this species forages in the evening. Therefore, increases in C-130 flying operations is not expected to affect BASH incident rates with this species. The NBPB would increase wastewater generation, which flows into the Ocmulgee River after treatment. No adverse impact on Atlantic Sturgeon (approximately 60 river miles downstream) is expected because effluent would continue to meet permit limits and existing river assimilative capacity would further reduce pollutant loading.

Other Vegetation

Turf grass and existing impervious area would be affected by construction of the Campus. Turf grass and potentially small areas of bottomland forest would be affected during stormwater system corrections/upgrades. Overall, the impact on general vegetation is expected to be less than significantly adverse.

Other Wildlife

Correcting high-erosion areas and ensuring the adequacy of the stormwater drainage system would reduce the appeal of that area of the flightline to wildlife, protecting both the mission and wildlife from potential conflict (long-term positive impact). The increase in flying activity would slightly elevate the opportunities for conflict (long-term less than significant adverse impact). Stormwater system work may temporarily disturb wildlife along the forest margin, but this effect is expected to be very minimal based on the areas of potential disturbance. Overall, a negligible long-term adverse impact on wildlife is expected.

Floodplains

The only part of this Proposed Action which would be near/in the floodplain is the stormwater system upgrades/corrections. Development in the flightline area of Robins AFB generally increases impervious area and has limitations on potential for retention in the immediate area, as described in Section 3.5.2.2. As a result, appropriately addressing developmental stormwater system impacts in this area requires holistic management, and at times, modification, of the stormwater system. Due to the positioning of the flightline area, associated stormwater outfalls lie unavoidably within the 100-yr floodplain. Therefore, general flightline area development would at times lead to modifying associated outfalls would allow no practicable alternative to limited short-term disturbance of the floodplain. It is not known if the stormwater system in the area has ever been holistically assessed and upgraded, but it is expected that updates would likely be appropriate given the current and expected levels of development. All appropriate flood-proofing and flood protection measures would be incorporated for the stormwater features in the floodplain. Increased development along the flightline would also lead to more runoff and associated potential pollutant loading draining into the floodplains.

As previously noted, the details of the upgrades and corrections would not be available until the design stage of the project. Existing stormwater features were used to estimate potential floodplain disturbance. The majority of expected disturbance (126,085 SF in the 100-yr floodplain and 127,321 SF in the 500-yr floodplain) is for potential rework of two channels and a weir with associated retention pond (see **Appendix G** for details). Some stormwater piping outlets may require rework and are found in forested areas on the eastern side of the airfield. Pipe and associated outfall work are expected to be relatively minimal. A small number of trees may need to be removed to ensure appropriately sized outfalls. Base natural resources personnel would be involved and ensure all applicable BMPs are followed to minimize short-term disturbance (a less than significant adverse impact). In the long term, the stormwater system improvements/corrections involved with this project would improve water quality entering the floodplain from Base, and ensure appropriate exit velocities to avoid excessive scouring (a long-term positive impact). However, given the other associated adverse impacts, the overall impact is expected to be less than significantly adverse.

Wetlands

The stormwater system upgrades may involve modification to outfalls in the forested wetland area (area "B" in **Figure 5** in **Appendix G**). Modification of existing stormwater infrastructure is expected to be exempt from permitting under Section 404 of the Clean Water Act. However, there would be negligible to less than significant short-term adverse impacts to wetlands due to construction. In the long-term, the improvement in stormwater runoff quality and velocity control would have a positive impact.

3.9 Earth Resources

3.9.1 Background

This resource area includes soils, topography, as well as soil/groundwater contamination. Known contamination which exceeds enforceable is largely managed under ERP. Other contamination does not fall under the ERP but is discussed in this section as applicable. The ROI for earth resources is comprised of the areas of potential ground disturbance on Base. The indicator of *de minimis* significance for soils is if the extent of disturbance would exceed the ability of BMPs to adequately manage erosion and run-off. The corresponding indicator for topography would be if the resulting topography would aggravate erosion and run-off or otherwise substantially deviate from the natural topography of the area. The corresponding indicator for contamination would be if the volume or type of contaminated media which would go off Base would exceed treatment/disposal capacities.

Once detailed designs are available, areas of potential soil disturbance are sent to ERP personnel for review via the dig permit process (Air Force Form 103), ensuring ERP site land use controls are enforced

(including personnel certification, personal protective equipment (PPE), and occupational health monitoring requirements) and ERP assets are not damaged.

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of manufactured chemicals which have been widely used in industrial and consumer products since the 1940s. PFAS generally break down very slowly, leading to concerns regarding accumulation in people, animals, and the environment. The EPA is in the process of finalizing national primary drinking water regulations for six PFAS. There are no legally enforceable limits at this time.

3.9.2 Existing Conditions

3.9.2.1 Soils

A range of soil types exist within the proposed development area as a result of the geology and hydrology present. The soils in the development area were identified using the Web Soil Survey (United States Department of Agriculture Natural Resources Conservation Service, USDA-NRCS, 2023) and are depicted in **Figure 3-3** in **Appendix A**. The majority of the development area, including the primary development area, features Lucy sand with 0-5% slopes. Other prevalent soil types in areas likely to require utility upgrades/modification include Orangeburg loamy fine sand with 2-5% slopes and Lakeland find sand with 0-5% slopes. The aforementioned Orangeburg soil is considered prime agricultural land by the USDA. Lucy sand with 0-5% slopes is considered farmland of statewide importance.

There is known environmental contamination within the proposed development areas, which include both the primary development area (where new facilities would go) as well as areas which would require utility modifications (see **Figure 3-4** in **Appendix A**). Contamination is characterized as affecting groundwater, soils, or both. Many sites under the ERP on Robins AFB have been remediated to the point that no further action (NFA) is required. However, some sites are still being restored (remedy in place status). All projects on Base must protect integrity of ERP assets, such as monitoring wells and operational pads with associated equipment, during and after construction (see **Figure 3-5** in **Appendix A** for ERP wells). If any projects require such assets to be removed, Georgia EPD regulations must be followed in the decommissioning process, with replacement at the project proponent's expense.

There is PFAS contamination within the areas of expected disturbance due to historic use of aqueous film forming foam (AFFF) (see **Figure 3-6** in **Appendix A**). Robins AFB had screening-level site inspections conducted to determine PFAS presence and identify any potential receptor pathways of immediate concern (Aerostar SES LLC, 2018). These sites are not currently ERP sites and do not have complete pathways for drinking water exposure but are anticipated to require additional investigation and potentially remediation in the future.

3.9.2.2 Topography

The topography of the area proposed for development, including associated utility work, trends from higher elevations around 310 ft above mean sea level (MSL) toward the west to lower elevation toward the east around 260 ft above MSL (see elevation index contours from the Air Force Materiel Command (AFMC) GeoBase Viewer in **Figure 3-7** in **Appendix A**). Steep changes in topography are associated with increased erosion risk. The projected increases in annual precipitation and storm intensity (see Section 3.4.1.2) would increase risks of soil erosion and unintended topographic changes.

3.9.3 Consequences

3.9.3.1 No-Action Alternative

Under the no-action alternative, no change to the existing conditions would occur in the proposed primary development area. Construction involved in other reasonably foreseeable actions on Base would have

short-term less than significant adverse impacts on soils due to ground-disturbing activities, such as excavation and site grading. Site grading would generally change existing topography (long term adverse impact). However, proper grading and stormwater controls would avoid any substantial erosion. The extent of disturbance for these reasonably foreseeable actions is expected to be adequately addressed by applicable BMPs. Therefore, development on Base would have less than significant adverse impacts on earth resources.

3.9.3.2 Proposed Action

Soils

Soil disturbance would be minimized and construction methods would apply standard BMPs to minimize erosion. Any soil waste generated would be managed and disposed of in accordance with Base procedures, specifically, 01560, *Environmental Requirements*, as well as the Robins AFB Hazardous Waste Management Plan. For soils disturbed in areas with known environmental contamination, a 100% replacement rate was applied. For areas where no environmental contamination is anticipated/found, it is expected that disturbed soil would be reused unless soil properties were incompatible from an engineering standpoint. A 10% replacement rate was used to estimate soil waste arising from potential soil issues, such as the discovery of environmental contamination or an engineering incompatibility.
Ground disturbance would include soil as well as any existing concrete or asphalt that cannot be incorporated into the desired end state.

Table 3-26: C-130 Campus Soil/Surface Impacts

Project	Disturbance Footprint	Expected Soil Waste (CY)	Other Soil Waste (CY)	Total Soil Waste (CY)
NBPB	322,820 SF (7.41 acres)	-	366	366
Heavy Maintenance Hangar	1,259,195 SF (28.91 acres)	16,111 CY	17,015	33,126
Multi-Purpose Hangar	212,389 SF (4.88 acres)	-	1,810	1,810
Aircraft Aprons	855,256 SF (19.63 acres)	49,556 CY	17,061	66,616
Total	2,649,660 SF (60.83 acres)	65,666 CY	36,252	101,918

Expected soil waste – refers to known contamination. Other soil waste – refers to potential engineering incompatibility or discovered contamination.

Overall, the proposed area development is expected to have negligible short-term adverse soil impacts (60.83 acres disturbed, 101,918 cubic yards (CY) soil/material removed) and positive long-term soil impacts due to reduced erosion.

Topography

Overall, the development of the C-130 Campus would have less than significant adverse impact on topography, as described by project area below.

NBPB: The proposed location for the NBPB equipment pad is currently relatively level, lying between the 308 ft above MSL and 310 ft above MSL elevation contours. The equipment pad would have no impact on topography. The taxiway connection would cross from the same elevation as the pad to the

existing spur elevation, which is between the 300 and 302 ft above MSL elevation contours. The taxiway impact is expected to be negligible and neutral. Part of the NBPB includes correcting a high erosion area, which would change the topography in a positive manner, since it would reduce soil erosion and associated unintended topographical changes. Utility lines would have no impact on topography.

Heavy Maintenance Hangar: The hangar footprint ranges from approximately 308 to 296 ft above MSL, which would require relatively substantial site grading as the facility would be level. The taxiway connections would require somewhat similar grading as existing elevations range from 308 to 294 ft above MSL. Utility connections would not impact topography. Proposed personnel parking area alternatives and proposed vehicle holding area are relatively level, with only approximately 2-4 ft of elevation changes in each location. The new hot cargo pad location would adjust the existing elevation variation (from approximately 288 to 276 ft above MSL) into a more gradual transition, having minimal neutral impact on topography. The high erosion area corrections within this project would have a positive impact on topography as it would reduce erosion and associated unintended topographical changes.

Multi-Purpose Hangar: The footprint for this hangar is relatively flat on the currently paved section, with more compressed elevation changes along one end, overall ranging from approximately 296 to 288 ft above MSL. The locations for the proposed relocated structures are relatively flat, with approximately 2-6 ft of elevation changes in each location. No topographical impact expected.

Aircraft Aprons: The apron section with the functional test spots has a gradual slope with elevation ranging from 294 to 280 ft above MSL. Grading would reduce the overall slope somewhat but overall would have a negligible neutral topographical impact with proper design regarding the increased stormwater runoff. The north section of proposed apron area would require more substantial grading as elevation ranges from approximately 306 to 292 ft above MSL. Overall, the development of the aircraft aprons is expected to have a less than significant adverse topographical impact.

3.10 Other Base Infrastructure

3.10.1 Background

For both the electrical and transportation systems, the ROI is Robins AFB. The indicator of *de minimis* significance would be exceeding available Base capacity, resulting in issues such as overloaded circuits or excessive traffic.

3.10.2 Existing Conditions

3.10.2.1 Electricity

The Base receives all its electricity during the day from the nearby Georgia Power Company (GPC) solar array. Approximately half the Base's energy consumption is during the day and is thus carbon-free electricity (CFE). Electricity during nighttime is supplied by the general GPC power grid. Electricity enters Base at substations and then travels along circuits to supply various areas. The substation which supplies power to the proposed development area, the Fowler Street Substation, is currently being expanded to accommodate future demands, including this campus development.

3.10.2.2 Transportation

As previously noted, parking near the flightline can be a challenge. Otherwise, the on-Base road system is considered reasonably adequate for existing traffic needs.

3.10.3 Consequences

3.10.3.1 No-Action Alternative

Electricity

Most development on Base would create additional demand on existing electrical substations. As required, projects would include new circuits, new substations, or substation expansions. If large-scale battery storage is implemented, it would effectively allow the solar array to provide power night and day, substantially reducing or eliminating purchased electricity air emissions. Overall, cumulative impacts on the Base electrical system are expected to be positive due to increased resiliency (and reduced emissions) from battery storage.

Transportation

During construction, traffic on Base would increase because of construction vehicles. Actions with increases in personnel would result in long-term increased traffic on Base. Actions consider required/available parking and potential roadwork to ensure proper facility functionality. Therefore, although increased on Base development would result in increased traffic, this adverse impact would be less than significant because of appropriate project planning and design.

3.10.3.2 Proposed Action

Electricity

A new circuit is included within the C-130 Campus scope. Each project would increase electrical demand (approximately 11,838 MWh/yr total), resulting in an overall less than significant adverse impact on the Base electrical network due to the Fowler Street Substation expansion. Construction may involve the use of temporary concrete batching plants, which may use the Base electrical network. However, construction would occur during daylight hours. No indirect electrical emissions are expected from concrete batching plants in such a scenario due to the nearby solar array.

Transportation

Additional parking and road repair are included to support the set of projects. Overall, traffic on Base would increase, both during construction and during operations, resulting in a net less than significant adverse impact.

3.11 Socioeconomics and Environmental Justice

3.11.1 Background

3.11.1.1 Socioeconomics

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.

The nature of the primary mission of Robins AFB, providing logistical support for the Air Force, requires a substantial industrial and manpower base. As a result, Robins AFB is the largest industrial complex in Georgia. Robins AFB provides a range of positive economic impacts from direct employment to service and construction contracts, to travel/recreational spending. Most of this economic impact is within nearby counties. Therefore, the ROI for socioeconomic considerations is composed of three counties, Houston, Bibb, and Peach, with the state of Georgia being the community of comparison (COC). The indicator of *de minimis* significance for socioeconomics would be a substantial loss of gross domestic income (GDP) and/or jobs or a substantial reduction in available housing or education system capacity.

3.11.1.2 Environmental Justice

Policies[5] require consideration of environmental justice issues and health and safety risks to children. EPA defines several relevant environmental justice terms as follows:

Environmental justice: "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (EPA, 1998).

Fair treatment: "no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies" (EPA, 1998).

Disproportionate impacts: "differences in impacts or risks that are extensive enough that they may merit Agency action" (EPA, 2016).

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 ROI for environmental justice is based on the census tracts falling under the 65-DNL noise contours (see **Figure 3-9** in **Appendix A**). The respective county is the COC for each census tract. The indicator of *de minimis* significance for environmental justice would be substantial and disproportionate adverse impacts to minority and/or low-income population(s). In accordance with Air Force guidance (US Air Force 2020), the demographics of the ROI is compared against the COC to determine the potential for disproportionate impacts. If the ROI contains a higher percentage of minority and/or low-income people, there is potential for a disproportionate impact.

3.11.2 Existing Conditions

3.11.2.1 Socioeconomics

Robins AFB is one of Georgia's largest employers, providing jobs to approximately 22,636 personnel and an approximate $3.57 billion impact on the Georgia economy (Robins AFB, 2023). The Base plays an important role in the continued growth of the local communities (see **Figure 3-8** in **Appendix A**).

Table 3-27: Socioeconomic Overview for ROIs and COC for Proposed Area Development (US Census Bureau, 2022)

Metric	Robins AFB (Tract 206)	Houston County	Bibb County	Peach County	Georgia
Population	1,557	166,829	156,762	27,822	10,799,566
Children (< 18 years old)	25.0%	25.3%	24.2%	21.2%	23.4%

[5] The USAF's Interim Guide for Environmental Justice with the Environmental Impact Analysis Process, 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*

Elderly (≥ 65 years old)	2.0%	13.0%	16.0%	16.0%	14.7%
Average household size	2.69	2.72	2.60	2.55	2.64
Average family size	3.22	3.22	3.49	3.14	3.23
Households with children (< 18 years old)	29.1%	39.2%	26.0%	30.9%	31.8%
Households with elderly (≥ 65 years old)	2.3%	26.6%	32.0%	34.5%	28.5%
Median Household Income	$76,717	$72,848	$48,176	$53,215	$66,559
Median Family Income	$86,563	$79,243	$63,420	$65,421	$80,731
Average Commute	9.9 min	21.8 min	21.7 min	24.7 min	27.1 min

Air Force employees usually bring not only themselves to their areas of employment but their dependents as well.

Table 3-28: Air Force Active-Duty Family Characteristics

Metric	Air Force Active Duty
Ratio of AF Dependents to AF Active Duty	1.19
Percent of dependents which are spouses	38.3%
Percent of dependents which are children*	61.3%
Percent of dependents which are adults and not spouses	0.4%
Percent of children in AF families ages 0-5 years	41.5%
Percent of children in AF families ages 6-11 years	33.5%
Percent of children in AF families ages 12-18 years	21.6%
Percent of children in AF families ages 19-22 years	3.4%

*Children include dependents age 20 or younger and dependents age 22 or younger enrolled as full-time students. Source: 2021 Demographics Report: Profile of the Military Community

Housing

A household is considered cost-burdened when housing costs more than 30% of the household gross income. Except for Houston County, the ROI is more cost-burdened than the COC (Georgia). Active-duty military members receive a monthly Basic Allowance for Housing (BAH), with enlisted receiving $1,215 or more and officers receiving $1,458 or more (depending on rank and dependents) (Defense Travel Management Office).

Table 3-29: Housing Overview for ROIs and COCs for Proposed Area Development (US Census Bureau, 2022)

Housing Metric	Robins AFB (Tract 206)	Houston County	Bibb County	Peach County	Georgia
Owner-occupied	1.8%	63.6%	55.8%	65.4%	66.0%
Renter-occupied	98.2%	36.4%	44.2%	34.6%	34.0%
Vacant Housing Units	25 (5.4%)	7,263 (10.7%)	14,229 (19.8%)	1,727 (14.5%)	474,133 (10.6%)
Rental Vacancy Rate	2.9%	10.2%	17.6%	11.0%	6.2%

Median Gross Rent	$1,455	$994	$896	$797	$1,131
Median Gross Rent as % of Household Income	-	28.4%	34.1%	30.5%	30.8%
Households with GRAPHI over 30%	-	47.9%	57.8%	51.2%	51.5%
Households with Mortgages with Housing Costs over 30% of Household Income	-	19.4%	28.1%	29.3%	25.1%
Households without Mortgages with Housing Costs over 30% of Household Income	-	7.1%	12.3%	8.6%	11.5%

GRAPHI = Gross Rent as a Percent of Household Income

Education

There is no on-Base school at Robins AFB. Children of families associated with Robins AFB attend local schools. Schools and school districts are rated using College and Career Ready Performance Index (CCRPI) scores, which provide simple letter grades to indicate overall performance. Within the ROI, education was only better in Houston County than the State.

Table 3-30: Education Overview for the ROI and COC for Proposed Area Development (National Center for Education Statistics)

Education Metric	Houston County	Bibb County	Peach County	Georgia
Total Schools	37	35	6	2,304
Students	30,243	21,159	3,754	1,686,318
Student/Teacher Ratio	15.07	13.86	15.03	15.0
Expenditures/Student	$12,712	$15,120	$13,708	$13,186
District Letter Grade (2019)	B	D	C	C

3.11.2.2 Environmental Justice

Tracts 204 and 203.01 contain higher percentages of minorities and low-income households than Houston County, thus having potential for a disproportionate impact. Tract 135.02 contains lower percentages of minorities and low-income households than Bibb county and therefore does not have potential for a disproportionate impact. Tract 206 (Robins AFB) would face the greatest magnitude of adverse environmental impacts from general activities on Base, but does not have potential for disproportionate impacts.

Table 3-31: Environmental Justice ROIs and COCs for Proposed Area Development (US Census Bureau, 2021). ROI percentages bolded when higher than CoC percentage.

Metric	Robins AFB (Tract 206)	Tract 204	Tract 203.01	Houston County	Tract 135.02	Bibb County
Population	1,557	2,018	1,172	166,829	1,801	156,762
White Only	1,122	694	189	92,663	1,361	56,365
Black / African American Only	211	1,307	933	52,906	190	86,500
American Indian / Alaska Native Only	5	-	35	1,613	-	324

Asian Only	73	-	15	6,454	6	3,740
Native Hawaiian / Other Pacific Islander	-	-	-	-	-	-
Other Race Only	79	17	-	3,447	205	4,244
Hispanic or Latino Only	136	128	35	11,453	257	5,594
Total Minority	504	1,452	1,018	75,873	658	100,402
% Minority	32.4%	**72.0%**	**86.9%**	45.5%	36.5%	64.0%
% Low-Income	5.0%	**48.3%**	**21.9%**	11.2%	15.1%	24.7%

The EPA's Environmental Justice screening tool (EJScreen) was used to provide additional context for the ROI and COCs. Tracts 204 and 203.01 are relatively worse off compared to Houston County for the EJScreen metrics. Tract 135.02 is largely better off compared to Bibb County based on the same metrics. Tract 206 is generally better off compared to Houston County regarding the EJScreen metrics.

Table 3-32: EJScreen Track Results For ROI and CoCs Relative to Georgia. ROI values bolded when worse than CoC value.

Metric	Robins AFB (Tract 206)	Tract 204	Tract 203.01	Houston County	Tract 135.02	Bibb County
PM2.5	43%	**77%**	**78%**	53%	58%	68%
Ozone	48%	**76%**	**77%**	55%	62%	75%
Diesel Particular Matter	35%	**70%**	**66%**	47%	47%	72%
Air Toxics Cancer Risk	59%	**85%**	**86%**	64%	67%	76%
Air Toxics Respiratory HI	**68%**	**98%**	**98%**	62%	73%	80%
Toxic Releases to Air	**37%**	**60%**	**64%**	34%	66%	82%
Traffic Proximity	20%	**86%**	**79%**	51%	52%	72%
Lead Paint	**60%**	**92%**	**76%**	51%	72%	81%
Superfund Proximity	68%	**95%**	**94%**	74%	79%	87%
RMP Facility Proximity	57%	**77%**	**72%**	57%	**73%**	68%
Hazardous Waste Proximity	**57%**	**84%**	**85%**	46%	**74%**	56%
Underground Storage Tanks	0%	**89%**	**85%**	59%	48%	74%
Wastewater Discharge	**63%**	**86%**	**91%**	62%	73%	74%

HI = hazard index, RMP = Risk Management Plan (potential chemical accident management plan).

Climate and Natural Disaster

The Federal Emergency Management Agency's (FEMA's) National Risk Index provides risk levels relating to natural hazards, social vulnerability, and community resilience. Risk indices indicate the percentage of communities at the same level (tract or county, as applicable) in the country which would be at lower risk. The ROI had lower overall risk index values than the COCs.

Table 3-33: FEMA National Risk Indices for ROI and COCs. ROI values bolded when worse than CoC.

Risk Index	Robins AFB (Tract 206)	Tract 204	Tract 203.01	Houston County	Tract 135.02	Bibb County

Drought	**73.8**	0	**71.36**	67.26	**88.95**	36.4
Earthquake	61.79	73.51	56.95	80.46	79.58	83.17
Hail	63.26	**79.08**	66.05	78.3	90.89	93.13
Heat Wave	34.36	68.31	52.07	85.91	54.06	87.88
Hurricane	53.81	69.82	52.78	79.77	76.3	82.05
Ice Storm	73.13	**89.13**	71.46	88.64	**93.37**	92.54
Landslide	**41.26**	0	**54.99**	29.52	48.84	61.74
Lightning	46.2	91.5	72.24	94.05	44.45	67.18
Riverine Flooding	27.54	**49.65**	**48.63**	35.57	**43.85**	43.72
Strong Wind	**17.08**	**26.74**	**17.17**	13.84	42.43	49.03
Tornado	41.39	68.54	46.53	81.29	77.99	87.27
Wildfire	49.71	**57.3**	**59.07**	52.24	**74.94**	52.31
Winter Weather	33.03	**62.97**	45.38	61.53	49.51	67.17
Overall Risk Index	9.06	46.84	11.96	71.08	62.4	76.42
Overall Risk	Very Low	Relatively Low	Very Low	Relatively Low	**Relatively Moderate**	Relatively Low
Overall Social Vulnerability	Very Low	**Very High**	**Very High**	Relatively Moderate	Very High	Very High
Overall Community Resilience	**Relatively Moderate**	**Relatively Moderate**	**Relatively Moderate**	Relatively High	**Relatively Moderate**	Relatively High

3.11.3 Consequences

3.11.3.1 No-Action Alternative

Under the No-Action Alternative, there would be no construction, demolition, new personnel, or other relating to C-130 depot workloads. Therefore, there would be no potential socioeconomic or environmental justice impacts. Other actions on Base would have positive economic impacts and less than significantly adverse impacts on housing and education. Actions on Base would primarily affect those working/residing on Base, meaning there would not be a substantial disproportionate adverse impact to minority or low-income populations.

3.11.3.2 Proposed Action

Construction Environmental Justice Impacts

There would be temporary less than significant adverse air, noise, and traffic impacts locally from construction activities. However, these effects would be short-term, intermittent, and negligible to minor, and would generally primarily impact on-Base residents rather than off-Base communities. There are minority/low-income populations near the western edge of Base (Tracts 204 and 203.01) which may experience these negligible to minor adverse impacts to some degree. However, the primary population exposed (Robins AFB, Tract 206) is not minority or low-income. Therefore, the adverse impacts would not disproportionately impact minority or low-income populations. No significant adverse environmental impacts would occur.

Operational Environmental Justice Impacts

Adverse environmental impacts (noise, air emissions, waste generation) from operations would be less than significant. Noise levels would be effectively unchanged. Air emissions would be monitored and

restricted in accordance with permit conditions. Waste generated would be processed and disposed of in accordance with applicable laws, regulations, plans, and permits. Air and noise impacts would primarily affect the on-Base population, which is not a minority or low-income population.

Socioeconomic Impacts

Construction would provide a short-term economic boost while an increase associated facility maintenance/support and jobs would provide a positive long-term economic impact. New employees are expected to be able to afford local housing since BAH would cover median housing costs. Taxes from and local spending by new employees/families would also support local economies. Children of new employees are expected to be easily absorbed into the existing school systems based on the relatively small number of school age children that would be expected (approximately 356) and the relatively large number of students in the local area (30,243 even if only considering Houston County). Overall, there would be no more than a 1.2% increase in the number of school age children in Houston County. This impact would be spread out somewhat in the other nearby counties as not all employees are expected to live in a single county.

Table 3-34: Campus Socioeconomic Impacts

Metric	NBPB	Heavy Maintenance Hangar	Multi-Purpose Hangar	Aircraft Aprons	Total
Construction Cost	$1.7 million	$115 million	$61 million	$233 million	$233 million
Personnel	20	280	360	106	766
Dependents	24	334	430	127	915
Spouses	9	128	165	48	350
Children 0-5 yrs old	6	85	109	32	233
Children 6-11 yrs old	5	69	88	26	188
Children 12-18 yrs old	3	44	57	17	121
Children 19-22 yrs old	0	7	9	3	19
Non-Spouse Adults	0	1	2	1	4

4.0 List of Preparers

Name/Organization	Degree(s)	Contribution	Years of Experience
Marissa Hartleb, EIT Robins AFB, 78 CEG/CEIE	B.S. Biological Engineering M.S. Environmental Engineering	Primary Author/Editor NEPA Specialist/ Project Manager	6
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David Kissler	78 ABW/SEG
Elza Fowler	78 ABW/SEG
Robert Edmisten	DHA, 78 MDG
Chairman Osceola	Seminole Tribe of Florida
Principal Chief Lambert	Eastern Band of Cherokee Indians
Principal Chief Sneed	Eastern Band of Cherokee Indians
Chief Bunch	United Keetoowah Band of Cherokee
Chief Lewis Johnson	Seminole Nation of Oklahoma

Mekko Morrow	Thlopthlocco Tribal Town
Tribal Chair Bryan	Poarch Band of Creek Indians
Principal Chief Floyd	Muscogee Creek Nation
Principal Chief Hill	Muscogee Creek Nation
Town King Givens	Kialegee Tribal Town of Oklahoma
Town King Yahola	Kialegee Tribal Town of Oklahoma
Chairman Cernek	Coushatta Tribe of Louisiana
Chairman Sickey	Coushatta Tribe of Louisiana
Chairwoman Flores	Alabama-Coushatta Tribe of Texas
Chairwoman Sylestine	Alabama-Coushatta Tribe of Texas
Chief Yargee	Alabama-Quassarte Tribal Town
US Fish and Wildlife Service	
GA Environmental Protection Division	
GA Department of Community Affairs	
GA Department of Natural Resources	
Middle GA Regional Commission	
Houston County Board of Commissioners	
Houston County Board of Education	
Warner Robins Community and Economic Development	

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