February

2024

Final

Environmental Assessment

for Flightline District Development at
Seymour Johnson Air Force Base in Goldsboro, North Carolina

Department of the Air Force

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

4 FW	4th Fighter Wing
916 ARW	916th Air Refueling Wing
AASHTO	American Association of State Highway and Transportation Officials
ACM	Asbestos Containing Material
AFFF	Aqueous Film Forming Foam
AFI	Air Force Instruction
AFMAN	Air Force Manual
AICUZ	Air Installation Compatible Use Zone
APE	Area of potential effect
APZ	Accident potential zone
AST	aboveground storage tank
AT	Anti-terrorism
ATFP	Anti-Terrorism/Force Protection
AVB	Active Vehicle Barrier
BASH	Bird/wildlife Aircraft Strike Hazard
BCR	Bird Conservation Regions
bgs	below ground surface
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	equivalent emissions of CO_2
CWA	Clean Water Act
CZ	Clear zone
DAF	United States Department of the Air Force
DAFI	Department of the Air Force Instruction
dB	decibel
dBA	A-weighted decibel
DNL	day-night average sound level
DoD	Department of Defense
DoDI	Department of Defense Instruction
DTRA MAA	Defense Threat Reduction Agency Mission Assurance Assessment
EA	Environmental Assessment
ECF	Entry Control Facility
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
E.O.	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FFRA	Fort Fisher Recreation Area
FOD	Foreign Object Debris
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GHG	greenhouse gas

HQ ACC	Headquarters Air Combat Command
HWMP	Hazardous Waste Management Plan
Hz	hertz
ICRMP	Integrated Cultural Resources Management Plan
ID	Identification
IDP	Installation Development Plan
INRMP	Integrated Natural Resource Management Plan
IPaC	Information for Planning and Consultation
ITE	Institute of Transportation Engineers
L_{eq}	Equivalent sound level
MAJCOM	Major Command
MBTA	Migratory Bird Treaty Act
MPO	Metropolitan Planning Organization
NA	not applicable
NAAQS	National Ambient Air Quality Standards
NCDEQ	North Carolina Department of Environmental Quality
NCDOT	North Carolina Department of Transportation
NCNHP	North Carolina Natural Heritage Program
NCWRC	North Carolina Wildlife Resources Commission
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NO_X	National Ambient Air Quality Standards
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O_3	ozone
OSHA	Occupational Safety and Health Administration
OSH	occupational safety and health
OWS	oil-water separator
PCB	Polychlorinated Biphenyl
PFAS	Per- and Polyfluoroalkyl Substances
PFBS	perfluorobutanesulfonic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
POV	Privately Owned Vehicle
PPE	personal protection equipment
RCW	red-cockaded woodpecker
ROI	Region of Influence
ROW	right of way
RRSE	Relative Risk Site Evaluation
SDDCTEA	Surface Deployment and Distribution Command Transportation Engineering Agency
SHPO	State Historic Preservation Officer
SJAFB	Seymour Johnson Air Force Base
SO_X	sulfur oxide
SPR	Spill Prevention and Response
STRAHNET	Strategic Highway Network

SWPPP	Stormwater Pollution Prevention Plan
TNC	The Nature Conservancy
TPH-DRO	Total Petroleum Hydrocarbons- Diesel Range Organics
tpy	tons per year
UFC	Unified Facilities Criteria
UFMP	Urban Forest Management Plan
U.S.	United States
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USCB	United States Census Bureau
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compounds
WOTUS	Waters of the United States

PRIVACY ADVISORY

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

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

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

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1.0 PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION AND BACKGROUND

The 4th Fighter Wing (4 FW) at Seymour Johnson Air Force Base (SJAFB), North Carolina, and Headquarters Air Combat Command (HQ ACC) have identified priorities for installation development and propose to implement them over the next five years (2023-2028). This Environmental Assessment (EA) has been prepared to evaluate the potential environmental impacts of these proposed projects in compliance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [U.S.C.] 4331 et seq.), the regulations of the President's Council on Environmental Quality (CEQ) that implement NEPA procedures (40 Code of Federal Regulations [CFR] § 1500-1508), as amended, the Air Force Environmental Impact Assessment Process Regulations at 32 CFR Part 989, and Air Force Instruction (AFI) 32-1015, *Integrated Installation Planning*.

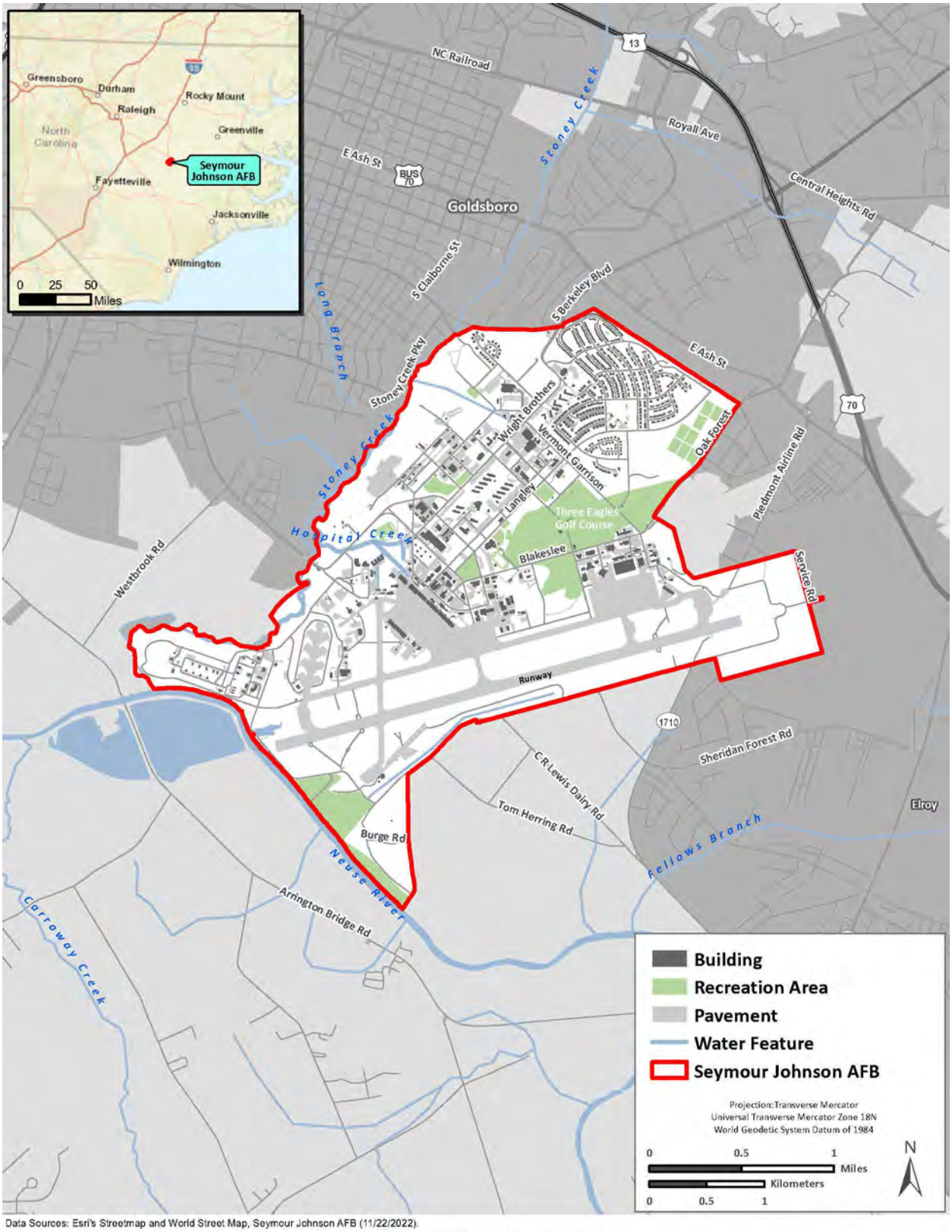
The intent of the ongoing process of installation development at SJAFB is to provide infrastructure improvements necessary to support the mission of the 4 FW and its tenant units. The two projects considered in this EA were identified as priorities for installation development in the SJAFB Flightline District Plan (USAF 2021a) and the SJAFB Installation Development Plan (USAF 2018). The Flightline District Plan serves as a supplement to the SJAFB Installation Development Plan (IDP). These plans identify requirements to improve the physical infrastructure and functionality of SJAFB, including current and future mission, facilities and infrastructure requirements, development constraints and opportunities, and land use relationships.

SJAFB is in Wayne County, North Carolina, roughly 55 miles southeast of Raleigh, and occupies 3,235 acres of land (see **Figure 1-1**). It was established in 1942 and has hosted a variety of missions and aircraft types throughout its history. In addition to the 4 FW, SJAFB is also home to the 916th Air Refueling Wing (916 ARW), the largest tenant unit on the installation. Currently, the F-15E Strike Eagle and the KC-46A Pegasus operate from SJAFB.

The intent of the Department of the Air Force (DAF) is to streamline NEPA compliance and facilitate the installation development process by evaluating the potential impacts on the human environment of the projects proposed for execution at SJAFB in one integrated document.

The information presented in this document serves as the basis for deciding whether the Proposed Actions would result in a significant impact on the human environment, requiring the preparation of an Environmental Impact Statement (EIS), or whether no significant impacts would occur, in which case a Finding of No Significant Impact (FONSI) would be appropriate. Because the execution of the proposed actions may involve "construction" in a wetland as defined in Executive Order (E.O.) 11990, *Protection of Wetlands*, or "action" in a floodplain under E.O. 11988, *Floodplain Management*, a Finding of No Practicable Alternative (FONPA) would be prepared in conjunction with the FONSI.

Figure 1-1: Location of Seymour Johnson Air Force (AFB) Base



1.2 ENVIRONMENTAL ANALYSIS APPROACH AND METHODOLOGY

The Air Force has identified projects within the Flightline District Plan for environmental analysis and will assess the impacts of these projects that may occur over the next five years. Analysis focuses on future development activities and priorities of the installation as established by the Wing Commander in conjunction with Major Command (MAJCOM) and Air Force mission planning. Any additional projects or future activities proposed in areas associated with the Installation must be evaluated on their own merit under the DAF EIAP guidelines to determine their environmental impacts and appropriate level of NEPA analysis.

1.3 PURPOSE AND NEED FOR PROPOSED ACTIONS

Each of the proposed actions (or projects) included in this EA has a specific purpose and need. For purposes of this EA, the purpose and need for each of the representative projects considered for analysis is presented in **Table 1-1**.

Table 1-1: Purpose and Need for Each Proposed Action

Project ID	Project Name	Purpose of the Action	Need for the Action
Infrastructure Construction Projects			
Project 1	Slocumb Gate Entry Control Facility (ECF) (VKAG* 19-3004) * VKAG is a geolocator used in Air Force project numbering, and therefore is not an acronym.	The purpose of the Proposed Action is to provide a properly configured, secure entrance to the installation as required by Anti-Terrorism/Force Protection (ATFP) standards.	The need for this action is to comply with Unified Facilities Criteria (UFC) 4-022-01, *Security Engineering: Entry Control Facilities/Access Control Points*, Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA), Institute of Transportation Engineers (ITE), and Defense Threat Reduction Agency Mission Assurance Assessment (DTRA MAA) standards and guidelines, and Department of Defense Instruction (DoDI) 2000.16, DoD Anti-terrorism (AT) Standards (restricted access document), DoDI 5200.08, Security of DoD Installations and Resources and the DoD Physical Security Review Board, and DoD 5200.08-R, Physical Security Program. Slocumb Gate ECF lacks an adequate Response Zone to contain all threat scenarios.
Project 2	Flightline Access Road (VKAG 06-1051)	The purpose of the Proposed Action is to provide decreased chances of foreign-object debris (FOD) dispersal and faster access to the western end of the flightline.	The need is to construct an access road on the western end of the flightline to reduce emergency response times and decrease the chances of FOD being transported and deposited on the flightline.

1.4 INTERAGENCY/INTERGOVERNMENTAL COORDINATION AND CONSULTATIONS

1.4.1 Interagency Coordination and Consultations

Scoping is an early and open process for developing the breadth of issues to be addressed in the EA and for identifying significant concerns related to a proposed action. Per the requirements of Intergovernmental Cooperation Act of 1968 (42 U.S.C. 4231[a]) and E.O. 12372, Federal, state, and local agencies with jurisdiction that could be affected by the proposed actions were notified during the development of this EA. A brief summary of the concerns and comments is shown below. All correspondence with federal, state, and local agencies is included in **Appendix A**.

During the scoping period, SJAFB received a response from one state agency:

- *North Carolina Natural Heritage Program (NCNHP)*: NCNHP, part of the North Carolina Department of Natural and Cultural Resources, sent a table of potential occurrences of rare species within a one-mile radius of the project area and a table of managed areas within a one-mile radius of the project area. There were no documented occurrences of rare species within the project area.

A scoping letter was sent to the National Marine Fisheries Service; however, per Procedural Instruction 02-110-20, dated January 13, 2017, the agency "will not provide formal written responses to requests for concurrence with a federal agency's determination that its actions will not affect any ESA-listed species or designated critical habitat ('no effect' determination)." Thus, no response was received.

Per the requirements of Section 106 of the NHPA and implementing regulations (36 CFR Part 800), Section 7 of the Endangered Species Act and implementing regulations including the Migratory Bird Treaty Act (MBTA), findings of effect and request for concurrence were transmitted to the North Carolina Natural Heritage Program, the North Carolina State Historic Preservation Officer (SHPO) and the US Fish and Wildlife Service (USFWS). Correspondence regarding the findings, concurrence, and resolution of any adverse effect is summarized below and included in **Appendix A**.

- *North Carolina SHPO*: The NC SHPO requested additional information regarding WY0158, Building 3400, Base Engineering Maintenance Shop, which they identified as being within the proposed flightline access road. Once comparative imagery and maintenance records were provided showing the building was demolished in July 2012, the SHPO had no additional comments on the DAF's no effect determination and concluded Section 106 consultation.

- *USFWS*: There are no federally listed species present within the project areas; formal Section 7 consultation was not required. The DAF still submitted informal consultation letters to USFWS on May 31 and September 20, 2023, as well as a follow-up email to USFWS on November 16, 2023. No response was received.

1.4.2 Government to Government Coordination and Consultations

Consistent with NHPA of 1966 implementing regulations (36 CFR Part 800), DoDI 4710.02, *Interactions with Federally-Recognized Tribes*, Department of the Air Force Instruction (DAFI) 90-2002, *Interactions with Federally Recognized Tribes*, and Air Force Manual (AFMAN) 32-7003, *Environmental Conservation*, the DAF consulted with federally recognized tribes that are historically affiliated with the geographic region being considered for the Proposed Actions 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 SJAFB point-of-contact for Native American tribes is the Installation Commander.

The Native American tribal governments that were coordinated or consulted with regarding these actions are listed in **Appendix A**. One comment from tribes was received:

- *Catawba Indian Nation*. The Catawba Indian Nation stated that they did not have any immediate concerns regarding the Proposed Action, but requested notification should any Native American artifacts or human remains be located during the ground disturbance phase of the project.

1.5 PUBLIC AND AGENCY REVIEW OF DRAFT EA

Because the Proposed Action areas coincide with wetlands and/or floodplains, they are subject to the requirements and objectives of E.O. 11990, *Protection of Wetlands*, and E.O. 11988, *Floodplain Management*. The DAF published early notice that the Proposed Action would occur in a floodplain/wetland in the Goldsboro News Argus on May 6, 2023.

The notice identified state and federal regulatory agencies with special expertise that have been contacted and solicited public comment on the proposed action and any practicable alternatives.

A Notice of Availability (NOA) of the Draft EA and FONSI/FONPA was published in the Goldsboro News Argus announcing the availability of the EA for review on September 2, 2023. The NOA invited the public to review and comment on the Draft EA. The publication of the NOA initiated a 30-day public and agency review period starting on September 2, 2023. At the closing of the review period, the NOA and public and agency comments were incorporated into the analysis of potential environmental impacts conducted as part of the EA, where applicable, and included in **Appendix A** of this Final EA.

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

Wayne County Public Library 1001 E Ash St Goldsboro, NC 27530	Pikeville Public Library 106 W Main St. Pikeville, NC 27863
SJAFB Public Website:	https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/

One comment from an elected official was received during the comment period:

- *North Carolina State Senator Buck Newton.* Senator Newton acknowledged receipt of the letter and noted he did not have any questions or comments.

1.6 DECISION TO BE MADE

The EA evaluates whether the proposed actions would result in significant impacts on the human and natural environment. If significant impacts are identified, SJAFB would undertake mitigation to reduce impacts to below the level of significance, undertake the preparation of an EIS addressing the proposed action, or abandon the proposed action.

This EA is a planning and decision-making tool that will be used to guide SJAFB in implementing the proposed actions in a manner consistent with Air Force standards for environmental stewardship.

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2.0 ALTERNATIVES INCLUDING PROPOSED ACTION

2.1 PROPOSED ACTION

This EA evaluates the potential environmental impacts that could arise from the implementation of two projects selected from the Flightline District Plan as part of the approved Short Range Development Plan (2023-2028) at SJAFB (shown in **Figure 2-1**). This document treats each project as a discrete proposed action and evaluates each project and its alternatives separately. These projects include initiatives for infrastructure construction.

2.2 ELECTION STANDARDS FOR PROJECT ALTERNATIVES

Identification and analysis of alternatives is one of the core elements of the environmental process under NEPA and the DAF's implementing regulations. The DAF may expressly eliminate alternatives from detailed analysis based on reasonable selection standards (32 CFR Part 989.8[c]). Consequently, SJAFB systematically evaluated design plans to identify potential design alternatives for the Proposed Actions. Specifically, the selection standards to identify suitable design plans included the following:

Slocumb Gate Entry Control Facility (ECF)

Standard 1 – This standard would bring the Response Zone at the Slocumb Gate into compliance with the security requirements in UFC 4-022-01, *Security Engineering: Entry Control Facilities/Access Control Points*.

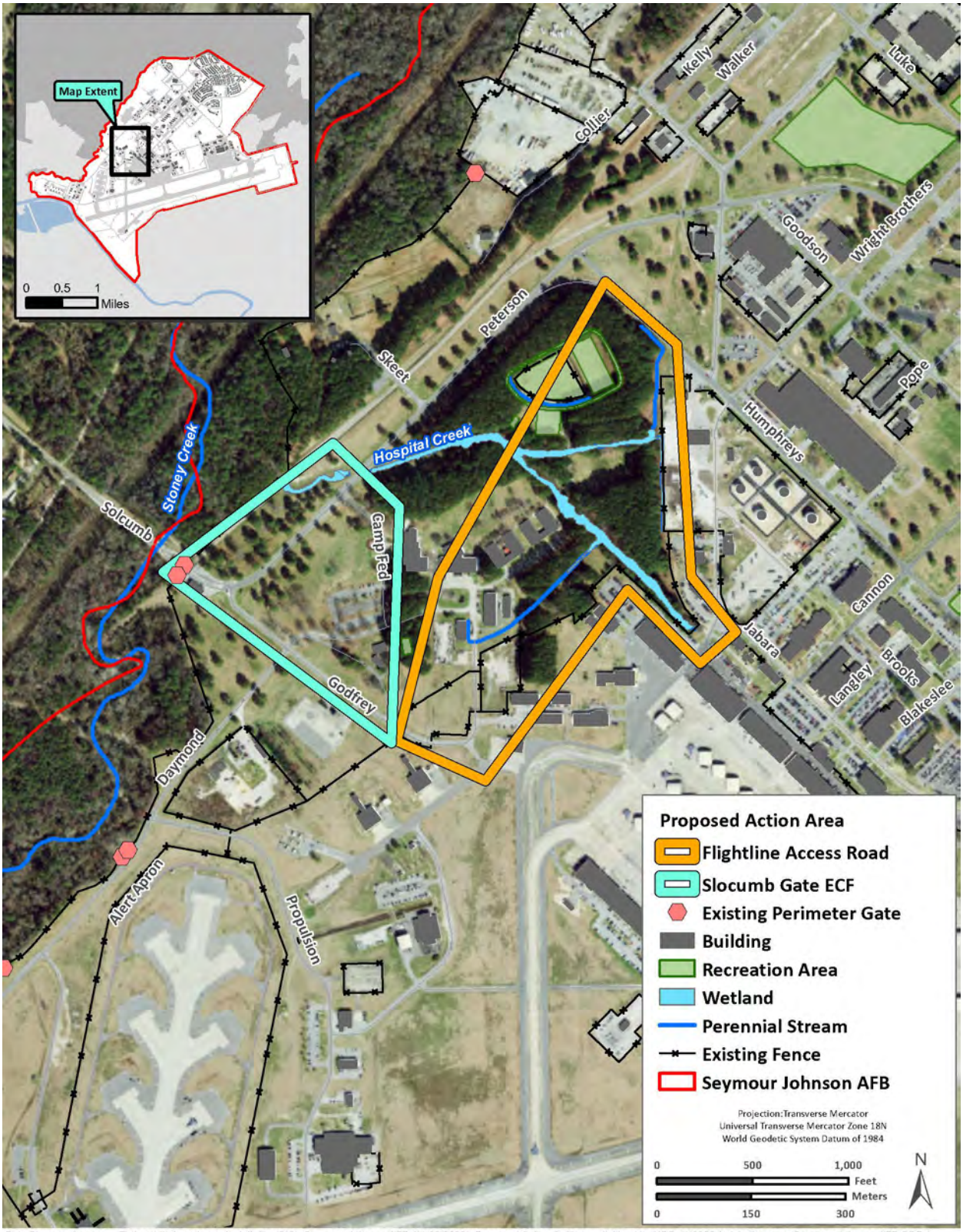
Standard 2 – This standard would ensure impacts on the adjacent Stoney Creek and associated riparian areas and wetlands are minimized to the greatest extent practicable.

Flightline Access Road

Standard 1 – This standard would ensure access by general traffic and emergency vehicles to the western end of the flightline is provided.

Standard 2 – This standard would ensure SJAFB has taken steps outlined in DAFI 21-101, *Aircraft and Equipment Maintenance Management*, to reduce FOD on the flightline.

Figure 2-1: Location on SJAFB of Projects Included in the Proposed Actions



Data Sources: Imagery - Esri and their partners; Installation GIS - Seymour Johnson AFB (11/22/2022); Proposed Action Outlines - digitized by HDR 11/2022 (original source: Seymour Johnson AFB PDFs).

2.2.1 Project 1: Slocumb Gate Entry Control Facility (ECF) Proposed Action

According to UFC 4-022-01, *Security Engineering: Entry Control Facilities/ Access Control Points*, the term "Entry Control Facility" encompasses the overall layout, organization, infrastructure, and facilities at entrance locations onto United States military installations. The objective of an ECF is to secure the installation from unauthorized access and intercept contraband (weapons, explosives, drugs, classified material, etc.) while maximizing vehicular traffic flow for all Department of Defense (DoD) personnel, visitors, and commercial traffic to an installation. An ECF and its facilities perform a variety of functions including visitor processing, vehicle registration, ID checks, privately owned vehicle (POV) inspections, and commercial/large vehicle inspections. Per UFC 4-022-01, the Slocumb Gate is classified as a Secondary ECF, meaning it must provide the means to defeat a vehicular threat through permanent measures.

ECFs are divided into three zones: Approach Zone, Access Control Zone, and Response Zone. The Response Zone provides security personnel with time to react to a threat, operate Active Vehicle Barriers (AVBs), and close the ECF if necessary.

At a minimum, ECFs must be designed to defeat all threat scenarios outlined in UFC 4-022-01. Based on the existing constraints at the Slocumb Gate, such as available space and proximity to Stoney Creek and its associated riparian areas and wetlands, SJAFB has considered the following measures for achieving the requirements of the UFC:

- Speed management – roadway curvatures limit the maximum attainable speed of threat vehicles and decrease the required Response Zone length. Implementation of speed management measures are most effective when installed within the Response Zone because these measures are effective against all threat scenarios outlined in the UFC. Also, by reducing the Response Zone length, there is a reduction in the space required for the ECF.

- Active Vehicle Barriers – ECFs must be provided with AVBs to enable the ECF to be closed (fully contained) and to prevent a threat vehicle from breaching the security. AVBs must be installed on all inbound and outbound lanes in the Response Zone to defeat all threat scenarios. Installing AVBs at the termination of the ECF provides the capability to stop threat vehicles from gaining entry to the installation.

- Overwatch – Installations must consider additional position(s) for security personnel to facilitate a response to a threat. These positions, known as overwatch, are normally placed in the Response Zone to facilitate surveillance and armed response. In most cases, the overwatch position is located at or near the end of the Response Zone to provide sufficient distance and time for this response.

Based on the information above, the DAF proposes to reconfigure the roads in the vicinity of the Slocumb Gate, install AVBs, and construct an overwatch facility. The reconfiguration of the roads would include a roadway curvature in the Response Zone, per the American Association of State Highway and Transportation Officials (AASHTO), to reduce speeds and increase response times (see **Figure 2-2**). Construction of an additional roadway segment to connect Peterson Avenue to Daymond Street is also proposed to facilitate the flow of traffic to the southern portion of the installation without interfering with the layout of the ECF. The proposed roads would total 57,775 ft^2**.** Approximately 30,567 ft^2 of pavement made obsolete by the reconfiguration would be removed. Approximately 310 ft^2 of AVBs would be installed in the inbound and outbound lanes of the Response Zone and an approximately 350 ft^2 overwatch facility would be constructed in the Response Zone to facilitate surveillance and armed response, as directed by the UFC. Underground electrical lines approximately 1,000 ft in length would be used to connect the overwatch facility to SJAFB's electrical system.

2.2.2 Project 1 Alternative 1: Abandon the Slocumb Gate – this alternative has been eliminated from further analysis (see **Section 2.3**).

2.2.3 Project 1 Alternative 2: Demolish and Rebuild the Entire ECF in the Same General Vicinity– this alternative has been eliminated from further analysis (see **Section 2.3**).

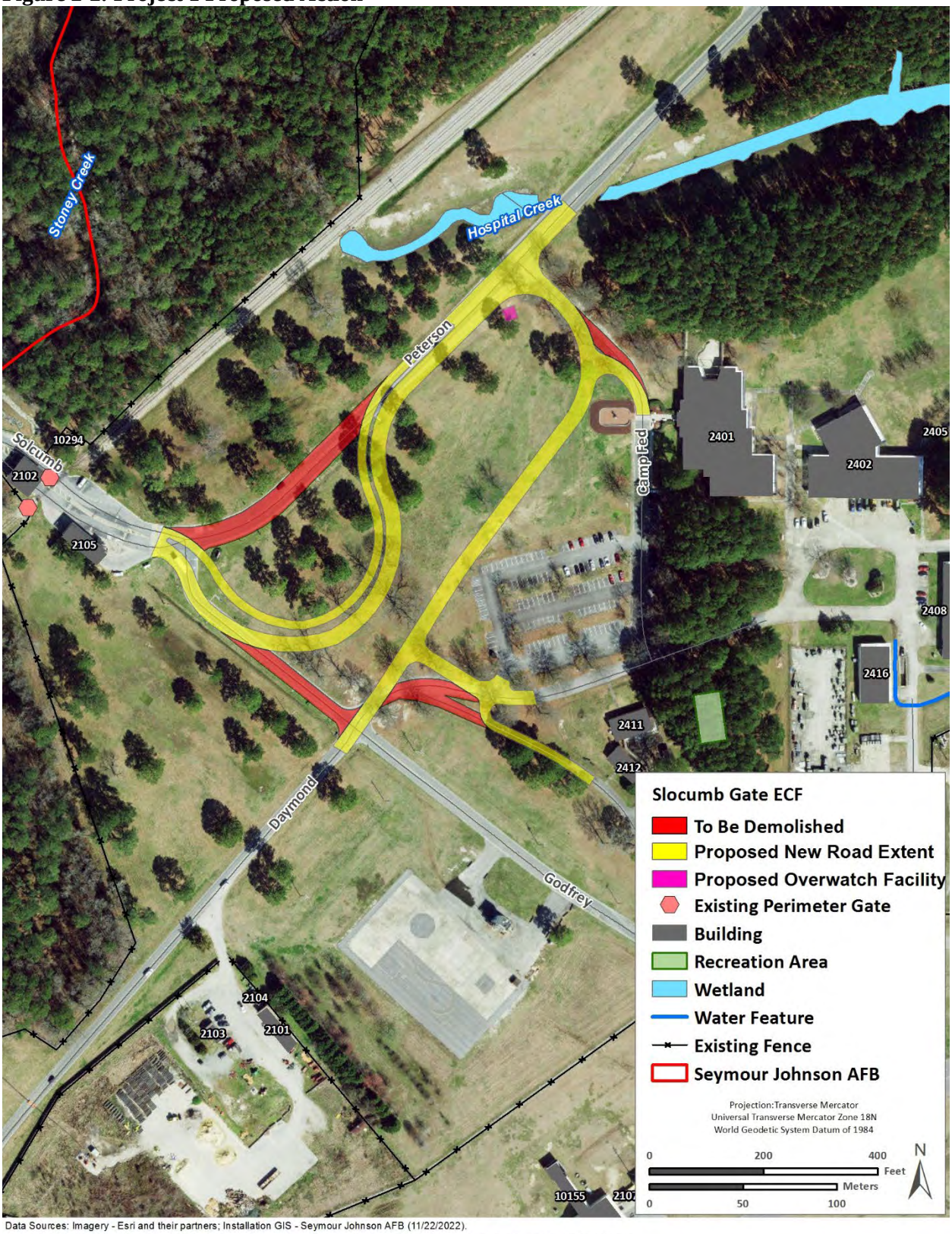
2.2.4 Project 1 Alternative 3: Demolish and Rebuild the Entire ECF in a Different Location – this alternative has been eliminated from further analysis (see **Section 2.3**).

2.2.5 Project 1 No Action Alternative

Under the No Action Alternative, the Slocumb Gate ECF would not be modified. ATFP measures would not be implemented. The Slocumb Gate ECF would remain non-compliant with SDDCTEA, ITE, and DTRA MAA standards and guidelines, and DoDI 2000.16 and 5200.08R. Operational and mission constraints would still be a concern for the Slocumb Gate ECF, according to the selection standard criteria.

While the No Action Alternative would not meet the purpose of or need for the Proposed Action as described in **Section 1.3**, the DAF EIAP (32 CFR § 989.8[d]) requires full consideration of the No Action Alternative. Therefore, the No Action Alternative will be carried forward for detailed analysis in the EA.

Figure 2-2: Project 1 Proposed Action



Data Sources: Imagery - Esri and their partners; Installation GIS - Seymour Johnson AFB (11/22/2022).

Document Path: J:\2022\22-097_AF_SeymourJohnson_(Humphreys)\7.2_Work_In_Progress\Map_Docs\DOPPA\22_097_SJ_EA_Fig_2_3_1_SlocumbGate_fix8_SC_AH.mxd

2.2.6 Project 2: Flightline Access Road Proposed Action

The DAF proposes to construct a new road to improve normal and emergency traffic access to the western end of the flightline (see **Figure 2-3**). The objective of the Proposed Action would be to provide faster access to the flightline than is currently available, resulting in reduced emergency response times and decreased risk of FOD being transported and deposited on the flightline. The Proposed Action would be part of SJAFB's plans to consolidate and enhance the non-flightline capabilities of the installation (USAF 2021a).

The flightline is paramount to SJAFB's operational activities. The 4 FW is responsible for rapid deployment of F-15E Strike Eagles, which requires continual training to ensure that pilots, aircrew, and ground crew are prepared for the military mission. Currently the flightline has limited access points, with the majority on the eastern side of the runway. From the western side of the installation, vehicles must travel around the former federal prison camp and bulk fuels storage area to reach an access point. The Proposed Action would provide a more direct route to the flightline, reducing travel time and allowing emergency vehicles to respond more quickly to the flightline during an emergency.

Reducing the incidence of FOD is highly desirable and a shorter travel distance could reduce the potential for a vehicle to collect debris in the tires. Road debris, such as rocks, can be picked up by tires while a vehicle travels along a road and then redeposited on the flightline. This type of debris poses a major hazard to aircraft.

The proposed road would improve access into and out of the F-15E Apron area from Jabara Avenue to Godfrey Road. It would connect with Humphrey Street to the north, run parallel to Jabara Avenue, and tie into Godfrey Street to the southwest. The curbed road would be 28 feet wide and 2,700 feet in length. An additional 600-foot segment would run perpendicular to, and connect the proposed road, to Jabara Avenue. The road would cross two branches of an unnamed stream that flows into Stoney Creek, a tributary of the Neuse River. One stream crossing would use 48-inch reinforced concrete pipe with concrete headwalls for the culvert. The pipe would begin at the top of the headwall at a width of approximately six feet and would expand in a trapezoidal shape to a width of ten feet at the bottom of the headwall. The second stream crossing would use dual 60-inch reinforced concrete pipes with concrete headwalls. The pipes would begin at the top of the headwall at a width of approximately 12 feet and would expand in a trapezoidal shape to a width of 16 feet at the bottom of the headwall. Because the total height from the streambanks to the top of the concrete headwalls is approximately six and seven feet respectively, the length of the conduit needed to span under the roadway for each crossing is approximately 36 feet.

2.2.7 Project 2 Alternative 1: Revise the Location of the Access Road to Avoid Wetlands – this alternative has been eliminated from further analysis (see **Section 2.3**).

2.2.8 Project 2 Alternative 2: Replace Culverts with Bridges

Under Alternative 2, the proposed road described in the Proposed Action would follow the same path but would cross the two branches of the unnamed stream using bridges rather than culverts. Each bridge would include a two-lane, asphalt road, approximately 30 feet wide and spanning approximately 25 feet. The bridges would be installed using pile-driving equipment and would require the temporary use of a 50 ft^2 by 100 ft^2 laydown area within the proposed project area.

2.2.9 Project 2 No Action Alternative

Under the No Action Alternative, the new Flightline Access Road would not be constructed. General traffic and emergency vehicles would continue to take a long, circuitous route to reach the western edge of the

flightline. Emergency response times and chances of FOD being deposited on the flightline would remain the same. Operational constraints would still be a concern, according to the selection standard criteria.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

The following alternatives were eliminated from further consideration based on the selection standards outlined in **Section 2.2** and other reasons as explained below.

Project 1 Alternative 1: Abandon the Slocumb Gate – This alternative does not comply with Standard 1 of the Slocumb Gate ECF selection standards, since it would not bring the Response Zone into compliance with the security requirements in UFC 4-022-01. The Slocumb Gate is the only ECF on the western side of the installation. It provides the shortest route with the least exposure to installation personnel from frequent deliveries of jet fuel, munitions, and other hazardous materials through that gate. The current route to the Slocumb Gate is via US-117, an area primarily containing warehouses and other light industrial uses, and has minimal exposure to off-installation residences while enroute to SJAFB. Eliminating the Slocumb Gate would route deliveries of these hazardous materials to either the Berkeley Gate or the Oak Forest Gate, increasing exposure to hazardous materials both on- and off-installation. In the case of the Berkeley Gate, large quantities of hazardous materials would be routinely transported down Berkeley Boulevard, a heavily developed commercial area leading to the installation's main ECF. For the Oak Forest Gate, these materials would be routinely transported by large elementary and middle schools, a sports complex, and a large residential neighborhood. With the existence of the Slocumb Gate, it is not necessary to increase risks to the public. Therefore, this alternative has been eliminated from further consideration.

Project 1 Alternative 2: Demolish and Rebuild the Entire ECF in the Same General Vicinity – This alternative would demolish all existing facilities and pavements associated with the Slocumb Gate ECF and then rebuild the ECF in accordance with the requirements of the UFC. Because this alternative would require construction activities in a wetland and the addition of soil materials to raise the area where the ECF would be rebuilt, impacts on wetlands, riparian areas, and floodplains would be substantially increased. Therefore, because it does not comply with Standard 2, this alternative has been eliminated from further analysis.

Project 1 Alternative 3: Demolish and Rebuild the Entire ECF in a Different Location

West – Stoney Creek forms the entire western boundary of the installation, so relocating the Slocumb Gate anywhere on the western side of the installation would encounter the same issues with wetlands, riparian areas, and floodplains, therefore not complying with Standard 2. Furthermore, Slocumb Street is the only off-installation roadway that runs directly to the installation's western perimeter; no other off-installation streets exist to access the western side of the installation.

South – The Neuse River and its associated wetlands form the southwest boundary of the installation; active runway prohibits entrance from the south. This option does not comply with Standard 2 of the selection criteria.

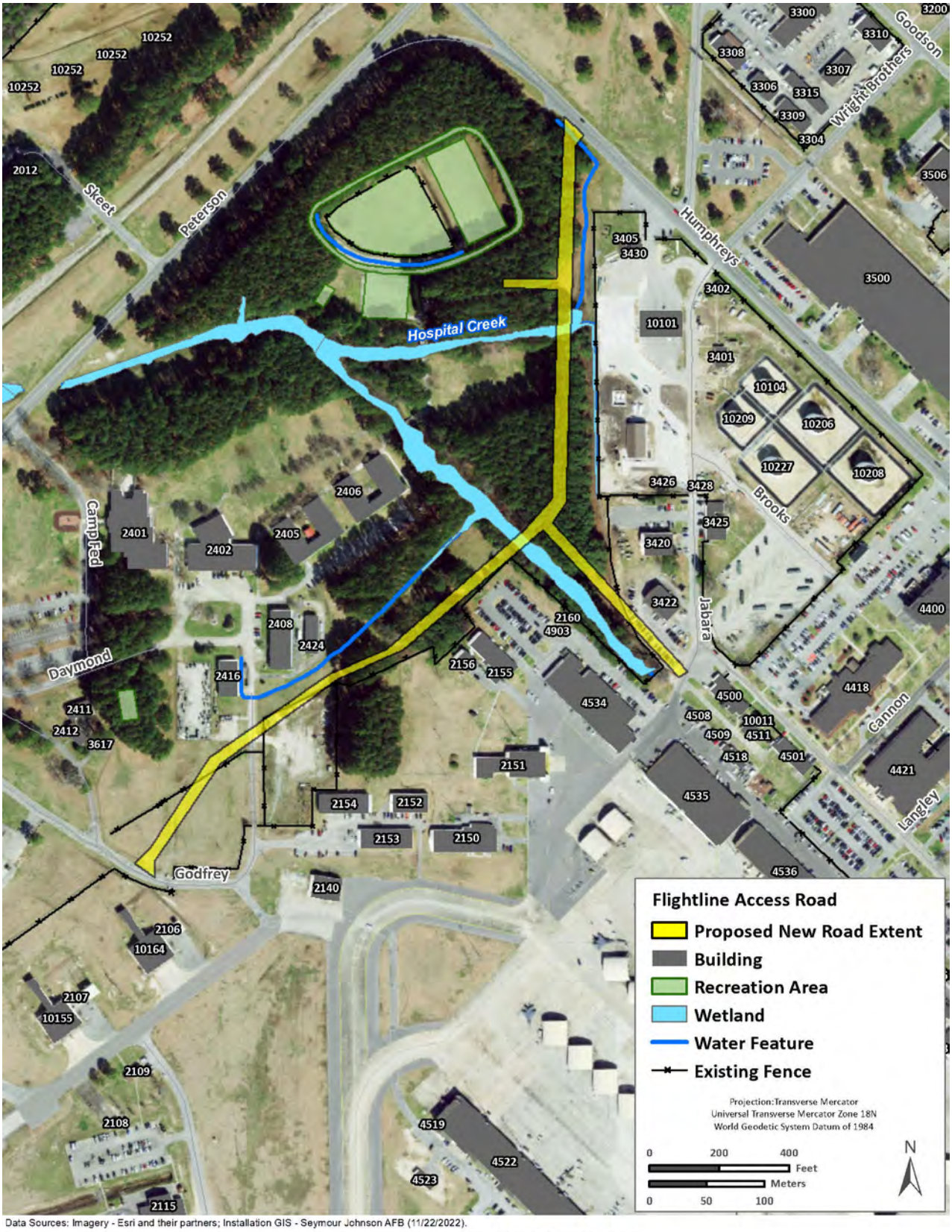
North – Berkeley Gate already provides access to the installation. This option does not comply with Standard 1 of the Slocumb Gate ECF selection standards, as it would reduce access to the installation.

East – Oak Forest Gate already provides access to the installation. This option does not comply with Standard 1 of the Slocumb Gate ECF selection standards, as it would reduce access to the installation.

Because these locations do not comply with the Selection Standards outlined in **Section 2.2**, this alternative has been eliminated from further analysis.

Project 2 Alternative 1: Revise the Location of the Access Road to Avoid Wetlands – This alternative does not comply with Standard 1 of the Flightline Access Road selection standards, since it would not ensure access to the western end of the flightline. According to the *Wetland Delineation Report to Support the Flightline District Development, Seymour Johnson Air Force Base, North Carolina* (**Appendix B**), there are wetlands all along both branches of the unnamed stream that flows into Stoney Creek. Due to the existing infrastructure already in place in this section of SJAFB, there is no location to move the access road that would both avoid the wetlands and conform to the requirement that the access road provide faster access to the flightline than is currently available. Therefore, this alternative has been eliminated from further analysis.

Figure 2-3: Project 2 Proposed Action



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3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 SCOPE OF THE ANALYSIS

3.1.1 Resources Analyzed

Resources in the project area that were analyzed include noise; land use; air quality, climate change, and greenhouse gases; earth resources; water resources; wetlands and floodplains; biological resources; cultural resources; infrastructure, hazardous materials and wastes; safety; socioeconomics; and environmental justice.

In considering whether the effects of the proposed action are significant, agencies analyze the potentially affected environment and degree of the effects of the action. Significance varies with the setting of the proposed action. The potentially affected environment and degree of the effects of the actions are described in terms of duration, the magnitude of the impact, and whether they are adverse or beneficial as summarized below.

- ***Short-term or long-term.*** In general, short-term impacts are those that would occur only with respect to a particular activity, for a finite period, or only during the time required for construction or installation activities. Long-term impacts are those that are more likely to be persistent and chronic.

- ***Significant, moderate, minor, negligible, or no impact.*** These relative terms are used to characterize the magnitude or intensity of an impact. Significant impacts are those effects that would result in substantial changes to the environment and should receive the greatest attention in the decision-making process. Less than significant impacts (i.e. moderate, minor, or negligible) are those that would be slight but detectable.

- ***Adverse or beneficial.*** An adverse impact is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment.

Table 3-1 provides an overview of potential impacts anticipated under each alternative considered, broken down by resource area. **Sections 3.2-3.14** of this EA address these impacts in more detail.

Table 3-1. Summary of Potential Environmental Impacts by Alternative

RESOURCE AREA	PROJECT 1	PROJECT 2		
	Proposed Action	**No Action Alternative**	**Proposed Action**	**Alternative 2**	**No Action Alternative**
Noise	Short-term, minor, adverse impacts on the noise environment would be expected due to the use of heavy equipment and construction traffic during construction and demolition activities.	No impacts on noise would be expected.	Short-term, minor, adverse impacts on the noise environment would be expected due to the use of heavy equipment and construction traffic during construction and demolition activities.		No impacts on noise would be expected.
Land Use	Long-term, negligible, adverse impacts on land use.	No impacts on land use would be expected.	Short- and long-term, minor to moderate, adverse impacts on land use.		No impacts on land use would be expected.
Air Quality, Climate Change, and GHG	Short-term, minor, adverse impacts on air quality would occur due to emissions generated during the construction period. No long-term, adverse impacts on air quality would result. Short-term, minor, adverse impacts from GHGs.	No impacts on air quality would be expected.	Short-term, minor, adverse impacts on air quality would occur due to emissions generated during the construction period. Short-term, adverse	Short-term, minor, adverse impacts on air quality due to emissions generated during the construction period.	No impacts on air quality would be expected.

			impacts on air quality would be insignificant. Construction would result in short-term, minor, adverse impacts from GHGs.	No long-term, adverse impacts on air quality would result. Long-term, minor, beneficial impacts on air quality could result from the decrease transit times to the western end of the flightline for normal and emergency traffic, which would reduce mobile air emissions. Construction would result in short-term, minor, adverse impacts from GHGs.	

Earth Resources	***Regional Geology***	No impacts on geology would be expected**.**	No impacts on geology would be expected from either project.		No impacts on earth resources would be expected.
	Topography	Short-term, negligible, adverse impacts on topography would be expected from earthmoving or grading activities during construction.	Short-term, negligible, adverse impacts on topography would be expected from earthmoving or grading activities during construction., no impacts on topography would be expected from these activities post-construction.		
	Soils	Short-term, negligible, adverse impacts on soils would result from temporary disturbance of ground surfaces, earthmoving activities, and grading within the project areas during construction.	Short-term, negligible, adverse impacts on soils would result from temporary disturbance of ground surfaces, earthmoving activities, and grading within the project areas during construction. Long-term, minor, adverse impacts from the addition of up to approximately 3.05 acres of vegetation removal and grading to impervious surfaces would also be expected.		
	Important Farmlands	No impacts on important farmlands are expected from the Proposed Actions.	No impacts on important farmlands are expected from the Proposed Actions.		
	Geologic Hazards	Short-term, negligible, adverse impacts could occur due to geological hazards.	Short-term, negligible, adverse impacts could occur due to geological hazards.		
Water Resources	***Groundwater***	Short-term, minor to moderate, adverse impacts on groundwater during roadway	No impacts on water resources would be expected.	Short-term, minor, and long-term, negligible, adverse impacts on groundwater.	

		reconfiguration and overwatch facility construction and demolition due to ground disturbance from the use of heavy equipment. would not be expected to result in a significant impact on groundwater. Long-term, negligible, adverse impacts on groundwater would be expected because the slight increase in impervious surfaces from the proposed road would not drastically affect stormwater runoff.			No impacts on water resources would be expected.
	Surface Water	Short-term, minor, adverse effects on surface water during construction. Long-term, negligible effects on stormwater runoff.	Short-term, minor, and long-term, minor to moderate, impacts on surface water.	Short-term, minor, and long-term, minor to moderate, impacts on surface water.	
Wetland & Floodplains	Short- and long-term, minor to moderate, adverse impacts on wetlands.		No impacts on wetlands or floodplains would be expected.	Short- and long-term, minor to moderate, adverse impacts on wetlands and long-term, negligible, adverse impacts on floodplains.	No impacts on wetlands or floodplains would be expected.

	Short-term, minor, adverse effects on floodplains. impacts on floodplains would be negligible in the long-term.			Short- and long-term moderate adverse impacts on wetlands and long-term, negligible, adverse impacts on floodplains.	
Biological Resources	***Vegetation***	Short- and long-term, negligible to minor, adverse impacts on vegetation. Long-term, negligible, beneficial impacts would result from revegetation or landscaping of disturbed sites with native species supporting the native plant community on the installation.	No new impacts on biological resources would be expected.	Short- and long-term, minor, adverse impacts on vegetation. Long-term, negligible, beneficial impacts would result from revegetation or landscaping of disturbed sites with native species supporting the native plant community on the installation.	No new impacts on biological resources would be expected.
	Wildlife Species and Habitat	Short- and long-term, negligible to minor, adverse impacts on wildlife species and their habitats.		Short- and long-term, minor, adverse impacts on wildlife species and their habitats.	
	Threatened & Endangered Species	No impacts on any federally listed threatened or endangered species would be expected to occur as none of the species previously listed in **Section 3.8.1**		No impacts on any federally listed threatened or endangered species would be expected to occur as none of the species previously listed in **Section 3.8.1** are found in the project area. Short- and long-term, minor, adverse impacts on the	

		are found in the project area. Short- and long-term, minor, adverse impacts on the potential habitat for one candidate species, the monarch butterfly, would be expected to occur.		potential habitat for one candidate species, the monarch butterfly, would be expected to occur.	
Cultural Resources	No impacts on known historic properties would be expected.		No impacts on cultural resources would be expected.	No impacts on known historic properties would be expected.	No impacts on cultural resources would be expected.
Infrastructure **(Systems)**	***Transportation***	Short-term, negligible to minor, adverse impacts and long-term, minor, beneficial impacts. Long-term, minor, beneficial impacts on transportation.	No new impacts on infrastructure would be expected.	Short-term, negligible, adverse impacts and long-term, minor, beneficial impacts on the transportation system present at SJAFB. / Long-term, minor, beneficial impacts on the transportation system.	No new impacts on infrastructure would be expected.
	Electrical	Short- and long-term, negligible to minor, adverse impacts.		No new impacts would be expected.	
	Natural Gas				
	Petroleum, Oil and Lubricants/Liquid Fuel	No new impacts would be expected.			

	Water Supply	Short- and long-term, negligible to minor, adverse impacts.			
	Wastewater System/Collection				
	Stormwater Discharge/Collection			Short- and long-term, minor, adverse impacts.	Long-term, minor, adverse impacts.
	Heating/Cooling Distribution	Long-term, minor, adverse impacts.		No new impacts would be expected.	
	Communications	Short- and long-term, negligible to minor, adverse impacts.		No new impacts would be expected	
	Solid Waste Management	Short- and long-term, minor, adverse impacts.		Short-term, minor, adverse impacts.	Long-term, minor, adverse impacts.
Hazardous Materials & Wastes	Short-term, minor, adverse impacts.		Long-term, moderate, adverse impacts.	Short-term, minor, adverse impacts.	Long-term, moderate, adverse impacts.
Safety	***Contractor Safety***	Short-term, negligible, adverse impacts.	No impacts on safety would be expected.	Short-term, negligible, adverse impacts.	Continued long-term, minor, adverse impacts on safety would be expected.
	Military and Public Safety	Long-term, moderate, beneficial impacts.		Long-term, moderate, beneficial impacts.	

Socioeconomics	Short-term, negligible, beneficial impacts.	No impacts on socioeconomics would be expected.	Short-term, negligible, beneficial impacts.	No impacts on socioeconomics would be expected.
Environmental Justice	Short- and long-term, negligible, beneficial impacts on environmental populations.	No impacts on environmental justice populations would be expected.	No impacts on environmental justice populations would be expected.	No impacts on environmental justice populations would be expected.

Key:
Grey symbolizes actions that could have no (either new or adverse) impacts on the respective resource area.
Dark green symbolizes actions that could have negligible to minor, adverse impacts on the respective resource area.
Light green symbolizes actions that could have minor, adverse impacts on the respective resource area.
Orange refers to actions that could have minor to moderate, adverse impacts on the respective resource area.
Blue symbolizes actions that could have any type of beneficial impact on the respective resource area.

3.1.2 Resources Eliminated from Detailed Analysis

Based on the scope of the Proposed Actions and Alternatives, Airspace Management was removed from detailed analysis. Under the Proposed Actions, no changes to current airspace types, flight activities, or training would occur. Similarly, the No Action Alternatives would not change any current flight patterns for aircraft in the area. The DAF anticipates no short- or long-term impacts on airspace management; therefore, airspace management has been eliminated from detailed analysis in this EA.

3.1.3 Cumulative Impacts

CEQ defines cumulative impacts as the "are the effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR § 1508.1[g]). Cumulative impacts can result from individually minor but collectively significant past, present, and foreseeable future actions. Informed decision-making is served by consideration of cumulative impacts resulting from actions that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

The cumulative impacts analysis summarizes expected environmental impacts from the combined impacts of past, present, and reasonably foreseeable future actions in accordance with CEQ regulations implementing NEPA and CEQ guidance on cumulative effects (CEQ 1997). The geographic scope of the analysis varies by resource area. For example, the geographic scope of cumulative impacts on resources such as soils and vegetation are narrow and focused on the location of the resource. The geographic scope of air quality and wildlife and sensitive species is much broader and considers more county- or region-wide activities. Projects that were considered for this analysis were identified by reviewing SJAFB documents; news releases and published media reports; and publicly available information and reports from federal, state, and local agencies. Projects that do not occur in proximity (i.e., within several miles) of the proposed Project Area would not contribute to a cumulative impact and are generally not evaluated further.

Past, Present, and Reasonably Foreseeable Future Actions

Past actions are those within the cumulative impacts analysis areas that have occurred prior to the development of this EA. The impacts of these past actions are generally included in the description in **Section 3**. Present actions include current or funded construction projects, SJAFB or other agency operations near the proposed Project Area, and current resource management programs and land use activities within the cumulative impacts analysis areas. Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with respect to their effects. The following activities are present or reasonably foreseeable future actions:

On-Installation:

- *Small Arms Indoor Firing Range*: The current indoor firing range at SJAFB is the oldest and smallest in the USAF and exceeds capacity. SJAFB plans to demolish several existing storage facilities totaling approximately 50,000 ft^2 and replace it with a new enclosed training complex measuring less than 100,000 ft^2. Construction is reasonably foreseen to be begin within the next 3-5 years.

- *Child Development Center:* SJAFB will be constructing a new childcare facility for daytime recreation and education. The facility will be less than 50,000 ft^2 and will be situated in the Stoney Creek Planning District adjacent to an existing facility serving a similar function.

- *Airman Dormitory:* SJAFB is planning to construct a new two-story dormitory with a footprint of less than 50,000 ft^2. It will be used for unaccompanied Airmen assigned at the Base and situated next to existing dormitories in the Stoney Creek Planning District. Construction is reasonably foreseen to be begin within the next 5-10 years.

- *Consolidated Wing Support Center*: SJAFB will be constructing a new two-story administrative building with a footprint of less than 10,000 ft^2 in the Stoney Creek Planning District, It will consolidate various functions from across the installation. Construction is reasonably foreseen to be begin within the next 5-10 years.

Off-Installation:

- *North Carolina Department of Transportation (NCDOT) U.S. 70 Corridor Improvements*: U.S. 70 is one of the primary east-west corridors across eastern North Carolina and provides a vital connection to SJAFB. NCDOT is working to improve passenger and freight movement along the U.S. 70 corridor from Raleigh to the Port of Morehead City (NCDOT 2023a). The Goldsboro Bypass to Princeton project will construct approximately 6.7 miles of freeway, three interchanges, and a bridge crossing over Rains Mill Road/N. Pine Street in the Town of Princeton. The project will not add additional through lanes to the existing four-lane divided highway but will provide wider paved outside and median shoulders. According to the latest NCDOT update, the first section of the project is scheduled to begin in 2024; however, due to rising project costs, the draft 2023-2033 State Transportation Improvement Program does not include right-of-way (ROW) acquisition or construction funding for this project (NCDOT 2023b).

- *NCDOT U.S. 117 Corridor Upgrade Near Goldsboro:* Planning and development are underway on this proposed project, which would upgrade about 24 miles of the U.S. 117 corridor to interstate standards between I-40 in Sampson County and I-795 in Wayne County. Much of the project timeline is still to be determined, with the ROW acquisition scheduled to begin in 2029 (NCDOT 2023c).

- *STRAHNET Connector/NCDOT Future I-*795: DoD's Strategic Highway Network (STRAHNET) is a system of highways, including the Interstate System. STRAHNET Connectors include the "last mile" that link important military installations and ports to major components of the STRAHNET. This proposed project, part of the project known as Future I-795, would widen the road tying Slocumb Gate into US 17 and I-795 via Slocumb Street, Westbrook Road and Arrington Road (SDDCTEA 2023, STIP 2023). The Connector is also listed on Goldsboro Metropolitan Planning Organization (MPO)'s Transportation Project Needs for 2023-2027 (Goldsboro MPO 2023). This project would increase the need for the Project 1 Proposed Action, as it would result in additional traffic and the need for enhanced security through Slocumb Gate.

3.2 NOISE

Noise is any sound that is unwanted, loud, or unpleasant; interfering with communication; is intense enough to damage hearing; or is otherwise intrusive. How a person responds to noise varies depending on the type and characteristics of the noise. These characteristics include distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities, such as construction or vehicular traffic, which are essential to a communities' quality of life. Any area where occupants are more susceptible to the adverse effects of noise are considered noise sensitive receptors. A noise-sensitive receptor includes a land use where people involved in indoor or outdoor activities could be subject to stress or considerable interference from noise. Such locations or facilities include residential dwellings, hospitals, nursing homes, church, educational facilities, and libraries. Sensitive receptors could also include noise

sensitive cultural practices, some domestic animals, or certain wildlife species or broad areas such as nature preserves and designated districts in which occasional or persistent sensitivity to noise above ambient (background noise) levels exist in the environment. Ambient noise levels vary depending on housing density and proximity to open space, major traffic areas, or airports. This section discusses human noise impacts, but other resources may also be affected by noise including land use, biological resources, and Environmental Justice communities and are analyzed in the applicable resource sections.

A metric is a system used to measure or quantify a characteristic of a particular subject. Noise is a complex physical phenomenon, and as such, different noise metrics help to quantify the noise environment. The noise metrics relevant to this EA are the Day-Night Average Sound Level (DNL) and the equivalent sound level (L_{eq}). DNL is a noise metric combining the levels and durations of noise events and the number of events over an extended time period. It is a cumulative average computed over a 24-hour period to represent total noise exposure. L_{eq} is the average sound level in dB of a given event or period of time. L_{eq} is used to to understand the impacts of heavy equipment used in construction, demolition, and renovation activities. **Table 3-2** presents typical noise levels (dBA at 50 feet) for outdoor construction. Individual pieces of heavy equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet (USEPA 1971, FHWA 2006). With multiple items of equipment operating concurrently, noise levels can be relatively high within several hundred feet of active construction and demolition sites.

Table 3-2: Noise Levels Associated with Outdoor Construction

Construction Noise	Leq (dBA)
Ground Clearing	84
Excavation, grading	89
Foundations	78
Structural	85
Finishing	89

Sources: USEPA 1971, FHWA 2006.
Key: Leq = equivalent sound level; dBA = "A"-weighted decibel

Regulatory Framework. The federal government has established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. According to DAF, FAA, and U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are "clearly unacceptable" in areas where the DNL noise exposure exceeds 75 dBA, and "normally acceptable" in areas exposed to noise levels of 65 dBA or less (24 CFR Part 51). Areas that experience noise levels above 65 dBA and below 75 dBA are identified as "normally unacceptable."

Under the Noise Control Act of 1972, the Occupational Safety and Health Administration (OSHA) established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed is 115 dBA, and exposure to this level must not exceed 15 minutes within an 8-hour period. Additionally, the standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that reduces sound levels to acceptable limits (OSHA 2008).

DoDI 4715.13, *DoD Operational Noise Program*, established policy, assigns responsibilities, and prescribes procedures for administering the DoD Operational Noise Program and managing military noise. Noise levels and land use compatibility at SJAFB are maintained through the Air Installations Compatible

Use Zones (AICUZ) program. Additionally, noise guidelines for Wayne County are presented in the Code of Ordinances, *Chapter 30: Article III Noise.*

3.2.1 Affected Environment

Noise sources at SJAFB consist of aircraft operations associated with the airfields. All major noise sources are located along the flight line to the south and southeast of both project areas. In addition to aircraft noise, on-installation construction, aircraft ground support equipment for maintenance purposes, and vehicle traffic produce noise; however, that noise is temporary and negligibly contributes to the average noise level. The project areas are within the aircraft generated noise contours and range from 70 to 75 dBA DNL.

SJAFB's AICUZ program is implemented to protect public health and safety while protecting military airfields from encroachment (USAF 2018). Incompatible land uses around SJAFB include 32 acres of residential, 3 acres of commercial and 2 acres of public uses within CZs and Accident Potential Zones (APZs) (USAF 2018). See **Section 3.3** for more information on land use. The AICUZ program also outlines noise zone contours around the airfield. Encroachment into these zones can lead to increased noise complaints and diminish mission execution. However, encroachment concerns are reserved for off-installation development surrounding SJAFB. Both proposed projects are within the installation boundaries in the 70-dBA and 75-dBA noise zones, due to the proximity to the airfield. Neither project is sited within an APZ or CZ.

The nearest noise sensitive receptors are off-installation, approximately 1,500 to 3,000 feet away from the proposed project areas. A large, forested area of mixed hardwoods, including Stoney Creek, buffers the installation. Because the surrounding area is largely forested, some airfield and operational noise is attenuated by the trees, providing partial year-round noise abatement for adjacent off-installation areas. The nearest noise-sensitive receptors are located as follows:

- Approximately 1,500 feet to the northwest down South Slocumb Street, a U.S. Eastern Carolina Housing development that encompasses residential homes and churches.

- Approximately 3,000 feet to the north, a residential neighborhood.

The nearest on-installation sensitive receptors are the SJAFB Education Center and Library and the installation's unaccompanied housing located approximately one-quarter to one-half mile to the northeast of both proposed project areas. See **Section 3.14** for further discussion on Environmental Justice and the people who reside in these housing communities.

3.2.2 Environmental Consequences

Analysis of potential noise impacts is based on changes to the ambient noise environment or potential changes to land use compatibility due to noise caused by implementation of a proposed action. Impacts on noise would be considered significant if a proposed action were to result in the violation of applicable federal or local noise regulations, create appreciable areas of incompatible land use outside the installation boundary, or result in noise that would negatively affect the health of the community.

Project 1 Proposed Action:

Short-term, minor, adverse impacts on the noise environment would be expected due to the use of heavy equipment and construction traffic during construction and demolition activities. All construction and demolition would occur within the installation's boundary, be collocated with other existing noise-compatible activities, be temporary in nature, and end with the facility construction phase. These activities would be conducted in the context of an active installation where aircraft and other types of military noise

are typical. Some people living or working near the project areas could notice or be bothered by the noise. The nearest sensitive receptors, which are residences, would generally experience noise levels below 70 dBA from construction equipment operation because they are more than 1,000 feet away. Given the temporary nature of proposed construction and demolition, distance to nearby noise-sensitive receptors, and the existing noise environment, these impacts would be minor. The following management actions would be performed to further reduce any realized noise impacts:

- Heavy equipment use would primarily occur during normal weekday business hours.
- Heavy equipment mufflers would be properly maintained and in good working order.
- Personnel, particularly equipment operators, would wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Adverse impacts would be further reduced by revegetation of the project area and installation of facilities upon completion of the construction phase, which would provide additional noise abatement.

Operation of construction vehicles to transport materials to and from the project area would temporarily add to existing traffic noise in the project area. Resulting noise impacts on the environment from construction traffic at the proposed project area would be minor.

Project 1 No Action Alternative:

Under the Project 1 No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.2.2** would remain unchanged. Therefore, no impacts on noise would be expected.

Project 2 Proposed Action:

Short-term, minor, adverse impacts on the noise environment would be expected due to the use of heavy equipment and construction traffic during construction and demolition activities. All construction and demolition would occur within the installation's boundary, be collocated with other existing noise-compatible activities, be temporary in nature, and end with the facility construction phase. These activities would be conducted in the context of an active installation where aircraft and other types of military noise are typical. Some people living or working near the project area could notice or be bothered by the noise. Proximity to and resulting noise effects on sensitive receptors would be similar to Project 1.

Construction activities would temporarily increase traffic noise to and from the project area. The additional construction-related traffic noise would be temporary and impacts on the noise environment would be minor. Because the installation and surrounding community is accustomed to aircraft and general operational noise on the installation, the temporary increase in traffic noise along the Flightline Access Road would not be perceptible; therefore, these impacts would be negligible.

Project 2 Alternative 2:

Impacts on noise under Project 2 Alternative 2 would be the same as those described for Project 2 Proposed Action. All construction and demolition would occur within the installation's boundary, be collocated with other existing noise-compatible activities, be temporary in nature, and end with the facility construction phase. Construction activities would temporarily increase traffic noise to and from the project area. The additional construction-related traffic noise would be temporary and impacts on the noise environment

would be minor. Proximity to and resulting noise effects on sensitive receptors would be similar to Project 1.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.2.2** would remain unchanged. Therefore, no impacts on noise would be expected.

3.2.3 Cumulative Impacts

Noise decreases with distance; therefore, increases to the ambient noise environment from operation of construction vehicles or equipment would be generally confined to within 0.5 miles of the proposed project area. All construction activities required for the Proposed Action would be conducted in an area where aircraft operations, vehicle travel, and industrial activities are typical and where the ambient noise environment is between 70 and 75 dBA. The intermittent, temporary increases in construction noise and traffic noise from the U.S. 70 corridor improvements, the U.S. 117 corridor upgrade, STRAHNET Connector, the Small Arms Indoor Firing Range, the Child Development Center, the Airman Dormitory, and the Consolidated Wing Support Center would negligibly affect the ambient noise levels of that area. At 50 feet from a construction activity, the noise level would not be expected to exceed 90 dBA, which is compliant with OSHA standards. The U.S. 70 corridor is approximately 2.5 miles to the east of both Project 1 and 2, while the U.S. 117 corridor is 2.15 miles to the west. The Child Development Center is .89 miles to the northeast and the Consolidated Wing Support Center is .5 miles north of both project 1 and 2. Therefore, implementation of the Proposed Actions would contribute negligibly to the noise environment if implemented concurrently with these reasonably foreseeable projects. If implemented concurrently with the reasonably foreseeable Small Arms Indoor Firing Range and the Airman Dormitory, which are within 0.5 miles of the proposed Projects 1 and 2, cumulative noise impacts from operation of construction vehicles, equipment, and construction activities would be negligible to minor, depending upon the equipment used. Therefore, implementation of the Proposed Actions, combined with the reasonably foreseeable projects, would not result in significant impacts on the noise environment.

3.3 LAND USE

Land use refers to real property classifications indicating either natural conditions or the types of human activity occurring on a parcel of land. In many cases, land use descriptions are organized in master planning and local zoning laws. Land use planning ensures orderly growth and compatible uses among adjacent property parcels or areas. However, no nationally recognized convention or uniform terminology for describing land use categories exists. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions (USAF 2018). Land use is described by human economic and cultural activities that are practiced in a given place (USEPA 2022). Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. A wide variety of land use categories result from human activity. Descriptive terms for human activity land uses generally include commercial, industrial, military, residential, agricultural, institutional, transportation, communications and utilities, and recreational (USAF 2018).

In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential effects on a project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its permanence (USAF 2018).

3.3.1 Affected Environment

SJAFB consists of 3,233 acres within the southeastern portion of the city limits of Goldsboro, North Carolina, and is a predominately urbanized area. Goldsboro is the county seat and largest municipality, located in the center of Wayne County in east-central North Carolina (**Figure 2-1**). Land uses that occur adjacent to SJAFB primarily consist of agricultural, commercial, residential, and industrial uses (USAF 2018).

The long-term ability to capitalize on undeveloped acreage without constraints depends on the installation's ability to plan future uses and facilities strategically, to prevent internal encroachment. SJAFB has a total of four planning districts formed based on 33 identified land uses rather than parcel-by-parcel assignment. The districts enhance future land use plans at the installation, regulate the character of each district, and ensure long-term mission effectiveness (USAF 2018).

The Proposed Actions fall within various planning districts and land use designations, including the Neuse Planning District, Ammo Planning District, Stoney Creek Planning District, and Housing Planning District. The Slocumb Gate ECF and Flightline Access Road projects would be constructed in the Stoney Creek and Neuse Planning Districts, respectively. The Stoney Creek Planning District future permitted land uses include light industrial; industrial; administrative; small-scale administrative; medical; community service; lodging; community commercial; unaccompanied housing; small-scale retail and service; outdoor recreation; and open space. The Neuse Planning District future permitted land uses include airfield operations and maintenance; industrial; light industrial; munitions storage; administrative; small-scale administrative; community service; small-scale retail and service; unaccompanied housing; outdoor recreation; and open space. Additionally, both planning districts require the implementation of increased security, restricted access, and setbacks.

Within SJAFB, operational land use is classified by an associated installation activity. Each operational land use area may encompass several different land use types. The operational land use classifications at SJAFB include the following:

- Airfield - areas including the runway, taxiways, aprons, accident prevention CZs
- Aircraft Operations and Maintenance - areas including hangars, tarmacs, maintenance shops, and aircraft support buildings
- Industrial - areas including warehouses, storage facilities, engineering and support buildings, railroad facilities, and the main power plant
- Administrative - areas including installation offices and support facilities
- Community (Commercial) - areas including the Commissary and the Base Exchange Complex
- Community (Service) - areas including the chapel and religious education center
- Medical - areas including the hospital and dental clinic
- Housing (Accompanied) - areas including installation military family housing
- Housing (Unaccompanied) - areas including installation dormitories
- Outdoor Recreation - areas including athletic fields, golf course, picnic areas, and nature trails
- Open Space - areas that have no regular usage
- Water - Neuse River, Stoney Creek, and golf course ponds

SJAFB displays land use characteristics typical of an active military installation with a flightline and associated maintenance hangars and workshops, an area with administrative buildings and retail and recreation facilities, and military housing areas. The typical land use categories and the associated installation acreages are presented in **Table 3-3**.

Table 3-3: SJAFB Existing Land Use

Land Use Category	Acres
Administrative	22.33
Aircraft Operations and Maintenance	298.92
Aircraft Clearance	1,066.72
Aircraft Pavement	
Community (Commercial)	57.45
Community (Service)	20.33
Housing (Unaccompanied)	287.90
Industrial	282.51
Medical/Dental	32.96
Open Space	595.49
Outdoor Recreation	264.51
Water	203.97
Other	62.63
Total	3,195.72

Source: SJAFB 2017.

3.3.2 Environmental Consequences

Evaluation of potential land use impacts is based on the level of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. In general, a land use impact would be considered adverse if it were to meet one or more of the following requirements:

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

Project 1 Proposed Action:

The Project 1 Proposed Action would have long-term, negligible, adverse impacts on land use within the project area. Implementation of the Proposed Action, which includes demolition of exiting roadway and construction of new roadway in the vicinity of Slocumb Gate, would not significantly decrease the amount of unimproved grounds. The entirety of this project would occur in an approximately 22.6-acre developed area of the installation. Under the Proposed Action, 57,775 ft^2 of roads would be constructed. In addition, 30,567 ft^2 of pavement would be removed. As such, approximately 27,208 ft^2, or approximately 0.625 acres, of land would be converted to impervious surfaces under the Proposed Action. Most of the land that would be converted to impervious surfaces under the Project 1 Proposed Action consists of improved

landscaped grounds around the existing buildings and roadways. The proposed roadways would not significantly decrease the amount of unimproved grounds, minimizing potential impacts on land use. The existing land use category for the project area would not change, since the land would continue to be used as an ECF; therefore, the Project 1 Proposed Action would be compatible with existing land uses in the area.

Additionally, under the Project 1 Proposed Action, AVBs would be installed on all inbound and outbound lanes and an overwatch facility would be constructed at or near the end of the Response Zone. Approximately 310 ft^2 of AVBs would be installed in the inbound and outbound lanes of the Response Zone and an approximately 350 ft^2 overwatch facility would be constructed in the Response Zone to facilitate surveillance and armed response, as directed by the UFC. The installation of AVBs and an overwatch position would not adversely affect land use in the area, as it would disturb a relatively small area that is already highly developed with impervious surfaces.

The Project 1 Proposed Action would result in long-term, negligible, adverse impacts on land use within the immediate areas. There are no known conflicts between Project 1 and objectives of federal, state, regional, or local land use plans, policies, or controls for the site. Proposed demolition, construction, and improved Slocumb Gate ECF operation would not change the current land user or be incompatible with existing or future land uses in the area.

Project 1 No Action Alternative:

No changes from those described in **Section 3.2.2** would occur as a result of the Project 1 No Action Alternative. Operational forces would continue to use the existing Slocumb Gate access roadways and the proposed replacement roads, AVBs, and overwatch positions would not be constructed. As a result, no short- or long-term impacts on land use would be anticipated.

Project 2 Proposed Action:

The Project 2 Proposed Action would have short- and long-term, minor to moderate, adverse impacts on land use within the project area. Under the Project 2 Proposed Action, a new road would be constructed to improve normal and emergency traffic access to the western end of the flightline. The entirety of this Proposed Action would occur in an approximately 46.17-acre developed area of the installation. Under the Project 2 Proposed Action, a curved road that is 28 feet wide and 2,700 feet in length would be constructed. Additionally, a 600-foot segment of road would run perpendicular to, and connect the proposed road, to Jabara Avenue. The majority of this Proposed Action would result in a land use change due to conversion of a portion of forested area into impervious surface. Additionally, a small portion of the area would be converted from improved landscaped grounds to impervious surfaces. The removal of forested area as a result of the Project 2 Proposed Action would result in short-term, moderate, adverse impacts as land use would change from undeveloped, wooded open space to airfield operations and maintenance, thus slightly changing the overall land use percentages in these categories. There are no known conflicts between the Project 2 Proposed Action and objectives of federal, state, regional, or local land use plans, policies, or controls for the site. Construction and operation of the proposed Flightline Access Road would not impact the use of lands nor would they cause a restriction on future land uses adjacent to the site.

Project 2 Alternative 2:

Impacts on land use under Project 2 Alternative 2 would be the same as those described for Project 2 Proposed Action.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the new Flightline Access Road would not be constructed, and the existing conditions discussed in **Section 3.3.1** would remain unchanged. General traffic and emergency vehicles would continue to take a long, circuitous route to reach the western edge of the flightline. No impacts on land use would be anticipated.

3.3.3 Cumulative Impacts

The Proposed Actions would capitalize on many existing in-place land use elements. No impacts on installation land use are expected. The proposed NCDOT roadway improvements would be largely comprised of road widening, rather than the construction of entirely new roads. The proposed construction of a Small Arms Indoor Firing Range, Child Development Center, Airman Dormitory, and Consolidated Wing Support Center would have long term, minor impacts on land use as a portion of the Proposed Action would result in the conversion of undeveloped forest land to developed land. The impacts of the Proposed Actions on land use would be minor as the Proposed Actions would not result in a land use change that would be incompatible with, nor change, the existing land use for the Project Areas and would not affect land use on SJAFB nor in the Proposed Action areas. Therefore, cumulative impacts on land use would be minor.

3.4 AIR QUALITY, CLIMATE CHANGE, AND GREENHOUSE GASES

Air quality is defined by the concentration of various pollutants in the atmosphere at a given location. Under the Clean Air Act (CAA), the six pollutants defining air quality, called "criteria pollutants," are carbon monoxide (CO), sulfur dioxide, nitrogen dioxide, ozone (O_3), suspended particulate matter (measured less than or equal to 10 microns in diameter [PM_{10}] and less than or equal to 2.5 microns in diameter [$PM_{2.5}$]), and lead. CO, sulfur oxides (SO_X), nitrogen oxides (NO_X), lead, and some particulates are emitted directly into the atmosphere from emissions sources. NO_X, O_3, and some particulates are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes. Volatile organic compound (VOC) and NO_X emissions are precursors of O_3 and are used to represent O_3 generation.

Under the CAA (42 U.S.C. Chapter 85), the U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) for criteria pollutants. Each state has the authority to adopt air quality standards stricter than those established by the USEPA. The State of North Carolina accepts the federal NAAQS (15A North Carolina Administrative Code Section 02D.0400). Areas that are and have historically been in compliance with the NAAQS or have not been evaluated for NAAQS compliance are designated as attainment areas. Areas that violate a federal air quality standard are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas.

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity determination are called *de minimis* levels and are specified at 40 CFR § 93.153. The General Conformity Rule does not apply to federal actions occurring in attainment areas.

Climate Change and Greenhouse Gases (GHGs). Global climate change refers to long-term fluctuations in temperature, precipitation, wind, sea level, and other elements of Earth's climate system. Of particular interest, GHGs are gas emissions that trap heat in the atmosphere. GHGs include water vapor, carbon dioxide (CO_2), methane, nitrous oxide, tropospheric O_3, and several fluorinated and chlorinated gaseous

compounds. Most GHGs occur naturally in the atmosphere but increases in concentrations result from human activities such as burning fossil fuels. Scientific evidence indicates a trend of increasing global temperature over the past century because of an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to have negative economic and social consequences across the globe. The dominant GHG emitted is CO_2, accounting for 79 percent of all GHG emissions as of 2021, the most recent year for which data are available (USEPA 2023a). Global warming potential was developed to allow comparisons of the impacts of different GHGs. The global warming potential provides a common unit of measure, which allows analysts to calculate total warming potential of different GHGs, and allows policymakers to compare emissions reduction opportunities. To estimate global warming potential, all GHGs are expressed relative to a reference gas, CO_2, which is assigned a global warming potential of one (1). All GHGs are multiplied by their global warming potential, and the results are added to calculate the total equivalent emissions of CO_2 (CO_2e).

E.O. 13990, *Protecting the Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, signed January 20, 2021, reinstated the *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*, issued on August 5, 2016, by CEQ that required federal agencies to consider GHG emissions and the effects of climate change in NEPA reviews, and directs federal agencies to determine an appropriate method for analyzing such emissions (CEQ 2016). The CEQ *National Environmental Policy Act Interim Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*, issued on January 9, 2023, recommends quantifying a proposed action's GHG emissions in appropriate context (CEQ 2023). In accordance with the 2016 Final Guidance and the 2023 Interim Guidance, estimated CO2e emissions associated with the Proposed Action are provided in this EA for informative purposes. Per the 2023 Interim Guidance, "Agencies should exercise judgement when considering whether to apply this guidance to the extent practicable to an on-going NEPA process." At the time of this analysis, DAF guidance providing specifics on applying social cost of GHG analyses and ensuring standardization across the DAF has not been finalized. Therefore, no social cost of GHG analysis has been prepared for this EA.

E.O. 14008, *Tackling the Climate Crisis at Home and Abroad*, further strengthens E.O. 13990 by implementing objectives to reduce GHG emissions and bolster resilience to the impacts of climate change and requiring federal agencies to develop and implement climate action plans. The DAF *Climate Action Plan* recognizes the department's role in contributing to climate change and aims to address the challenges and risks posed by climate change through the implementation of climate priorities including making climate-informed decisions and optimizing energy use, and pursuing alternative energy sources. The DAF also follows the *DoD Climate Adaptation Plan* and considers the DoD *Climate Risk Analysis* for climate change planning (DAF SAF/IE 2022). *The Long-term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050* sets target benchmarks to achieve net-zero GHG emissions by no later than 2050 through emission-reducing investments such as carbon-free power generation, zero-emission vehicles, energy-efficient buildings, and expansion and protection of forest areas (DOS and EOP 2021).

3.4.1 Affected Environment

The region of influence for the air quality analysis is Wayne County, North Carolina, which contains SJAFB. Wayne County is within the Southern Coastal Plain Intrastate Air Quality Control Region (40 CFR § 81.152). The USEPA has designated Wayne County as in attainment for all criteria pollutants (40 CFR § 81.334) (USEPA 2023b). As such, the General Conformity Rule is not applicable, and a General Conformity Analysis is not required. **Table 3-4** includes the most recent available annual emissions inventory for Wayne County.

Table 3-4: 2020 Annual Emissions Inventory for Wayne County

County	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
Wayne County	3,346	14,152	13,998	111	5,415	1,325	0.108	3,289,535

Source: USEPA 2023c.
Note: To calculate the total CO_2e, all GHGs are multiplied by their global warming potential and the results are added together. The global warming potentials used to calculate CO_2e are as follows: CO_2 = 1; methane = 25; nitrous oxide = 298.
Key: tpy = tons per year

The USEPA and North Carolina Department of Environmental Quality (NCDEQ) regulate air quality in North Carolina. SJAFB operates under an air permit administered by NCDEQ for construction and operation of stationary air emissions sources.

Climate Change and GHGs. Ongoing global climate change has contributed to rising seas and retreating shorelines, increased storm intensity, increased precipitation, decreased crop productivity, disruption of natural ecosystems, and human health effects in the southeastern U.S., including North Carolina (Carter et al. 2018). Changes to regional climate patterns could result in regional changes to flooding frequency and intensity, reduced air quality, damage to homes and transportation infrastructure, and increased consumption of electricity. Cities, roads, ports, and water supplies in the southeast are vulnerable to the impacts of storms and sea level rise (USEPA 2016). A portion of the Slocumb Gate ECF project area is within the 100- and 500-year floodplains (see **Section 3.7**) (USAF 2018). High air temperatures can cause adverse health effects (e.g., heat stroke, dehydration), especially in vulnerable populations, which can affect cardiovascular and nervous systems. Warmer air also can increase the formation of ground-level O_3, which can lead to a variety of health effects, including aggravation of lung diseases and increased risk of death from heart or lung disease (USEPA 2016). Once emitted, air pollutants can be dispersed via air, water, soil, and living organisms. Dispersion pathways depend to a large extent upon environmental conditions, such as wind speed and topography.

Historically, the average temperature at SJAFB is 81.2 degrees during the hottest month of July, and the average temperature is 43.4 during the coldest month of January. The region has an average annual precipitation of 49.8 inches per year. The wettest month of the year is August, with an average rainfall of 5.7 inches (IDcide 2023). In 2020, North Carolina produced 106.5 million metric tons of CO_2 emissions and was ranked the 13th highest producer of CO_2 within the U.S. (USEIA 2022).

3.4.2 Environmental Consequences

The air quality analysis estimates the effects on air quality and climate change that would result from modifying the Slocumb Gate ECF and construction of the flightline access road. Because Wayne County is in attainment for all criteria pollutants, the General Conformity Rule is not applicable to emissions of criteria pollutants from the Proposed Actions. Per the Air Quality EIAP Guide, the DAF applies insignificance indicators to actions occurring in areas designated as attainment or unclassified for the NAAQS to provide an indication of the significance of potential impacts on air quality. The insignificance indicator used by the DAF is the 250 tons per year (tpy) Prevention of Significant Deterioration threshold, as defined by USEPA, and is applied to emissions for all criteria pollutants besides lead, that have been designated attainment or unclassified. The insignificance indicator for lead is 25 tpy. The insignificance indicators do not denote a significant impact; however, they do provide a threshold to identify actions that have insignificant impacts on air quality. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance of one or more NAAQS (AFCEC 2020).

The DAF Air Conformity Applicability Model, version 5.0.18a, was used to estimate the annual air emissions from the modification and construction actions. The potential for air quality impacts was assessed in accordance with Air Force Manual (AFMAN) 32-7002, *Environmental Compliance and Pollution Prevention*; the EIAP (32 CFR Part 989); and the General Conformity Rule (40 CFR Part 93 Subpart b). The Air Conformity Applicability Model with detailed emissions calculations are included in **Appendix C**.

Consistent with E.O. 14008, 2016 CEQ Final Guidance, and the 2023 Interim Guidance, this EA examines GHGs as a category of air emissions. It also examines potential future climate scenarios to determine whether elements of the Proposed Actions would be affected by climate change. This EA does not attempt to measure the actual incremental impacts of GHG emissions from the Proposed Actions, as there is a lack of consensus on how to measure such impacts. Global and regional climate models have substantial variation in output and do not have the ability to measure the actual incremental impacts of a project on the environment.

Project 1 Proposed Action:

Short-term, minor, adverse impacts on air quality would occur due to emissions generated during the construction period for the Project 1 Proposed Action. Emissions of criteria pollutants would be directly produced from operation of heavy equipment, demolition of existing pavement, heavy duty diesel vehicles hauling supplies and debris to and from the project area, workers commuting daily to and from the project area in their personal vehicles, and ground disturbance. All such emissions would be temporary in nature and produced only when construction activities are occurring.

Table 3-5 lists the estimated annual air emissions associated with the Project 1 Proposed Action. The analysis assumes construction for the Slocumb Gate ECF would occur over a 1-year period using a surrogate year of 2028 to equate a worse-case emissions scenario in which all construction occurs in the same year. The actual construction period and timeline for construction is likely to be different than was assumed for the analysis. The total net annual emissions from construction would not exceed the insignificance indicator of 250 tpy for all criteria pollutants (25 tpy for lead). Therefore, the short-term, adverse impacts on air quality would be insignificant.

Table 3-5: Estimated Air Emissions from Construction for the Project 1 Proposed Action

Year	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
2028	1.140	0.208	1.649	0.003	1.845	0.049	<0.001	334.4
Insignificance indicator	250	250	250	250	250	250	25	NA
Exceeds insignificance indicator?	No	No	No	No	No	No	No	NA

Key: NA = not applicable

Construction activities would incorporate best management practices (BMPs) and environmental control measures to minimize emissions of criteria pollutants and fugitive dust. These could include using diesel particulate filters in construction equipment, limiting equipment and vehicle idling times, using existing electrical connections preferentially over the use of generators, and dust suppression techniques such as wetting the ground surface and covering stockpiles of material. These BMPs and environmental control measures could reduce uncontrolled particulate matter emissions from a construction site by approximately 50 percent depending upon the number of BMPs and environmental control measures required and the potential for air emissions.

No additional stationary sources of air emissions would be installed at the Slocumb Gate ECF, and no additional personnel and associated vehicle trips would enter or exit the installation via the improved ECF. Therefore, the Project 1 Proposed Action would not increase annual air emissions produced by SJAFB or from motorized vehicles, and no long-term, adverse impacts on air quality would result.

Climate Change and GHGs. Construction would produce approximately 334.4 tons of direct CO_2e, representing 0.010 percent of annual CO_2e emissions in Wayne County. By comparison, 334 tons of CO_2e is approximately the GHG footprint of 67 passenger vehicles driven for 1 year or 38 homes' energy use for one year (USEPA 2023d). As such, air emissions produced during construction would not meaningfully contribute to the potential effects of global climate change and would not considerably increase the total CO_2e emissions produced by Wayne County. Therefore, construction would result in short-term, minor, adverse impacts from GHGs.

Ongoing changes to climate patterns in the southeastern U.S. are described in **Section 3.4.1**. These climate changes are unlikely to affect the DAF's ability to implement the Project 1 Proposed Action. All elements of the Project 1 Proposed Action are only indirectly dependent on any of the elements associated with future climate scenarios (e.g., meteorological changes). At the time of this analysis, no future climate scenario or potential climate stressor would have appreciable effects on any element of the Project 1 Proposed Action. The climate stressor with the greatest potential to affect the Proposed Action is changes in flooding frequency and intensity, which could affect the new infrastructure built in the floodplains. To reduce exposure to potential flooding, design of the ECF would take into consideration site engineering protocols to elevate infrastructure above the designated flood level (see **Section 3.7**).

Project 1 No Action Alternative:

Under the Project 1 No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.4.1** would remain unchanged. No impacts on air quality would be expected.

Project 2 Proposed Action:

Short-term, minor, adverse impacts on air quality would occur due to emissions generated during the construction period for the Flightline Access Road project. As with the Project 1 Proposed Action, emissions of criteria pollutants would be directly produced from operation of heavy equipment, demolition of existing pavement, heavy duty diesel vehicles hauling supplies and debris to and from the project area, workers commuting daily to and from the project area in their personal vehicles, and ground disturbance. All such emissions would be temporary in nature and produced only when construction activities are occurring.

Table 3-6 lists the estimated annual air emissions associated with the Project 2 Proposed Action. The analysis assumes construction for the road would occur over a 1-year period using a surrogate year of 2028 to equate a worse-case emissions scenario in which all construction occurs in the same year. The actual construction period and timeline for construction is likely to be different than was assumed for the analysis. The total net annual emissions from construction would not exceed the insignificance indicator of 250 tpy for all criteria pollutants (25 tpy for lead). Therefore, the short-term, adverse impacts on air quality would be insignificant.

Table 3-6: Estimated Air Emissions from Construction for the Project 2 Proposed Action

Year	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
2028	1.420	0.261	1.978	0.004	2.889	0.065	<0.001	394.5
Insignificance indicator	250	250	250	250	250	250	25	NA
Exceeds insignificance indicator?	No	No	No	No	No	No	No	NA

Key: NA = not applicable

Table 3-7: Estimated Air Emissions from Construction for the Project 1 and Project 2 Proposed Actions

Year	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
2028	2.560	0.469	3.627	0.007	4.734	0.114	<0.001	728.9
Insignificance indicator	250	250	250	250	250	250	25	NA
Exceeds insignificance indicator?	No	No	No	No	No	No	No	NA

Key: NA = not applicable

As with the Slocumb Gate ECF project, construction activities would incorporate BMPs and environmental control measures, as identified for the Project 1 Proposed Action, to minimize emissions of criteria pollutants and fugitive dust, which could reduce uncontrolled particulate matter emissions by approximately 50 percent. As shown in **Table 3-7**, the total net annual emissions from construction for both Project 1 and Project 2 Proposed Actions would not exceed the insignificance indicator of 250 tpy for all criteria pollutants (25 tpy for lead). Therefore, the additive short-term, adverse impacts on air quality from both projects combined would be insignificant.

No additional stationary sources of air emissions would be installed as part of the new access road, and no additional personnel and associated vehicle trips would occur. Therefore, the Project 2 Proposed Action would not increase annual air emissions produced by SJAFB or motorized vehicles and no long-term, adverse impacts on air quality would result. The Project 2 Proposed Action would, however, decrease transit times to the western end of the flightline for normal and emergency traffic, which would reduce mobile air emissions, resulting in long-term, minor, beneficial impacts on air quality. These long-term, beneficial impacts would begin following the construction period, in approximately 2029, and would continue indefinitely.

Climate Change and GHGs. Construction for the Project 2 Proposed Action would produce approximately 394.5 tons of direct CO_2e, representing 0.012 percent of annual CO_2e emissions in Wayne County. By comparison, 395 tons of CO_2e is approximately the GHG footprint of 80 passenger vehicles driven for 1 year or 45 homes' energy use for one year (USEPA 2023d). As such, air emissions produced during construction would not meaningfully contribute to the potential effects of global climate change and would not considerably increase the total CO_2e emissions produced by Wayne County. Therefore, construction would result in short-term, minor, adverse impacts from GHGs. The additive CO_2e emissions from construction for both the Project 1 and Project 2 Proposed Actions were estimated to be 728.9 tons.

Similar to the emissions from the Project 2 Proposed Action alone, these additive emissions would not meaningfully contribute to the potential effects of global climate change and would not considerably increase the total CO_2e emissions produced by Wayne County.

Ongoing changes to climate patterns in the southeastern U.S. are described in **Section 3.4.1**. These climate changes are unlikely to affect the DAF's ability to implement the Project 2 Proposed Action. All elements of the Proposed Action, in-and-of-themselves are only indirectly dependent on any of the elements associated with future climate scenarios (e.g., meteorological changes). The Proposed Action project area is not within a floodplain or coastal zone. At the time of this analysis, no future climate scenario or potential climate stressor would have appreciable effects on any element of the Project 2 Proposed Action.

Project 2 Alternative 2:

Project 2 Alternative 2 would result in short-term, minor, adverse impacts on air quality due to emissions generated during the construction period for Project 2. **Table 3-8** lists the estimated annual air emissions associated with Alternative 2. Air emissions from construction for Project 2 Alternative 2 would be slightly greater than those for the Project 2 Proposed Action because Project 2 Alternative 2 would include the construction of two bridges rather than the installation of culverts, which requires more earth moving activities and heavier equipment. As with the Project 2 Proposed Action, air emissions from construction would be temporary in nature and produced only when construction activities are occurring. Construction activities would incorporate BMPs and environmental control measures, as identified for the Project 1 Proposed Action, to reduce emissions of criteria pollutants from construction activities.

Table 3-8: Estimated Air Emissions from Construction for the Project 2 Alternative 2

Year	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
2028	1.533	0.283	2.180	0.005	2.892	0.069	<0.001	442.5
Insignificance indicator	250	250	250	250	250	250	25	NA
Exceeds insignificance indicator?	No	No	No	No	No	No	No	NA

Key: NA = not applicable

Table 3-9: Estimated Air Emissions from Construction for Project 1 and Project 2 Alternative 2

Year	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
2028	2.673	0.491	3.829	0.008	4.737	0.118	<0.001	776.9
Insignificance indicator	250	250	250	250	250	250	25	NA
Exceeds insignificance indicator?	No	No	No	No	No	No	No	NA

Key: NA = not applicable

As shown in **Table 3-9**, the total net annual emissions from construction for both Project 1 and Project 2 Alternative 2 would not exceed the insignificance indicator of 250 tpy for all criteria pollutants (25 tpy for lead). Therefore, the additive short-term, adverse impacts on air quality from both projects combined would be insignificant.

As with the Project 2 Proposed Action, no additional stationary sources would be installed as part of the new access road, and no additional personnel and associated vehicle trips would occur. Therefore, no long-term, adverse impacts on air quality would result. Long-term, minor, beneficial impacts on air quality could result from the decrease transit times to the western end of the flightline for normal and emergency traffic, which would reduce mobile air emissions. These long-term, beneficial impacts would begin following the construction period, in approximately 2029, and would continue indefinitely.

Climate Change and GHGs. Construction for Project 2 Alternative 2 would produce approximately 442.5 tons of direct CO_2e, an increase of 12 percent from the Project 2 Proposed Action, and would represent 0.013 percent of annual CO_2e emissions in Wayne County. By comparison, 443 tons of CO_2e is approximately the GHG footprint of 90 passenger vehicles driven for 1 year or 51 homes' energy use for one year (USEPA 2023d). As with the Project 2 Proposed Action, air emissions produced during construction would not meaningfully contribute to the potential effects of global climate change and would not considerably increase the total CO_2e emissions produced by Wayne County. Therefore, construction would result in short-term, minor, adverse impacts from GHGs. The additive CO_2e emissions from construction for both Project 1 and Project 2 Alternative 2 was estimated to be 776.9 tons. Similar to the emissions from Project 2 Alternative 2 alone, these additive emissions would not meaningfully contribute to the potential effects of global climate change and would not considerably increase the total CO_2e emissions produced by Wayne County.

As with the Project 2 Proposed Action, the ongoing changes to climate patterns in the southeastern U.S. are unlikely to affect the DAF's ability to implement the Project 2 Alternative 2, and no future climate scenario or potential climate stressor would have appreciable effects on any element of the Project 2 Proposed Action.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.4.1** would remain unchanged. No impacts on air quality would be expected.

3.4.3 Cumulative Impacts

Air emissions and GHGs would be produced from the reasonably foreseeable actions. Roadway and facility construction for U.S. 70, U.S. 117, the Small Arms Indoor Firing Range, Child Development Center, Airman Dormitory, and Consolidated Wing Support Center may coincide with the Project 1 and 2 Proposed Actions could contribute additional emissions of criteria pollutants in Wayne County; however, such occurrences would be temporary in nature and would cease upon completion of construction activities. BMPs and environmental control measures, as described for the Project 1 Proposed Action, would be implemented to minimize air emissions from the reasonably foreseeable actions and reduce cumulative impacts on air quality. The Prevention of Significant Deterioration insignificance indicators are applied to each individual project; therefore, the additive emissions of criteria pollutants from construction for the reasonably foreseeable actions in Wayne County would not be combined with the emissions from the Project 1 and 2 Proposed Actions and would not result in exceedance of the insignificance indicators for the Proposed Actions.

Ongoing changes to climate patterns in the southeastern U.S. are described in **Section 3.4.1**. These changes are unlikely to adversely impact construction associated with the reasonably foreseeable actions, including the Small Arms Indoor Firing Range, Child Development Center, Airman Dormitory, and Consolidated Wing Support Center likely would include new stationary air emissions sources (e.g., emergency generators, boilers)Because neither of the Proposed Actions include new permanent emissions sources,

additive operational emissions from the Proposed Actions combined with the operational emissions for the reasonably foreseeable actions would not occur. Therefore, long-term, cumulative impacts would not occur.

3.5 EARTH RESOURCES

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, soils, and, where applicable, geologic hazards and paleontology. Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their ability to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

Important farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981 (7 U.S.C. § 4201 et seq.). The intent of the FPPA is to minimize the extent that federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. The Natural Resources Conservation Service (NRCS) is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the Act (7 CFR Part 658). For the purposes of the FPPA, important farmland includes prime farmland, unique farmland, and farmland of statewide or local importance. The land could be cropland, pasture, rangeland, forest, or other land, but not urban developed land or water. The FPPA defines these important farmlands within 7 U.S.C. § 4201(c)(1) as follows:

- *Prime farmland:* Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and that is also available for these uses.

- *Unique farmland:* Land other than prime farmland that is used for the production of specific high value food and fiber crops. Unique farmland is not based on national criteria.

- *Farmland of statewide or local importance:* Land that is of statewide or local importance other than prime or unique farmland that is used for the production of food, feed, fiber, forage, or oilseed crops, as determined by the appropriate state or local government agencies (7 U.S.C. § 4201[c][1]).

Determination of whether an area is considered important farmland and potential impacts associated with a proposed action are based on the preparation of the Farmland Conversion Impact Rating Form (AD-1006) for areas where farmland soils occur and by applying criteria established at Section 658.5 of the FPPA (7 CFR Part 658). Lands that receive a combined total site assessment score of less than 160 points on the Farmland Conversion Impact Rating Form are not covered by the FPPA (7 CFR Part 658.2[a]).

3.5.1 Affected Environment

Regional Geography and Geology. The project areas for the Proposed Actions are within the Atlantic Coastal Plain physiographic region of North Carolina. This region is characterized by flat to gently rolling hills with extensive areas of wetlands and alluvial deposits. The predominate geology consists of unconsolidated thin beds of fine-grain sand, sandy loams, and clayey-sand commonly mapped in the region, including the Black Creek geologic formation (see **Figure 3-1**) (USGS 2023).

Topography. The topography of the project areas exhibits little topographic relief. The elevation ranges from approximately 100 to 120 feet above mean sea level (USGS 2016). There are no steep slopes within the project areas.

Soils. Eight (8) soil types are present within the project areas (see **Figure 3-1**). The characteristics of these soils are provided in **Table 3-10** (USDA 2023). Overall, soil associations found within the project areas consist of generally deep soils with depths ranging from 60 to 100 inches below ground surface (bgs) (152 to 254 centimeters bgs) to subsoil that are loamy.

Table 3-10: Soil Characteristics

Soil Name	Map Unit	Depth (inches)	Soil Characteristics
Coxville loam	Co	0 - 80	Poorly drained soil, moderately low permeability
Dragston Loamysand	Dr	0 - 66	Somewhat poorly drained soil, moderately rapid permeability
Goldsboro loamysand	GoA	0 - 76	Moderately well drained soil, with moderate permeability
John's sandyloam	Jo	0 - 60	Somewhat poorly to moderately well drained soil, with moderate permeability
Lumbee sandy loam	Lv	0 - 60	Poorly drained soil, with moderate permeability
Norfolk loamy sand, 0 to 2% slopes	NoA	0 - 100	Well drained soil, with moderate permeability
Norfolk loamy sand, 6 to 10% slopes	NoC	0 - 100	Well drained soil, with moderate permeability
Wickham loamy sand	WhB	0 - 78	Well drained soil, with moderate permeability

Important Farmland. The NRCS bases important farmland soil determinations on the most recent soil survey for an area. The most recent soil survey for Wayne County was completed in 2019 (USDA 2023). **Table 3-11** provides farmland designations and percent area for each soil type within the project areas.

Table 3-11: Soil Farmland Characteristics

Proposed Action	Map Unit	Farmland Designation	Percent Area	Approximate Acreage
Slocumb Gate	Jo	Prime Farmland if Drained	26%	5.9
	NoC	Farmland of Statewide Importance	15%	3.3
	WhB	Prime Farmland	59%	13.5
	Totals		*100%*	*22.7*

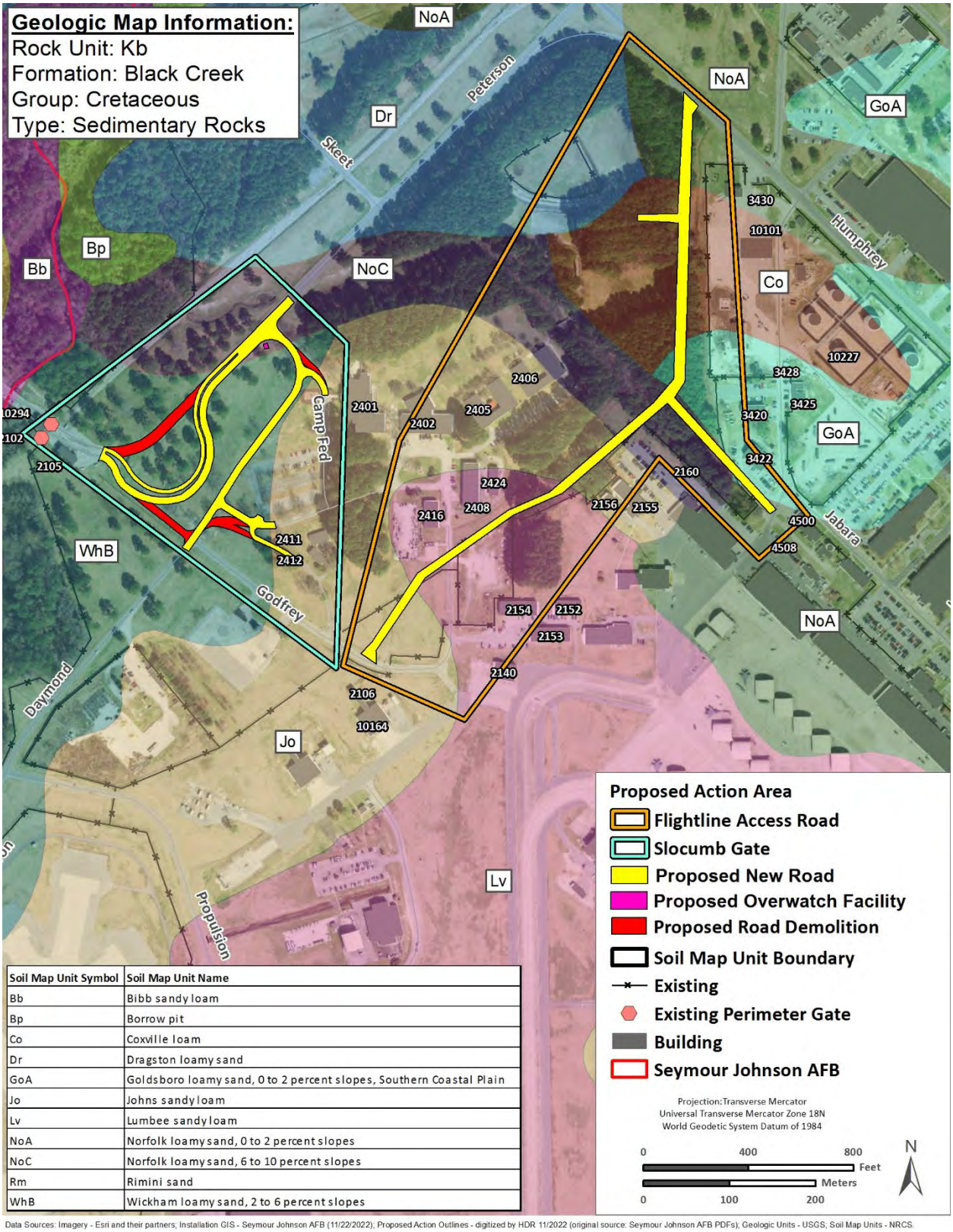
Flightline Access Road	Co	Farmland of Statewide Importance	17%	8.4
	Dr	Farmland of Statewide Importance	7%	3.5
	GoA	Prime Farmland	6%	2.9
	Jo	Prime Farmland if Drained	26%	12.9
	Lv	Prime Farmland if Drained	21%	10.6
	NoA	Prime Farmland	9%	4.5
	NoC	Farmland of Statewide Importance	14%	7.3
	Totals		*100%*	*50.1*

Source: USDA 2023.

The Project 1 project area contains approximately 3.3 acres of farmland of statewide importance (15 percent of site area), 13.5 acres of prime farmland (59 percent of site area), and 5.9 acres of prime farmland, if drained (26 percent of site area). The Project 2 project area totals approximately 19.2 acres of farmland of statewide importance (38 percent of site area), 7.5 acres of prime farmland (15 percent of site area), and 23.5 acres of prime farmland, if drained (47 percent of site area). The project areas are on an active Air Force base and do not have a history of agricultural use, based on historical aerial imagery (Google Earth 2023).

Geologic Hazards. Rockfalls, sinkholes, and minor earthquakes are common in eastern North Carolina. All parts of North Carolina with exposed rock outcrops are subject to these gravity-driven geologic hazards (Ready NC 2023). Sinkholes are common in North Carolina from the dissolution of minerals at depth (Ready NC 2023). In all parts of North Carolina, cretaceous-aged carbonate strata and interbedded salts are dissolved over time, which can lead to sinkholes. Earthquakes can happen with rock strata on either side of a geologic fault move relative to one another. While earthquakes are common in North Carolina, they are generally minor and do not cause structural damage to buildings (Ready NC 2023).

Figure 3-1: Earth Resources of the Project Areas



Soil Map Unit Symbol	Soil Map Unit Name
Bb	Bibb sandy loam
Bp	Borrow pit
Co	Coxville loam
Dr	Dragston loamy sand
GoA	Goldsboro loamy sand, 0 to 2 percent slopes, Southern Coastal Plain
Jo	Johns sandy loam
Lv	Lumbee sandy loam
NoA	Norfolk loamy sand, 0 to 2 percent slopes
NoC	Norfolk loamy sand, 6 to 10 percent slopes
Rm	Rimini sand
WhB	Wickham loamy sand, 2 to 6 percent slopes

Data Sources: Imagery - Esri and their partners; Installation GIS - Seymour Johnson AFB (11/22/2022); Proposed Action Outlines - digitized by HDR 11/2022 (original source: Seymour Johnson AFB PDFs); Geologic Units - USGS; Soil Map Units - NRCS.
Document Path: J:\2022\22-097_AF_SeymourJohnson_(Humphreys)\7.2_Work_In_Progress\Map_Docs\DOPPA\22_097_SJ_EA_Fig_X_Soils_Geologic_6x8_SC_AH.mxd

3.5.2 Environmental Consequences

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

Impacts on geology and soils would be adverse if they would alter the lithology (i.e., the character of a rock formation), stratigraphy (i.e., the layering of sedimentary rocks), and geological structures that dictate groundwater systems; change the soil composition, structure, or function within the environment; or increase the risk of geological hazards.

Project 1 Proposed Action:

Regional Geology. No impacts on geology would be expected from either project. Activities associated with the proposed construction, maintenance, and operation of Slocumb Gate would not alter lithology, stratigraphy, or the geological structures that control the distribution of aquifers and confining beds.

Topography. Short-term, negligible, adverse impacts on topography would be expected from earthmoving or grading activities during construction. Topography would be mildly altered to provide flat surfaces for the proposed access roads. Impacts would be negligible because the site does not contain substantially steep slopes and is generally level already. Earthmoving and grading would not be required for maintenance and operations; therefore, no impacts on topography would be expected from these activities post-construction.

Soils. Short-term, negligible, adverse impacts on soils would result from temporary disturbance of ground surfaces, earthmoving activities, and grading within the project areas during construction. These activities would excavate soils and expose rock materials, remove vegetation in some areas, and expose soils to erosion. The use of trucks and construction equipment would result in soil compaction, which could also lead to increased rates of erosion and alter soil structure. Specific construction limitations and considerations would depend on the type of construction activity and the specific subsurface composition encountered.

In general, accelerated erosion of soils would be short-term during construction activities and minimized by appropriately siting and designing facilities taking into account soil limitations, employing construction and stabilization techniques appropriate for the soil and climate, and implementing BMPs and erosion control measures. BMPs would include the installation of silt fencing and sediment traps, application of water to disturbed soil to reduce dust, and revegetation of disturbed areas as soon as possible following ground disturbance, as appropriate.

Construction materials would be appropriately stabilized with temporary erosion control measures during construction, and with long-term measures according to the Stormwater Pollution Prevention Plan (SWPPP) during construction and maintenance of the proposed roads. Impacts would be localized to the proposed disturbance areas due to the implementation of these measures and BMPs. Therefore, short-term impacts would be minor.

Long-term, minor, adverse impacts from the addition of up to approximately 3.05 acres of vegetation removal and grading to impervious surfaces would also be expected. Reduced soil infiltration and productivity and increased runoff from additional impervious surfaces would occur; however, permanent runoff control measures would be implemented to prevent erosion and flooding in surrounding areas. Project 1 would also include removal of 30,567 square feet (0.70 acres) of roads, which would create new

open areas in the areas where new roadway does not replace it. These measures, combined with construction BMPs, would reduce potential impacts from maintenance and operations.

Important Farmlands. Under the Project 1 Proposed Action, approximately 1.32 acres of prime farmland (Wickham loamysand) has the potential of being directly converted to non-agricultural use due to road construction. While the soils in the proposed project areas have farmland designations, the area itself is not covered by FPPA because the project areas are in an urban, military installation and have never been used for agricultural purposes. Therefore, no impacts on important farmlands are expected from the Proposed Actions.

Geologic Hazards. Short-term, negligible, adverse impacts could occur due to geological hazards. While earthquakes are common in North Carolina, they are generally minor and do not cause structural damage to buildings (Ready NC 2023). The proposed facilities would meet all building requirements outlined in applicable state and local building codes to minimize potential impacts from earthquakes.

While there are no slopes greater than 25 percent within the project areas, implementation of BMPs and erosion control measures, as well as other appropriate preventative measures identified by federal, state, and local agencies, would be implemented where applicable to minimize potential impacts from rockfalls. These preventative measures could include regular drain and culvert maintenance, drainage ditch and channel maintenance, vegetation maintenance, and implementation of roadside stabilization measures.

Project 1 No Action Alternative:

No changes from those described in **Section 3.2.2** would occur as a result of the Project 1 No Action Alternative. Operational forces would continue to use the existing Slocumb Gate access roadways and the proposed replacement roads, AVBs, and overwatch positions would not be constructed. As a result, no short- or long-term impacts on earth resources would be anticipated.

Project 2 Proposed Action

Regional Geology. No impacts on geology would be expected from either project. Activities associated with the proposed construction, maintenance, and operation of the Flightline Access Road would not alter lithology, stratigraphy, or the geological structures that control the distribution of aquifers and confining beds.

Topography. Short-term, negligible, adverse impacts on topography would be expected from earthmoving or grading activities during construction. Topography would be mildly altered to provide flat surfaces for the proposed access roads. Impacts would be negligible because the site does not contain substantially steep slopes and is generally level already. Earthmoving and grading would not be required for maintenance and operations; therefore, no impacts on topography would be expected from these activities post-construction.

Soils. Short-term, negligible, adverse impacts on soils would result from temporary disturbance of ground surfaces, earthmoving activities, and grading within the project areas during construction. These activities would excavate soils and expose rock materials, remove vegetation in some areas, and expose soils to erosion. The use of trucks and construction equipment would result in soil compaction, which could also lead to increased rates of erosion and alter soil structure. Specific construction limitations and considerations would depend on the type of construction activity and the specific subsurface composition encountered.

In general, accelerated erosion of soils would be short-term during construction activities and minimized by appropriately siting and designing facilities taking into account soil limitations, employing construction

and stabilization techniques appropriate for the soil and climate, and implementing BMPs and erosion control measures. BMPs would include the installation of silt fencing and sediment traps, application of water to disturbed soil to reduce dust, and revegetation of disturbed areas as soon as possible following ground disturbance, as appropriate.

Construction materials would be appropriately stabilized with temporary erosion control measures during construction, and with long-term measures according to the Stormwater Pollution Prevention Plan (SWPPP) during construction and maintenance of the proposed roads. Impacts would be localized to the proposed disturbance areas due to the implementation of these measures and BMPs. Therefore, short-term impacts would be minor.

Long-term, minor, adverse impacts from the addition of up to approximately 3.05 acres of vegetation removal and grading to impervious surfaces would also be expected. Reduced soil infiltration and productivity and increased runoff from additional impervious surfaces would occur; however, permanent runoff control measures would be implemented to prevent erosion and flooding in surrounding areas. These measures, combined with construction BMPs, would reduce potential impacts from maintenance and operations.

Important Farmlands. Under the Project 2 Proposed Action, approximately 1.73 acres of prime farmland, farmland of statewide importance, and prime farmland if drained, has the potential of being directly converted to non-agricultural use due to road construction. While the soils in the proposed project areas have farmland designations, the area itself is not covered by FPPA because the project areas are in an urban, military installation and have never been used for agricultural purposes. Therefore, no impacts on important farmlands are expected from the Proposed Actions.

Geologic Hazards. Short-term, negligible, adverse impacts could occur due to geological hazards. While earthquakes are common in North Carolina, they are generally minor and do not cause structural damage to buildings (Ready NC 2023). The proposed facilities would meet all building requirements outlined in applicable state and local building codes to minimize potential impacts from earthquakes.

While there are no slopes greater than 25 percent within the project areas, implementation of BMPs and erosion control measures, as well as other appropriate preventative measures identified by federal, state, and local agencies, would be implemented where applicable to minimize potential impacts from rockfalls. These preventative measures could include regular drain and culvert maintenance, drainage ditch and channel maintenance, vegetation maintenance, and implementation of roadside stabilization measures.

Project 2 Alternative 2:

Impacts on land use under Project 2 Alternative 2 would be the same as those described for Project 2 Proposed Action.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the new Flightline Access Road would not be constructed, and the existing conditions discussed in **Section 3.3.1** would remain unchanged. General traffic and emergency vehicles would continue to take a long, circuitous route to reach the western edge of the flightline. No impacts on land use would be anticipated.

3.5.3 Cumulative Impacts

Cumulative impacts from both Proposed Actions in combination with the reasonably foreseeable actions would include impacts on topography and soils due to vegetation clearing and soil disturbance from construction activities, such as grading, contouring, trenching, and from increases in impervious surfaces. Other additive effects would include conversion of important farmland soils. However, reviewing historical aerial photographs of the project areas has shown that the area has never been used for agricultural purposes. Additional cumulative impacts could occur due to construction of structures in areas with geological hazards; however, it is anticipated that all structures would be designed in accordance with applicable state and local building codes to minimize potential impacts. Cumulative, short- and long-term, negligible to minor, adverse impacts on geology and soils would be expected from the additive effects of the Proposed Action in combination with past, present, and reasonably foreseeable future actions.

3.6 WATER RESOURCES

Water resources are natural and man-made sources of water that are available for use by, and for the benefit of, humans and the environment. Water resources relevant to SJAFB's location in North Carolina include groundwater and surface water features. Wetlands and floodplains are discussed in **Section 3.7**.

Groundwater. Groundwater is water that exists in the saturated zone beneath the Earth's surface that collects and flows through aquifers and is used for drinking, irrigation, and industrial purposes. Groundwater typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, and recharge rates.

Surface Water. Surface water includes natural, modified, and man-made water confinement and conveyance features above groundwater that may or may not have a defined channel and discernable water flow. Stormwater is an important component of surface water systems because of its potential to introduce sediments and other contaminants that could degrade surface waters, such as lakes, rivers, or streams. Energy Independence and Security Act Section 438 (42 U.S.C. § 17094) establishes into law stormwater design requirements for federal development projects that disturb a footprint of greater than 5,000 square feet. Under these requirements, pre-development site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow.

The Clean Water Act (CWA) establishes federal limits for regulating point and non-point discharges of pollutants into the Waters of the United States (WOTUS) and quality standards for surface waters. The term "Waters of the United States" has a broad meaning under the CWA and incorporates deep water aquatic habitats and special aquatic habitats (including wetlands/playas). E.O. 11990, *Protection of Wetlands*, requires federal agencies to determine whether a proposed action would occur within a wetland and to avoid new construction in wetlands wherever there is a practicable alternative.

It is DAF policy to avoid construction of new facilities within areas containing wetlands where possible per AFMAN 32-7003, *Environmental Conservation*, and E.O. 11990. A FONPA would need to be prepared for all projects impacting wetland areas.

3.6.1 Affected Environment

Groundwater. SJAFB overlies the inner Coastal Plain region of the Coastal Plain physiographic province where the upland surface is flat and slopes toward the southeast. Maximum relief in Wayne County occurs in and adjacent to the stream valleys of the major rivers that flow in a southeasterly direction. Regionally, the location of SJAFB is a part of the Northern Atlantic Coastal Plain Aquifer System. The local hydrologic setting of SJAFB consists of three distinct aquifer zones: the surficial aquifer, the Black Creek aquifer, and the Upper Cape Fear River. The surficial aquifer is comprised of interbedded clays and sands and silty

sands and is approximately 40 feet thick in the area of SJAFB. The Black Creek aquifer is comprised of sand and clay and ranges in thickness from 45 to 70 feet. The Upper Cape Fear River aquifer is comprised of sand and clay and ranges in thickness from 10 to 60 feet and is more than 80 feet below ground level (Cardinell and Howe 1997). The Black Creek and Upper Cape Fear River aquifers are defined by low permeability and therefore have low recharge rates (NCDEQ 2023). The surficial aquifer is recharged by rainfall infiltration and the recharge rate depends on how rapidly rainfall infiltrates the aquifer. The surficial aquifer transmits water laterally to the Neuse River and Stoney Creek and transmits water vertically to the Black Creek and Upper Cape Fear aquifers. In general, groundwater in the surficial aquifer moves away from areas of high hydraulic head toward the Neuse River and Stoney Creek.

Surface Water. The main watercourses throughout the installation consist of the Neuse River, Stoney Creek, Hospital Creek, Burge Ditch, Mayfield's Ditch (tributary to Stoney Creek and Burge Ditch), Prison Ditch (tributary to Stoney Creek), Golf Course Ditch and Golf Course Lake (tributary to Burge Ditch), Bulk Fuels Ditch (tributary to Prison Ditch), and unnamed reaches of Stoney Creek. the SJAFB installation boundary is defined by Stoney Creek to the west and the Neuse River to the south (DAWSON 2022).

The project areas contain two forks of an unnamed reach of Stoney Creek and several earthen and rip-rap swales that channel stormwater. Surface water flows west into Stoney Creek which is outside of the project area to the west. Stoney Creek flows south to the Neuse River, located less than one mile from the location of Projects 1 and 2. Hospital Creek extends into the Project 1 project area, traversing beneath Peterson Avenue via a culvert system. The intermittent creek forks in the Project 1 project area, where it branches into several earthen swales and ditches that channel stormwater (**Appendix B**).

Extensive storm water pipe networks and open channels exist for discharging surface runoff. The runoff is discharged through multiple outfalls along Stoney Creek and the Neuse River. The SJAFB storm water outlet is downstream where the Neuse River crosses the installation boundary.

The United States Geological Survey (USGS) manages the National Hydrography Dataset (NHD) which is a geospatial dataset that depicts surface water and water drainage networks of the United States. According to the USGS hydrography set, all mapped surface water features within the project areas are labelled canal/ditch and show water flow west to an intermittent reach of Stoney Creek before flowing south into Stoney Creek. Stoney Creek flows south until it reaches the Neuse River, approximately one mile southwest of the project areas (**Appendix B**).

SJAFB purchases water from the City of Goldsboro. The City of Goldsboro sources its water supply from the Neuse River. If water supply from the Neuse River becomes unavailable, the City of Goldsboro will use the Little River as an alternate (SJAFB 2020a).

3.6.2 Environmental Consequences

Project 1 Proposed Action:

Groundwater. Reconfiguring the Slocumb Gate ECF under the Project 1 Proposed Action would have short-term, minor to moderate, adverse impacts on groundwater during roadway reconfiguration and overwatch facility construction and demolition due to ground disturbance from the use of heavy equipment. During construction and demolition activities, soil disturbance could lead to increased sediment transportation during rainfall events that could eventually enter groundwater through recharge points (e.g., percolation to aquifers, direct recharge to surface water bodies). The use of trucks and construction equipment could result in soil compaction, which could also lead to increased rates of erosion and runoff. Implementation of BMPs and planning during construction would minimize such impacts by controlling the movement of surface water runoff and ensuring no direct access to groundwater recharge points. BMPs

could include using temporary barriers such as fiber logs or silt fences, which would be placed based on site-specific evaluations on an as-needed basis.

Vehicles and equipment used during construction and demolition activities could increase the potential for petroleum or hazardous material spills, typically due to leaks or accidents at the work site. Any such leaks or spills could be transported to groundwater either by surface water runoff or by soil leaching. Proper housekeeping, maintenance of equipment, and containment of fuels and other potentially hazardous materials would be implemented to minimize the potential for a release of fluids. With the implementation of BMPs and minimal groundwater recharge in the area, the Project 1 Proposed Action would not be expected to result in a significant impact on groundwater.

Long-term, negligible, adverse impacts on groundwater would be expected because the slight increase in impervious surfaces from the proposed road would not drastically affect stormwater runoff. Construction and operation of Project 1 Proposed Action is not expected to cause an increase water demand from groundwater because water for construction purposes would not be supplied from SJAFB groundwater.

Surface Water. Reconfiguring the Slocumb Gate ECF under the Project 1 Proposed Action would have short-term, minor, adverse effects on surface water during construction. Construction activities under Project 1 could transport sediment and other material into Hospital Creek and the adjacent Stoney Creek. Stormwater has the potential to transport sediment and hazardous materials to surface water bodies, which could then transfer off-installation via Stoney Creek. Therefore, the Project 1 Proposed Action could potentially adversely affect surface water bodies outside of SJAFB. Implementation of standard stormwater protection BMPs, including using temporary barriers such as fiber logs or silt fences, and spill prevention and management plans would reduce or eliminate long-term, adverse impacts on the quality of surface waters on or off-installation.

Although there would be a slight increase in impervious surface areas due to the new road, impacts are anticipated to be long-term and negligible because stormwater runoff would not significantly adversely impact.

Project 1 No Action Alternative:

Under the Project 1 No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.6.1** would remain unchanged. No impacts on water resources would be expected.

Project 2 Proposed Action:

Groundwater. Constructing a new road to improve normal and emergency traffic access to the western end of the flightline under the Project 2 Proposed Action would result in short-term, minor, and long-term, negligible, adverse impacts on groundwater. Installation of two culverts over the unnamed streams requires modification to the stream and increased sediment is anticipated to be generated and could potentially leach into groundwater. However, implementation of BMPs and planning during construction would minimize such impacts by controlling the movement of surface water runoff and ensuring no direct access to groundwater recharge points. BMPs could include using temporary barriers such as fiber logs or silt fences, which would be placed based on site-specific evaluations on an as-needed basis.

Vehicles and equipment used during construction activities could increase the potential for petroleum or hazardous material spills, typically due to leaks or accidents at the work site. Any such leaks or spills could be transported to groundwater either by surface water runoff or by soil leaching. Proper housekeeping, maintenance of equipment, and containment of fuels and other potentially hazardous materials would be implemented to minimize the potential for a release of fluids. With the implementation of BMPs and

minimal groundwater recharge in the area, implementation of the Project 2 Proposed Action would not be expected to result in a significant impact on groundwater.

Long-term, negligible, adverse impacts on groundwater would be expected because the amount of additional impervious surface area of the new road would not significantly adversely impact affect stormwater pollution runoff and therefore, groundwater contamination.

Surface Water. Constructing a new road to improve normal and emergency traffic access to the western end of the flightline under the Project 2 Proposed Action would result in short-term, minor, and long-term, minor to moderate, impacts on surface water.

Short-term, moderate, adverse impacts would be expected during construction. Construction activities, including roadway construction and culvert installation, under the Project 2 Proposed Action could transport sediment and other material into the unnamed streams that flow into Hospital Creek and adjacent Stoney Creek. Culvert installation is an intensive process that would require the bed of the stream to be dug out using heavy equipment, thereby disrupting the stream and wetland. Stormwater has the potential to transport sediment and hazardous materials to surface water bodies, which could then transfer off-installation via Stoney Creek. Therefore, the Project 2 Proposed Action could potentially adversely affect water bodies outside of SJAFB. Implementation of standard stormwater protection BMPs, including using temporary barriers such as fiber logs or silt fences, and spill prevention and management plans would reduce or eliminate long-term, adverse impacts on the quality of surface waters on or off-installation.

Long-term, minor to moderate, adverse and beneficial impacts on surface water, including Hospital Creek and Stoney Creek, would be expected due to the proposed culverts and increase in stormwater runoff associated with the increased impervious surface from the proposed roadway. Culverts can result in adverse effects on streams because they can cause habitat fragmentation, modification of the streambank, damming of flow through debris accumulation at the opening, and general alteration of water flow. Benefits from culverts include reducing erosion of the road surface, which keeps sediment out of surface waters.

Project 2 Alternative 2:

Groundwater. Impacts on groundwater under Project 2 Alternative 2 would be similar to those described for the Project 2 Proposed Action. During construction of the proposed roadway and installation of bridges over the unnamed streams, pile driving could lead to increased sediment transportation during rainfall events that could eventually enter groundwater through recharge points. Installation of two bridges over the unnamed streams would require modification to the stream and generate increased sediment that could potentially leach into groundwater. Installing a bridge using a pile driver would be less invasive than culvert installation because it does not require as intensive modification to the stream. Implementation of BMPs and planning during construction would minimize impacts by controlling the movement of surface water runoff and ensuring no direct access to groundwater recharge points. BMPs could include using temporary barriers such as fiber logs or silt fences, which would be placed based on site-specific evaluations on an as-needed basis.

Surface Water. Impacts on stormwater under Project 2 Alternative 2 would be similar to those described for the Project 2 Proposed Action. Construction activities, including road construction and installation of bridges over the unnamed streams using a pile driver, could transport sediment and other material into the unnamed streams that flow into Hospital Creek and adjacent Stoney Creek. Bridge installation would result in disruption to the flow of water, increased sediment loading, and impacts to the streambank stability. Bridge installation would still require use of heavy equipment and disruption to the stream and wetland but would not be as invasive as culvert installation as described for Project 2 Proposed Action. Implementation of standard stormwater protection BMPs and spill prevention and management plans would reduce or

eliminate long-term, adverse impacts on the quality of surface waters. Implementation of BMPs and planning during construction would minimize impacts by controlling the movement of surface water runoff and ensuring no direct access to groundwater recharge points. BMPs could include using temporary barriers such as fiber logs or silt fences, which would be placed based on site-specific evaluations on an as-needed basis.

Additionally, long-term impacts on surface water would be slightly less than those described for Project 2 Proposed Action because no culverts would be required.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.6.1** would remain unchanged. No impacts on water resources would be expected.

3.6.3 Cumulative Impacts

The Proposed Actions in conjunction with on- and off-installation projects are not anticipated to result in significant impacts. Additional cumulative impacts from the construction of the Small Arms Indoor Firing Range, Child Development Center, Airman Dormitory, and Consolidated Wing Support Center as well as the widening of the U.S. 70 under the NCDOT U.S. 70 Corridor Improvements, CDOT U.S. 117 Corridor Upgrade near Goldsboro, and STRAHNET Connector could occur due to construction in areas that have potential to impact water resources; however, it is anticipated that potential impacts construction would be mitigated with BMPs, stormwater management plans, and necessary permits would be obtained. Cumulative, short- and long-term, negligible to minor, adverse impacts on groundwater and surface water resources would be expected from the additive effects of the Proposed Action in combination with past, present, and reasonably foreseeable future actions. Impacts to groundwater and surface water would be in the form of increased sediment runoff during construction activities, the addition of impervious surface area, and potential direct habitat disturbance depending on location.

3.7 WETLANDS/FLOODPLAINS

Wetlands. Wetlands are considered WOTUS if they are determined to be jurisdictional by the U.S. Army Corps of Engineers (USACE) and USEPA. Wetlands are present within the SJAFB boundary, primarily the western boundary, along Stoney Creek.

A ruling instituted by USACE and USEPA revised the definition of WOTUS protected under the CWA. The ruling came into effect on March 20, 2023. Under the 2023 Rule, WOTUS include: (1) traditional navigable waters, the territorial seas, and interstate waters; (2) impoundments of qualifying waters; (3) tributaries to qualifying waters; (4) wetlands adjacent to qualifying waters; and (5) certain intrastate lakes and ponds, streams, and wetlands (USACE and USEPA 2023).

Floodplains. Floodplains are areas of low, level ground present along rivers, stream channels, or coastal waters that are subject to periodic or infrequent inundation because of rain or melting snow. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain as an area within which there is a one percent chance of inundation by a flood event in a given year, or a flood event in the area once every 100 years. E.O. 11988, *Floodplain Management*, requires federal agencies to determine whether a proposed action would occur within a floodplain and to avoid floodplains to the maximum extent possible wherever there is a practicable alternative. E.O. 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, requires agencies to prepare for and protect federally funded buildings and projects from flood risks. More specifically, it requires agencies to determine specific federal building or

project dimensions (i.e., how high, wide, and expansive a building or project should be) to manage and mitigate any current or potential flood risks.

It is DAF policy to avoid construction of new facilities within the 100-year floodplain, if possible, per AFMAN 32-7003 and E.O. 11988. A FONPA must be prepared and approved by the MAJCOM for all projects impacting floodplain areas. Because the Proposed Action project areas coincide with wetlands and/or floodplains, they are subject to the requirements and objectives of E.O. 11990, *Protection of Wetlands*, and E.O. 11988, *Floodplain Management*. The DAF published early notice that the Proposed Action would occur in a floodplain/wetland in the Goldsboro News Argus on May 6, 2023.

3.7.1 Affected Environment

Wetlands. A wetland delineation was conducted at SJAFB in November 2022 in the Project 1 and 2 project areas. According to the *Wetland Delineation Report to Support the Flightline District Development, Seymour Johnson Air Force Base, North Carolina* (**Appendix B**), wetlands are present along the full length of both branches of the unnamed stream that flows into Stoney Creek and along Stoney Creek. **Figure 3-2** shows the locations of the wetlands within the Project 1 and 2 project areas.

As summarized in **Table 3-12**, the wetland delineation concluded the following:

- The Project 1 project area contains 0.02 acres of riparian habitat and 0.2 acres of bordering riparian wetland habitat.
- The Project 2 project area contains 0.22 acres of riparian habitat and 1.81 acres of bordering riparian wetland habitat.
- There are also 0.10 acres of narrow earthen swales meant to control stormwater within the Project 2 project area, which intermittently convey water but do not meet the criteria of wetland habitat.
- A majority of the earthen and rip-rap reinforced stormwater retention basins tie into Stoney Creek and channel stormwater, but do not meet the criteria for a wetland and, therefore, are not included in acreage calculations. Two areas of swales do meet wetland criteria and are included in the total wetland acreage for the project areas.
- Desktop resources, including the USGS NHD and the USFWS National Wetland Inventory (NWI) depict most of the creek in the project areas as excavated/man-made. The exception to this is the reach that is west of Peterson Avenue, within the Project 1 project area (**Appendix B**).

Table 3-12: Acreage of Wetland, Riverine, and Non-Wetland Areas in Projects 1 and 2

Project Area	Type	Acres
Slocumb Gate (Project 1)	Riverine	0.02
	Wetland	0.20
	Non-Wetland	0
Flightline Access Road (Project 2)	Riverine	0.22
	Wetland	1.81
	Non-Wetland	0.10

According to USFWS's NWI mapping, shown on **Figure 3-2**, a riverine, intermittent streambed, with a water regime that is seasonally flooded is located in the Project 1 project area. A riverine system is located in the Project 2 project area. This habitat is also marked as excavated, used to identify wetland basins or channels that were excavated by humans (USFWS 2023a).

Floodplains. Base topography of SJAFB includes the Neuse River Floodplain with elevations ranging from 45 to 110 feet and sloping gradually downward from the northeast to the southwest. According to the FEMA Flood Insurance Rate Map, a section of the Project 1 project area (west of Peterson Avenue) coincides with the 100- and 500-year floodplains, and immediately adjacent to, but outside of the Project 1 project area, the corridor surrounding Stoney Creek is designated a special flood hazard area and a regulatory floodway (Zone AE), with a portion of it coinciding with the 500-year floodplain (see **Figure 3-2**). SJAFB is covered by 782.3 acres (approximately 24.3 percent) of impervious surface, such as buildings and pavement.

3.7.2 Environmental Consequences

Project 1 Proposed Action:

Reconfiguring the Slocumb Gate under the Project 1 Proposed Action would have short- and long-term, minor to moderate, adverse impacts on wetlands. Sediment and pollution/runoff from roadway construction and demolition and construction of the overwatch facility would result in a short-term increase in sediment entering the wetland along Hospital Creek and ultimately, Stoney Creek. Increased sediment load has the potential to be harmful to wetlands because excess sediment can cover vegetation and other benthic aquatic species, decreasing access to sunlight and oxygen. Excess sediment also increases total suspended solids within the water column, impacting water quality. Reconfiguring the Slocumb Gate and construction of the overwatch facility would not greatly increase the total amount of impervious surfaces, therefore, increased runoff to the wetland along Hospital Creek in the project area would be minimal. Increased runoff is expected in the short term during the construction and demolition process. Runoff is also expected to contain higher pollutants during the construction process due to a temporary increase in vehicle traffic from construction vehicles and potential for leaks. However, BMPs would be implemented to prevent pollutant from entering waterways. Traffic volume would be expected to be similar to current conditions, therefore, no change in the amount of pollutants generated by traffic would be expected.

Reconfiguring the Slocumb Gate under the Project 1 Proposed Action would have short-term, minor, adverse effects on floodplains. The Project 1 Proposed Action is not expected to greatly increase the amount of impervious surfaces. Because a section of the Project 1 Proposed Action (west of Peterson Avenue) coincides with the 100- and 500-year floodplains, increasing the amount of impervious surfaces could increase runoff volume and flood level. However, this increase in runoff could be offset with the implementation of BMPs such as detention basins. The topography of the Project 1 project area that is currently within the floodplain would not be greatly changed, therefore impacts on floodplains would be negligible in the long-term.

Project 1 No Action Alternative:

Under the Project 1 No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.7.1** would remain unchanged. No impacts on wetlands or floodplains would be expected.

Figure 3-2: Water Resources Map

Project 2 Proposed Action:

Constructing a new road to improve normal and emergency traffic access to the western end of the flightline under the Project 2 Proposed Action would result in short- and long-term, minor to moderate, adverse impacts on wetlands and long-term, negligible, adverse impacts on floodplains. The proposed roadway has been designed using two culverts to cross over two wetlands in the Project 2 project area, which would result in short-term, minor to moderate, adverse impacts because construction activities would disturb the stream and wetland. Culvert installation would result in disruption to the flow of water, increased sediment loading, and impacts to streambank stability. Culvert installation is an intensive process that would require the bed of the stream to be dug out using heavy equipment, thereby disrupting the stream and wetland. Pollution from construction equipment has potential to leach into the wetland and negatively affect water quality. Increased pollutant and stormwater loading into the wetlands would be expected due to the increase in impervious surfaces and stormwater runoff associated with the proposed roadway. Long-term, minor to moderate, adverse impacts would be expected from the use of culverts for the road to cross the two wetlands. Potential impacts of culverts include modification of the streambank, damming of flow through debris accumulation at the opening, and general alteration of water flow. Long-term, negligible, adverse impacts on floodplains would be expected due to an increase in stormwater runoff from an increase in impervious surfaces.

Project 2 Alternative 2:

Constructing a new road to improve normal and emergency vehicle access to the western end of the flightline under Project 2 Alternative 2 would result in short- and long-term moderate adverse impacts on wetlands and long-term, negligible, adverse impacts on floodplains. The proposed roadway designed using bridges to cross over two wetlands in the project area would result in adverse impacts in the short-term because construction activities would disturb the stream and wetland. Bridge installation would result in disruption to the flow of water, increased sediment loading, and impacts to streambank stability. However, bridge installation using a pile driver would be less invasive than culvert installation as described for the Project 2 Proposed Action, resulting in minor impacts. Bridge installation would still require use of heavy equipment and disruption to the stream and wetland. Pollution from construction equipment has the potential to leach into the wetland and negatively affect water quality. Increased pollutant and stormwater loading into the wetlands would be expected due to the increase in impervious surfaces and stormwater runoff associated with the proposed roadway. Long-term, minor, adverse impacts would be expected from the use of bridges for the road to cross the two wetlands. Bridge installation could also result in habitat disturbance; however, the level of disturbance would be less than that of the culverts as described in Project 2 Alternative 2. See **Section 3.8** for further discussion of habitat disturbance.

Impacts on floodplains under Project 2 Alternative 2 would be the same as those described for the Project 2 Proposed Action.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.7.1** would remain unchanged. No impacts on wetlands or floodplains would be expected.

3.7.3 Cumulative Impacts

The Proposed Actions in conjunction with on- and off-installation projects are not anticipated to result in significant impacts. Additional cumulative impacts from the construction of the Small Arms Indoor Firing Range, Child Development Center, Airman Dormitory, and Consolidated Wing Support Center as well as the widening of the U.S. 70 under the NCDOT U.S. 70 Corridor Improvements, NCDOT U.S. 117 Corridor

Upgrade near Goldsboro, and STRAHNET Connector could occur due to construction in areas that have potential to impact water resources; however, it is anticipated that potential impacts construction would be mitigated with BMPs, stormwater management plans, and necessary permits would be obtained. Cumulative, short- and long-term, negligible to minor, adverse impacts on wetlands and floodplains would be expected from the additive effects of the Proposed Action in combination with past, present, and reasonably foreseeable future actions. Impacts to wetlands and floodplains would be in the form of increased sediment runoff during construction activities, the addition of impervious surface area and runoff, and potential direct habitat disturbance depending on location.

3.8 BIOLOGICAL RESOURCES

Biological resources include native or naturalized plants and animals and the habitats in which they occur, and native or introduced species found in landscaped or disturbed areas. Protected species are defined as those listed as threatened, endangered, or proposed or candidate for listing by the USFWS or North Carolina Wildlife Resources Commission (NCWRC). Federal species of concern and candidate species are not protected by the Endangered Species Act (ESA); however, these species could become listed and, therefore, are given consideration when addressing impacts of a proposed action on biological resources.

Section 7 of the ESA (1973) requires all federal agencies to use their authorities to conserve endangered and threatened species in consultation with USFWS. The ESA gives the Secretary of the Interior the responsibility of deciding whether a species' survival has been so jeopardized that it warrants conservation actions. Authority for administering the ESA has been delegated to USFWS. Under the ESA, when a species is formally "listed" (i.e., added to the Federal List of Endangered and Threatened Wildlife and Plants) federal agencies are directed to use their legal authorities to carry out conservation programs to support continued survival of the species (SJAFB 2020b).

Sensitive habitats include those areas designated by the USFWS as critical habitat under the ESA and sensitive ecological areas as designated by state or federal rulings. Sensitive habitats also include wetlands, plant communities that are unusual or of limited distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer/winter habitats). Further, the DAF is responsible for the protection of migratory birds under the MBTA and E.O. 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*.

SJAFB's Integrated Natural Resource Management Plan (INRMP) provides interdisciplinary strategic guidance for natural resource management on the installation for a period of 5 years. Implementation of the INRMP ensures that the installation continues to support present and future mission requirements while preserving, improving, and enhancing ecosystem integrity (SJAFB 2020b). The 2020 INRMP was used as a baseline to develop an understanding of the resources in the project areas.

3.8.1 Affected Environment

SJAFB covers approximately 3,220 acres in the southeastern portion of the City of Goldsboro, Wayne County, North Carolina. This area falls within the Coastal Plain region of North Carolina, which consists of the floodplain of the Neuse River and relict terraces of the river. In appearance and in practice, SJAFB is much like a small, urbanized, and industrial town. Most of the land at SJAFB has been developed to support the military mission as well as a variety of other human uses for the personnel stationed there (SJAFB 2020b). Aside from the developed areas, small, forested areas are present on the periphery of the installation in the north and west, and along the Neuse River and Stoney Creek along the northern boundary (SJAFB 2020b).

Vegetation. Temperate rainforest, also called temperate evergreen forest or laurel forest, is characteristic of the area. Temperate rainforests have fewer species of trees than their tropical counterparts and, therefore, larger populations of individual species. Trees are not as tall here as in low-latitude rainforests. Leaves are usually smaller and the leaf canopy less dense (Bailey 1995). Common species include evergreen oaks and members of the laurel and magnolia families. A well-developed lower stratum of vegetation that may include tree ferns, small palms, shrubs, and herbaceous plants is typical. At higher elevations, where fog and clouds persist, the trunks and branches of trees are often covered in moss (Bailey 1995).

Along the Atlantic coast, the extensive coastal marshes and interior swamps are dominated by gum and cypress. Most upland areas are covered by subclimax pine forest, which has an understory of grasses and sedges called savannas. Undrained shallow depressions in savannas form upland bogs or pocosins, in which evergreen shrubs predominate (Bailey 1995).

Surveys of the natural communities occurring on SJAFB are limited to a natural resources survey conducted in 1994 (SJAFB 2020b) and a tree survey conducted in 1999 as part of the Urban Forest Management Plan (UFMP) prepared for the installation (SJAFB 2020b). The 1994 survey focused on mapping the natural communities present at SJAFB, and the UFMP was limited to an inventory of tree species. As such, a comprehensive list of all plants occurring at SJAFB is not available.

A total of 10,307 trees were inventoried as part of preparation of the UFMP (SJAFB 2020b). The most common tree species identified was loblolly pine (*Pinus taeda*) (39 percent), followed by sweetgum (*Liquidambar styraciflua*) (8 percent), crapemyrtle (*Lagerstroemia indica*) (7 percent), willow oak (*Quercus phellos*) (6 percent), and ornamental pear (*Pyrus sp*.) (5 percent) (SJAFB 2020b). Other species documented include flowering dogwood (*Cornus florida*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), longleaf pine (*Pinus palustris*), and southern red oak (*Quercus falcata*); the survey also documented 29 dead trees and three stumps (SJAFB 2020b).

Invasive Plant Species. Introduced plant species are non-native species that do not naturally occur within the region and have either accidentally or purposefully become established. Although not all introduced species become invasive, many introduced species that become established outside of their native area are not subject to normal predation pressures, and will spread, often forcing out or replacing native species. Invasive species are those that persist, proliferate, and cause economic or environmental harm (SJAFB 2020b). E.O. 13112, *Invasive Species*, requires federal agencies to prevent the introduction of invasive species, detect and control invasives in a cost-effective manner, and monitor invasives and provide for restoration of native species.

An invasive species survey has not been conducted at SJAFB, and available information on the presence of invasive species is limited. During the months of June and July 2002, a survey for the presence of the kudzu vine (*Pueraria montana var. lobata*) on SJAFB was conducted (SJAFB 2020b). Results of the survey determined that approximately 2.5 acres in the McColpin Road area were infested with kudzu vine. The kudzu vine present in this area was eradicated via a combination of control methods, including the use of herbicide, grubbing, and removal of the root system. Herbicide applications are completed annually, as necessary, to control this species. Additionally, Japanese honeysuckle (*Lonicera japonica*) is abundant within the small, forested areas at SJAFB (SJAFB 2020b).

Rare Plant Species. No rare plant species were identified during the 1994 natural resources survey (SJAFB 2020). The Nature Conservancy (TNC) has documented three rare plant species within a 10-mile radius of SJAFB, however none of these have been observed within the last 30 years or more. In general, Wayne County and adjacent counties have a poor representation of rare plant species compared to most other parts of North Carolina (SJAFB 2020b).

Wildlife. A formal survey to identify the wildlife species occurring at SJAFB has not been conducted in recent years. The information provided in the following sections is based on existing survey reports (SJAFB 2020b).

Mammals. SJAFB contains fragments of woodland and forest habitat within its boundaries, most of which is in the southwestern section of the installation near the Neuse River. A few other woodland patches are present along the northwestern boundary, along Stoney Creek. Common mammal species that are expected to occur include, white-tailed deer (*Odocoileus virginianus*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and gray squirrels (*Sciurus carolinensis*).

Birds. There are many resident and breeding migratory birds that are known or likely to occur at SJAFB (see **Table 3-13**). Wood thrush (*Hylocichla mustelina*) and red-eyed vireo (*Vireo olivaceus*) are likely to nest at SJAFB (SJAFB 2020b). Additionally, neotropical species may occur that do not require extensive forests for breeding, such as gray catbird (*Dumetella carolinensis*), white-eyed vireo (*Vireo griseus*), Carolina chickadee (*Poecile carolinensis*), woodpeckers (Picidae family), and grasshopper sparrow (*Ammodramus savannarum*). SJAFB is within the breeding range of uncommon warbler species such as the Swainson's warbler (*Limnothlypis swainsonii*) and Kentucky warbler (*Oporornis formosus*). However, these species are not likely to nest at SJAFB because of the fragmented habitat on the installation (SJAFB 2020b). **Table 3-13** below lists the bird species that have been observed or are expected to occur at SJAFB.

Table 3-13: Bird Species Observed or Expected to Occur at SJAFB

Common Name	Scientific Name
American coot	*Fulica americana*
American crow	*Corvus brachyrhynchos*
American goldfinch	*Spinus tristis*
American kestrel	*Falco sparverius*
American pipit	*Anthus rubescens*
American robin	*Turdus migratorius*
Bald eagle	*Haliaeetus leucocephalus*
Barn swallow	*Hirundo rustica*
Belted kingfisher	*Ceryle alcyon*
Blue grosbeak	*Passerina caerulea*
Blue jay	*Cyanocitta cristata*
Brown thrasher	*Toxostoma rufum*
Brown-headed cowbird	*Molothrus ater*
Canada goose	*Branta canadensis*
Carolina chickadee*	*Poecile carolinensis*
Carolina wren**	*Thryothorus ludovicianus*
swift	*Chaetura pelagica*
Chipping sparrow	*Spizella passerina*
Cliff swallow	*Petrochelidon pyrrhonota*
Common grackle	*Quiscalus quiscula*
Common snipe	*Gallinago gallinago*
Cooper's hawk	*Accipiter cooperii*

Dark-eyed junco**	*Junco hyemalis*
Double-crested cormorant	*Phalacrocorax auritus*
Eastern bluebird	*Sialia sialis*
Eastern kingbird	*Tyrannus tyrannus*
Eastern meadowlark	*Sturnella magna*
Eastern phoebe	*Sayornis phoebe*
Eastern towhee	*Pipilo erythrophthalmus*
European starling	*Sturnus vulgaris*
Field sparrow	*Spizella pusilla*
Fish crow	*Corvus ossifragus*
Grasshopper sparrow**	*Ammodramus savannarum*
Gray catbird	*Dumetella carolinensis*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Green heron	*Butorides virescens*
Herring gull	*Larus argentatus*
Horned lark**	*Eremophila alpestris*
House finch	*Carpodacus mexicanus*
Indigo bunting	*Passerina cyanea*
Kentucky warbler*	*Oporornis formosus*
Killdeer	*Charadrius vociferus*
Least sandpiper	*Calidris minutilla*
Loggerhead shrike	*Lanius ludovicianus*
Mallard	*Anas platyrhynchos*
Mississippi kite	*Ictinia mississippiensis*
Mourning dove	*Zenaida macroura*
Northern bobwhite	*Colinus virginianus*
Northern cardinal**	*Cardinalis cardinalis*
Northern flicker	*Colaptes auratus*
Northern harrier*	*Circus cyaneus*
Northern mockingbird	*Mimus polyglottos*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Osprey	*Pandion haliaetus*
Red-eyed vireo*	*Vireo olivaceus*
Red-shouldered hawk	*Buteo lineatus*
Red-tailed hawk	*Buteo jamaicensis*
Red-winged blackbird	*Agelaius phoeniceus*
Ring-billed gull	*Larus delawarensis*
Rock pigeon	*Columba livia*
Savannah sparrow	*Passerculus sandwichensis*

Song sparrow	*Melospiza melodia*
Summer tanager	*Piranga rubra*
Swainson's warbler*	*Limnothlypis swainsonii*
Tufted titmouse	*Baeolophus bicolor*
Turkey vulture	*Cathartes aura*
Upland sandpiper	*Bartramia longicauda*
White-eyed vireo*	*Vireo griseus*
Wood thrush*	*Hylocichla mustelina*
Yellow-rumped warbler*	*Dendroica coronata*

Source: SJAFB 2020b.
* Species identified in 1994 natural resources survey only.
** Species identified in both the 1994 natural resources survey and 2009 Bird/wildlife Aircraft Strike Hazard survey.

The interior of the North Carolina Coastal Plain region does not receive much visitation by migrating land birds, with the heaviest flights of migrating songbirds passing to the west of SJAFB (SJAFB 2020b). However, the woodlands at SJAFB may provide suitable forage and resting habitat for the few common and widespread neotropical migrant bird species that pass through Wayne County.

Extensive grasslands that support wintering habitat for birds is scarce throughout the upper Coastal Plain region, however the grassland area associated with the airfield may provide wintering habitat for a few species such as the horned lark (*Eremophila alpestris*) and northern harrier (*Circus cyaneus*). Additionally, the open areas adjacent to the airfield likely provide foraging habitat for other raptors (SJAFB 2020b).

The Bird/wildlife Aircraft Strike Hazard (BASH) biologist at SJAFB conducts a methodical weekly bird survey as part of the BASH program, which includes monitoring all bird species and their activities at 10 selected plots in the vicinity of the airfield. According to data collected from January 2005 through December 2009, the primary nuisance species requiring removal from the airfield area include blackbirds (Emberizidae family), ring-billed gull (*Larus delawarensis*), and turkey vulture (*Cathartes aura*) (SJAFB 2020b). Data collected as part of the BASH program has identified 60 bird species in and around the airfield (see **Table 3-13**).

Threatened and Endangered Species and Species of Concern. The USFWS Information for Planning and Consultation (IPaC) tool identified six federally listed species with the potential to occur at SJAFB, including the tricolored bat (*Perimyotis subflavus*) (proposed endangered), red-cockaded woodpecker (*Picoides borealis*) (endangered), Neuse River waterdog (*Necturus lewisi*) (threatened), Carolina madtom (*Noturus furiosus*) (endangered), Atlantic pigtoe (*Fusconaia masoni*) (threatened), and monarch butterfly (*Danaus plexippus*) (candidate) (USFWS 2023b). Consultation under the ESA for all of the six species will be undertaken unless not present in the project areas. The monarch butterfly is currently a candidate species under Section 7 of the ESA and is not yet proposed for listing. Therefore, consultation with USFWS is not required.

There is some possibility that the Neuse River waterdog, a large salamander that is also a North Carolina species of special concern and occurs only in the Neuse and Tar river drainages (SJAFB 2020b), may occur in the Neuse River habitat of SJAFB (SJAFB 2020b). Although the Neuse River waterdog has been documented in regional sections of the Neuse River, focused surveys for this species in the river habitat located immediately adjacent to SJAFB have not been conducted (SJAFB 2020b). The closest location on the Neuse River where the Neuse River waterdog has been identified is 10 miles upstream, with the closest site downstream located approximately 15 miles away. Threats to this species include degradation of water quality and development, including channelization, degradation of aquatic habitat, agricultural pollution

(i.e., runoff of farm waste and pesticides), and industrial and urban development. As this species is not present within the project areas, consultation with USFWS is not required.

A survey for the presence and potential habitat to support the red-cockaded woodpecker (RCW), a federally endangered species, was conducted at SJAFB in 2002 (SJAFB 2020b). All longleaf pines present on the installation were closely inspected for signs of RCW presence. Groups of loblolly pines were inspected by walking through the area and observing signs of RCW presence either close by or at a distance. No signs of RCW presence were identified. Numerous mature loblolly pines provide for appropriate nesting habitat, but the availability of foraging habitat was very low, and the intact forested areas were small and fragmented. It is very unlikely that the forest habitat of SJAFB represents appropriate habitat for RCWs. Results of the RCW survey were submitted to USFWS, and the USFWS responded with a letter of concurrence that RCW is unlikely to utilize SJAFB for nesting or foraging (SJAFB 2020b). As this species is not present within the project areas, consultation with USFWS is not required.

In addition to the species listed above, NCNHP responded to a request for information in a letter dated June 9, 2023 (**Appendix A**). The letter noted that one federally endangered species, the Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) was observed within a one-mile radius of the project, most recently in April 2018. Sturgeon spend most of their life in salt water but migrate up freshwater rivers, along the coast, to spawn (NC Wildlife 2023). As this species is not present within the project areas, consultation with USFWS is not required.

As part of the 1988 amendment to the Fish and Wildlife Conservation Act (Public Law 100-653), the USFWS is required to identify species, subspecies, and populations of migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA of 1973. The goal envisioned by USFWS in identifying these species of conservation concern is to stimulate the implementation of coordinated, proactive management and conservation actions among federal, state, tribal, and private partners. Additionally, the lists are intended to assist federal land-managing agencies and their partners in their efforts to abide by the bird conservation principles embodied in the MBTA and E.O. 13186 (SJAFB 2020b). Bird species are listed according to Bird Conservation Regions (BCRs) developed by USFWS, with SJAFB located in BCR 27, Southeastern Coastal Plain. Of the 53 species listed by USFWS for BCR 27, six species are known or expected to occur at SJAFB (see **Table 3-14**).

Table 3-14: USFWS Birds of Conservation Concern Known or Expected to Occur at SJAFB

Common Name	Scientific Name	Comments
American kestrel	*Falco sparverius*	Observed in airfield area during BASH monitoring (2005-2009).
Bald eagle	*Haliaeetus leucocephalus*	Observed in airfield area during BASH monitoring (2005-2009).
Kentucky warbler	*Oporornis formosus*	Observed during 1994 natural resources survey.
Loggerhead shrike*	*Lanius ludovicianus*	Observed in airfield area during BASH monitoring (2005-2009).
Swainson's warbler	*Limnothlypis swainsonii*	Observed during 1994 natural resources survey.
Wood thrush	*Hylocichla mustelina*	Observed during 1994 natural resources survey.

Source: SJAFB 2020b.
* North Carolina Species of Special Concern

3.8.2 Environmental Consequences

Project 1 Proposed Action:

Vegetation. The Project 1 Proposed Action would result in short- and long-term, negligible to minor, adverse impacts on vegetation. Direct effects on vegetation from removal and crushing and indirect effects

from soil compaction and the potential for establishment of invasive species would occur. However, long-term, negligible, beneficial impacts would result from revegetation or landscaping of disturbed sites with native species supporting the native plant community on the installation.

Crushing and soil compaction would occur when vehicles and equipment access, park, and maneuver around the project area during construction activities. Additionally, ground disturbance and transportation of construction equipment could increase the potential for the establishment of invasive plant species. Adverse impacts on vegetation would be minimized with the use of appropriate BMPs, such as cleaning equipment prior to entering the project area. In accordance with E.O. 13112, *Invasive Species*, active measures would be implemented to help prevent and control dissemination of invasive plant species during ground-disturbing activities. Revegetation of disturbed areas with native vegetation would further reduce the establishment of invasive species.

Wildlife Species and Habitat. There is the potential for the Project 1 Proposed Action to result in short- and long-term, negligible to minor, adverse impacts on wildlife species and their habitats. Construction activities would result in both temporary and permanent, minor degradation of habitat, including impacts to aquatic species with the potential impacts on wetlands (see **Section 3.7.2**). To help mitigate these impacts, SJAFB would conduct surveys for listed species prior to any construction and have a monitor onsite during construction. An updated species list from USFWS would be required to be obtained within 90 days of starting any construction activities. Should an updated list of species add additional species to be consulted on under Section 7 of the ESA, SJAFB will undertake such consultation if SJAFB has determined based on effects there a requirement to consult.

Temporary and permanent displacement of mobile wildlife from noise, lighting, and other disturbances would occur from construction activities. High-impact activities that require heavy equipment could cause more-mobile mammals, reptiles, and birds, including breeding migratory birds, to relocate temporarily or permanently to nearby similar habitat. This disturbance is expected to be minor, and it is assumed that displaced wildlife would return soon after activities conclude. However, to avoid nest abandonment and other adverse impacts, surveys would be conducted prior to the start of potentially disturbing activities. These impacts would be expected to be short-term, and BMPs would be implemented to minimize any adverse impacts.

Individuals of smaller, less-mobile species could be inadvertently killed or injured during ground-disturbing activities or transportation of equipment and personnel. Burrowing animals, such as rodents and reptiles, could be impacted. However, vehicles associated with construction activities would be used primarily on the established roads, which limits the potential for impacts on burrowing species.

Potential BMPs that would be implemented could include employing seasonal avoidance measures during construction and training activities as well as non-disturbance buffer zones around occupied nests during the nesting period. Pre-construction surveys would be conducted during the breeding season, and if found, one of the following mitigation activities would be conducted (1) seasonal avoidance measures would be implemented until birds have vacated the affected nests (i.e., construction activities would not occur during the breeding season of 1 March to 30 September; (2) spatial buffers of at least 0.25 miles from construction activities would be implemented; or (3) relocation activities would be implemented using USFWS-recommended relocators.

The Project 1 Proposed Action would result in both short- and long-term, negligible to minor, adverse impacts on wildlife species and their habitats. None of the species listed above would be intentionally removed from their habitats. Construction activities would result in temporary, minor degradation of wildlife habitat, while construction of the new roadway would result in permanent, minor degradation of habitat. Adherence to BMPs would minimize unnecessary disturbances to habitat.

Threatened and Endangered Species. No impacts on any federally listed threatened or endangered species would be expected to occur as a result of the Project 1 Proposed Action as none of the species previously listed in **Section 3.8.1** are found in the project area. However, short- and long-term, minor, adverse impacts on the potential habitat for one candidate species, the monarch butterfly, would be expected to occur. However, with the implementation of BMPs, adverse impacts on the potential habitat for the species would be expected to be minor. Construction activities would result in both temporary and permanent loss of habitat for the species and temporary displacement of individuals from noise, lighting, and other disturbances would be expected to occur. To help mitigate these impacts, SJAFB would conduct surveys prior to any construction and have a monitor onsite during construction.

Project 1 No Action Alternative:

Under the Project 1 No Action Alternative, the proposed infrastructure would not be constructed, and existing conditions discussed in **Section 3.8.1** would remain unchanged. No new impacts on biological resources would be expected.

Project 2 Proposed Action:

Impacts on biological resources resulting from the Project 2 Proposed Action would be similar to impacts resulting from Project 1, although impacts would be slightly greater than Project 1 due to the project affecting a larger surface area.

Vegetation. The Project 2 Proposed Action would result in short- and long-term, minor, adverse impacts on vegetation. Direct effects on vegetation from removal and crushing and indirect effects from soil compaction and the potential for establishment of invasive species would occur. However, as with Project 1, long-term, negligible, beneficial impacts would result from revegetation or landscaping of disturbed sites with native species supporting the native plant community on the installation. Adverse impacts on vegetation would be minimized with the use of appropriate BMPs.

Wildlife Species and Habitat. The Project 2 Proposed Action would result in short- and long-term, minor, adverse impacts on wildlife species and their habitats. Construction activities would result in both temporary and permanent, minor degradation of habitat. As with Project 1, to help mitigate these impacts, SJAFB would conduct surveys for listed species prior to any construction and have a monitor onsite during construction. An updated species list from USFWS would be required to be obtained within 90 days of starting any construction activities. Should an updated list of species add additional species to be consulted on under Section 7 of the ESA, SJAFB will undertake such consultation if SJAFB has determined based on effects there a requirement to consult.

Temporary and permanent displacement of mobile wildlife from noise, lighting, and other disturbances would occur from construction activities. Additionally, individuals of smaller, less-mobile species could be inadvertently killed or injured during ground-disturbing activities or transportation of equipment and personnel. However, these impacts would be expected to be minor and BMPs would be implemented to minimize any adverse impacts.

Threatened and Endangered Species. No impacts on any federally listed threatened or endangered species would be expected to occur as a result of the Project 2 Proposed Action as none of the species previously listed in **Section 3.8.1** are found in the project area. However, short- and long-term, minor, adverse impacts on one candidate species, the monarch butterfly, would be expected to occur similar to Project 1. With the implementation of BMPs, adverse impacts on the species would be expected to be minor. Construction activities would result in both temporary and permanent loss of habitat for the species and temporary displacement of individuals from noise, lighting, and other disturbances would be expected to occur. To

help mitigate these impacts, SJAFB would conduct surveys prior to any construction and have a monitor onsite during construction.

Project 2 Alternative 2:

Impacts on biological resources resulting from Project 2 Alternative 2 would be the same as those described for the Project 2 Proposed Action. Alternative 2 would result in short- and long-term, minor, adverse impacts on vegetation and on wildlife species and their habitats. No impacts on any federally listed threatened or endangered species would be expected to occur. Short- and long-term, minor, adverse impacts on the monarch butterfly would be expected to occur. However, as under the Proposed Action, with the implementation of BMPs adverse impacts on these resources would be expected to be minor.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the proposed infrastructure would not be constructed, and existing conditions discussed in **Section 3.8.1** would remain unchanged. No new impacts on biological resources would be expected.

3.8.3 Cumulative Impacts

Construction activities under the Proposed Actions, in conjunction with the on- and off-installation projects, would result in impacts on vegetation through crushing and soil compaction during ground-disturbing activities, which could result in establishment of invasive species. Adverse impacts on vegetation would be minimized with appropriate BMPs, such as cleaning equipment prior to entering the project areas and measures would be implemented to help prevent and control dissemination of invasive plant species during ground-disturbing activities. Revegetation of disturbed sites with native vegetation would further reduce the establishment of invasive species.

Project activities that require heavy equipment could cause mobile mammals, amphibians, and reptiles, and birds, including breeding migratory birds, to temporarily relocate to nearby similar habitat. This disturbance is expected to be minor, and it is assumed that displaced wildlife would return to areas that had not been improved soon after activities conclude or would move to adjacent areas of similar habitat. Adverse impacts on wildlife would be minimized with appropriate BMPs, such as conducting surveys prior to any construction activities taking place and scheduling project activities to occur outside of the nesting season of 1 March to 30 September to reduce impacts on migratory birds. Although growth and development can be expected to continue outside of SJAFB and within the surrounding natural areas, significant adverse impacts on these resources would not be expected. Therefore, the Proposed Actions, when combined with the other reasonably foreseeable actions, would result in no significant adverse cumulative impacts on biological resources.

3.9 CULTURAL RESOURCES

Cultural resources are historic sites, buildings, structures, objects, or districts considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural or engineering resources, and traditional cultural resources. Federal laws and Executive Orders that pertain to cultural resources management include the NHPA (1966), the Archeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990). SJAFB is required to comply with DAF regulations and instructions, including AFMAN 32-7003, *Environmental Conservation;* and DAFI 90-2002, *Interactions with Federally Recognized Tribes*. The *Integrated Cultural Resources Management Plan (ICRMP) for Seymour Johnson*

AFB (SJAFB 2021a) is the guidance document for cultural resources for planning and proposed activities at SJAFB.

The NHPA defines historic properties as buildings, structures, sites, districts, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP). Resources found significant under NRHP criteria are considered eligible for listing in the NRHP. Historic properties are generally 50 years of age or older (i.e., considered historic age), are historically significant, and retain sufficient integrity to convey their historic significance.

3.9.1 Affected Environment

Under Section 106 of the NHPA, federal agencies must take into account the effect of their undertakings on historic properties within the proposed undertaking's area of potential effects (APE). Federal agencies must assess the possible effects of the proposed undertaking on historic properties in consultation with the SHPO and other consulting or interested parties, including the public. The APE is defined as the geographic area or areas within which an undertaking (project) may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The APE for the Proposed Action is discontinuous and includes 1) the construction footprint of the proposed road demolition and construction associated with Slocumb Gate ECF and 2) the construction footprint of the proposed new Flightline Access Road (see **Figure 2-1**).

The Integrated Cultural Resources Management Plan (ICRMP) for SJAFB, Dare County Range, and Fort Fisher Recreation Area (FFRA), states the three facilities have been comprehensively surveyed for archaeological and architectural resources. Past surveys at SJAFB have identified one historic archaeological site, a Civil War era site, that is eligible for listing in the NRHP, located at the FFRA; no NRHP-eligible archaeological resources have been discovered at SJAFB. No Traditional Cultural Resources have been identified at SJAFB. The 2021 ICRMP lists two NRHP-eligible architectural resources at SJAFB (Buildings 5015 and 2130) but neither are within the APE for the Proposed Actions (SJAFB 2021a). Therefore, there are no previously surveyed historic properties within the APE for the Proposed Actions.

3.9.2 Environmental Consequences

Project 1 Proposed Action:

There are no known historic properties within the APE for the Project 1 Proposed Action. Therefore, the Proposed Action would have no impacts on known historic properties. Should inadvertent discoveries be made during construction or demolition, the standard operating procedures for inadvertent discoveries of archaeological resources outlined in the installation's ICRMP would be implemented.

Project 1 No Action Alternative:

Under the No Action Alternatives for Project 1, the DAF would not perform demolition or construction as part of the proposed Slocumb Gate ECF project. Therefore, conditions as described in **Section 3.9.1** would remain unchanged, and no impacts on cultural resources would occur.

Project 2 Proposed Action:

There are no known historic properties within the APE for the Project 2 Proposed Action. Therefore, the Project 2 Proposed Action would have no impacts on known historic properties. Should inadvertent discoveries be made during construction or demolition, the standard operating procedures for inadvertent discoveries of archaeological resources outlined in the installation's ICRMP would be implemented.

Project 2 Alternative 2:

There are no known historic properties within the APE for Project 2 Alternative 2. Therefore, Project 2 Alternative 2 would have no impacts on known historic properties. Should inadvertent discoveries be made during construction or demolition, the standard operating procedures for inadvertent discoveries of archaeological resources outlined in the installation's ICRMP would be implemented.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the DAF would not perform construction as part of the proposed new Flightline Access Road project. Therefore, conditions as described in **Section 3.9.1** would remain unchanged, and no impacts on cultural resources would occur.

3.9.3 Cumulative Impacts

Because no impacts on cultural resources would be expected under the Proposed Actions, no cumulative impacts would result from the Proposed Actions in conjunction with the reasonably foreseeable actions in the surrounding area. The entirety of SJAFB has been surveyed for cultural resources, but the potential to encounter undiscovered archaeological deposits during ground disturbing activities cannot be entirely ruled out. Each reasonably foreseeable project would be analyzed for impacts on cultural resources independently, in compliance with applicable federal laws. Potential impacts on cultural resources from reasonably foreseeable actions would be avoided, minimized, or mitigated through the Section 106 of the NHPA compliance process, as needed.

3.10 INFRASTRUCTURE

Infrastructure is the basic man-made systems and services, such as transportation and utilities, that a country or organization uses in order to function effectively (Cambridge Dictionary 2023). Infrastructure components at SJAFB to be discussed in this section include transportation, utilities, and solid waste management. Transportation includes major and minor roadways that feed into the installation and the security gates, roadways, parking areas, and pedestrian networks on the installation. Utilities include electrical supply, liquid fuel supply, natural gas supply, water supply, sanitary sewer and wastewater systems, stormwater drainage, communications systems, and solid waste management.

3.10.1 Affected Environment

Transportation. There are currently three gates at the installation, Berkley, Slocumb, and Oak Forest, with Berkley Gate being used most frequently. Berkley Gate is accessible via interchanges with U.S. 13 and Berkley Boulevard. Oak Forest Gate can be accessed from the intersection of Oak Forest Road and U.S. 70. Eight arterial on-installation roads carry the majority of traffic throughout the installation with six collector roads distributing traffic to local streets and destinations. Major parking areas on-installation include surface parking lots adjacent to the Commissary and Exchange center, and two parking lots along Wright Brothers and Cannon Avenues. Additional parking areas are available throughout the installation near designated facilities. SJAFB has a system of pedestrian sidewalks adjacent to the arterial and collector roads and nature trails near recreation areas (AECOM 2018).

Electrical System. Electrical power is provided to SJAFB by Duke Progress Energy. A single 115-kilovolt transmission circuit is energized by a substation near the Wayne Manor Housing Area. Primary distribution consists of approximately 567,000 linear feet of underground lines and approximately 389,000 linear feet of overhead lines (AECOM 2018).

Natural Gas System. Natural gas is supplied to SJAFB by Piedmont Natural Gas. The natural gas system, maintained by Piedmont Natural Gas, consists of approximately 20,500 linear feet of mains, 39 main valves, 30 regulators, and 17 meter stations. Gas is supplied through two mains, with the primary source entering the installation at the easternmost corner of the Berkley Village housing area and the secondary source entering the installation via Elm Street (AECOM 2018).

Petroleum, Oil and Lubricants/Liquid Fuel Systems. Fuel storage capacity is operated by DLA and can accommodate a total of approximately 4,620,000 million gallons at SJAFB. Stored fuel types include diesel fuel, jet fuel, motor vehicle gasoline and heating oil. All fuels are received via commercial truck and rail, except for jet fuel which is transferred from a government-owned, contractor operated pipeline into bulk fuel tanks and then distributed through an installation hydrant refueling system. The pipeline fuel is delivered from Miller's Siding off- installation rail offloading system through an underground 6-inch-diameter carbon steel pipeline at approximately 580 gallons per minute. Four offloading spots and four 300 gallons per minute positive displacement pumps offload commercial truck fuels (AECOM 2018).

Water Supply Systems. SJAFB currently purchases water from the City of Goldsboro. Water is supplied via three metered connections and distributed throughout the installation via approximately 385,000 linear feet of mains and approximately 1,000 linear feet of service lines. The total water storage system includes one 500,000-gallon water tower and two fire protection water storage tanks totaling 600,000 gallons. In 2007, a potable water booster station was installed and in 2016, a top-fill/bottom-draw system in the water tower was completed (AECOM 2018).

Wastewater System/Collection System. The wastewater collection system at SJAFB consists of approximately 331,000 linear feet of sanitary sewer and industrial wastewater mains, 15 active oil-water separators and 14 sanitary sewage pump stations. Domestic and industrial wastewater is discharged to the City of Goldsboro's publicly owned treatment works through a single exit point west of the Slocumb Street and Daymond Road intersection (AECOM 2018).

Stormwater Discharge/Collection System. The stormwater system at SJAFB consists of approximately 50 miles of drainage pipe and a series of open and closed infrastructure including swales, ditches, and pipes. SJAFB currently has a National Pollutant Discharge Elimination System permit for non-point source stormwater that discharges through drainage ditches and storm sewers to Stoney Creek or the Neuse River (AECOM 2018).

Heating/Cooling Distribution Systems. SJAFB facilities are heated via individual gas-fired heating system and individual air conditioning systems. Buildings 3802, 3803, and 3815 are served by centralized chiller plants located in Building 3805. The chiller plant in Building 3609 serves chilled water in Buildings 3602 and 3603, and the chiller plant in Building 3610 provides chilled water to Buildings 3605, 3606, 3607, 3613, 3614, 3615, and 3616. Three previously used central heating plants at SJAFB have been decommissioned and demolished (AECOM 2018).

Communications System. Communications systems at SJAFB use ultra-high frequency as its radio frequency range. Copper and fiber cables connect core facilities and are government-owned and contractor maintained (AECOM 2018).

Solid Waste Management. There are no active landfills at SJAFB. All non-hazardous solid waste is transported off the installation. Compostable waste is transported to the City of Goldsboro Compost yard on Westbrook Road. Solid waste that cannot be reused or recycled is trucked to the Wayne County Landfill. Construction and demolition debris is disposed of at the Wayne County Construction and Demolition Landfill (USAF 2021b).

3.10.2 Environmental Consequences

Project 1 Proposed Action:

Transportation. The Project 1 Proposed Action would result in short-term, negligible to minor, adverse impacts and long-term, minor, beneficial impacts on the transportation system present at SJAFB. Construction and reconfiguration operations associated with the Proposed Action could result in temporary, minor, adverse impacts on the transportation system due to the closure of Slocumb Gate and the road network in the project area during construction operations. Closures and traffic changes during operations would be communicated on- and off-installation. Long-term, minor, beneficial impacts on transportation would include the increased facilitation of traffic flow to the southern portion of the installation from the reconfiguration of roadways. Additional traffic to newly constructed roads, driveways, and vehicle parking areas for construction equipment and contractor vehicles as part of the Proposed Action would also be expected, resulting in temporary, negligible, adverse impacts.

Electrical System. The Project 1 Proposed Action would result in short- and long-term, negligible to minor, adverse impacts on the electrical system at SJAFB. Installation of new electrical lines, overhead or underground, could be required to connect the newly constructed overwatch facility to the electrical grid. Interruptions to the electrical system may occur during construction of the overwatch facility and reconstruction of the roadways or during connection of the new overwatch facility to the electrical distribution system. Impacts are anticipated to be negligible to minor as construction activities and connection interruptions would be temporary. The net change in total electricity consumption at the installation due to the new overwatch facility is expected to be minor.

Natural Gas System. The Project 1 Proposed Action would result in short-and long-term, negligible to minor, adverse impacts on the natural gas system at SJAFB. Natural gas could be supplied to the newly constructed overwatch facility via existing mains or additional mains as needed. Interruptions to the natural gas system could occur during construction of the overwatch facility and reconstruction of the roadways or during connection of the new overwatch facility to the natural gas system. Impacts are anticipated to be negligible to minor as construction activities and connection interruptions would be temporary. The net change in total natural gas consumption at the installation due to the new overwatch facility is expected to be minor.

Petroleum, Oil and Lubricants/Liquid Fuel Systems. The Project 1 Proposed Action is not anticipated to result in any changes to the installation's petroleum, oils, and lubricants or liquid fuel systems, as equipment and construction vehicles would not utilize the installation's fuel supply and the overwatch facility would not require connection to the system. Due to the current location of the liquid fuels installation pipeline in the project area, disturbance during construction could possibly occur but is not anticipated.

Water Supply Systems. The Project 1 Proposed Action would result in short- and long-term, negligible to minor, adverse impacts on the SJAFB water supply system. The overwatch facility would be tied into the existing water supply lines to the extent possible, and additional lines may be installed as needed. Interruptions to the water supply system may occur during connection of the newly constructed overwatch facility to the installation's water distribution system.

Wastewater System/Collection System. The Project 1 Proposed Action would result in short- and long-term, negligible to minor, adverse impacts on the wastewater system at SJAFB. The Proposed Action would require the addition of sanitary sewer systems in association with the project area and constructed overwatch facility. This would increase the sanitary sewer system infrastructure at the installation. The addition of sanitary sewer systems on the installation would increase the volume of domestic wastewater discharged to

the City of Goldsboro's publicly owned treatment works, but the total impact on the wastewater system would be negligible.

Stormwater Discharge/Collection System. The Project 1 Proposed Action would result in short- and long-term, minor, adverse impacts on stormwater handling at SJAFB. Short-term construction activities could result in adverse impacts on stormwater handling by disrupting natural drainage patterns, contaminating stormwater discharge, and heavy sediment loading. The Proposed Action would not be expected to result in significant impacts on the stormwater handling system as construction activities would be temporary and runoff controls would be implemented during construction. A minor increase in impervious surfaces would occur with the reconfiguration of roads in the vicinity of Slocumb Gate. Potential impacts may include increased runoff, erosion and sedimentation, and changes in downstream direction and volume of stormwater, but the Proposed Action would not be expected to result in significant impacts on the stormwater handling system.

Heating/Cooling Distribution Systems. The Project 1 Proposed Action could result in long-term, minor, adverse impacts on the SJAFB heating and cooling system. One existing on- installation chiller plant would be required to supply additional service to the overwatch facility. If the chiller plant is unable to support the increased output, additional distribution systems may be necessary at SJAFB.

Communications System. The Project 1 Proposed Action would result in short- and long-term, negligible to minor, adverse impacts on the SJAFB communications system. New lines could be installed to connect the newly constructed overwatch facility to existing infrastructure. Interruptions to the communications system could occur during connection of the newly constructed overwatch facility to the installation's communications system.

Solid Waste Management. The Project 1 Proposed Action would result in short- and long-term, minor, adverse impacts on solid waste management. Construction activities would generate minimal amounts of solid waste. Waste disposal would be conducted in accordance with all federal, state, and local laws and regulations. Solid waste generated during operation of the new infrastructure would be added to the waste already collected by a contractor and transported to the Wayne County Landfill. All compostable waste generated during operation would be transported to the City of Goldsboro Compost yard. The Proposed Action would negligibly increase the overall amount of solid waste generated through the addition of the overwatch facility at SJAFB.

Project 1 No Action Alternative:

Under the No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.10.1** would remain unchanged. No new impacts on infrastructure would be expected.

Project 2 Proposed Action:

Transportation. The Project 2 Proposed Action would result in short-term, negligible, adverse impacts and long-term, minor, beneficial impacts on the transportation system present at SJAFB. Construction operations associated with the Proposed Action could result in short-term, negligible, adverse impacts on area roadways due to a temporary increase in the number of construction-related vehicles accessing the installation. Closures and traffic changes during operations would be communicated on- and off-installation. Long-term, minor, beneficial impacts on transportation would include increased facilitation of traffic flow to the western end of the flightline and improved normal and emergency traffic access due to the additional roadway. Additional traffic to the newly constructed road, driveways, and vehicle parking

areas for construction equipment and contractor vehicles as part of the Project 2 Proposed Action would also be expected, resulting in temporary, negligible, adverse impacts.

Electrical System. The Project 2 Proposed Action is not anticipated to result in any changes to the installation's electrical system. Disturbance of underground electrical lines during construction could possibly occur but is not anticipated.

Natural Gas System. The Project 2 Proposed Action is not anticipated to result in any changes to the installation's natural gas system, as equipment and construction vehicles would not utilize the installation's natural gas supply.

Petroleum, Oil and Lubricants/Liquid Fuel Systems. The Project 2 Proposed Action is not anticipated to result in any changes to the installation's petroleum, oils, and lubricants or liquid fuel systems, as equipment and construction vehicles would not utilize the installation's fuel supply. Due to the current location of the liquid fuels installation pipeline in the project area, disturbance during construction could possibly occur but is not anticipated.

Water Supply Systems. The Project 2 Proposed Action is not anticipated to result in any changes to the installation's water supply system. Due to the location of current main and service water lines in the project area, disturbance during construction could possibly occur but is not anticipated.

Wastewater System/Collection System. The Project 2 Proposed Action is not anticipated to result in any changes to the installation's wastewater collection system as no new facilities are being constructed that would integrate with the current sanitary sewer and wastewater systems.

Stormwater Discharge/Collection System. The Project 2 Proposed Action would result in short- and long-term, minor, adverse impacts on stormwater handling at SJAFB. Short-term construction activities could result in adverse impacts on stormwater handling by disrupting natural drainage patterns, contaminating stormwater discharge, and heavy sediment loading. The Proposed Action would not be expected to result in significant impacts on the stormwater handling system as construction activities would be temporary. The addition of culverts to cross two branches of the unnamed stream could result in a disruption to natural drainage patterns but the impacts are anticipated to be negligible. A minor increase in impervious surfaces would occur with the addition of roadways in the project area. Potential impacts could include increased runoff, erosion and sedimentation, and changes in downstream direction and volume of stormwater, but the Proposed Action would not be expected to result in significant impact on the stormwater handling system.

Heating/Cooling Distribution Systems. There are no anticipated impacts on the heating and cooling system at SJAFB due to the Project 2 Proposed Action as equipment and construction vehicles would not utilize the installation's heating and cooling systems.

Communications System. The Project 2 Proposed Action is not anticipated to result in any changes to the installation's communications system. Due to the current locations of the communication utility segments in the project area, disturbance during construction could possibly occur but is not anticipated.

Solid Waste Management. The Project 2 Proposed Action would result in short-term, minor, adverse impacts on solid waste management. Construction activities would generate minimal amounts of solid waste. Waste disposal would be conducted in accordance with all federal, state, and local laws and regulations. Solid waste generated during operation of the new infrastructure would be added to the waste already collected by a contractor and transported to the Wayne County Landfill. All compostable waste generated during operation would be transported to the City of Goldsboro Compost yard.

Project 2 Alternative 2:

Impacts on infrastructure under Project 2 Alternative 2 would be similar to those described for the Project 2 Proposed Action.

With the replacement of culverts with bridges, Alternative 2 would also result in long-term, minor, beneficial impacts on the transportation system, and short- and long-term, minor, adverse impacts on stormwater handling and solid waste management at SJAFB.

Project 2 No Action Alternative:

Under the No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.10.1** would remain unchanged. No new impacts on infrastructure would be expected.

3.10.3 Cumulative Impacts

Construction activities under the Project 1 and 2 Proposed Actions in conjunction with the U.S. 70 Corridor Improvements, U.S. 117 Corridor Upgrade near Goldsboro, and STRAHNET Connector would result in impacts on transportation, solid waste management, and stormwater discharge systems. The addition of roadways to improve movement on- and off-installation would have long-term, beneficial impacts on the transportation system through increased facilitation of traffic flow. An increase in solid waste generation during construction activities on- and off-installation could lead to adverse impacts relating to the disposal of material. Coordination would be required to ensure the designated landfills are able to hold the cumulative estimated amount of solid waste from the Proposed Actions and reasonably foreseeable actions. The possible disruption of natural drainage patterns, contamination of stormwater discharge, and heavy sediment loading due to operations within the installation and surrounding area would not be expected to result in significant impacts on the stormwater handling systems.

The proposed construction of a Small Arms Indoor Firing Range, Child Development Center, Airman Dormitory, and Consolidated Wing Support Center would have long term, minor impacts on the infrastructure at SJAFB. The future proposed construction would necessitate connection to the installations utility systems while moderately increasing the overall production of solid waste. The impacts of the future proposed actions would be minor as the net change in total utility consumption on base would be negligible to minor. The Proposed Actions, when combined with other actions off the installation, are not anticipated to result in significant cumulative impacts on infrastructure.

3.11 HAZARDOUS MATERIALS AND WASTES

Hazardous materials and wastes are substances that can cause negative effects to wildlife, human life, and the environment, and are commonly used on DAF installations for industrial use. They are man-made and are regulated to avoid contamination to the surrounding area.

Typical waste on SJAFB is managed in accordance with the Integrated Solid Waste Management Plan. Waste designated as hazardous is processed in accordance with the Hazardous Waste Management Plan (HWMP) (SJAFB 2023). Special hazards covered in the HWMP are asbestos containing materials (ACMs) and polychlorinated biphenyls (PCBs). ACMs are found in building floor tiles and wall plaster, and PCBs are commonly found in coolant fluids.

The installation has a work plan for projects that addresses the Environmental Restoration Program (ERP). The purpose of the ERP and work plan is to identify, confirm, and address problems resulting from past releases of hazardous substances and petroleum products into the environment. For example, per- and

polyfluoroalkyl substances (PFAS) and aqueous film forming foam (AFFF) are emerging contaminants of concern that may still be present in industrial materials on DAF installations, commonly in firefighting foam and non-stick products. This class of chemicals includes the perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutanesulfonic acid (PFBS). They are often found absorbed into groundwater, soil, or surface water. The DoD uses the Relative Risk Site Evaluation (RRSE) to measure the impact of PFAS contamination on a site. The impact is measured through the contaminant hazard factor, or how concentrated the PFAS are; the migration pathway factor, which determines how easily the exposure can reach humans or the environment; and the reception factor, which determines how likely a human will come into contact with the contaminant.

3.11.1 Affected Environment

The project areas include the Slocumb Gate ECF at the western side of the installation, and the access road connecting to the flightline east of Slocumb Gate. Construction on the installation is conducted in accordance with North Carolina's Hazardous Waste Management Rules, which incorporate Resource Conservation and Recovery Act requirements (NCDEQ 2020). This includes waste minimization, recordkeeping and proper disposal. Transportation of hazardous materials is regulated by the U.S. Department of Transportation. A complete list of federally recognized hazardous substances and their reportable quantities is provided in 40 CFR § 302.4.

ACMs are a concern generally in buildings constructed prior to the early 1980s. The buildings near the project areas were constructed between 1980-1999, with only one building in the area constructed after that time period (USAF 2021b). SJAFB has not identified any asbestos in buildings near the project areas. Most buildings on the installation have been renovated, removing any PCB risk. A PCB storage facility containing used generators is well maintained and not in the vicinity of either project area.

AFFF was used and found to be in high quantity at four of six sites analyzed on installation and is especially present in local groundwater (SJAFB 2022). Three of these sites (AFFF Areas 1, 2, and 3) are near the Flightline Access Road project area. The Slocumb Gate ECF and the proposed Flightline Access Road are near to AFFF Areas 2 and 3, described below, which have a high groundwater concentration of AFFF (see **Figure 3-3**) (SJAFB 2022).

AFFF Area 1 encompasses Former Fire Training Area 3 – FT-07. This area was operational from 1956-1992, with typical training exercises involving the release of 500 gallons of fuel into a circular diked pit containing metal cylinders from a nearby an underground storage tank. The drainage system beneath the pit drained the wastewater and residual fuel to an oil-water separator (OWS) prior to discharging into the sanitary sewer system. In 2007, a Comprehensive Environmental Response, Compensation, and Liability Act removal action at FT-07 was completed, removing approximately 3,700 cubic yards of soil. FT-07 received a No Further Action notice in February 2010 from the NCDEQ and is in the long-term monitoring program. Although there are no records indicating the use of AFFF, because AFFF was used post-1970, it is possible that AFFF was used during these training exercises. The RRSE noted that slightly elevated levels of PFOS were detected in the soil at AFFF Area 1. Additionally, elevated levels of PFBS, PFOA, and PFOS were detected in the groundwater (SJAFB 2022, NCDEQ 2019).

AFFF Area 2 encompasses Building 4522, a five-bay hangar that contains three fire suppression systems. Bay E is a paint spray booth that has an AFFF system installed in 1986, which was accidentally discharged most recently in 2001. The discharge was captured by the hangar floor drains, which leads to an OWS that then discharges into the sanitary sewer system. In 2012, the area near the OWS was investigated and determined to have had a release to the environment with the detection of Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO) in the surrounding soil. Although the investigations in 2012 did not analyze for PFAS, the elevated levels of TPH-DRO indicate that the integrity of the OWS is uncertain and

there is a potential that PFAS could have been released into the surrounding area. Since 2015, the AFFF systems have been shut down and are expected to be replaced with high expansion foam. The RRSE noted that slightly elevated levels of PFOS were detected in the soil at AFFF Area 2. Additionally, elevated levels of PFBS, PFOA, and PFOS were detected in the groundwater (SJAFB 2022).

AFFF Area 3 encompasses Building 4537, a three-bay hangar that is equipped with an AFFF system installed in 1984. In 1998, there was an accidental discharge in Bay B which was collected by the floor drains. An 800-gallon tank had an apparent leak and became corroded at some point before 2015, when it was taken out of operation. In 2012, similar to Area 2, the area around the OWS was investigated and TPH-DRO was found in the surrounding soil at levels above regulatory criteria, indicating that the integrity of the OWS is uncertain and there is a potential that PFAS could also be present in the surrounding area. The RRSE noted that slightly elevated levels of PFOA and PFOS were detected in the groundwater at AFFF Area 3. No soil samples were noted in the RRSE (SJAFB 2022).

The project areas overlap two ERP sites: SS33 (spill site) and RW502 (contaminated parking area) (see **Figure 3-4**). Site SS33 previously stored old jet engine test cells and extends into the roadway that Project 1 would use. The fuel for the test cells was used from 1955 to 1984 and was removed between 1989 and 1994. Jet fuel contamination was found around 2001, presumably from a leak, and subsequently remediated. The site received a No Further Action notice from the NCDEQ in 2015(FPM 2017a).

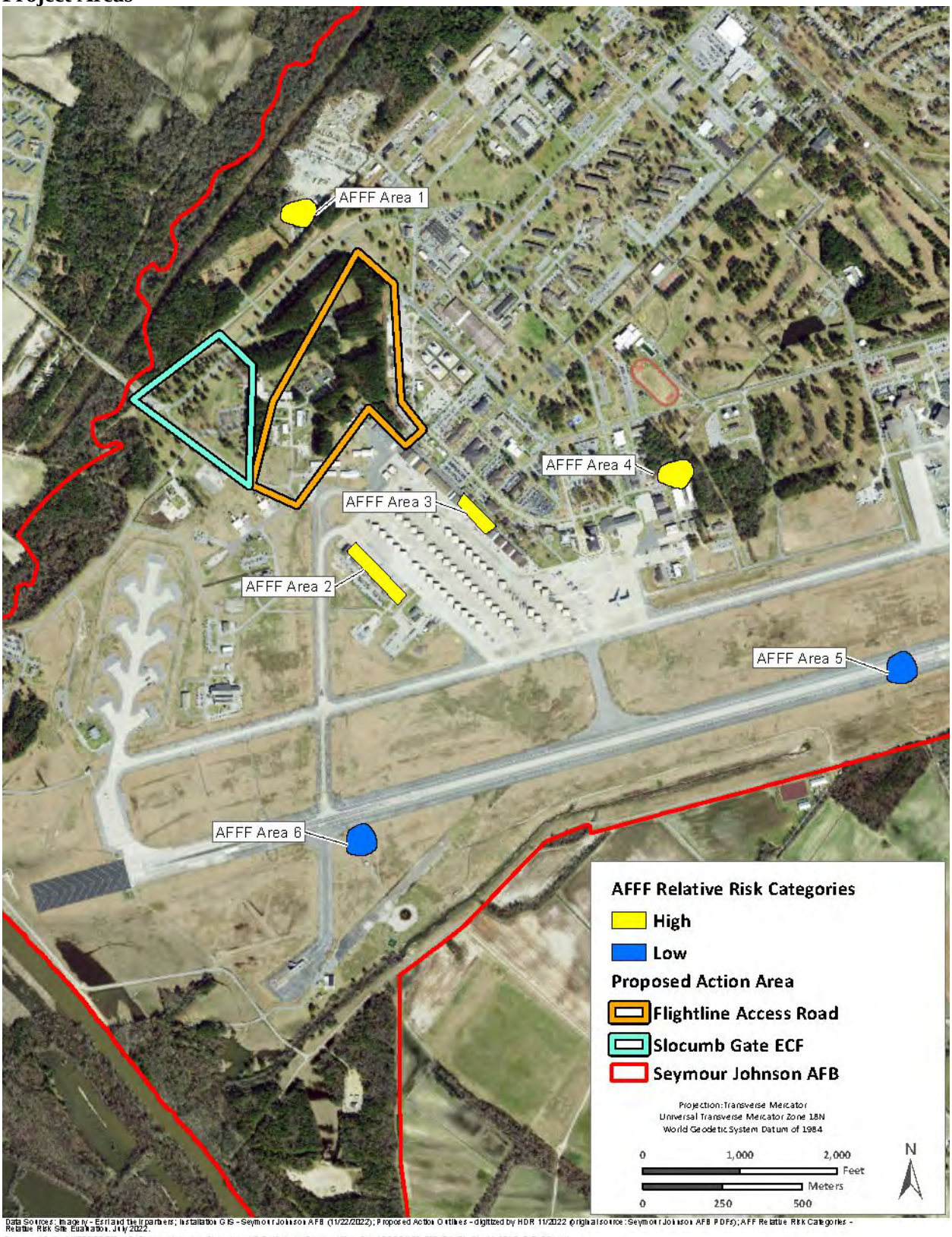
Site RW502 was a former wash area associated with an oil/water separator within a bulk fuel storage area truck parking lot. The site extends into the proposed Project 2 roadway. Benzene, arsenic, mercury, lead, and other hazardous materials were detected in 2002 from leakage of petroleum-related compounds, prompting remediation in 2004. The site received a No Further Action notice from the NCDEQ in 2015(FPM 2017b).

3.11.2 Environmental Consequences

The criteria considered to determine whether an alternative would result in potential significant adverse impacts due to hazardous materials and waste includes the extent or degree to which an alternative would result in the following:

- Noncompliance with federal, state, local, or installation regulations.
- An increase in the generation of hazardous materials or waste beyond current management procedures.
- Creation of contaminated sites that would cause negative impacts on human health or the environment.
- Impediment of currently contaminated sites or remediation sites that would cause substantial delays or require significant alteration of planning.

Figure 3-3: Aqueous Film-Forming Foam (AFFF) -contaminated Sites on SJAFB Proximal to the Project Areas



Project 1 Proposed Action:

Construction would result in short-term, minor, adverse impacts on hazardous materials and waste management due to increased presence of hazardous materials and potential for spills. Hazardous materials such as solvents, hydraulic fluid, and oil would be present on the construction site for the duration of the project. Aboveground Storage Tanks (ASTs) could be used temporarily for storing fuel for onsite power generation or equipment and would be removed upon completion of the project.

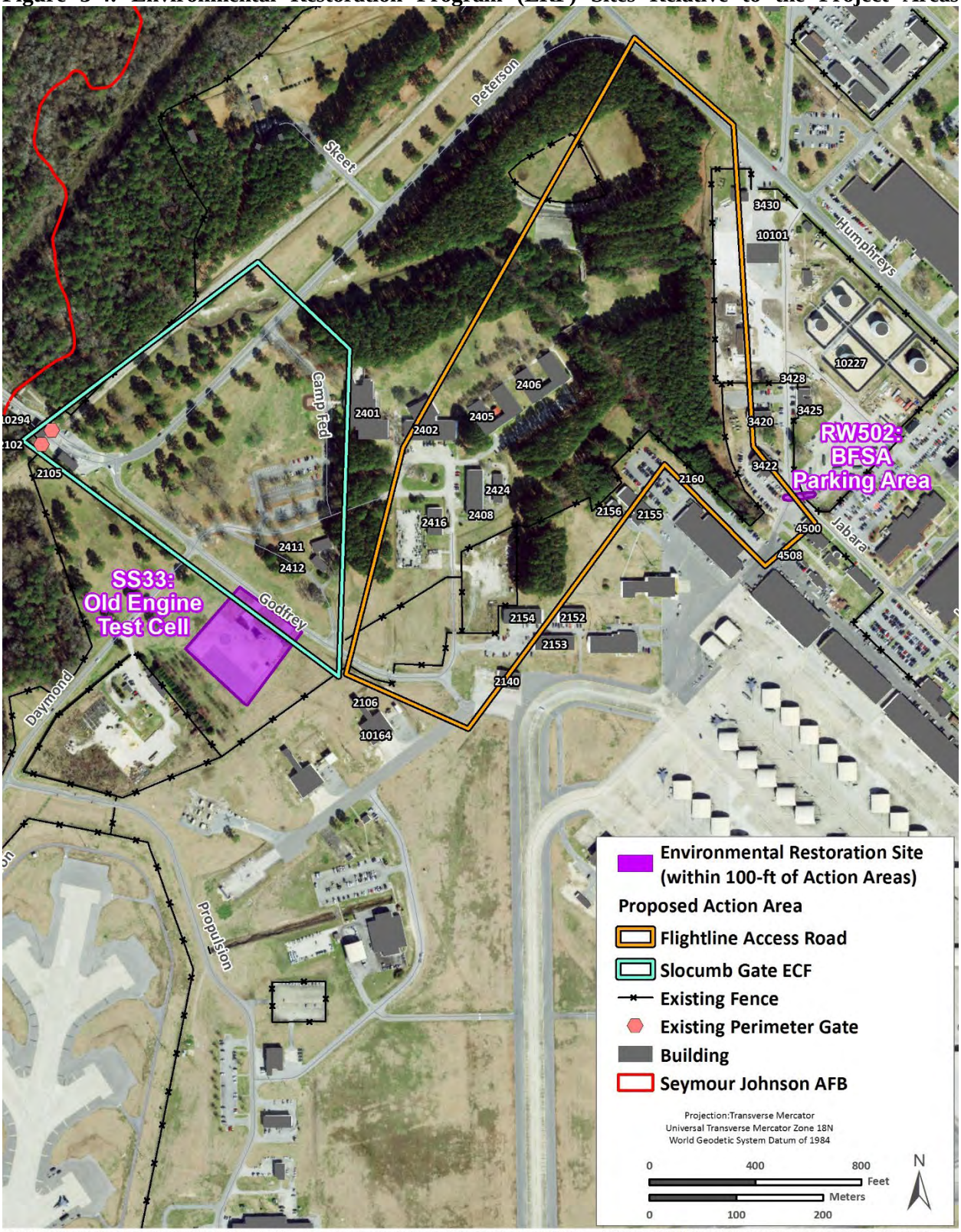
Should any hazardous materials be released into the environment, the Spill Prevention and Response (SPR) Plan would be adhered to, and construction contractors would use BMPs to prevent spills, ensuring the handling and storage of any hazardous materials would be carried out in compliance with the local laws and regulations (SJAFB 2021b). The contractor would coordinate with the SJAFB ERP office to ensure that ground disturbance would not disturb environmental restoration activities. If contractors were to find groundwater or soils potentially contaminated with PFAS from AFFF Areas 1, 2, or 3, or other hazardous materials, work would be stopped and the contractor would be required to report the discovery to the ERP office and implement appropriate safety measures. The issue would have to be investigated and resolved before any additional progress could be made.

Upon completion of construction, there would be no long-term impacts on hazardous materials and wastes in the project area. Maintenance and continued use of the improved Slocumb Gate ECF would not create additional risk of hazardous material exposure, apart from the continued passage of hazardous materials and waste transport trucks. The new facilities would also not impair the ability to continue monitoring of the ERP sites.

Project 1 No Action Alternative:

Under the Project 1 No Action Alternative, improvements to the Slocumb Gate ECF would not be implemented and existing conditions would remain unchanged. Jet fuel, munitions, petroleum products, and other hazardous materials would continue to be transported to SJAFB via delivery trucks. The Slocumb Gate ECF provides a route to warehouses that minimizes exposure of hazardous materials to residential areas. Due to their locations, the other installation gates increase risk of hazardous materials exposure to commercial and residential areas. Without implementation of the ECF upgrades to comply with UFC ECF standards and guidelines, Slocumb Gate traffic, including transport of hazardous materials, would continue to be slow and hard to regulate, increasing risk of hazardous materials exposure in the area. Therefore, long-term, moderate, adverse impacts on hazardous materials and waste would occur under the Project 1 No Action Alternative.

Figure 3-4: Environmental Restoration Program (ERP) Sites Relative to the Project Areas



Data Sources: Imagery - Esri and their partners; Installation GIS - Seymour Johnson AFB (11/22/2022); Proposed Action Outlines - digitized by HDR 11/2022 (original source: Seymour Johnson AFB PDFs).

Document Path: J:\2022\22-097_AF_SeymourJohnson_IHumphreys\k7 2_Work_In_Progress\Map_Docs\DOPPA\22_097_SJ_EA_Fig_X_Hazmat_New_6x8_SC.mxd

Project 2 Proposed Action:

Construction would result in short-term, minor, adverse impacts on hazardous materials and waste management due to increased presence of hazardous materials and potential for spills. Hazardous materials such as solvents, hydraulic fluid, and oil would be present on the construction site for the duration of the project. ASTs could be used temporarily for storing fuel for onsite power generation or equipment and would be removed upon completion of the project.

Improved flightline access via the proposed roadway would ease traffic congestion, including transport of hazardous materials, such as jet fuel, to and from the flightline. In an emergency, spill response times would be improved with direct access to the flightline from other areas on the installation.

Should any hazardous materials be released into the environment, the SPR Plan would be adhered to, and construction contractors would use associated BMPs to prevent spills, ensuring the handling and storage of any hazardous materials would be carried out in compliance with local laws and regulations. The contractor would coordinate with the SJAFB ERP office to ensure that ground disturbance would not impact environmental restoration activities. If contractors were to find groundwater or soils potentially contaminated with PFAS from Areas 1, 2, or 3 or other hazardous materials, work would be stopped and the contractor would be required to report the discovery to the ERP office and implement appropriate safety measures. The issue would have to be investigated and resolved before any additional progress could be made.

Upon completion of construction, there would be no long-term impacts from hazardous materials and waste in the project area. Provided that there is little groundwater disturbance, and that PFAS are not present in the nearby area, no impacts would be anticipated. Use of the Flightline Access Road would reduce risks of accidents during transport of hazardous materials and petroleum products to the flightline. The Flightline Access Road would not impair the ability to continue monitoring of the ERP sites.

Project 2 Alternative 2:

Impacts under Project 2 Alternative 2 would be similar to those described for the Project 2 Proposed Action.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the proposed Flightline Access Road would not be constructed and existing conditions would remain unchanged. Without direct access to the flightline, transport of hazardous materials, such as jet fuel, would continue to be slow and circuitous, increasing risk of exposure to personnel and public on the installation. Emergency vehicle response time would continue to be impeded by lack of easy access to the flightline. Therefore, long-term, moderate, adverse impacts on hazardous materials and waste would occur under the Project 2 No Action Alternative.

3.11.3 Cumulative Impacts

Long-term, negligible to minor, adverse impacts on hazardous materials and waste management would result during construction of both Proposed Actions. When combined with construction on and near SJAFB, specifically the U.S. 70 Corridor Improvements, U.S. 117 Corridor Upgrade near Goldsboro, and STRAHNET Connector, the increased presence of hazardous materials and petroleum products during construction activities would increase the risk of exposure or accidental release of materials in the area. This risk would be minimized through implementation of BMPs and environmental protection measures. All hazardous and petroleum wastes generated would be handled and disposed of in accordance with the installation's HWMP and North Carolina's Hazardous Waste Management Rules. After construction is completed, no cumulative long-term impacts on hazardous materials and waste would be expected.

3.12 SAFETY

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety addresses workers' and public health and safety during any construction, demolition, or project activities.

Site safety requires adherence to regulatory requirements imposed for the benefit of employees and the public. Site safety includes implementation of engineering and administrative practices that aim to reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous DoD and military branch-specific requirements designed to comply with standards issued by federal OSHA, USEPA, and state occupational safety and health (OSH) agencies. These standards specify health and safety requirements, the amount and type of training required for workers, the use of personal protection equipment (PPE), administrative controls, engineering controls, and permissible exposure limits for workplace stressors.

Health and safety hazards can often be identified, and reduced or eliminated, before an activity begins. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself, together with the exposed (and possibly susceptible) population or public. The degree of exposure to a potential hazard depends primarily on the proximity of the hazard to the population. Common hazards include transportation, maintenance, and repair activities, and the creation of a noisy environment or a potential fire hazard. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments due to noise or fire hazards for nearby populations. Noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

3.12.1 Affected Environment

The Proposed Action would affect contractors involved in the construction of the gates and the safety of all military and civilian personnel on the SJAFB; each are discussed below in further detail.

Contractor Safety. All contractors performing construction activities are responsible for following federal and state safety regulations and are required to conduct activities in a manner that does not increase risk to workers or the public.

North Carolina is one of several states that administers their own OSH program according to the provision of the federal OSH Act of 1970, which permits a state to administer its own OSH program if it meets all federal requirements regarding the program's structure and operations. The OSH Division within the North Carolina Department of Labor has the responsibility of enforcing occupational health and safety standards within the state (NCDOL 2011). Its jurisdiction includes all private and public entities such as city, county, and state government employees. Federal employees are excluded as they are covered by federal OSHA regulations.

OSH programs address the health and safety of people at work. OSH regulations cover potential exposure to a wide range of chemical, physical, and biological hazards, and ergonomic stressors. The regulations are designed to control these hazards by eliminating exposure to the hazards via administrative or engineering controls, substitution, or use of PPE. OSH is the responsibility of each employer, as applicable. Employer responsibilities are to review potentially hazardous workplace conditions; monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous substances), physical (e.g., noise propagation, falls), and biological (e.g., infectious waste, wildlife, poisonous plants) agents, and ergonomic stressors; recommend and evaluate controls (e.g., prevention, administrative, engineering, PPE) to ensure exposure to personnel is eliminated or adequately controlled; and ensure a medical surveillance program is in place to perform

occupational health physicals for those workers subject to the use of respiratory protection or engaged in hazardous waste, asbestos, lead, or other work requiring medical monitoring.

Military and Public Safety. Each branch of the military has its own policies and regulations that act to protect its workers, despite their work location. DAFI 91-202, *The U.S. Air Force Mishap Prevention Program*, "establishes mishap prevention program requirements, assigns responsibilities for program elements, and contains program management information." To meet the goals of minimizing loss of DAF resources and protecting military personnel, mishap prevention programs should address groups at increased risk for mishaps, injury, or illness; a process for tracking incidents; funding for safety programs; metrics for measuring performance; safety goals; and methods to identify safety BMPs.

SJAFB will respond to disasters on- or off- installation that involve installation resources or affect mission capabilities (USAF 2018). The 4th Civil Engineer Squadron Readiness and Emergency Management Flight at SJAFB provide the SJAFB community with an Installation Emergency Management Plan. The Plan identifies procedures for response and recovery from major accidents, natural disasters, attacks, and terrorist use of Chemical, Biological, Radiological, Nuclear, or High-Yield Explosives weapons or materials.

There are two fire stations at SJAFB (USAF 2018). The Main Station is just east of the F-15 Apron in Building 4601 and houses primary aircraft firefighting vehicles, an engine company, and support apparatuses within an 18-parking bay facility. The satellite fire station is located just north of the 916 ARW parking ramp in Building 4810. The SJAFB Fire Department, on average, answers 69 calls per month, although there has not been a "real fire" on the installation for approximately three years. The department has a strong rapport with all 29 fire departments in the surrounding communities.

Medical facilities at SJAFB occupy approximately 123,018 square feet (USAF 2018). The 4th Medical Group serves a prime service area population of more than 35,000 beneficiaries, of which more than 10,000 are enrolled with approximately 70 patients seen every day.

3.12.2 Environmental Consequences

Project 1 Proposed Action:

Implementation of the Project 1 Proposed Action would result in short-term, negligible, adverse and long-term, moderate, beneficial impacts on safety.

Contractor Safety. The Project 1 Proposed Action would result in short-term, negligible, adverse impacts on the health and safety of construction personnel. Construction and demolition activities for Project 1 would slightly increase the health and safety risk to workers within the project area due to exposure to construction hazards. The selected construction contractor would be required to develop a comprehensive health and safety plan detailing all potential hazards and site-specific guidance to ensure potential safety risks are minimized. The plan would include, at a minimum, emergency response and evacuation procedures; operating manuals; PPE recommendations; procedures for handling, storing, and disposing of hazardous materials and wastes; information on the effects and symptoms of potential exposures; and guidance with respect to hazard identification. Contractor personnel would be responsible for compliance with applicable federal, state, and local safety regulations and would be educated though daily safety briefings to review upcoming work activities and associated hazards. Therefore, the Project 1 Proposed Action would not be expected to result in a significant adverse impact on contractor safety.

Military and Public Safety. The Project 1 Proposed Action would result in long-term, moderate, beneficial impacts on military personnel and public health and safety. The Project 1 Proposed Action would improve

the safety of all military and civilian personnel on site by securing the installation from unauthorized access and intercepting contraband.

Project 1 No Action Alternative:

Under the No Action Alternative, the proposed infrastructure would not be constructed, and the existing conditions discussed in **Section 3.10.1** would remain unchanged.

Under the Project 1 No Action Alternative, reconfiguration of the roads in the vicinity of the Slocumb Gate would not occur at SJAFB, and the existing conditions discussed in **Section 3.12.1** would remain unchanged. No long-term beneficial impacts on the safety of military and civilian personnel on the site would be expected.

Project 2 Proposed Action:

Similar to the Project 1 Proposed Action, implementation of Project 2 Proposed Action would result in short-term, negligible, adverse and long-term, moderate, beneficial impacts on safety.

Contractor Safety. The Project 2 Proposed Action would result in short-term, negligible, adverse impacts on the health and safety of construction personnel. Similar to the Project 1 Proposed Action, a comprehensive health and safety plan would be required to ensure potential safety risks are minimized.

Military and Public Safety. The Project 2 Proposed Action would result in long-term, moderate, beneficial impacts on military personnel and public health and safety. The Project 2 Proposed Action would provide a more direct route to the flightline, reducing travel time and allowing emergency vehicles to respond more quickly to the flightline during an emergency. Project 2 would also reduce the incidences of FODs on the flightline which pose a major hazard to aircraft during takeoff and landing.

Project 2 Alternative 2:

Similar to the Project 1 and 2 Proposed Actions, implementation of Project 2 Alternative 2 would result in short-term, negligible, adverse and long-term, moderate, beneficial impacts on safety.

Contractor Safety. Impact on the health and safety of construction personnel would be the same as the Project 2 Proposed Action.

Military and Public Safety. Impacts on military personnel and public health and safety would be the same as the Project 2 Proposed Action.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the Flightline Access Road would not be constructed, and the existing conditions discussed in **Section 3.12.1** would remain unchanged. Emergency response times would remain delayed and the risk of FODs on the flightline would not be reduced, continuing to create a safety risk to personnel and civilian visitors at SJAFB. Therefore, continued long-term, minor, adverse impacts on safety would be expected.

3.12.3 Cumulative Impacts

No adverse cumulative impacts on health and safety would be expected from the Proposed Actions in combination with the present and reasonably foreseeable future projects on the installation and in the surrounding area.

3.13 SOCIOECONOMICS

3.13.1 Affected Environment

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. While population and demographic data are relatively straightforward and maintained by the U.S. Census Bureau (USCB), there are many factors that can be used as indicators of economic conditions for a geographic area, such as employment and unemployment rates, employment by business sector, and median household income.

For the purposes of this socioeconomic analysis, five different community types are used, as follows:

- The Region of Influence (ROI) encompassing three census tracts including, and immediately adjacent to, the Proposed Action project areas,
- City of Goldsboro,
- Wayne County, North Carolina,
- State of North Carolina, and
- the United States.

The ROI is comprised of the three individual census tracts (5, 15, and 14.02) which include the installation and are on either side of Slocumb Drive. The ROI best illustrates socioeconomic characteristics for where the majority of impacts from the Proposed Action would be expected because it encompasses the project areas and associated population. All the proposed construction and operations would occur within the ROI.

SJAFB is within the city of Goldsboro in Wayne County, North Carolina. In 2020, the population of Wayne County was 123,785, representing 1.2 percent of the total population of the State of North Carolina. From 2010 to 2020, the population of Goldsboro decreased by 6 percent, while Wayne County grew by 3.1 percent. This is less than the growth rate of both the state of North Carolina (12 percent) and the United States (7.4 percent) over the same time period. Because 2010 data for one of the three census tracts in the ROI was not available, the percent change in the ROI could not be determined between 2020 and 2010. **Table 3-15** presents the 2010 and 2020 populations for the five communities discussed above.

Table 3-15: Total Population in the Region of Influence as Compared to North Carolina and the United States (2010 and 2020)

Location	2010	2020	Percent Change
ROI	5,660*	7,391	N/A
Goldsboro	36,816	34,610	-6.0%
Wayne County	120,102	123,785	3.1%
North Carolina	9,271,178	10,386,227	12.0%
United States	303,965,272	326,569,308	7.4%

Source: USCB 2010, USCB 2020a.
*Population not available for census tract 14.02.

Employment Characteristics. The three largest industries in the ROI in terms of percentage of the workforce employed within that industry are: manufacturing (22.1 percent); educational services, and health care and social assistance industry (18.7 percent); and arts, entertainment, and recreation, and accommodation and food services (12.4 percent). In 2021, the ROI reported an unemployment rate of 13.3 percent, which is higher than the unemployment rate of Goldsboro overall (8.1 percent), Wayne County (4.4 percent), or North Carolina (5.3 percent) (USCB 2021, USCB 2020b).

During fiscal year 2020, 22,576 individuals were employed by SJAFB, of which 4,547 were active-duty personnel. Payroll expenditures from the installation totaled over $344 million. When non-payroll expenditures associated with SJAFB are included, total expenditures exceeded $378 million. An additional 7,688 local jobs are created through the installation, resulting in a total economic impact of more than $612 million (SJAFB 2020c).

3.13.2 Environmental Consequences

Project 1 Proposed Action:

Construction of the Project 1 Proposed Action would result in short-term, negligible, beneficial impacts on socioeconomics. Direct and indirect, beneficial impacts would result from increased payroll tax revenue and the purchase of construction materials and goods in the area benefiting SJAFB and the local economies of the City of Goldsboro and Wayne County. No adverse impacts on socioeconomics would be expected under the Project 1 Proposed Action. Only a small number of construction workers would be required over the construction period, which could be supported by the current construction workforce in Goldsboro. The temporary increase in construction workers at SJAFB would represent a small increase in the total number of persons working on the installation, but no additional facilities (e.g., housing, schools) would be necessary to accommodate the workforce because they would be sourced locally.

Operations of the Slocumb Gate ECF would not result in changes in employment and would be confined to the installation. Therefore, operation would not be likely to generate additional local or regional spending, and no long-term adverse impacts on socioeconomics are anticipated.

Project 1 No Action Alternative:

Under the Project 1 No Action Alternative, the Slocumb Gate ECF would not be constructed, and the existing conditions discussed in **Section 3.13.1** would remain unchanged. No impacts on socioeconomics would be expected.

Project 2 Proposed Action:

Similar to the Project 1 Proposed Action, construction would result in short-term, negligible, beneficial impacts on socioeconomics. No adverse impacts on socioeconomics would be expected under the Project 2 Proposed Action.

Operations of the Flightline Access Road would not result in changes in employment and would be confined to the installation. Therefore, operation would not be likely to generate additional local or regional spending, and no long-term adverse impacts on socioeconomics are anticipated.

Project 2 Alternative 2:

Similar to the Project 1 and 2 Proposed Actions, construction would result in short-term, negligible, beneficial impacts on socioeconomics. No adverse impacts on socioeconomics would be expected under Project 2 Alternative 2.

Similar to the Project 2 Proposed Action, operations of the Flightline Access Road would not result in changes in employment and would be confined to the installation. Therefore, operation would not be likely to generate additional local or regional spending, and no long-term adverse impacts on socioeconomics are anticipated.

Project 2 No Action Alternative:

Under the Project 2 No Action Alternative, the Flightline Access Road would not be constructed, and the existing conditions discussed in **Section 3.13.1** would remain unchanged. No impacts on socioeconomics would be expected.

3.13.3 Cumulative Impacts

The Proposed Actions would result in short-term, negligible, beneficial impacts on socioeconomics. Direct and indirect, beneficial impacts would result from increased payroll tax revenue and the purchase of construction materials and goods in the area resulting in a beneficial impact on the local economy of the Wayne County. Additional construction associated with the on- and off-installation projects that could coincide with the Proposed Actions could contribute to a slight increase in the region's economy through the purchase of construction materials and employment opportunities for construction personnel.

3.14 ENVIRONMENTAL JUSTICE

3.14.1 Affected Environment

E.O. 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low- Income Populations*, and E.O. 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, direct agencies to identify and address the environmental effects of their actions on minority and low-income populations. The E.O. was enacted to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with the respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

E.O. 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, states that each Federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." Children might be more susceptible than adults to certain environmental effects and risks. Therefore, activities occurring near areas that could have higher concentrations of children during any given time, such as schools and childcare facilities, might further intensify potential impacts on children.

Considerations of concerns related to environmental justice and protection of children include race, ethnicity, and the poverty status of populations in the vicinity of a proposed action.

Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, or Other. Poverty status is used to define low-income populations. The poverty rate is defined as the number of people with income below poverty level, which was $30,000 for a family of four in 2023 (HHS 2023). A potential disproportionate impact may occur when the percent minority in the study area exceeds 50 percent and/or the percent low-income exceeds 20 percent of the population.

The relevant demographics of the ROI (see **Section 3.13.1** for definition of ROI), City of Goldsboro, Wayne County, North Carolina, and the United States are listed in **Table 3-16**. The African American population in both the ROI and the city of Goldsboro is over 50 percent, which is significantly higher than that of North Carolina or United States as a whole. The Hispanic population in the ROI and Goldsboro are both lower than that of North Carolina (USCB 2020a).

Table 3-16: Demographics by Location

Location	Total Population, 2020	Caucasian (%)	Black/ African American (%)	Some Other Race (%)	Asian (%)	American Indian/ Native Alaskan (%)	Native Hawaiian/ Pacific Island (%)	2+ Races (%)	Hispanic/ Latino* (%)
Census Tracts (ROI)	7,391	31.3	55.4	0.6	2.6	0.3	0.3	9.6	7.3
Goldsboro	34,610	39.5	52.0	0.9	2.3	0.2	0.1	5.0	5.8
Wayne County	123,785	66	32.6	3.0	2.4	0.8	0.2	4.7	12.1
North Carolina	10,386,227	67.6	21.4	3.2	3.0	1.2	0.1	3.6%	9.5
United States	326,569,308	70.4	12.6	5.1	5.6	0.8	0.2	5.2	18.2

*Percentage not included as part of demographic total.
Source: USCB 2020a.

The median household income in the ROI is $32,343, which is below the city, county, and state median household incomes of $37,556, $47,221, and $56,642 respectively (**Table 3-17**). The poverty rate in both the ROI and Goldsboro exceeds 20 percent.

The total occupancy of the installation's unaccompanied housing described in **Section 3.2.1** is 561, 18 percent of which is women. The predominant ages of the Airmen are 18-24 (89 percent). The annual wages of the Airmen are less than the median household incomes of the ROI and range from $23,011 to $31,579 (SJAFB 2023b).

Children (under 18 years old) make up approximately 26.1 percent of the ROI (USCB 2020a, 2020b). The Environmental Justice Index for communities near the ROI falls within the 95th percentile in North Carolina for Air Toxics Cancer Risk (USEPA 2023e). This refers to the chance that exposure to certain air-borne pollutants will develop cancer (USEPA 2019).

Table 3-17: Minority Population and Poverty Rates – 2020 American Community Survey (ACS)

Area		Median Household Income	Poverty Rate (percent)
Wayne County, NC	**Census Tracts (ROI)**	$32,343	31.3
	Goldsboro	$37,556	24.3
	Wayne County Overall	$47,221	18.7
North Carolina		$56,642	14
United States		$64,994	12.8

Source: USCB 2020b.

The SJAFB Child Development Center and Youth Center are located in the Stoney Creek Planning District on Langley Avenue. Both Meadow Lane Elementary School and Greenwood Middle School are located to the northeast of the installation, approximately 1 mile from the Oak Forest Gate (USAF 2018).

3.14.2 Environmental Consequences

Project 1 Proposed Action:

Impacts on environmental justice are considered adverse human health impacts if they have a disproportionate and adverse effect on minority and low-income populations. The Project 1 Proposed Action would occur in areas where minority populations exceed 50 percent of the population, and the poverty rate exceeds 20 percent. Therefore, a likelihood exists that the Project 1 Proposed Action could affect minority populations due to proximity of these populations near the project areas. However, the construction and operation of the Project 1 Proposed Action would occur entirely on the installation and would not be expected to impact the surrounding community. The Project 1 Proposed Action would improve traffic flow and could result in minor beneficial permanent impacts for community members driving around the installation. Therefore, short- and long-term, negligible, beneficial impacts on minority populations could occur from implementation of the Project 1 Proposed Action.

No schools or childcare facilities are located close to the Proposed Action; therefore, no impacts to children are anticipated.

The Project 1 Proposed Action would cause only temporary impacts on air quality and noise during construction, and appropriate BMPs would be used to minimize any potentially disproportionate effects on minority and low-income populations. See **Section 3.2** for more information on noise and **Section 3.4** for more information on air quality.

Project 1 No Action Alternative:

Under the Project 1 No Action Alternative, the Slocumb Gate ECF would not be constructed, and the existing conditions discussed in **Section 3.14.1** would remain unchanged. No new impacts on environmental justice populations would be expected.

Project 2 Proposed Action:

Similar to the Project 1 Proposed Action, the construction and operation of the Project 2 Proposed Action would occur entirely on the installation and would not be expected to impact the surrounding community. The Project 2 Proposed Action would cause only temporary impacts on air quality and noise during construction, and appropriate BMPs would be used to minimize any potentially disproportionate effects on minority and low-income populations. See **Section 3.2** for more information on noise and **Section 3.4** for more information on air quality.

Therefore, no significant adverse impacts on minority populations or children would be expected under the Project 2 Proposed Action.

Project 2 Alternative 2:

As with the Project 2 Proposed Action, no adverse impacts on minority populations or children would be expected under Project 2 Alternative 2.

Project 2 No Action Alternative:

Under the Project 1 No Action Alternative, the Flightline Access Road would not be constructed, and the existing conditions discussed in **Section 3.14.1** would remain unchanged. No new impacts on environmental justice populations would be expected.

3.14.3 Cumulative Impacts

There are no foreseeable cumulative impacts associated with the proposed actions and other projects. No disproportionate impacts on populations, minorities, or low-income families would be anticipated.

3.15 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The relationship between short-term uses and enhancement of long-term productivity from implementation of the Proposed Actions is evaluated from the standpoint of short-term effects and long-term effects. Short-term effects would be those associated with construction of the new infrastructure and demolition of the existing Slocumb Gate ECF. The long-term enhancement of productivity would be those effects associated with operation and maintenance of the infrastructure after implementation of the Proposed Actions.

The Proposed Actions represent an enhancement of long-term productivity and enhanced capability for mission success at SJAFB. The negative effects of short-term impacts from construction and demolition activities would be minor compared to the long-term positive impacts by enabling the DAF and SJAFB to meet required ATFP standards and to improve safety and accessibility of the flightline.

3.16 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable commitment of resources are related to the use of non-renewable resources and the impacts that the use of these resources would have on future generations. These impacts primarily result from the use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals). The irreversible and irretrievable commitments of resources that would result from implementation of the proposed actions involve the consumption of material resources used for construction, energy resources, biological resources, and human labor resources. The use of these resources is considered to be permanent.

Material Resources. The Proposed Actions would result in short-term, minor, adverse impacts on material resources. Material resources used for the construction of proposed actions would potentially include building materials, concrete and asphalt, and various construction materials and supplies. Materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. The Proposed Actions would result in short- and long-term, minor, adverse impacts on energy resources. Energy resources, including petroleum-based products (e.g., gasoline and diesel), used for the Proposed Action would be irretrievably lost. During construction and maintenance activities, gasoline and diesel would be used for the operation of vehicles and construction equipment. However, consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, less than significant impacts would be expected.

Human Resources. The use of human resources for construction and maintenance activities is considered an irretrievable loss only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the proposed actions represents employment opportunities and is considered beneficial.

Biological Resources. The Proposed Action would result in a negligible loss of vegetation and wildlife habitat. Because the project area consists primarily of developed land, the loss would be negligible and not considered significant; therefore, a less than significant impact on the irretrievable loss of vegetation and wildlife habitat is expected.

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4.0 PREPARERS AND REVIEWERS

Samantha Bartleson
Earth Resources
M.S. Environmental Science
B.S. Environmental Science
Years of Experience: 2

Chad Blackwell
Cultural Resources Peer Review
MHP, Historic Preservation
B.A. History
Years of Experience: 20

Tim Didlake
Air Quality Peer Review
B.S. Earth Sciences
Years of Experience: 15

Jessica Forbes
Cultural Resources
M.A. History/Public History
B.A. History
Years of Experience: 10

Nic Frederick
Earth Resources, Socioeconomics, Environmental Justice Peer Review
M.S. Biology
B.S. Psychology
Years of Experience: 13

Caroline Garcia
Land Use
B.S. Environmental and Sustainability Sciences
Years of Experience: 1

Carolyn Hein
Air Quality
B.S., Environmental Science
Years of Experience: 4

Abbey Humphreys
General QC
M.S. Biology
B.S. Environmental Biology
B.S. Geospatial Science
Years of Experience: 7

Alex Jangrell-Tackett
Infrastructure Peer Review
M.S. Environmental Science and Policy
B.S. Marine Science
Years of Experience: 10

Kristin Lang
Socioeconomics and Environmental Justice
Land Use Peer Review
M.A. International Development
B.A. Foreign Affairs and German Language
Years of Experience: 12

Natalie Lott
Infrastructure
B.S. Integrated Science and Technology
Years of Experience: 1

Hannah Patel
Biological Resources
B.S. Biological Sciences
Years of Experience: 5

Deborah Peer
Noise Peer Review
M.S. Environmental Science and Management
B.S. Zoology
B.S. Wildlife Science
Years of Experience: 23

Nina Poppe
Water Resources, Wetlands/Floodplains
B.S. Water Resource Management
Years of Experience: 3

Amberlyn Rector
Noise
B.S. General Studies
Years of Experience: 2

Jason See
Safety Peer Review
Ph.D. Marine Science
B.S. Zoology
Years of Experience: 19

Patrick Solomon, CEP
Hazardous Materials and Wastes Peer Review
M.S. Geography
B.A. Geography
Years of Experience: 29

Karen Stackpole
Biological Resources, Water Resources, Wetlands/Floodplains Peer Review
M.S. Environmental Science
B.S. Biology
A.S. Agriculture
Years of Experience: 27

Yuliya Vanchosovych
Safety
M.E.M. Water Resource Management
B.S. Evolution and Ecology

Years of Experience: 6
Dylan Wake
Hazardous Materials and Wastes
B.S. Environmental Science and Policy
Years of Experience: 1

5.0 REFERENCES

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APPENDIX A: PUBLIC INVOLVEMENT AND AGENCY COORDINATION

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Appendix A: Public Involvement & Agency Coordination

Interested Party List

Federal Contacts

Mr. Pete Benjamin
US Fish and Wildlife Service,
Eastern North Carolina Ecological Services
PO Box 33726
Raleigh, NC 27636-3726

Sen. Tedd Budd
U.S. Senator
SR-B85 Russell Senate Office Building
Washington, DC 20510

Ms. Rosemary Calli
Wetlands Regulatory Section
Water Management Division
US Environmental Protection Agency
61 Forsyth Street, SW
Atlanta, GA 30303

Rep. Wiley Nickel
U.S. House of Representatives, 13th District
1133 Longworth House Office Building
Washington, DC 20515

Ms. Emily Thompson
US Department of the Army
Wilmington District, Corps of Engineers
Washington Regulatory Field Office
2407 W. 5th Street
Washington, NC 27889

Sen. Thom Tillis
U.S. Senator
113 Dirksen Senate Office Building
Washington, DC 20510

Mr. Pace Wilbur
National Marine Fisheries Service Habitat Conservation Division
101 Pivers Island Road
Beaufort, NC 28516

State Contacts

Rep. John Bell
NC House of Representatives District 10
300 N. Salisbury Street, Rm. 301F
Raleigh, NC 27603-5925

Ms. Misty Buchanan
North Carolina Natural Heritage Program
1651 Mail Service Center
Raleigh, NC 27699-1651

Ms. Kelly Bullock
North Carolina Department of Environmental Quality, Division of Water Resources
943 Washington Square Mall
Washington, NC 27889

Ms. Gabriela Garrison
North Carolina Wildlife Resources Commission
1701 Mail Service Road
Raleigh, NC 27699-1700

Ms. Renee Gledhill-Earley
North Carolina State Historic Preservation Office
4617 Mail Service Center
Raleigh, NC 27699-4617

Mr. Bill Moore
North Carolina Department of Environmental Quality, Division of Land Resources
943 Washington Square Mall
Washington, NC 27889

Sen. E.S. Newton
North Carolina Senate District 4
300 N. Salisbury Street, Rm. 520
Raleigh, NC 27603

Mr. Robert Pullinger
North Carolina Department of Environmental Quality, Division of Energy, Mineral, and Land Resources
943 Washington Square Mall
Washington, NC 27889

Robert Tankard
North Carolina Department of Environmental
Quality, Division of Water Resources
943 Washington Square Mall
Washington, NC 27889

Local Contacts

Mr. Chip Crumpler
Wayne County County Manager
PO Box 227
Goldsboro, NC 27530

Mr. David Ham
City of Goldsboro Mayor's Office
200 N Center St.
Goldsboro, NC 27530

Tribal Contacts

Wenonah George Haire, DMD
The Catawba Nation
1536 Tom Steven Road
Rock Hill, SC 29730

The Honorable William Harris
The Catawba Nation
996 Avenue of the Nations
Rock Hill, SC 29730

The Honorable Tom Jonathan
Tuscarora Nation
5226 Walmore Road
Lewiston, NY 14092

Example General Agency Scoping Letter

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

MAY 2 6 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Mr. Chip Crumpler
Wayne County County Manager
PO Box 227
Goldsboro, NC 27530

Dear Mr. Crumpler:

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations, and the United States Air Force (USAF) NEPA regulations, the USAF is preparing an Environmental Assessment (EA) to address the potential environmental impacts associated with the construction and operation of new infrastructure at Seymour Johnson Air Force Base (AFB), North Carolina. The Proposed Action includes two separate construction projects. The first Proposed Action would modify the Slocumb Gate Entry Control Facility road alignment to meet the requirements for Entry Control Facilities outlined in Unified Facilities Criteria 4-022-01, to include Response Zone layout, speed management, and containment and control of vehicles. The second Proposed Action would construct an access road on the west end of the flightline to reduce emergency response times and decrease the chances of foreign object debris being transported and deposited on the flightline.

The purpose of the first Proposed Action is to provide a properly configured, secure entrance to the installation as required by Anti-Terrorism/Force Protection (ATFP) standards. The need for this action is to comply with Unified Facilities Criteria (UFC) 4-022-01, *Security Engineering: Entry Control Facilities/Access Control Points*, Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA), Institute of Transportation Engineers (ITE), and Defense Threat Reduction Agency Mission Assurance Assessment (DTRA MAA) standards and guidelines.

The purpose of the second Proposed Action is to provide faster access to the west end of the flightline. Currently the flightline has limited access points, with the majority located on the eastern end. On the west end, vehicles must travel a long, circuitous route to reach an access point. The need for this action is construct an access road on the west end of the flightline in order to reduce emergency response times and decrease the chances of foreign object debris (FOD) being transported and deposited on the flightline.

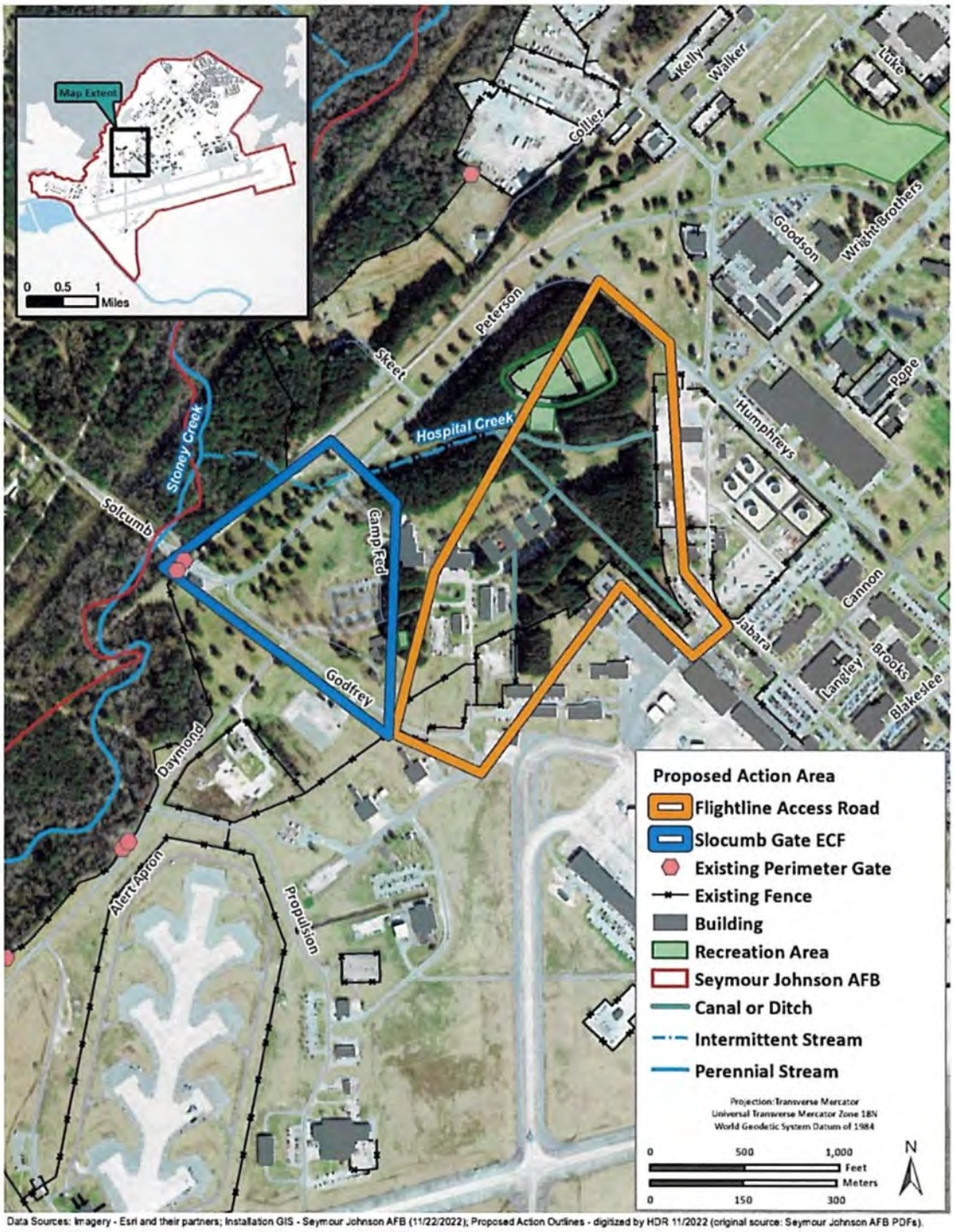
If you have additional information regarding impacts of the Proposed Action on the natural environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. We look forward to and welcome your participation in this process. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

Please send your written responses to Mr. Todd Luce, 4 CES/CEIE, 1095 Peterson Ave, Seymour Johnson AFB, NC 27531, or via email to *todd.luce.1@us.af.mil.*

Sincerely,

BRIAN W. JOYNER, P.E.

Attachment:
Proposed Location of New Infrastructure



Data Sources: Imagery - Esri and their partners; Installation GIS - Seymour Johnson AFB (11/22/2022); Proposed Action Outlines - digitized by HDR 11/2022 (original source: Seymour Johnson AFB PDFs).

Proposed Location of New Infrastructure

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

MAY 26 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Mr. Pete Benjamin
Field Supervisor
US Fish and Wildlife Service, Eastern North Carolina Ecological Services
PO Box 33726
Raleigh, NC 27636-3726

Dear Mr. Benjamin:

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The purpose of the second Proposed Action is to provide faster access to the west end of the flightline. Currently the flightline has limited access points, with the majority located on the eastern end. On the west end, vehicles must travel a long, circuitous route to reach an access point. The need for this action is construct an access road on the west end of the flightline in order to reduce emergency response times and decrease the chances of foreign object debris (FOD) being transported and deposited on the flightline.

Pursuant to Section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 United States Code 1531, et seq.), SJAFB AFB conducted an effect determination for this project. All interrelated and interdependent actions were analyzed during that review. The United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool listed a total of four federally listed threatened or endangered species, one proposed endangered species, and one candidate species with the potential to occur within the project area. These species include: tricolored bat (*Perimyotis subflavus*) (proposed endangered); Red-cockaded Woodpecker (*Picoides borealis*) (Endangered); Neuse River Waterdog (Necturus lewisi) (Threatened); Carolina Madtom (Noturus furiosus) (Endangered); Atlantic Pigtoe (Fusconaia masoni) (Threatened); and Monarch Butterfly (*Danaus plexippus*) (Candidate). Of the federally listed species that could occur on the installation, none have suitable habitat and have not been identified on the installation. However, to ensure no impact, an updated species list from USFWS will be obtained amd reviewed for changes to listed species within 90 days of starting construction activities.

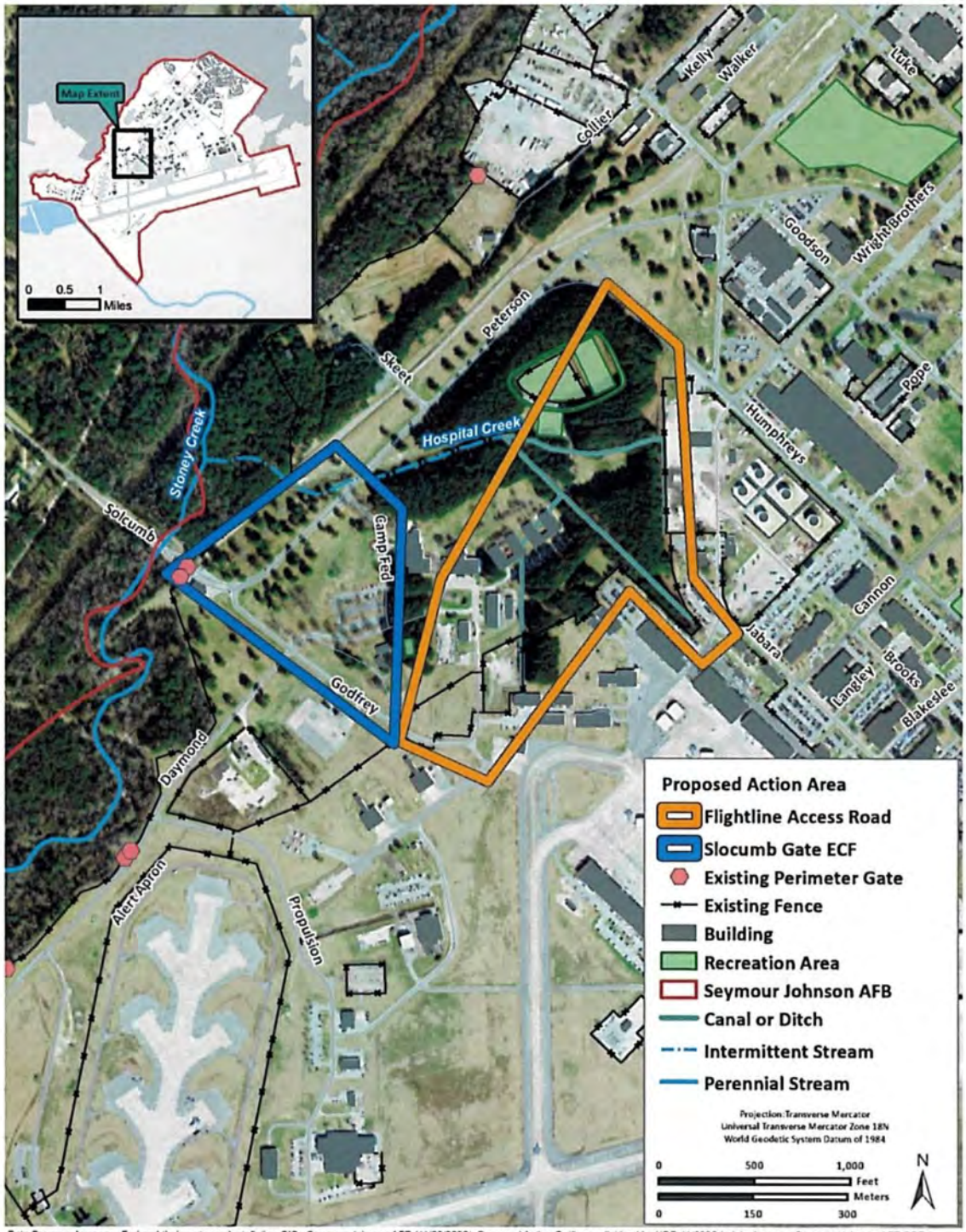
If you have additional information regarding impacts of the Proposed Action on the natural environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. We look forward to and welcome your participation in this process. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

Please send your written responses to Mr. Todd Luce, 4 CES/CEIE, 1095 Peterson Ave, Seymour Johnson AFB, NC 27531, or via email to *todd.luce.1@us.af.mil.*

Sincerely,

BRIAN W. JOYNER, P.E.

Attachments:
Proposed Location of New Infrastructure



Data Sources: Imagery - Esri and their partners; Installation GIS - Seymour Johnson AFB (11/22/2022); Proposed Action Outlines - digitized by HDR 11/2022 (original source: Seymour Johnson AFB PDFs).

Proposed Location of New Infrastructure

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

MAY 26 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Renee Gledhill-Earley
North Carolina State Historic Preservation Office
4617 Mail Service Center
Raleigh, NC 27699-4617

Dear Ms. Gledhill-Earley:

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations, and the United States Air Force (USAF) NEPA regulations, the USAF is preparing an Environmental Assessment (EA) to address the potential environmental impacts associated with the construction and operation of new infrastructure at Seymour Johnson Air Force Base (AFB), North Carolina. The Proposed Action includes two separate construction projects. The first Proposed Action would modify the Slocumb Gate Entry Control Facility road alignment to meet the requirements for Entry Control Facilities outlined in Unified Facilities Criteria 4-022-01, to include Response Zone layout, speed management, and containment and control of vehicles. The second Proposed Action would construct an access road on the west end of the flightline to reduce emergency response times and decrease the chances of foreign object debris being transported and deposited on the flightline.

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If you have additional information regarding impacts of the Proposed Action on cultural resources or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. As we move forward through this process, we welcome your participation and input.

Please send your written responses to Mr. Todd Luce, 4 CES/CEIE, 1095 Peterson Ave, Seymour Johnson AFB, NC 27531, or via email to *todd.luce.1@us.af.mil.*

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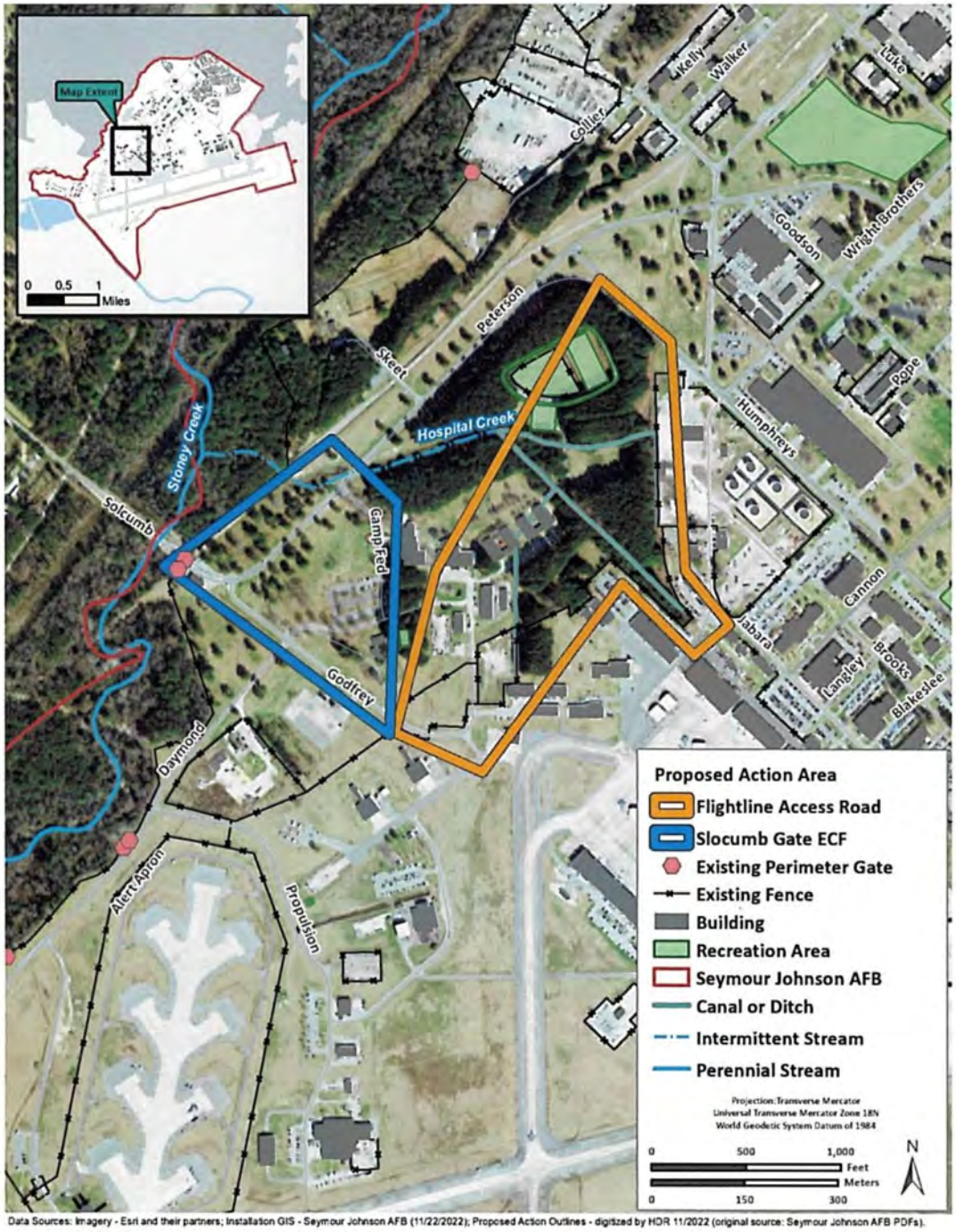

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Proposed Location of New Infrastructure

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

Colonel Lucas J. Teel
Commander, 4th Fighter Wing
1510 Wright Brothers Ave
Seymour Johnson AFB NC 27531

The Honorable William Harris
The Catawba Nation
996 Avenue of the Nations
Rock Hill, SC 29730

JUN 08 2023

Dear Chief Harris:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Catawba Indian Nation may have an interest and to invite the Catawba Indian Nation to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations, and the United States Air Force (USAF) NEPA regulations, the USAF is preparing an Environmental Assessment (EA) to address the potential environmental impacts associated with the construction and operation of new infrastructure at Seymour Johnson Air Force Base (AFB), North Carolina. The Proposed Action includes two separate construction projects. The first Proposed Action would modify the Slocumb Gate Entry Control Facility road alignment to meet the requirements for Entry Control Facilities outlined in Unified Facilities Criteria 4-022-01, to include Response Zone layout, speed management, and containment and control of vehicles. The second Proposed Action would construct an access road on the west end of the flightline to reduce emergency response times and decrease the chances of foreign object debris being transported and deposited on the flightline.

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The purpose of the second Proposed Action is to provide faster access to the west end of the flightline. Currently the flightline has limited access points, with the majority located on the eastern end. On the west end, vehicles must travel a long, circuitous route to reach an access point. The need for this action is to construct an access road on the west end of the flightline in order to reduce emergency vehicle response times while reducing the chance of foreign object debris (such as small stones caught in tire treads) from inadvertently being transported and deposited on the flightline.

If you have additional information regarding impacts of the Proposed Action on cultural resources or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. As we move forward through this process, we welcome your participation and input.

Please send your written responses to Mr. Todd Luce, 4 CES/CEIE, 1095 Peterson Ave, Seymour Johnson AFB, NC 27531, or via email to *todd.luce.1@us.af.mil.*

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LUCAS J. TEEL, Colonel, USAF
Commander

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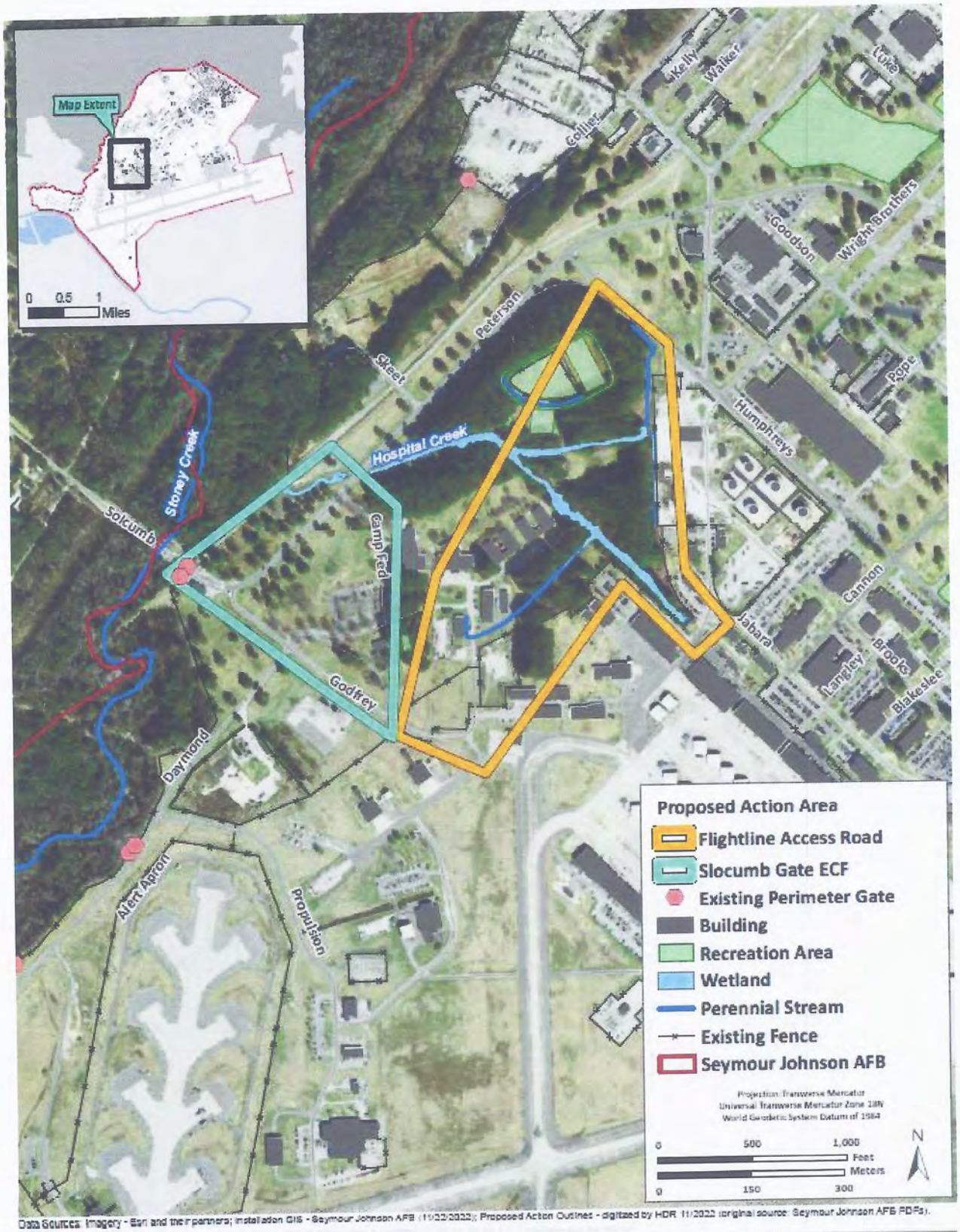

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Proposed Location of New Infrastructure

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

Colonel Lucas J. Teel
Commander, 4th Fighter Wing
1510 Wright Brothers Ave
Seymour Johnson AFB NC 27531

JUN 08 2023

Wenonah George Haire, DMD
The Catawba Nation
ATTN: THPO
1536 Tom Steven Road
Rock Hill, SC 29730

Dear Dr. Haire:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Catawba Indian Nation may have an interest and to invite the Catawba Indian Nation to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations, and the United States Air Force (USAF) NEPA regulations, the USAF is preparing an Environmental Assessment (EA) to address the potential environmental impacts associated with the construction and operation of new infrastructure at Seymour Johnson Air Force Base (AFB), North Carolina. The Proposed Action includes two separate construction projects. The first Proposed Action would modify the Slocumb Gate Entry Control Facility road alignment to meet the requirements for Entry Control Facilities outlined in Unified Facilities Criteria 4-022-01, to include Response Zone layout, speed management, and containment and control of vehicles. The second Proposed Action would construct an access road on the west end of the flightline to reduce emergency response times and decrease the chances of foreign object debris being transported and deposited on the flightline.

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and DoD 5200.08-R, Physical Security Program. Slocumb Gate ECF lacks an adequate Response Zone to contain all threat scenarios.

The purpose of the second Proposed Action is to provide faster access to the west end of the flightline. Currently the flightline has limited access points, with the majority located on the eastern end. On the west end, vehicles must travel a long, circuitous route to reach an access point. The need for this action is to construct an access road on the west end of the flightline in order to reduce emergency vehicle response times while reducing the chance of foreign object debris (such as small stones caught in tire treads) from inadvertently being transported and deposited on the flightline.

If you have additional information regarding impacts of the Proposed Action on cultural resources or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. As we move forward through this process, we welcome your participation and input.

Please send your written responses to Mr. Todd Luce, 4 CES/CEIE, 1095 Peterson Ave, Seymour Johnson AFB, NC 27531, or via email to *todd.luce.1@us.af.mil.*

Sincerely,

LUCAS J. TEEL, Colonel, USAF
Commander

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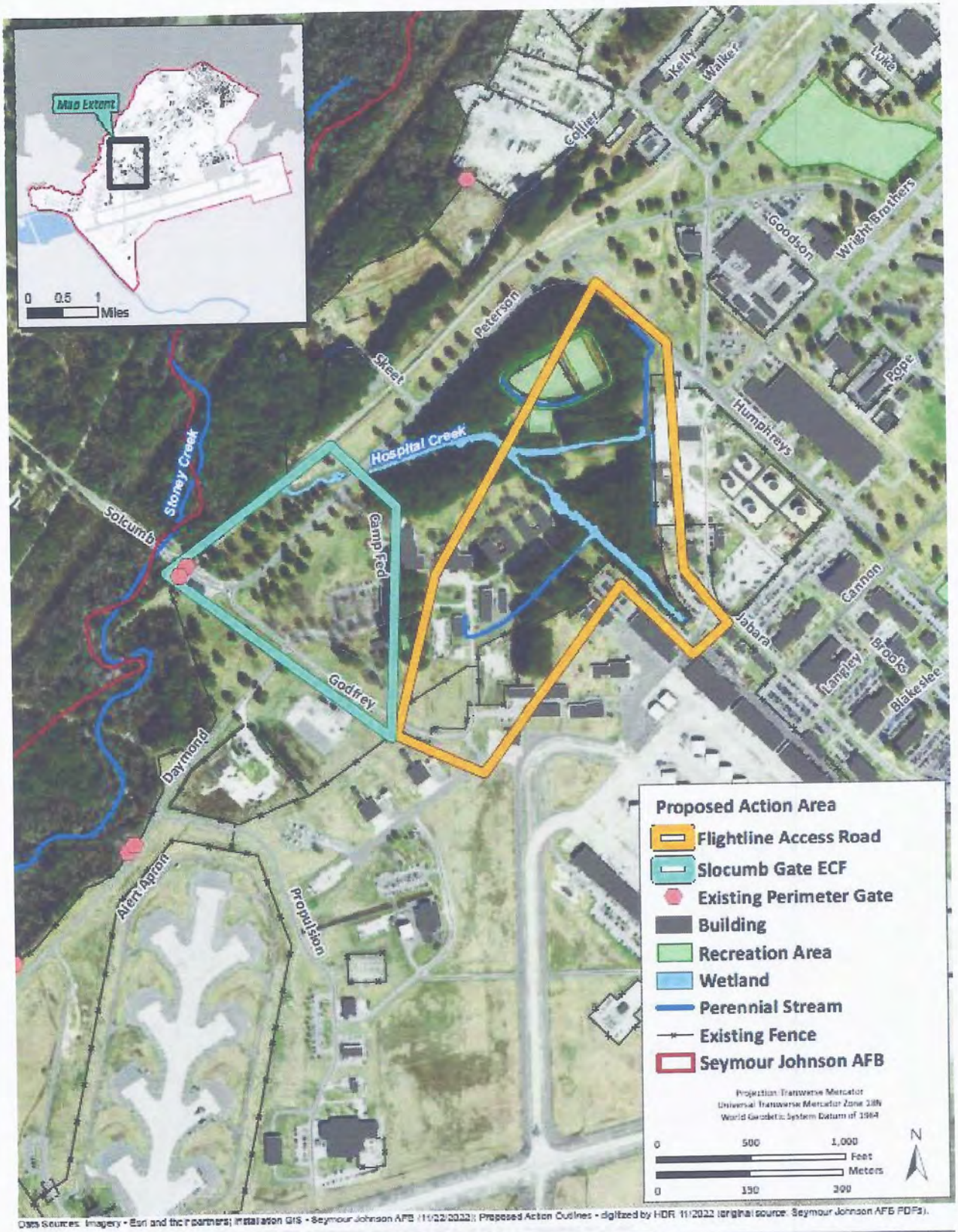

Proposed Location of New Infrastructure

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

Colonel Lucas J. Teel
Commander, 4th Fighter Wing
1510 Wright Brothers Ave
Seymour Johnson AFB NC 27531

JUN 08 2023

The Honorable Tom Jonathan
Tuscarora Nation
5226 Walmore Road
Lewiston, NY 14092

Dear Chief Jonathan:

The purpose of this letter is two-fold: to give you an opportunity to review and comment on a proposed action in which the Tuscarora Indian Nation may have an interest and to invite the Tuscarora Indian Nation to participate in government-to-government consultation with the United States Air Force (Air Force), pursuant to Section 106 of the National Historic Preservation Act (NHPA).

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations, and the United States Air Force (USAF) NEPA regulations, the USAF is preparing an Environmental Assessment (EA) to address the potential environmental impacts associated with the construction and operation of new infrastructure at Seymour Johnson Air Force Base (AFB), North Carolina. The Proposed Action includes two separate construction projects. The first Proposed Action would modify the Slocumb Gate Entry Control Facility road alignment to meet the requirements for Entry Control Facilities outlined in Unified Facilities Criteria 4-022-01, to include Response Zone layout, speed management, and containment and control of vehicles. The second Proposed Action would construct an access road on the west end of the flightline to reduce emergency response times and decrease the chances of foreign object debris being transported and deposited on the flightline.

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If you have additional information regarding impacts of the Proposed Action on cultural resources or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. As we move forward through this process, we welcome your participation and input.

Please send your written responses to Mr. Todd Luce, 4 CES/CEIE, 1095 Peterson Ave, Seymour Johnson AFB, NC 27531, or via email to *todd.luce.1@us.af.mil.*

Sincerely,

LUCAS J. TEEL, Colonel, USAF
Commander

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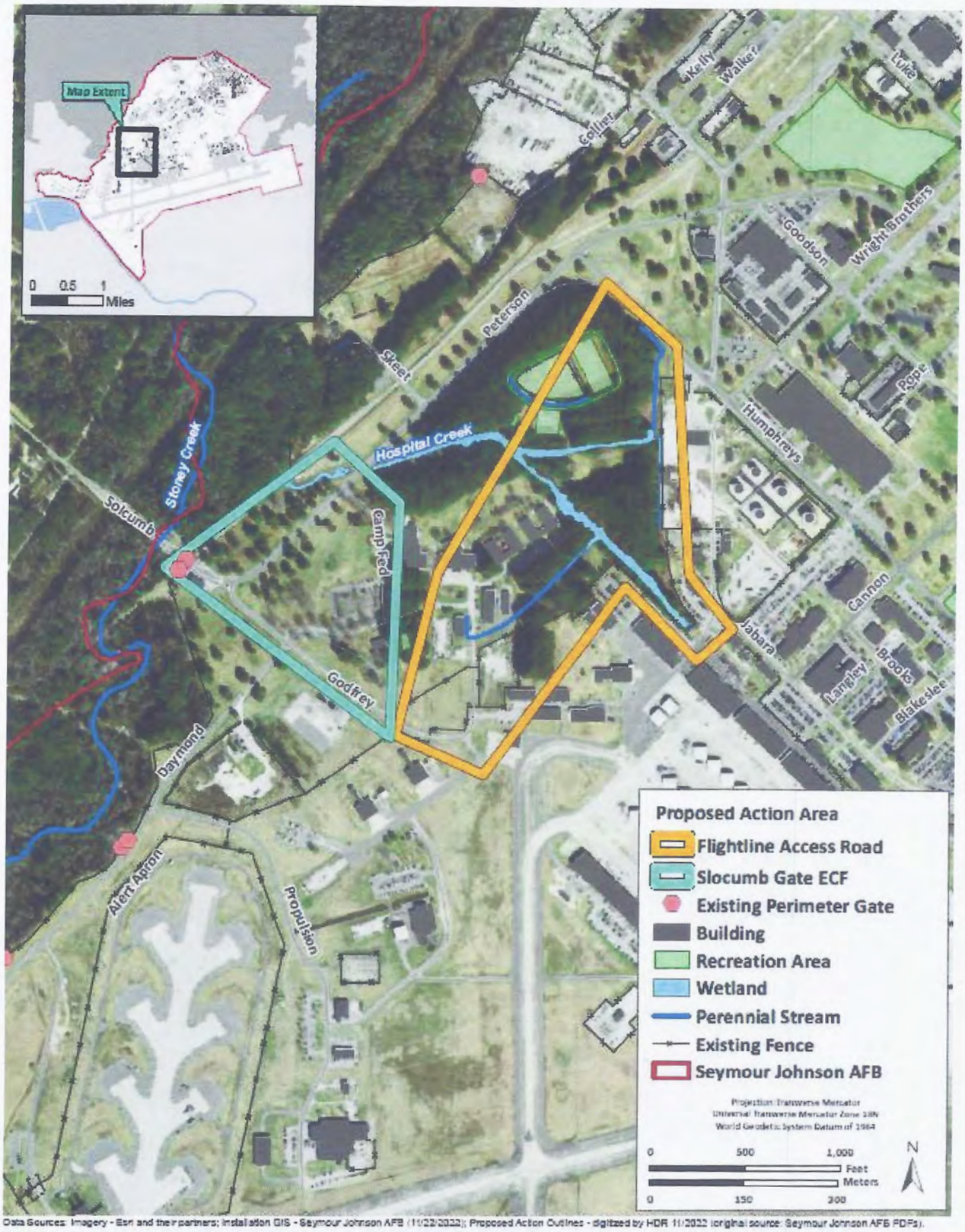

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Proposed Location of New Infrastructure

Department of Commerce · National Oceanic & Atmospheric Administration · National Marine Fisheries Service

NATIONAL MARINE FISHERIES SERVICE PROCEDURAL INSTRUCTION 02-110-20
January 13, 2017

Protected Resources Management

Conservation of Threatened and Endangered Species 02-110

"NO EFFECT" DETERMINATIONS

NOTICE: This publication is available at: http://www.nmfs.noaa.gov/op/pds/index.html

Author name: Cathy Tortorici
Office: Protected Resources

Certified by: Donna Wieting
Office: Protected Resources

Type of Issuance: Initial

SUMMARY OF REVISIONS:

Signed Donna S Wieting 1/13/17
Donna Wieting Date
Director, Office of Protected Resources

1.0 Introduction. The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NOAA Fisheries) reviewed its consultative responsibilities under section 7 of the Endangered Species Act (ESA), 16 U.S.C. § 1536, and associated regulations at 50 C.F.R. part 402. Based on this review NOAA Fisheries will not provide formal written responses to requests for concurrence with a federal action agency's determination that its actions will not affect any ESA-listed species or designated critical habitat ("no effect" determination).

Under section 7 of the ESA, if a federal action agency determines that its action "may affect" ESA-listed species or designated critical habitat within NOAA Fisheries jurisdiction, the federal action agency must consult with NOAA Fisheries to ensure that its action is not likely to jeopardize the continued existence of those species or result in the destruction or adverse modification of such critical habitat. The term "may affect" is not defined in the ESA or by NOAA Fisheries/United States (U.S.) Fish and Wildlife Service's joint regulations governing section 7 consultation at 50 CFR, Chapter IV. However, the NOAA Fisheries/US Fish and Wildlife Service's *Final ESA Section 7 Consultation Handbook, March 1998,* (found in PD 02-110-09, hereinafter "*ESA Section 7 Handbook*") defines the term "may affect" as: "the appropriate conclusion when a proposed action may pose **any** effects on ESA-listed species or designated critical habitat." If the federal action agency determines that its activities "may affect" an ESA-listed marine or anadromous species or its designated critical habitat, it must

engage in consultation.

If, on the other hand, the federal action agency determines that its action will not affect any ESA-listed species or designated critical habitat within NOAA Fisheries' jurisdiction (i.e., it makes a "no effect" determination), there is no need to consult with NOAA Fisheries. As with "may affect," the term "no effect" is not defined in the joint regulations governing section 7 consultation, but it is defined in the Services' *ESA Section 7 Handbook* as: "the appropriate conclusion when the federal action agency determines its proposed action will not affect a listed species or designated critical habitat." Neither the ESA nor the NOAA Fisheries/U.S. Fish and Wildlife Service's joint consultation regulations mandate consultation when federal action agencies determine their proposed actions have "no effect" on any ESA-listed species or designated critical habitat.

Although not required to do so, action agencies sometimes request that NOAA Fisheries provide written concurrence with the agency's "no effect" determination per the guidance provided in the *ESA Section 7 Handbook,* (page 3-12). NOAA Fisheries has previously (though infrequently) provided such written concurrence with federal action agency "no effect" determinations. However, as directed herein, it shall be NOAA Fisheries' procedure not to provide a written response.

2.0 Objective. The purpose of this procedure is to promote effective, efficient, and consistent implementation of section 7 of the ESA by NOAA Fisheries personnel.

3.0 Authorities and Responsibilities. This directive establishes the following authorities and responsibilities:

Guidelines and Procedures: "No effect" determinations under section 7 of the ESA are the province of action agencies, which may make such findings without seeking the agreement of NOAA Fisheries. A U.S. District Court decision addressed this very issue and issued an opinion that wholly validates NOAA Fisheries' procedure.

The case in question, *Sierra Forest Legacy v. United States U.S. Forest Service*, 598 F. Supp. 2d 1058 (N.D. Cal. 2009), concerned the U.S. Forest Service's determination that an amendment to a "management indicator species" list would have "no effect" on any ESA-listed species and NOAA Fisheries and the U.S. Fish and Wildlife Service's concurrence with that determination. Plaintiffs, environmental groups, filed suit against the Forest Service, NOAA Fisheries, and the U.S. Fish and Wildlife Service arguing, among other things, that the Services violated the ESA in issuing the concurrences. In dismissing the case against the Services, the court declined to address the substantive correctness or incorrectness of the written concurrences. As the court explained, because the U.S. Forest Service never initiated formal consultation, there was no requirement [to issue concurrences] imposed on NOAA Fisheries and the U.S. Fish and Wildlife Service. Thus, the court found that the plaintiff could not challenge the concurrences. *See also id at 1067-69.* The court made clear that it would have reached the same conclusion even if NOAA Fisheries and the U.S. Fish and Wildlife Service had instead disagreed with the U.S. Forest Service's "no effect" finding and issued non-concurrences. *Id.* at 1067 ("Until an action agency requests consultation, [the Services] have no obligation to consult, and in fact cannot

engage in consultation, even if they believe the 'no effect' determination was erroneous.").

Furthermore, neither the ESA nor the joint regulations governing section 7 consultation contain any direction or process for NOAA Fisheries to provide its concurrence with such determinations. Although the *ESA Section 7 Handbook* indicates that a federal action agency may choose to request concurrence with its no effect determination, the handbook does not obligate NOAA Fisheries to acknowledge the request or to respond.[1] It is therefore NOAA Fisheries' procedure that it will not provide any written concurrence with a federal action agency's determination that its action will have "no effect" on any ESA-listed species or designated critical habitat.[2]

[1] If requested, NOAA Fisheries staff may provide technical information and assistance to the federal action agency as it decides whether to make a "no effect" determination. However, as provided herein, NOAA Fisheries shall decline to concur with any such final determination. In cases where NOAA Fisheries disagrees with the federal action agency's "no effect" determination, NOAA Fisheries may offer to provide the above-referenced technical assistance and may urge the federal action agency to engage in ESA section 7 consultation.

[2] This procedure is not intended to address, and is not applicable, when the federal action agency determines that its action "may affect" certain species and/or habitat but will have "no effect" on others (sometimes referred to as "mixed determinations").

NC DEPARTMENT OF
NATURAL AND CULTURAL RESOURCES

Roy Cooper, **Governor**

D. Reid Wilson, **Secretary**

Misty Buchanan
Deputy Director, Natural Heritage Program

NCNHDE-22262

June 9, 2023

Brian w. Joyner
Deputy Base Engineer/$th Civil Engineer Squadron
1095 Peterson Ave
Seymour Johson AFB, NC 27531
RE: Security Engineering

Dear Brian w. Joyner:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

A query of the NCNHP database indicates that there are records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. These results are presented in the attached 'Documented Occurrences' tables and map.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is documented within the project area or indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: https://www.fws.gov/offices/Directory/ListOffices.cfm?statecode=37.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also please note that the NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or an occurrence of a Federally-listed species is documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Intersecting the Project Area
Security Engineering
June 9, 2023
NCNHDE-22262

No Element Occurrences are Documented within the Project Area

There are no documented element occurrences (of medium to very high accuracy) that intersect with the project area. Please note, however, that although the NCNHP database does not show records for rare species within the project area, it does not necessarily mean that they are not present; it may simply mean that the area has not been surveyed. The use of Natural Heritage Program data should not be substituted for actual field surveys if needed, particularly if the project area contains suitable habitat for rare species. If rare species are found, the NCNHP would appreciate receiving this information so that we may update our database.

No Natural Areas are Documented within the Project Area

Managed Areas Documented Within Project Area*

Managed Area Name	Owner	Owner Type
Seymour Johnson Air Force Base	US Department of Defense	Federal

*NOTE: If the proposed project intersects with a conservation/managed area, please contact the landowner directly for additional information. If the project intersects with a Dedicated Nature Preserve (DNP), Registered Natural Heritage Area (RHA), or Federally-listed species, NCNHP staff may provide additional correspondence regarding the project.

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/help. Data query generated on June 9, 2023; source: NCNHP, Spring (April) 2023. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
Security Engineering
June 9, 2023
NCNHDE-22262

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Freshwater Fish	38942	Acipenser oxyrinchus oxyrinchus	Atlantic Sturgeon	2018-04-17	E	4-Low	Endangered	Endangered	G3T3	S2

No Natural Areas are Documented Within a One-mile Radius of the Project Area

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
City of Goldsboro Open Space	City of Goldsboro	Local Government
City of Goldsboro Open Space	City of Goldsboro	Local Government
Seymour Johnson Air Force Base	US Department of Defense	Federal
Mountains-to-Sea Trail	NC DNCR, Division of Parks and Recreation	State
NC Hazard Mitigation Buyout Property - Goldsboro	NC DPS, Division of Emergency Management	State

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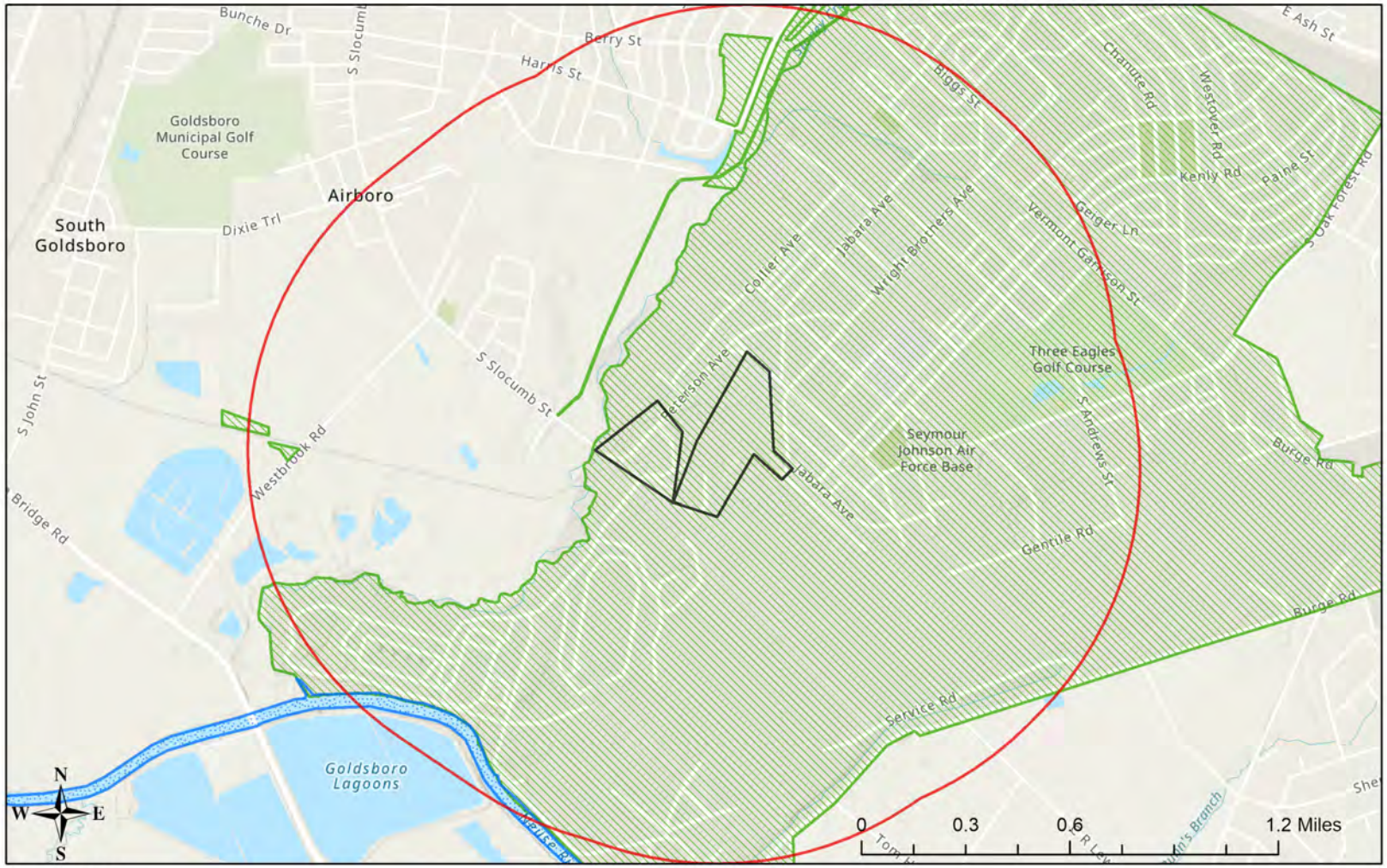
NCNHDE-22262: Security Engineering



June 9, 2023

- Managed Area (MAREA)
- Natural Heritage Element Occurrence (NHEO)
- Buffered Project Boundary
- Project Boundary

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

From:	JOYNER, BRIAN W CIV USAF ACC 4 CES/CL
To:	Timothy Salmon; LUCE, TODD A CIV USAF ACC 4 CES/CEIEA
Cc:	Matthew Livingston; Bobby Croom; Laura Getz; Holly Jones
Subject:	RE: SJAFB Proposed Action
Date:	Monday, June 26, 2023 4:47:12 PM
Attachments:	~WRD0000.jpg

Good afternoon Tim,
No specific need…unless Goldsboro would have some concern. With the nature of these projects, I would not anticipate such. However, notification is part of the federal NEPA requirement for these future requirements.

Thanks for checking.
v/r
Brian

//SIGNED//
BRIAN W. JOYNER, P.E., DAF
Deputy Base Civil Engineer
4th Civil Engineer Squadron
Seymour Johnson AFB
DSN 722-5143
(919) 722-5143

From: Timothy Salmon <TSalmon@goldsboronc.gov>
Sent: Monday, June 26, 2023 12:46 PM
To: JOYNER, BRIAN W CIV USAF ACC 4 CES/CL <brian.joyner@us.af.mil>; LUCE, TODD A CIV USAF ACC 4 CES/CEIEA <todd.luce.1@us.af.mil>
Cc: Matthew Livingston <MLivingston@goldsboronc.gov>; Bobby Croom <BCroom@goldsboronc.gov>; Laura Getz <LGetz@goldsboronc.gov>; Holly Jones <HJones@goldsboronc.gov>
Subject: [URL Verdict: Neutral][Non-DoD Source] FW: SJAFB Proposed Action

Good day Brian and Todd,
Do you need anything specific from the City regarding these proposed activities? We are unaware of any impacts to the City.
R, Tim

Timothy Salmon
City Manager
City of Goldsboro
P 919-580-4330
F 919-580-4344
www.goldsboronc.gov

From: Laura Getz <LGetz@goldsboronc.gov>
Sent: Friday, June 23, 2023 8:19 AM

To: Timothy Salmon <TSalmon@goldsboronc.gov>; Matthew Livingston <MLivingston@goldsboronc.gov>; Bobby Croom <BCroom@goldsboronc.gov>
Subject: SJAFB Proposed Action

Good morning,

Please see the attached letter from the base. They would like a response within 30 days of June 2.

Thank you,

Laura Getz, MMC/NCCMC
NCAMC District 4 Director/State Certification Chair
City Clerk
City of Goldsboro
P (919) 580-4330
www.goldsboronc.gov

Pursuant to North Carolina General Statutes Chapter 132, Public Records, this electronic mail message and any attachments hereto, as well as any electronic mail message(s) that may be sent in response to it may be considered public record and as such are subject to request and review by anyone at any time.

North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

July 3, 2023

Todd Luce
4 CES/CEIE
1095 Peterson Ave
Seymour Johnson AFC, NC 27531

TODD.LUCE.1@US.AF.MIL

Re: Construct an Access Road on the West End of the Flightline, Seymour Johnson Air Force Base, ER 23-1382

Dear Mr. Luce:

Thank you for your letter of May 26, 2023, concerning the above-referenced undertaking. We have reviewed the submittal and offer the following comments.

We have conducted a review of the project area and have identified WY0158, Building 3400, Base Engineering Maintenance Shop, within the proposed flightline access road. Our survey files note that WY0158 was recorded in 1994 and an assessment for its eligibility for listing on the National Register of Historic Places could not be made at that time citing,

> "Since no extant rendering of this building's as built elevations has been located to date, and a series of renovations has taken place, first in 1956, and later in 1972 and 1983, no assessment can be made on the survivorship of this structure's original fabric."

Additionally, no photographs of WY0158 were taken at the request of the Military Police.

Our review of historical satellite imagery indicates that WY0158 is no longer extant. If WY0158 is confirmed no longer extant by your office, please provide any details for our records and no further consultation with our office is required for this proposal. Enclosed is a map from our survey files of WY0158's location.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

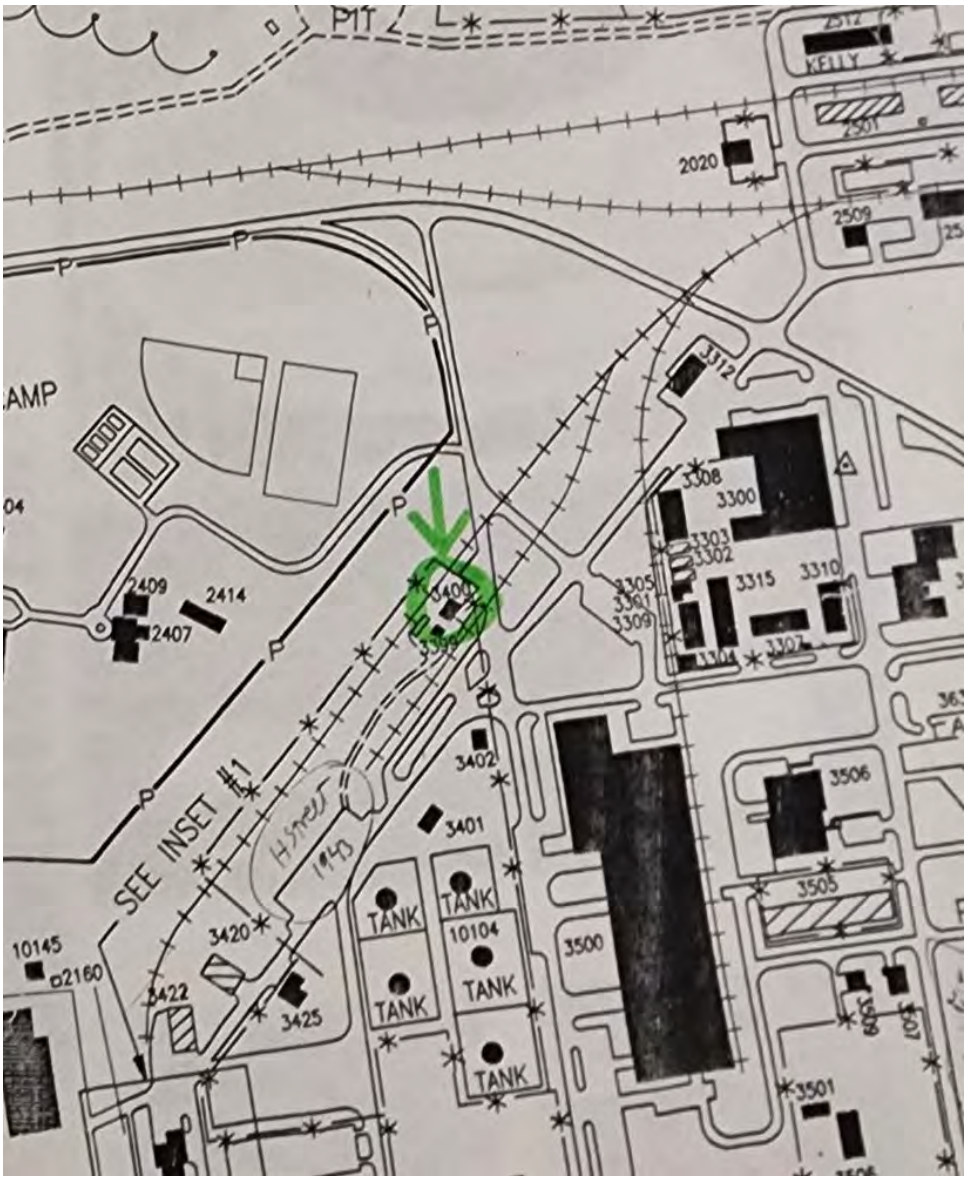
Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

Enclosures:



North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

July 5, 2023

Todd Luce
4 CES/CEIE
1095 Peterson Ave
Seymour Johnson AFC, NC 27531

TODD.LUCE.1@US.AF.MIL

Re: Modify the Slocumb Gate Entry Control Facility Road alignment, Slocumb Road, Seymour Johnson Air Force Base, Wayne County, ER 23-1381

Dear Mr. Luce:

Thank you for your letter of June 5, 2023, concerning the above-referenced undertaking. We have reviewed the submittal and offer the following comments.

We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

Circa. January 2010 - Facility 3400 and Facility 3399

Circa. March 2013 - Facility 3405 and Facility 3430

Facility 3400 demolished July 17, 2012 (part of replacement project VKAG021036)

Attachment 5 (continued)

BUILDING and FACILITY INSPECTION/INVENTORY CHECKLIST

BUILDING NO 3400 FAC ID 03400 DATE 29-Jul-10

DATE OF LAST INSPECTION/INVENTORY 20 FEB 2001 COMMON USER/Tenant Code 501

CATEGORY/NOMENCL 219444 / BE MAINT SHP

Is Bldg utilized as designated purpose shown above? (YES) NO

If not, what is purpose of Bldg? Used for

RECORD MEASUREMENTS OF FACILITY	SQUARE FEET	588	SQUARE YARDS		LINEAR FEET		OTHER
CURRENT MEASUREMENTS OF FACILITY (If Changed)	SQUARE FEET	714	SQUARE YARDS		LINEAR FEET		OTHER

BUILDING TOTAL 2 +BS
DETAILS FLOORS CONSTRUCTION MATERIAL/TYPE wood
PLACED IN SERVICE DATE 1 Jan 42 FUND CODE(S) ~~1-3xx-56~~

UTILITIES (Y=Yes N=No) Water [Y] Electric [Y] Sewer [Y] Gas [N] Heat [Y] Steam [N] Air [Y]

PLANTS AND SYSTEMS: PLEASE VERIFY THE FOLLOWING ARE IN THE FACILITY

CATEGORY CODE/ NOMENCLATURE	UNIT OF MEASURE
810126 / A/C WINDOW UNITS	2 TN

THE FOLLOWING OR ATTACHED IS A LIST OF REAL PROPERTY INSTALLED EQUIPMENT ASSOCIATED WITH THE PLANT (S) SHOWN ABOVE. PLEASE VERIFY THE EQUIPMENT IS LOCATED WITHIN THE FACILITY

ARE THERE OTHER PLANTS OR SYSTEMS (i.e., fire detection, fire suppression, air conditioning, heating, intrusion detection, etc?) NOT SHOWN ABOVE? IF SO, PLEASE LIST BELOW

Sq Ft. change
CAD Drawing - Update
Shows 1 floor; actually has 2.

REMARKS: File shows larger Sq. Ft.

SIGNATURE: Building Manager
Melvin Michael Price

Paint Condition (Circle One)
Excellent (Fair)
Good Poor

Demo 20120717

Seymour Johnson AFB, N.C. (INSTALLATION NAME AND NO.) | 40ct 84 (DATE) | (DRAWING NO.) | 4680 (RP ACCOUNT NO.) | VKAG (CONTROL NO.) | (BUILDING NO.) 03400

DIMENSIONS (Width x Length)				CODE
Main Building	Offsets	Wings	Basements	
20'0" X 29'0"				

MATERIALS			
Foundation	Floor	Wall	Roof
Concrete	Concrete	Brick	Comp. Roll

HEATING		
Source	Type	Fuel

No. of Usable Floors	Fire Protection	
	No.	Type

Utility Connections	Bldg Eqpt	No.	Total Capacity
Water	Air Conditioning		
Sewer	Evaporative Cooling		
Electric	Mechanical Cooling		
Gas	Hot Water Facilities		
Steam			
Condensate			

	CODE
State: North Carolina	734
Assignment: TAC	ØT
Type of Construction: Permanent	1
Condition: Usable	1
Occupancy: AF	1
Air Force Interest: Owned	1
Unit of Measure (Other than area): SF	
Quantity: 588	
Nomenclature: 219944 Shp	A
Category: 219944	
Remarks	

Voucher No.	Date	Description	Date Completed	Area Unit SF: Amount	Area Unit SF: Total	Cost	Total Cost
	40ct 84	Balance Forwarded	Nov 56		588		4,920 16
Balances Forwarded							

AF FORM 15 JUN 58 1430 REPLACES DA FORM 5-87, 1 NOV 45 WHICH IS OBSOLETE IN THE USAF.

BE Maint Shp

REAL PROPERTY ACCOUNTABLE RECORD - BUILDINGS 03400

SJAFB (INSTALLATION NAME AND NO.) | VAC96 (DATE) | (DRAWING NO.) | 3400 (FACILITY NO.) | (PLANT NO.) | (RP ACCOUNT NO) | (CONTROL NO.) | A/C Window Units (NOMENCLATURE)

SYSTEM			
Type	Capacity	Source	
Maximum Hydrant Pressure	Type of Product	Type of Dispensing	

MAINS		
Type	Diameter (Inches)	Pressure (Lbs)

ELECTRIC LINES			
Primary		Secondary	
Current	Voltage	Current	Voltage

Electric Service Lines		Storage	
Current	No. of Lights	Type	Capacity

SUB-STATIONS		
Type	Current	Capacity

FIELDS		PUMPS		OUTLETS	
Type	Size (Sq Yds)	No.	Capacity	No.	Capacity

	CODE
State: NC	734
Assignment: TAC	ØT
Condition: Usable	21
Occupancy: USAF	1
Air Force Interest: OWNED	1
Unit of Measure: TN	
Quantity	
Category: 890126	
Remarks	

Voucher No.	Date	Description	Date Completed	Mains and Lines TTL: Amount	Mains and Lines TTL: Total	Cost: Amount	Cost: Total
		RPR - 31 MAR 83			2		1,290 12 ~~1035~~ ~~75~~
Balances Forwarded							

AF FORM 15 JUN 58 1431 REPLACES DA FORM 5-32, 1 NOV 45 WHICH IS OBSOLETE IN THE USAF.

REAL PROPERTY ACCOUNTABLE RECORD - SYSTEMS

Installation Name and No.	Date	Drawing No.	RP Account No.	Control No.	Building No.
SEYMOUR JOHNSON AFB ~~[illegible]~~ VKAG	1 Nov 56		4680	~~03101-8~~ [illegible]	03400

51040

DIMENSIONS (Width x Length)

Main Building	Offsets	Wings	Basements
20'x29'			

MATERIALS

Foundation	Floor	Wall	Roof
CONCRETE	CONCRETE	BRICK	COMP. ROLL

HEATING

Source	Type	Fuel

No. of Usable Floors	Fire Protection No.	Fire Protection Type

Utility Connections		Bldg Eqpt	No.	Total Capacity
Water		Air Conditioning		
Sewer		Evaporative Cooling		
Electric		Mechanical Cooling		
Gas		Hot Water Facilities		
Steam				
Condensate				

		Code
State	NORTH CAROLINA	734
Assignment	TAG	T
Type of Construction	PERM.	1
Condition	USABLE	1
Occupancy	AF	1
Air Force Interest	OWNED Donated	2
Unit of Measure (Other than area)		
Quantity		
Nomenclature	~~PUMP STA.~~ ~~O/T Hydrants~~	125-977 ~~125-978~~
Category	~~[illegible]~~	125-978

Remarks: 3-PUMPS GASOLINE PETRO 3-HP elec. $800 PMP STN, LF

~~"P" Prop 2400~~

Voucher No.	Date	Description	Date Completed	Area Unit SF Amount	Area Unit SF Total	Cost		Total Cost	
1	1-21-57	Original Bldg.	1942	580	580	5800	00	~~[illegible]~~ 5800	00
2	1-22-57	Trans. of "P" Property			580	Est. Value 2,400	00	8200	00
3	2-4-57	Change from Bldg. No. 2240 to 3400			580			8200	00
51	22 Jul 58	Change on w/o 306-58	11-58	8	588	478 ~~[illegible]~~	77	8,678	77
38-61	22 Aug 60	Acct. Code change only							
		BALANCES FORWARDED			588			8,678	77

AF FORM 1430 15 JUN 56 REPLACES DA FORM 5-47, 1 NOV 45 WHICH IS OBSOLETE IN THE USAF. REAL PROPERTY ACCOUNTABLE RECORD - BUILDINGS 03400

Voucher No.	Date	Description	Date Completed	Area Unit Amount	Area Unit Total	Cost		Total Cost	
		BALANCES FORWARDED			588			8,678	77
[illegible]	[illegible]	Acct code change							
72-0072	18 Feb 72	Drop out of E" ita				1000	00	7678	77
830068	24 Feb 83	Install Shower Cabinet	Feb 83			1,273	20	8,951 ~~8951~~	97
		RPR 31 Mar 83			588			4448	09
830103	5 May 83	Inst paneling in office/break area				1768	19	6216	28
		BALANCES FORWARDED							

GPO 810893

From: LUCE, TODD A CIV USAF ACC 4 CES/CEIEA
To: Kristin Lang
Subject: [External] - Seymour Johnson AFB -- SHPO Section 106 response for Modify the Slocumb Gate Entry Control Facility Road
Date: Friday, August 25, 2023 7:05:55 AM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Kristin, just want to make sure you saw the SHPO's response that concludes Section 106 for Flightline Access Road and Slocumb Gate projects. Thanks! -Vr, Todd

TODD A. LUCE, Civ, DAF
Environmental Planner
DAF Certified Coach
4 CES/CEIEA, Seymour Johnson AFB, NC
todd.luce.1@us.af.mil
DSN 722-7455, Comm: (919) 722-7455

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From: PESENTI, CATHRYN M CIV USAF ACC 4 CES/CEIE <cathryn.pesenti@us.af.mil>
Sent: Wednesday, August 16, 2023 8:06 AM
To: LUCE, TODD A CIV USAF ACC 4 CES/CEIEA <todd.luce.1@us.af.mil>
Subject: FW: RE: Modify the Slocumb Gate Entry Control Facility Road alignment, Slocumb Road, Seymour Johnson Air Force Base, Wayne County, ER 23-1381 AND Construct an Access Road on the West End of the Flightl

Todd,

Based on SHPO's response to the Scoping Letter, I don' think we need to send them any additional letters for this project.

CATHRYN PESENTI, CIV, DAF
Environmental Element Chief
Seymour Johnson AFB, NC
DSN: 312-722-5102

Comm: 919-722-5102

From: DCR - Environmental_Review <Environmental.Review@ncdcr.gov>
Sent: Wednesday, July 12, 2023 5:36 PM
To: LUCE, TODD A CIV USAF ACC 4 CES/CEIEA <todd.luce.1@us.af.mil>
Cc: PESENTI, CATHRYN M CIV USAF ACC 4 CES/CEIE <cathryn.pesenti@us.af.mil>
Subject: [URL Verdict: Neutral][Non-DoD Source] Re: [External] RE: Modify the Slocumb Gate Entry Control Facility Road alignment, Slocumb Road, Seymour Johnson Air Force Base, Wayne County, ER 23-1381 AND Construct an Access Road on the West End of the Flightli...

Thank you for updating us. This concludes our Section 106 consultation unless there are major changes to project plans.

Best,

Devon L. Borgardt (she/her)

Environmental Review Assistant

State Historic Preservation Office

919-814-6586

109 E. Jones Street MSC 4603 Raleigh, NC 27699

Email correspondence to and from this address is subject to the North Carolina

Public Records Law and may be disclosed to third parties.

Please Note:* Requests for project review or responses to our review comments should be sent to the Environmental Review emailbox at *environmental.review@ncdcr.gov*. Otherwise, your request will be returned and you will be asked to send it to the proper mailbox. This will cause delays in your project. Information on email project submittal is at: *NCHPO ER Project Review Checklist

Facebook *Twitter* *Instagram* *YouTube*

From: LUCE, TODD A CIV USAF ACC 4 CES/CEIEA <todd.luce.1@us.af.mil>
Sent: Tuesday, July 11, 2023 8:23 AM
To: DCR - Environmental_Review <Environmental.Review@ncdcr.gov>
Cc: PESENTI, CATHRYN M CIV USAF ACC 4 CES/CEIE <cathryn.pesenti@us.af.mil>
Subject: [External] RE: Modify the Slocumb Gate Entry Control Facility Road alignment, Slocumb

Road, Seymour Johnson Air Force Base, Wayne County, ER 23-1381 AND Construct an Access Road on the West End of the Flightline, Seymour Johnso

CAUTION: External email. Do not click links or open attachments unless verified. Report suspicious emails with the Report Message button located on your Outlook menu bar on the Home tab.

Ms. Borgardt, thank you for your response. Please find comparative imagery and maintenance records (attached) for Facility 3400; this building is no longer extant, it was demolished in July 2012. Our real property accountability officer has taken steps to update our records showing final disposition of the building.

Thank you for taking the time to check your files, for your response and for coordinating on our future proposed actions at Seymour Johnson Air Force Base.

Very respectfully,

TODD A. LUCE, Civ, DAF
Environmental Planner
DAF Certified Coach
4 CES/CEIEA, Seymour Johnson AFB, NC
todd.luce.1@us.af.mil
DSN 722-7455, Comm: (919) 722-7455

From: DCR - Environmental_Review <Environmental.Review@ncdcr.gov>
Sent: Wednesday, July 5, 2023 12:19 PM
To: LUCE, TODD A CIV USAF ACC 4 CES/CEIEA <todd.luce.1@us.af.mil>
Subject: [URL Verdict: Neutral][Non-DoD Source] Modify the Slocumb Gate Entry Control Facility Road alignment, Slocumb Road, Seymour Johnson Air Force Base, Wayne County, ER 23-1381 AND Construct an Access Road on the West End of the Flightline, Seymour Johnson...

Mr. Luce,

In the future, your unit is welcome to submit projects for review through this email address.

Our responses are attached. Thank you.

Best,

Devon L. Borgardt (she/her)

Environmental Review Assistant

State Historic Preservation Office

919-814-6586

109 E. Jones Street MSC 4603 Raleigh, NC 27699

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

to

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

July 13, 2023

Attention: Todd Luce
Department of the Air Force
1095 Peterson Avenue
Seymour Johnson AFB, NC 27531

Re. THPO #	TCNS #	Project Description
2023-702-7		Potential environmental impacts associated with the construction and operation of new infrastructure at Seymour Johnson Air Force Base

Dear Mr. Luce,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-7369, or my e-mail Caitlin.Rogers@catawba.com.

Sincerely,

Caitlin Rogers for

Wenonah G. Haire
Tribal Historic Preservation Officer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Misty Buchanan
North Carolina Natural Heritage Program
1651 Mail Service Center
Raleigh, NC 27699-1651

Dear Ms. Buchanan:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

The Draft EA and proposed Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Hard copies are also available upon request.

In accordance with Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, as amended by EO 12416, *Intergovernmental Review of Federal Programs*, we request your participation and feedback on the Draft EA. If after review of the Draft EA and proposed FONSI/FONPA, you have additional information regarding impacts of the Proposed Actions on the natural environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. We anticipate publishing the Final EA in late 2023.

Please provide your written questions or comments on this Draft EA at your earliest convenience, but no later than 30 days from the date of this correspondence. Please address all questions and comments to Mr. Todd Luce, 4 CES/CEIE, 1095 Peterson Ave, Seymour Johnson AFB, NC 27531. Comments are encouraged to be sent by email to todd.luce.1@us.af.mil.

Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Robert Tankard
North Carolina Department of Environmental Quality
Division of Water Resources
943 Washington Square Mall
Washington NC, 27889

Dear Mr. Tankard:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

The Draft EA and proposed Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Hard copies are also available upon request.

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Please provide your written questions or comments on this Draft EA at your earliest convenience, but no later than 30 days from the date of this correspondence. Please address all questions and comments to Mr. Todd Luce, 4 CES/CEIE, 1095 Peterson Ave, Seymour Johnson AFB, NC 27531. Comments are encouraged to be sent by email to todd.luce.1@us.af.mil.

Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Robert Pullinger
North Carolina Department of Environmental Quality
Division of Energy, Mineral, and Land Resources
943 Washington Square Mall
Washington NC, 27889

Dear Mr. Pullinger:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

The Draft EA and proposed Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) are available at https://www.seymourjohnson.af.mil/Home/SJAFB-Environmental-Management/. Hard copies are also available upon request.

In accordance with Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, as amended by EO 12416, *Intergovernmental Review of Federal Programs*, we request your participation and feedback on the Draft EA. If after review of the Draft EA and proposed FONSI/FONPA, you have additional information regarding impacts of the Proposed Actions on the natural environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. We anticipate publishing the Final EA in late 2023.

Please provide your written questions or comments on this Draft EA at your earliest convenience, but no later than 30 days from the date of this correspondence. Please address all questions and comments to Mr. Todd Luce, 4 CES/CEIE, 1095 Peterson Ave, Seymour Johnson AFB, NC 27531. Comments are encouraged to be sent by email to todd.luce.1@us.af.mil.

Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Emily Thompson
US Department of the Army
Wilmington District, Corps of Engineers
Washington Regulatory Field Office
2407 W. 5th Street
Washington, NC 27889

Dear Ms. Thompson:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Rosemary Calli
Wetlands Regulatory Section
Water Management Division
US Environmental Protection Agency
61 Forsyth Street, SW
Atlanta, GA 30303

Dear Ms. Calli:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Chip Crumpler
Wayne County County Manager
PO Box 227
Goldsboro, NC 27530

Dear Mr. Crumpler:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

David Ham
City of Goldsboro Mayor's Office
200 N Center St.
Goldsboro, NC 27530

Dear Mr. Ham:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

John Bell
NC House of Representatives District 10
300 N. Salisbury Street, Rm. 301F
Raleigh, NC 27603-5925

Dear Rep. Bell:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

E.S. Newton
North Carolina Senate District 4
300 N. Salisbury Street, Rm. 520
Raleigh, NC 27603

Dear Sen. Newton:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Wiley Nickel
U.S. House of Representatives, 13th District
1133 Longworth House Office Building
Washington, DC 20515

Dear Rep. Nickel:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Tedd Budd
U.S. Senator
SR-B85 Russell Senate Office Building
Washington, DC 20510

Dear Sen. Budd:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Thom Tillis
U.S. Senator
113 Dirksen Senate Office Building
Washington, DC 20510

Dear Sen. Tillis:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

DEPARTMENT OF THE AIR FORCE
4TH FIGHTER WING (ACC)
SEYMOUR JOHNSON AIR FORCE BASE NC

SEP 14 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Avenue
Seymour Johnson AFB NC 27531

Mr. Pete Benjamin
Fish and Wildlife Enhancement
US Fish and Wildlife Service
PO Box 33726
Raleigh, NC 27636-3726

Dear Mr. Benjamin:

Last May, I sent you a letter briefly describing the Air Force's proposal for two separate construction projects: 1) modification of the Slocumb Gate Entry Control Facility (ECF) road alignment to meet the requirements for ECFs outlined in Unified Facilities Criteria 4-022-01, and 2) construction of an access road on the west end of the flightline to reduce emergency response times and decrease chances of foreign object debris being transported and deposited on the flightline. I would like to follow up by inviting you to review the Draft Environmental Assessment (EA) addressing the potential environmental impacts associated with the construction and operation of new infrastructure at SJAFB, North Carolina.

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Sincerely,

BRIAN W. JOYNER, P.E.
Deputy Base Engineer

OCT 0 3 2023

North Carolina General Assembly
Senate

SENATOR BUCK NEWTON
4TH DISTRICT

OFFICE ADDRESS: 520 LEGISLATIVE OFFICE BUILDING
300 N. SALISBURY STREET
RALEIGH, NC 27603-5925
TELEPHONE: (919) 733-5878
EMAIL: BUCK.NEWTON@NCLEG.GOV

COMMITTEES:
JUDICIARY, CO-CHAIR
AGRICULTURE, ENERGY, AND ENVIRONMENT
APPROPRIATIONS ON JUSTICE AND PUBLIC SAFETY
EDUCATION/HIGHER EDUCATION
TRANSPORTATION

September 26, 2023

Mr. Brian W. Joyner, P.E.
Deputy Base Engineer
4th Civil Engineer Squadron
1095 Peterson Ave.
Seymour Johnson AFB NC 27531

Dear Mr. Joyner:

Thank you for your letter of September 14, 2023, with the additional information for the Air Force's proposal on the two construction projects. We have reviewed this and currently we have no further questions or comments.

Thank you again for keeping us posted.

Sincerely,

Buck

Senator Buck Newton

BN/cd

From:	Kristin Lang
To:	pete_benjamin@fws.gov
Cc:	LUCE, TODD A CIV USAF ACC 4 CES/CEIEA; Karen Stackpole
Subject:	Consultation for Flightline District Development at Seymour Johnson Air Force Base
Date:	Thursday, November 16, 2023 10:30:05 AM

Dear Mr. Benjamin,

Earlier this year we mailed two letters to your office regarding the potential environmental impacts associated with the construction and operation of new infrastructure at Seymour Johnson Air Force Base (AFB), North Carolina, but did not receive a response. I wanted to follow up via email to confirm receipt and see if USFWS has any concerns with this Proposed Action. The letters and draft EA are attached. Please feel to reach out if you have any questions.

Warm regards,

Kristin Lang
Environmental Scientist
DAWSON
Durham, NC
Mobile: 434.665.5270
http://www.dawson8a.com
Kūpono Ka Hana - Excellence in Service

From:	Kristin Lang
To:	pete_benjamin@fws.gov
Subject:	FW: Consultation for Flightline District Development at Seymour Johnson Air Force Base
Date:	Monday, January 22, 2024 10:37:41 AM

Mr. Benjamin,

I just left you a voicemail—here are the letters I referenced in my message. If you could provide a written response for our records, I would greatly appreciate it.

Warm regards,

Kristin Lang
Environmental Project Manager
DAWSON
Mobile: 434.665.5270

From: Kristin Lang
Sent: Thursday, November 16, 2023 10:30 AM
To: pete_benjamin@fws.gov
Cc: LUCE, TODD A CIV USAF ACC 4 CES/CEIEA <todd.luce.1@us.af.mil>; Karen Stackpole <kstackpole@dawsonohana.com>
Subject: Consultation for Flightline District Development at Seymour Johnson Air Force Base

Dear Mr. Benjamin,

Earlier this year we mailed two letters to your office regarding the potential environmental impacts associated with the construction and operation of new infrastructure at Seymour Johnson Air Force Base (AFB), North Carolina, but did not receive a response. I wanted to follow up via email to confirm receipt and see if USFWS has any concerns with this Proposed Action. The letters and draft EA are attached. Please feel to reach out if you have any questions.

Warm regards,

Kristin Lang
Environmental Scientist
DAWSON
Durham, NC
Mobile: 434.665.5270
http://www.dawson8a.com
Kūpono Ka Hana - Excellence in Service

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APPENDIX B: WETLAND DELINEATION REPORT

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FINAL
WETLAND DELINEATION REPORT

To Support the Flightline District Development
Seymour Johnson Air Force Base, North Carolina

Contract Number: W912HN18D1007

Task Order Number: W912HN22F1038

Prepared for:

U.S. Army Corps of Engineers
Savannah District
100 W. Oglethorpe Ave.
Savannah, GA 31401
and
U.S. Department of the Air Force

Prepared by:

Dawson Solutions, LLC
4100 Market Street, Suite 117
Huntsville, Alabama 35808

August 2023

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AMSL	Above Mean Sea Level
CWA	Clean Water Act
DAWSON	Dawson Solutions, LLC
ECF	Entry Control Facility
FEMA	Federal Emergency Management Agency
GIS	Geographical Information Systems
GPS	Global Positioning System
NC DEQ	North Carolina Department of Environmental Quality
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
US	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
US EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOTUS	Waters of the United States

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1.0 INTRODUCTION

Dawson Solutions, LLC (DAWSON) has prepared this Wetland Delineation Report for Seymour Johnson Air Force Base (AFB) in Goldsboro, North Carolina, hereafter referred to as the "Site". DAWSON was retained to provide an evaluation of wetlands and Waters of the United States (WOTUS) at the Site as part of the environmental assessment of the proposed Slocumb Gate Entry Control Facility (ECF) and Flightline Access Road project areas, hereafter referred to as the "Project Area."

DAWSON conducted the field investigation of the Project Area on November 17, 2022. The Project Area totals 46.1 acres in the Flightline Access Road Project Area and 22.6 acres in the Slocumb Gate ECF Project Area, for a total of 68.7 acres of land reviewed (**Figure 1**).

Appendix A presents figures and mapped wetland boundaries. **Appendix B** includes the FEMA Firmette map. A comprehensive photograph log is provided in **Appendix C**. **Appendix D** presents the appropriate regional wetland determination data sheets for the sample test points collected.

2.0 PROJECT PURPOSE

This Wetland Delineation Report presents the results of the wetland boundaries within the Project Area at Seymour Johnson AFB. The findings of this report will be used in project planning and potential future development purposes for avoidance or minimization of impacts, if any, to wetlands and WOTUS. The delineation is part of the analysis associated with potentially constructing an access road to the flightline and realigning the roadway at the Slocumb Gate ECF. As part of this delineation, DAWSON delineated the boundaries of all wetlands and WOTUS within the Project Area to provide the most up-to-date conditions.

This Wetland Delineation Report was prepared in part to satisfy the regulatory requirements of the United States Army Corps of Engineers (USACE) under the purview of Section 404 of the Clean Water Act (CWA). Delineations were conducted in accordance with the USACE 1987 *Wetland Delineation Manual* (USACE 1987) and the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* (USACE 2010).

3.0 PROJECT LOCATION

The Project Area occupies 68.7-acres of land aboard Seymour Johnson AFB in Goldsboro, Wayne County, North Carolina. The Project Area contains several paved and unpaved roads, a part of a perimeter gate, approximately a dozen buildings, several paved parking lots, chain-link fencing, and a recreational field. Peterson Avenue separates the two Project Areas. Surrounding the buildings are a mix of landscaped and wooded areas. A reach of the Stoney Creek extends into Slocumb Gate ECF Project Area. Traversing beneath Peterson Avenue via a culvert system, the intermittent creek forks in the Flightline Road Project Area where it is branches into several earthen swales and ditches that channel stormwater.

4.0 REGULATORY DRIVERS

4.1 SECTION 401/404 OF THE CLEAN WATER ACT

As defined by USACE, in accordance with Section 404 of the CWA, USACE has regulatory jurisdiction over WOTUS, including lakes, ponds, streams (intermittent and perennial), and wetlands. Wetlands are defined as "*those that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (USACE 1987).

USACE also regulates navigable waters under Section 10 of the Rivers and Harbor Act (33 U.S.C. 401 et seq.) which requires a permit from USACE to construct any structure in or over any navigable water of the United States, as well as any proposed action that would alter or disturb (such as excavation/dredging or deposition of materials) these waters. If the proposed structure or activity affects the course, location, condition, or

capacity of the navigable water, even if the proposed activity is outside the boundaries of the waterbody, a permit from USACE is required.

This document will conclude with a request for a review/approved jurisdictional determination ("AJD"), to be provided by USACE stating the presence or absence of "waters of the United States" on a parcel or a written statement and map identifying the limits of "waters of the United States" on a parcel. See 33 C.F.R. § 331.2. Under existing USACE policy, AJDs are generally valid for five years unless new information warrants revision prior to the expiration date.

4.2 NORTH CAROLINA STATE REGULATED WETLAND LAW

Development in wetlands in North Carolina requires a permit from either USACE or the N.C. Division of Coastal Management. One of these agencies must be consulted prior to disturbing wetlands.

The North Carolina Department of Environmental Quality (NC DEQ) Division of Water Resources is responsible for Isolated and Other non-404 Jurisdictional Wetlands and Water Permits (NC Wetlands 2022).

According to the state of North Carolina, "*Wetlands are wet areas commonly referred to as swamps, lowlands, marshes, bottomlands, and sloughs and are the most abundant coastal habitat type in North Carolina. These areas have plants and animals that are adapted to live parts of their lives in water. Wetland habitat extends into water as far as plants grow that live any of their lives out of water. Wetlands habitat extends onto land as far as to where plants grow that are adapted to live in water. This means that not all wetlands habitat is always underwater and wetland habitats include some areas that are only occasionally flooded*." (NCDEQ 2023).

5.0 PROJECT SETTING

The Project Area is located at Seymour Johnson AFB, approximately 2.5 miles southeast of downtown Goldsboro in Wayne County, North Carolina. The Project Area is situated at the northwest corner of the flightline. Overall, the Project Area exhibits little topographic relief and has an elevation of approximately 75 feet above mean sea level (AMSL) (**Figure 2**[1]). The Project Area has two forks of a reach of Stoney Creek and several earthen and rip-rap swales that channel stormwater. Surface water flows west into Stoney Creek which is west and outside of the Project Area. Stoney Creek flows south to the Neuse River, located less than one mile from the Project Area.

5.1 ECOLOGICAL REGIONS

The United States Environmental Protection Agency (US EPA) created their Ecological Regions of North America maps (US EPA 2023), which characterizes four levels of ecoregions, beginning at the coarsest level in North America, and further subdividing down to smaller areas of similar characteristics. The Site is located in Region 8 which is the Eastern Temperate Forests Ecoregion (Level I); Region 8.3 Southeastern USA Plains (Level II); Region 65 Southeastern Plains Ecoregion (Level III); and on the border between Region 65m Rolling Coastal Plain and 65p Southeastern Floodplains and Low Terraces Ecoregions (Level IV).

The Southeastern Plains ecoregion consists of irregular plains with broad interstream areas and has a mosaic of cropland, pasture, woodland, and forest. Natural vegetation was predominantly longleaf pine, with smaller areas of oak-hickory-pine. On some moist sites, Southern mixed forest occurs with beech, sweetgum, southern magnolia, laurel and live oaks, and various pines. The Cretaceous or Tertiary-age sands, silts, and clays of the region contrast geologically with the older metamorphic and igneous rocks of the Blue Ridge (66) and Piedmont (45). Elevations and relief are greater than in the Southern Coastal Plain (75), but generally less than in much of the Piedmont. Streams in this area are relatively low-gradient and sandy-bottomed.

According to the Description of the Ecoregions of the United States compiled by Robert G. Bailey of the US Forest Service in 1995, the Site is located within the Southern Mixed Forest Province (231). The climate in this ecoregion includes mild winters and hot, humid summers, with an average annual temperature of 60º to 70º Fahrenheit (15-21º Celsius). Precipitation is estimated to be approximately 40 to 60 inches per year and tends to be evenly distributed throughout the year, with a slight peak in midsummer or early spring (Bailey 1995).

[1] Note the USGS topographic map covering the site appears to have elevations recorded in the metric system unit of measure.

Forests consist of medium-tall to tall broadleaf deciduous and needleleaf evergreen trees. At least 50 percent of the stands are made up of loblolly pine, shortleaf pine, and other southern yellow pine species. Other common trees include oak, hickory, sweetgum, blackgum, red maple, and winged elm. The main grasses are bluestem, panicums, and longleaf uniola. Dogwood, viburnum, haw, blueberry, American beautyberry, youpon, and numerous woody vines are common (Bailey 1995).

5.2 SOIL

Soil survey maps accessed through the U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS) web soil survey were reviewed prior to conducting the field surveys. Eight soil types were identified within the Project Area (**Figure 3**).

The entire Project Area is made up of loamy soil. The northern section of the Project Area north of the creek is comprised of Dragston loamy sand, Norfolk loamy sand, 0 to 2 percent slopes, Coxville Loam, and Goldsboro loamy sand, 0 to 2 percent slopes, Southern Coastal Plain. Norfolk loamy sand, 6 to 10 percent slopes cuts across the middle of the Project Area, following the creek. The southern section of the Project Area includes Wickham loamy sand, 2 to 6 percent slopes, Johns sandy loam, and Lumbee sandy loam. All of the soils are classified as farmland.

Soils underlying the mapped WOTUS and wetlands in the project area are Norfolk loamy sand, 6 to 10 percent (non- hydric map unit) and Coxville loam (hydric map unit). The soil series descriptions and drainage classifications for the Project Area are provided in **Table 5-1**.

Table 5-1. Soils at the Seymour Johnson AFB Project Area

Symbol	Soil Name	Slope (Percent)	Drainage Class	Hydrologic Soil Group	Farmland Classification	Hydric (Y/N)
Jo	Johns sandy loam	0 to 2	Moderately well drained	C	Prime farmland if drained	N
NoC	Norfolk loamy sand, 6 to 10 percent slopes	6 to 10	Well drained	A	Farmland of statewide importance	N
Dr	Dragston loamy sand	0 to 2	Somewhat poorly drained	A/D	Farmland of statewide importance	N
Lv	Lumbee sandy loam	0 to 2	Poorly drained	B/D	Prime farmland if drained	Y
Co	Coxville Loam	0 to 2	Poorly drained	C/D	Farmland of statewide importance	Y
WhB	Wickham loamy sand, 2	2 to 6	Well drained	B	Prime farmland	N

Symbol	Soil Name	Slope (Percent)	Drainage Class	Hydrologic Soil Group	Farmland Classification	Hydric (Y/N)
	to 6 percent slopes					
GoA	Goldsboro loamy sand, 0 to 2 percent slopes, Southern Coastal Plain	0 to 2	Moderately well drained	B	Prime farmland	N
NoA	Norfolk loamy sand, 0 to 2 percent slopes	0 to 2	Well drained	A	Prime farmland	N

Notes:

Data Recorded from USDA NRCS Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx).

Group A. Soils have low runoff potential when thoroughly wet. Water is transmitted freely through the soil. Group A soils typically have less than 10 percent clay and more than 90 percent sand or gravel and have gravel or sand textures.

Group B. Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Dual hydrologic group (such as C/D), the first letter represents drained areas while the second represents undrained areas.

5.2.1 HYDRIC SOIL

Lumbee sandy loam (Lv) (9.68 acres within Flightline Access Road Project Area)

Lumbee sandy loam (Lv) map unit typically occurs at an elevation of 80 to 330 feet. This unit is mapped in the southeastern section of the Project Area. All areas of this map unit are prime farmland if drained, while the unit is considered poorly drained. The unit does have a hydric soil rating. Slopes range from 0 to 2 percent. Depth to water table ranges from 0 to 12 inches with rare frequency of flooding and no ponding identified (NRCS 2023).

Coxville Loam (Co) (8.32 acres within Flightline Access Road Project Area)

This map unit occurs at an elevation of 80 to 330 feet. All areas of this map unit are considered Farmland of statewide importance and the unit is considered poorly drained. This area is located in the northeastern part of the Project Area. The unit does have a hydric soil rating. Slopes range from 0 to 2 percent. Depth to water table ranges from 0 to 12 inches with no frequency of flooding and no ponding identified (NRCS 2023).

5.2.2 NON-HYDRIC SOIL

Johns sandy loam (Jo) (6.01 acres within Slocumb Gate ECF and 10.25 acres within Flightline Access Road Project Area)

This map unit typically occurs at an elevation of 80 to 330 feet. This unit is mapped in the south-central section of the Project Area. All areas of this map unit are prime farmland if drained, and the unit is considered moderately-well drained. The unit does not have a hydric soil rating. Slopes range from 0 to 2 percent. Depth to water table ranges from 18 to 36 inches with rare frequency of flooding and no ponding identified (NRCS 2023).

Norfolk loamy sand, 6 to 10 percent slopes (NoC) (3.16 acres within Slocumb Gate ECF and 7.15 acres within Flightline Access Road Project Area)

This map unit typically occurs at an elevation of 80 to 330 feet. This unit is mapped in across the middle of the Project Area along the creek. All areas of this map unit are considered Farmland of statewide importance and the unit is considered well drained. The unit does not have a hydric soil rating. Depth to water table ranges from 18 to 36 inches with rare frequency of flooding and no ponding identified (NRCS 2023).

Dragston loamy sand (Dr) (3.36 acres within Flightline Access Road Project Area)

Dragston loamy sand (Dr) map unit typically occurs at an elevation of 0 to 20 feet. All areas of this map unit are considered Farmland of statewide importance and the unit is considered somewhat poorly drained. This area is located in the northwestern part of the Project Area. The unit does not have a hydric soil rating. Slopes range from 0 to 2 percent. Depth to water table ranges from 12 to 30 inches with no frequency of flooding and no ponding identified (NRCS 2023).

Wickham loamy sand, 2 to 6 percent slopes (WhB) (13.43 acres within Slocumb Gate ECF Project Area)

This map unit typically occurs at an elevation of 80 to 330 feet. This unit is mapped in the southwestern section of the Project Area. All areas of this map unit are prime farmland and the unit is considered well drained. The unit does not have a hydric soil rating. Slopes range from 0 to 2 percent. Depth to water table is more than 80 inches with rare frequency of flooding and no ponding identified (NRCS 2023).

Goldsboro loamy sand, 0 to 2 percent slopes, Southern Coastal Plain (GoA) (2.95 acres within Flightline Access Road Project Area)

This map unit typically occurs at an elevation of 130 to 270 feet. All areas of this map unit are prime farmland and the unit is considered moderately-well drained. This unit is mapped in the central-eastern portion of the Project Area and is largely developed. The unit does not have a hydric soil rating. Depth to water table ranges from 24 to 36 inches with no frequency of flooding and no ponding identified (NRCS 2023).

Norfolk loamy sand, 0 to 2 percent slopes (NoA) (4.47 acres within Flightline Access Road Project Area)

This map unit typically occurs at an elevation of 10 to 330 feet. All areas of this map unit are prime farmland and the unit is considered well drained. This area is located in the northern part of the Project Area. The unit does not have a hydric soil rating. Depth to water table ranges from 40 to 72 inches with no frequency of flooding and no ponding identified (NRCS 2023).

5.3 TOPOGRAPHY

The Project Area is positioned on a flat area of the landscape situated east of Stoney Creek and less than a mile northeast of the Neuse River. The Project Area is at an elevation of approximately 66 to 91 feet AMSL (increasing in elevation moving from west to northeast). The 1982 USGS topographic map (shown in **Figure 2**) depicts the project area at an elevation of approximately 23 meters AMSL.

5.4 HYDROLOGY

All surface hydrology within the Project Area flows into the main stem of Stoney Creek. Total annual rainfall for the area ranges between 40-60 inches each year.

The United States Geological Survey (USGS) manages the National Hydrography Dataset (NHD) which is a geospatial dataset that depicts surface water and water drainage networks of the United States. According to the USGS hydrography set, all mapped surface water features within the Project Area are labelled canal/ditch and show water flow to the west to an intermittent reach of Stoney Creek before flowing south into Stoney Creek. Stoney Creek flows south until it reaches the Neuse River, approximately one-mile southwest of the Project Area and making up Seymour Johnson AFB's southern border.

According to the U.S. Fish and Wildlife Service (USFWS)'s National Wetlands Inventory (NWI) mapping, shown on the water resources map (**Figure 4)**, the Project Area includes two riverine habitats. The first NWI mapped area is located within the Slocumb Gate ECF Project Area and is mapped R4SBC, indicating it is a riverine, intermittent, streambed, with a water regime that is seasonally flooded.

The second riverine habitat is mapped as R5UBFx, indicating the habitat is riverine, unknown perennial, unconsolidated bottom, semi-permanently flooded water regime and a special modifier: excavated. This modifier is used to identify wetland basins or channels that were excavated by humans (USFWS 2023). The second riverine habitat is entirely in the Flightline Access Road Project Area.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Map No. 3720350800K, effective 6/20/2018), a section of the Project Area within Slocumb Gate ECF (west of Peterson Avenue) includes an area defined as a 1% Annual Chance Flood Hazard, and outside the project area but immediately adjacent to it the

corridor surrounding Stoney Creek is designated a special flood hazard area and a regulatory floodway (Zone AE), and parts are a 0.2% annual chance flood hazard. Floodplain information is also shown on the water resources map (**Figure 4**), and the FEMA Firmette map is shown in **Appendix B**.

6.0 METHODS

6.1 PRE-FIELD REVIEW OF INFORMATION

The following data sources were reviewed for information on vegetation, topography, soils, drainage patterns, and potential or known wetlands in the project vicinity:

- Publicly available historic and recent aerial photographs;
- FEMA Flood Insurance Rate Map;
- USGS National Hydrography Dataset;
- USFWS NWI map; and
- USDA NRCS Web Soil Survey.

6.2 MAPPING METHODOLOGY

Mapping was conducted by DAWSON on November 17, 2022. The boundary of wetlands and WOTUS, swales, retention basins, and stormwater conveyance system features at the Project Area were mapped using an Arrow Gold GNSS sub-meter accuracy Global Positioning System (GPS) unit.

6.3 GIS DEVELOPMENT

Wetland boundaries were collected using an Arrow Gold GNSS GPS unit capable of collecting sub-meter data. Geographical Information Systems (GIS) data and attribute information was reviewed in accordance with DAWSON's Quality Assurance Plan prepared for the Project Area. GIS data accompanies this report.

6.4 WETLAND DELINEATION METHODOLOGY

Delineations were conducted in accordance with the USACE 1987 *Wetland Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* (USACE 2010). Wetland indicators as described by USACE (2010) were used to assess the presence of wetlands.

GPS data points and a continuous line were collected from the boundary of the reach of Stoney Creek and any bordering wetland identified. Wetland sample points from wetland 1 and 2 were recorded on USACE Routine Wetland Delineation Form (**Appendix C**). One soil sample was collected from within each wetland and one from the adjacent upland. If the wetland had standing water present, a wetland soil sample was not collected in that location, as soil field indicators that would have formed under flooding conditions would be assumed to have anaerobic properties. Plant species and their indicator status were identified, and evidence of hydrology were evaluated, as discussed in further detail below.

Vegetation - The wetland indicator status for plant species was reviewed and documented in accordance with the National Wetland Plant List (Lichvar et al., 2016) and Western Gulf Coast 2020 Subregional Wetland Plant List. Vegetation Hydrophytic vegetation was documented on Field Data Sheets based on percent cover in the sample plot. Using the National Wetland Plant List, dominant species within the sample plot were recorded based on the assigned rating in **Table 6-1** below. Vegetation in the upland and wetland communities was characterized using the dominance method. A radius of 10 feet around the wetland and upland soil sample was used at each feature.

Table 6-1. Vegetation Indicator Status

Indicator Status	Designation	Qualitative Description (Lichvar et al., 2016)
Obligate (OBL)	Hydrophyte	Occurs in wetlands
Facultative Wetland (FACW)	Hydrophyte	Usually occurs in wetlands
Facultative (FAC)	Hydrophyte or Non-hydrophyte	Can occur in both wetland and upland habitats
Facultative Upland (FACU)	Non-hydrophyte	Usually occurs in uplands
Upland (UPL)	Non-hydrophyte	Almost always occurs in upland habitats

Notes: Source: National Wetland Plant List (Lichvar et al., 2016).

Soils - USDA NRCS defines hydric soil as “a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile” (NRCS).

Soil test pits were dug to a depth of 18-inches or refusal on rock or hardpan. The soil profile was examined for the presence of hydric soil indicators using the Munsell Color book, including the hue, value, chroma, and matrix. Long term inundation and saturation of the soil, combined with microbial activity causes anaerobic conditions within the soil, leading to oxygen depletion, accumulation of organic matter and/or reducible elements, most notably, iron. Evidence of hydric soil conditions, including redox features, gleyed soil, saturated soil, texture, and the presence of an organic/peat layer or hydrogen sulfide odor was recorded.

Hydrology - Wetland indicators as described by USACE (2010) were used to assess the presence of wetlands. DAWSON determined if hydrology indicators were present within the surveyed areas. The three indicators necessary to define a wetland are the positive presence of hydrophytic vegetation, hydric soils, and wetland hydrology. In the event surface water is not present, the USACE manual defines the positive presence of hydrology as the feature exhibiting one or more primary indicator, or two secondary indicators. The primary and secondary indicators are listed below.

Primary Indicators

- High water table
- Saturation
- Water marks
- Sediment deposits
- Drift deposits
- Algal mat or crust
- Iron deposits
- Inundation visible on aerial imagery
- Sparsely vegetated concave surface
- Water-stained leaves
- Aquatic fauna
- Marl deposits
- Hydrogen sulfide odor
- Oxidized rhizospheres on living roots
- Prescence of reduced iron
- Recent iron reduction in tilled soils
- Thin muck surface

Secondary Indicators

- Surface soil cracks
- Drainage patterns
- Moss trim lines
- Dry-season water table
- Crayfish burrows
- Saturation visible on aerial imagery
- Stunted or stressed plants
  Geomorphic position
- Shallow aquitard
- Microtopographic relief
- Facultative-Neutral test

Each wetland/WOTUS was characterized in accordance with the wetlands and deepwater habitats classification system used in NWI mapping (Cowardin, 1979). The Cowardin Classification System incorporates information in a succinct code that reveals the landscape position, plant community and hydrology.

7.0 DELINEATION RESULTS

The field delineation of wetland and aquatic resources in the Project Area was conducted by Karen Stackpole and Kristin Lang of DAWSON on November 17, 2022. USACE Routine Wetland Delineation Data forms and photos associated with the delineation are provided in **Appendix C and D**, respectively. **Figure 5** depicts the wetland and aquatic features that were delineated within the Project Area.

7.1 WETLAND AND AQUATIC RESOURCES

The field investigation resulted in the delineation of one forked intermittent reach of Stoney Creek along with narrow areas of bordering riparian wetlands at the creek boundary. The forested riparian wetlands bordering the creek display typical hydrologic indicators such as water-stained leaves, staining at the bottom of trees, and oxidized rhizospheres on roots. The forested riparian wetlands on either side of the creek contained a mixture of plant assemblages, with the forested wetland areas generally dominated by a mature overstory of lobolly pine (*Pinus taeda*) and red maple (*Acer rubrum)*, and an understory of Chinese privet (*Ligustrum sinense*). Two earthen swales flow into the creek via culverts and exhibit wetland characteristics at the culvert opening and the area of the swale that was nearest to the creek.

The delineated reach of Stoney Creek within the Project Area was observed to be an average of approximately 3-4 feet wide, have a low gradient, and flow west toward Stoney Creek. The reach is culverted as it passes beneath Peterson Avenue as it enters the Slocumb Gate ECF Project Area. The banks of the creek were observed to range from 1 to 8 feet within the creek channel. Creek bed substrate was observed to generally be sand/sediment with few to little cobbles. DAWSON recorded the following vegetation in **Table 7-1** within the areas delineated and data points recorded.

Table 7-1. Vegetation Observed

Common Name	Scientific Name	Type
Lobolly pine	*Pinus taeda*	Tree
River birch	*Betula nigra*	
Tulip tree	*Liriodendron tulipifera*	
Red maple	*Acer rubrum*	
Crepe myrtle	*Lagerstroemia indica*	Shrub
Chinese privet	*Ligustrum sinense*	
Sawtooth blackberry	*Rubus argutus*	
Roundleaf greenbrier	*Smilax bona-nox*	Vine
Muscadine	*Vitus rotindifolia*	
Switchcane	*Arundunaria tecta*	Grass
Vasey's grass	*Paspalum urvillei*	
Maryland Golden Aster	*Chrysopsis mariana*	Herbs/Forbs
Fennel	*Eupatorium capillifolium*	
Pale Meadow Beauty	*Rhexia mariana*	

Table 7-2. Wetland/Upland Sample Locations

Data Collection Point	Latitude (N°)	Longitude (W°)	Hydrophytic Vegetation (Y/N)	Hydric Soils (Y/N)	Wetland Hydrology (Y/N)	Habitat Classification (Upland or Wetland)
W1-Wet	35.349083	-77.972482	Y	Y	Y	Wetland
W1-Upland	35.348969	-77.972582	Y	N	N	Upland
W2-Wet	35.349520	-77.973137	Y	Y	Y	Wetland
W2-Upland	35.349486	-77.973201	Y	N	N	Upland
W3-Wetland	35.348239	-77.971344	Y	Y	Y	Wetland
W3-Upland	35.348262	-77.971305	Y	N	N	Upland

Note: Wetland 2 and 3 test points exhibited similar characteristics to that of Wetland 1 sample test points, therefore, data forms were not completed for these locations.

Table 7-3. WOTUS and Wetland Data

Project Area	Type	Cowardin Classification	Acres
Flightline Access Road	Riverine	R5UBFx	0.22
	Wetland	PFO1C	1.81
	Non-Wetland	N/A	0.10
Slocumb Gate	Riverine	R4SBC	0.02
	Wetland	PEM1C	0.20
	Non-Wetland	N/A	0
Total Riverine Acreage in Project Area			***0.24***
Total Wetland Acreage in Project Area			***2.01***
Total Earthen Swale/Non-Wetland Acreage in Project Area			***0.10***

Key:
R5UBFx = Riverine, unknown perennial, unconsolidated bottom, semi-permanently flooded, excavated
PFO1C = Palustrine, Forested, broad-leaved Deciduous, Seasonally Flooded
N/A = Not Applicable
R4SBC = Riverine, Intermittent, Streambed, Seasonally flooded
PEM1C = Palustrine, emergent, Persistent, Seasonally Flooded
(Source: Cowardin Classification System)

7.2 UPLAND AREAS

The 68.7-acre Project Area consists primarily of upland areas with the exception of the delineated forked creek and areas of stormwater conveyance/earthen swales. Upland areas were found to be maintained mowed grass, with some areas improved with structures or pavement. The canopy of forested upland areas was observed to be similarly dominated by lobolly pine and red maple as in the delineated forested areas, however, these areas did not exhibit signs of hydrology or hydric soils.

8.0 FINDINGS AND CONCLUSIONS

- The Project Area contains 0.24 acres of riparian habitat and 2.01 acres of bordering riparian wetland habitat. There are also 0.10 acres of narrow earthen swales within the project area that intermittently convey water but do not meet the characteristics of wetland habitat.

- A majority of the earthen and rip-rap reinforced stormwater retention basins tie into the creek and channel stormwater but do not meet the criteria for a wetland and are not included in acreage calculations. Two areas of the swales do meet wetland criteria and are included in the wetland calculation above.

- Desktop resources, including the USGS National Hydrography Dataset and the USFWS National Wetland Inventory depict most of the creek in the Project Area as excavated/manmade. The exception to this is the reach that is located west of Peterson Avenue, within the Slocumb Gate ECF Project Area.

- Seymour Johnson AFB requests a site walk with USACE to provide confirmation of the mapped location and boundaries of all aquatic resources identified and requests a jurisdictional determination of these resources.

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APPENDIX A

FIGURES

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Location Map
Seymour Johnson Air Force Base, North Carolina

Date
FEBRUARY 2023

Figure
1

KEY

Project Location

Engineering Scale
1" = 500'

Source(s)
DAWSON, Esri

Projection
WGS 1984 UTM Zone 18N

N
W
E
S
0
250
500 Feet

DAWSON

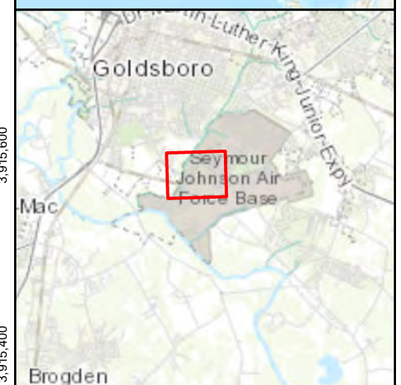
Z:\Shared\Active Contracts\DS\10831 - SAV USACE IDIQ\10831.106 - Flightline District Development EA SJAFB\14-MISC\GIS\SJAFB_FlightLineEA.aprx | 2/1/2023 | KathleenKeith

Topography Map
Seymour Johnson Air Force Base, North Carolina

Date	Figure
FEBRUARY 2023	2

KEY

- Project Location



Engineering Scale
1" = 500'

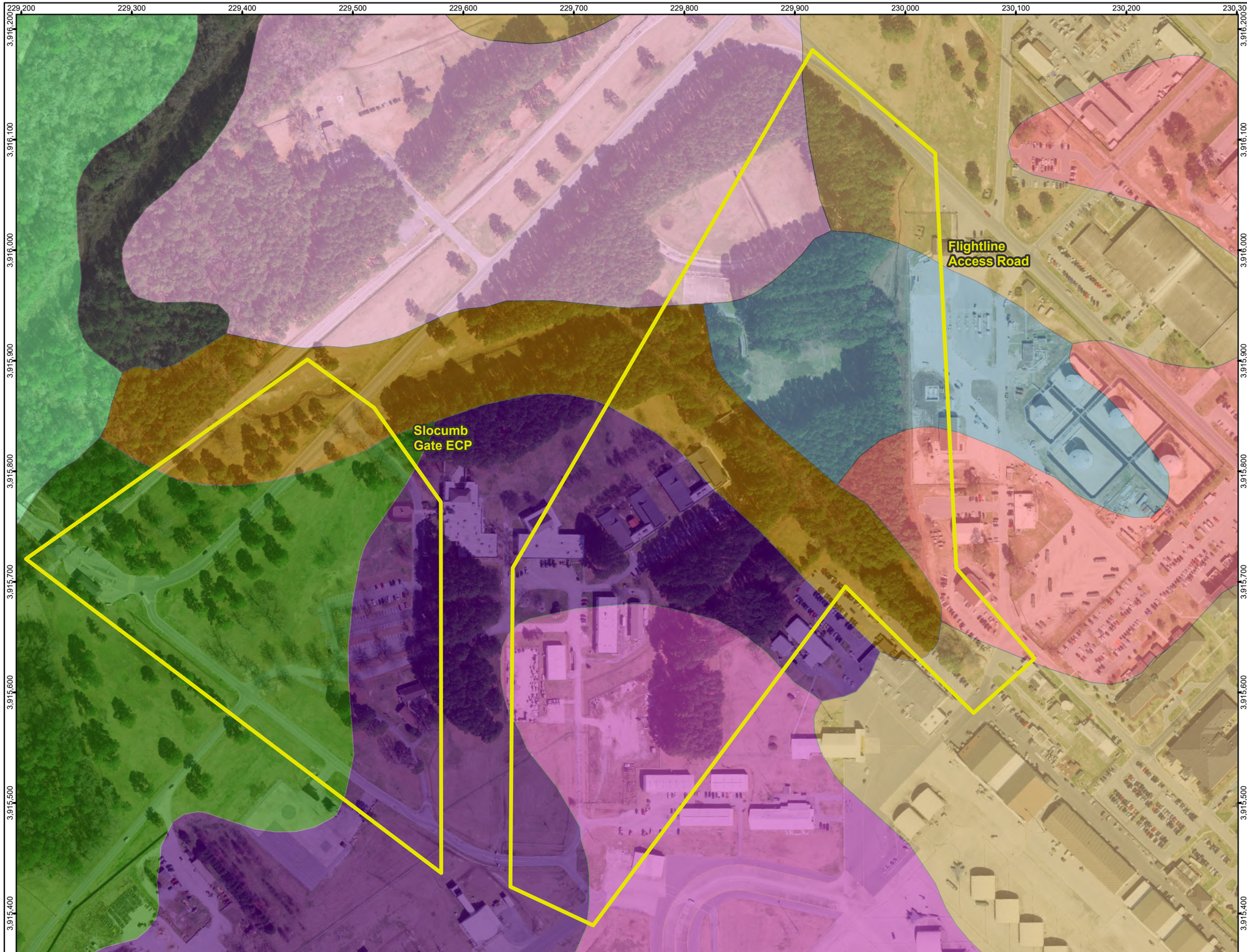
Source(s)
DAWSON, Esri, USGS Topographic Maps

Projection
WGS 1984 UTM Zone 18N

N
W
E
S

0 250 500 Feet

DAWSON



Soils Map
Seymour Johnson Air Force Base, North Carolina

Date	Figure
FEBRUARY 2023	3

KEY

- Bibb sandy loam
- Borrow pit
- Coxville loam
- Dragston loamy sand
- Goldsboro loamy sand, 0 to 2 percent slopes, Southern Coastal Plain
- Johns sandy loam
- Lumbee sandy loam
- Norfolk loamy sand, 0 to 2 percent slopes
- Norfolk loamy sand, 6 to 10 percent slopes
- Wickham loamy sand, 2 to 6 percent slopes
- Project Location

Engineering Scale
1" = 275'

Source(s)
DAWSON, Esri, USDA NRCS SSURGO

Projection
WGS 1984 UTM Zone 18N

N
W E
S

0 137.5 275 Feet

DAWSON

Z:\Shared\Active Contracts\DS\10831 - SAV USACE IDIQ\10831.106 - Flightline District Development EA SJAFB\14-MISC\GIS\SJAFB_FlightLineEA.aprx | 2/8/2023 | KathleenKeith

Water Resources Map
Seymour Johnson Air Force Base, North Carolina

Date	Figure
FEBRUARY 2023	4

KEY

- NWI Riverine Wetland
- NWI Palustrine Wetland
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Regulatory Floodway
- Project Location

Engineering Scale
1" = 500'

Source(s)
DAWSON, Esri, USFWS National Wetland Inventory, FEMA NFHL

Projection
WGS 1984 UTM Zone 18N

N W E S

0 250 500 Feet

DAWSON

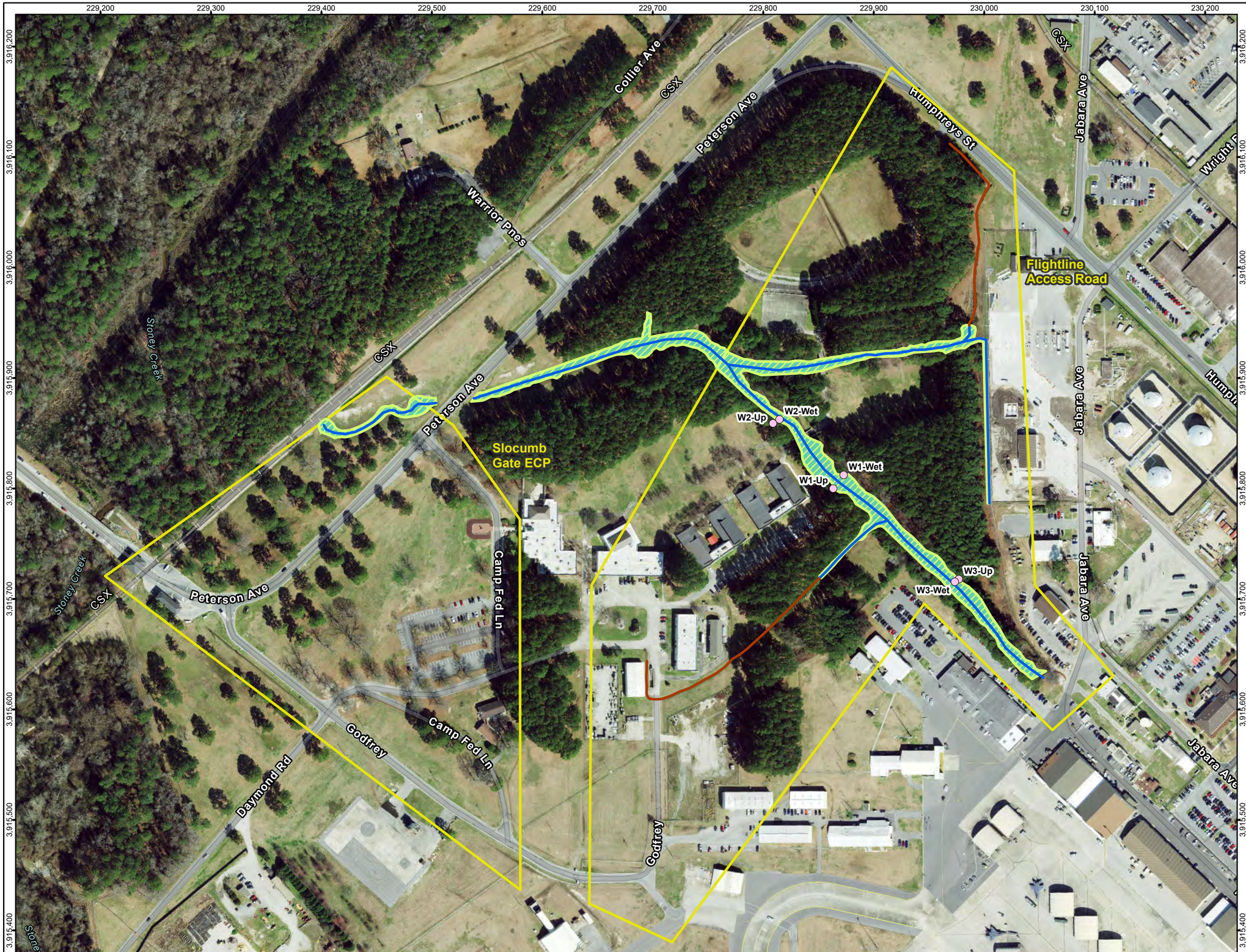
Z:\Shared\Active Contracts\DS\10831 - SAV USACE IDIQ\10831.106 - Flightline District Development EA SJAFB\14-MISC\GIS\SJAFB_FlightLineEA.aprx | 2/8/2023 | KathleenKeith

Wetland Delineation Map
Seymour Johnson Air Force Base, North Carolina

Date	Figure
FEBRUARY 2023	5

KEY

- Wetland Point
- Drainage Stream
- Non-Wetland Earthen Swale
- Wetland
- Project Location



Engineering Scale
1" = 275'

Source(s)
DAWSON, Esri

Projection
WGS 1984 UTM Zone 18N

N
W
E
S
0
137.5
275 Feet

DAWSON

APPENDIX B

FEMA FIRMETTE MAP

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National Flood Hazard Layer FIRMette

FEMA

77°58'45"W 35°21'11"N

77°58'7"W 35°20'42"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/8/2023 at 12:54 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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APPENDIX C

PHOTO DOCUMENTATION

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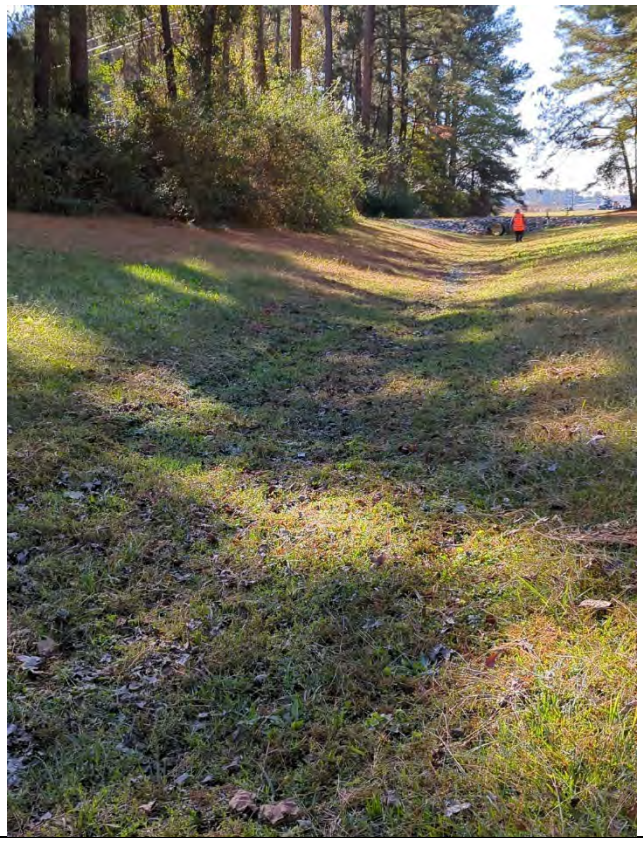
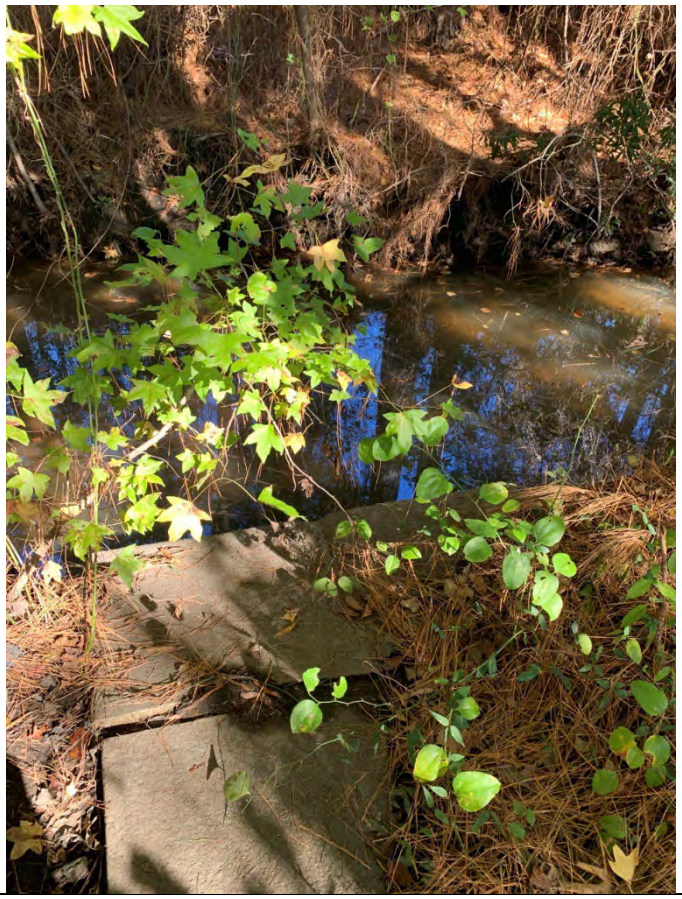
Photograph 1 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Earthen swale (non-wetland) .	
Photograph 2 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Creek showing bank with utility crossing in the background	

Photograph 3 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Earthen culvert	
Photograph 4 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Outfall	

Photograph 5 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Delineated Creek	
Photograph 6 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Test Point 3	

Photograph 7 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Test Point 3 Sample	
Photograph 8 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Test Point 3	

Photograph 9 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Utility Crossing over creek	
Photograph 10 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Culvert	

Photograph 11 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Culvert	
Photograph 12 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Test Point 4 (upland)	

Photograph 13 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Culvert	
Photograph 14 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Culvert and fence boundary, eastern side	

Photograph 15 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Looking east at creek from access road/culvert	
Photograph 16 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Road with culvert looking north	

Photograph 17 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** W1 Wet	
Photograph 18 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Transition from wetland to upland	

Photograph 19 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Bridge over creek	
Photograph 20 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Steep slope to creek from upland habitat within flightline project area	

Photograph 21 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** View from upland looking at wetland fringe with creek in view	
Photograph 22 **Location:** SJAFB **Date:** 11/17/2022 **Description:** Reeds and understory bordering creek	

Photograph 23 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Creek looking southwest from Peterson Avenue within Slocumb Gate ECF project area	
Photograph 24 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Pipeline located outside of project area between Flightline and Slocumb Gate project boundaries	

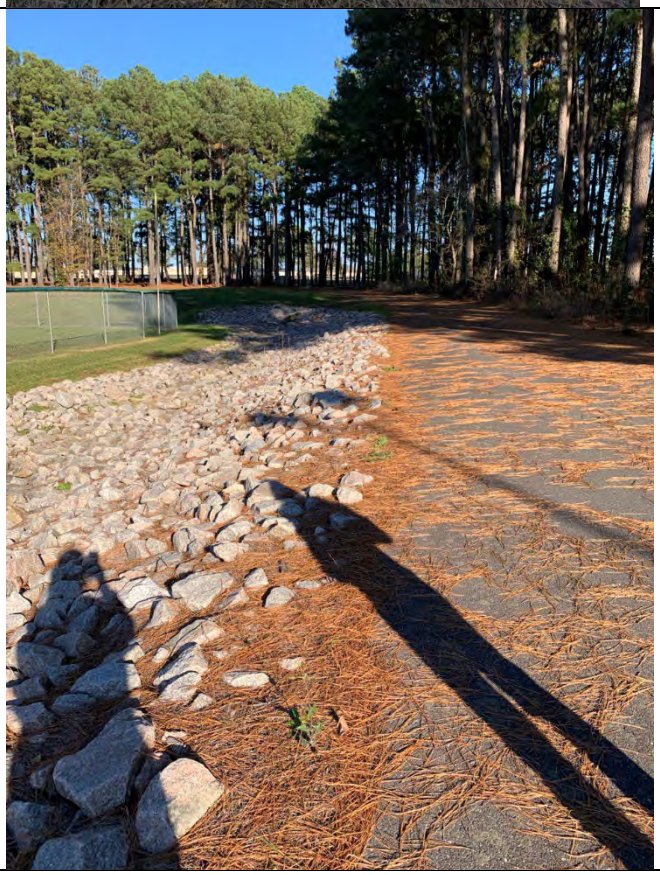
Photograph 25 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Drainage east of Peterson Ave (not a part of the project area).	
Photograph 26 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Culvert east of Peterson Ave (not a part of the project area).	

Photograph 27 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Culvert west of Peterson Ave (Slocumb Gate ECF Project Area)	
Photograph 28 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Next to culvert	

Photograph 29 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Steep bank on creek west of Peterson Ave.	
Photograph 30 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Bridge, northern branch of creek	

Photograph 31 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Examining soils along the earthen swale in the northern part of the flightline Access Road Project Area	
Photograph 32 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Earthen swale looking north toward Humphreys Street.	

Photograph 33 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Vegetation within earthen swale	
Photograph 34 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Earthen swale (non-wetland)	

Photograph 35 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** View of earthen swale looking south along the eastern project boundary of the Flightline Access Road Project Area.	
Photograph 36 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Rip-rap area bordering the recreation field	

Photograph 37 **Location:** Seymour Johnson AFB **Date:** 11/17/2022 **Description:** Along recreational field	

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APPENDIX C

USACE WETLAND DELINEATION DATASHEETS

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U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SJAFB/Flightline Access and Slocumb Gate City/County: Goldsboro/Wayne Sampling Date: 11-17-2022

Applicant/Owner: USAF State: NC Sampling Point: W1-Upland

Investigator(s): K. Stackpole, K. Lang Section, Township, Range: N/A

Landform (hillside, terrace, etc.): sloped Local relief (concave, convex, none): sloped-concave Slope (%): 5

Subregion (LRR or MLRA): LRR P Lat: 35.348969 Long: -77.972582 Datum: WGS 1984

Soil Map Unit Name: Norfolk Loamy Sand 6 to 10 percent Slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No x	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No x	
Wetland Hydrology Present?	Yes ____	No x	

Remarks:
Sample point immediately outside of the riparian corridor of the R5UBFx riparian system within the proposed Flightline Road Project Area

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Upland area adjacent to an excavated creek eventually channeling water into Stoney Creek.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: W1-Upland

Tree Stratum (Plot size: 10)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	20	Yes	FAC
2. *Acer rubrum*	40	Yes	FAC
3. *Liriodendron tulipifera*	20	Yes	FACU
4.			
5.			
6.			
	80	=Total Cover	
50% of total cover: 40		20% of total cover:	16
Sapling Stratum (Plot size: 10)			
1. *Ligustrum sinense*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1
Shrub Stratum (Plot size: 10)			
1.			
2.			
3.			
4.			
5.			
6.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Herb Stratum (Plot size: 10)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Woody Vine Stratum (Plot size: 10)			
1. *Smilax bona-nox*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	90 (A)		290 (B)

Prevalence Index = B/A = 3.22

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)
Forested area on both banks of the excavated creek

SOIL

Sampling Point: W1-Upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5YR 3/2	100					Loamy/Clayey	Dry, crumbly, refusal on rocks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SJAFB/Flightline Access and Slocumb Gate City/County: Goldsboro/Wayne Sampling Date: 11-17-2022

Applicant/Owner: USAF State: NC Sampling Point: W1-Wet

Investigator(s): K. Stackpole, K. Lang Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): Flat Slope (%): 1

Subregion (LRR or MLRA): LRR P Lat: 35.349083 Long: -77.972482 Datum: WGS 1984

Soil Map Unit Name: Norfolk Loamy Sand 6 to 10 percent Slope NWI classification: R5UBFx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Sample point within the bordering vegetated riparian corridor and floodplain

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- X Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 12

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: W1-Wet

Tree Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	90	Yes	FAC
2. *Betula nigra*	10	No	FACW
3.			
4.			
5.			
6.			
	100	=Total Cover	
50% of total cover: 50		20% of total cover:	20
Sapling Stratum (Plot size: 15)			
1. *Ligustrum sinense*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Herb Stratum (Plot size: 15)			
1. *Arundinaria tecta*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Woody Vine Stratum (Plot size: 15)			
1. *Smilax bona-nox*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	110	x 3 =	330
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		370 (B)
Prevalence Index = B/A =			2.85

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: W1-Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2.5/1	100					Sandy	Black,can squeeze water from soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ? Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ? Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ____

Remarks:

Approxiamtely 5 feet from bank of creek

APPENDIX C: AIR QUALITY CALCULATIONS

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

Slocumb Road ECF Proposed Action ACAM Report

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

a. Action Location:

Base: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Project 1: Slocumb Gate ECF Proposed Action

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2028

e. Action Description:

See Section 3.4.1 of EA.

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

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

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the

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

action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

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

Analysis Summary:

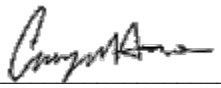
2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.208	250	
NOx	1.140	250	
CO	1.649	250	
SOx	0.003	250	
PM 10	1.845	250	
PM 2.5	0.049	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	334.4		

2029 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	
NOx	0.000	250	
CO	0.000	250	
SOx	0.000	250	
PM 10	0.000	250	
PM 2.5	0.000	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	0.0		

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



Carolyn Hein, Contractor

5/10/2023
DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Slocumb Road ECF Proposed Action ACAM Detail Report

1. General Information

- Action Location
Base: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Project 1: Slocumb Gate ECF Proposed Action

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2028

- Action Purpose and Need:
See Section 1.3 of EA.

- Action Description:
See Section 3.4.1 of EA.

- Point of Contact
Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Slocumb Gate ECF Proposed Action

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

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Slocumb Gate ECF Proposed Action

- Activity Description:
It was assumed construction for the Slocumb Gate ECF project would occur over a 12-month period, from January 2028 through December 2028.

Demolition of obsolete pavement would be required, for a total of 30,567 ft2. Depth of demolition was assumed to be 2 feet. Demolition would begin in January 2028 and last approximately 2 months.

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Site grading would occur on approximately 88,342 ft2. Site grading would begin in March 2028 and last approximately 2 months. It was assumed 2,500 cubic feet of demolished material would be hauled off-site.

Trenching would be required for curb and gutter construction (approximately 2,500 linear feet) A 1-foot trench width was assumed. Therefore, the total trenched area would be 2,500 ft2. Trenching would begin in April 2028 and last approximately 1 month.

Construction would include the overwatch (100 ft2). Construction would begin in May 2028 and last approximately 1 month.

Paving for the Slocumb Road realignment would occur on approximately 57,775 ft2. Paving would begin in June 2028 and last approximately 6 months.

- Activity Start Date
Start Month: 1
Start Month: 2028

- Activity End Date
Indefinite: False
End Month: 11
End Month: 2028

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.208396
SO_x	0.003410
NO_x	1.139665
CO	1.648628
PM 10	1.844810

Pollutant	Total Emissions (TONs)
PM 2.5	0.049422
Pb	0.000000
NH_3	0.001203
CO_2e	334.4

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 2
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 30567
Height of Building to be demolished (ft): 2

- Default Settings Used: Yes

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

- Construction Exhaust (default)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

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

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

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

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

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

- Worker Trips Vehicle Mixture (%)

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

2.1.3 Demolition Phase Emission Factor(s)

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

Concrete/Industrial Saws Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0336	0.0006	0.2470	0.3705	0.0093	0.0093	0.0030	58.539
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

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

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

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

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

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

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

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

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

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

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

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

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 3
Start Quarter: 1

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Start Year: 2028

- Phase Duration
Number of Month: 2
Number of Days: 0

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 88342
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 2500

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

2.2.3 Site Grading Phase Emission Factor(s)

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

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

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

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

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

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

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

- Worker Trips Emissions per Phase

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

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)

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

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

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

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 4
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 1
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 2500
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

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

- Construction Exhaust (default)

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

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

2.3.3 Trenching / Excavating Phase Emission Factor(s)

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

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

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

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

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

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

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

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

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

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

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

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 1
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 100
Height of Building (ft): 10
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

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

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

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

- Worker Trips Vehicle Mixture (%)

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

- Vendor Trips

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

- Vendor Trips Vehicle Mixture (%)

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

2.4.3 Building Construction Phase Emission Factor(s)

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

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.4.4 Building Construction Phase Formula(s)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

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

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

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

- Worker Trips Emissions per Phase

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

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

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

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

- Vender Trips Emissions per Phase

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

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

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

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

2.5 Paving Phase

2.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 6
Number of Days: 0

2.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 57775

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

2.5.3 Paving Phase Emission Factor(s)

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

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

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

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

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

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Worker Trips Emissions per Phase

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

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

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

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

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

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

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

Flightline Access Road Proposed Action (Preferred Alternative) ACAM Report

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

a. Action Location:

Base: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Project 2: Flightline Access Road Proposed Action (Preferred Alternative)

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2028

e. Action Description:

See Section 3.4.1 of EA.

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

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

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with

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

net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

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

Analysis Summary:

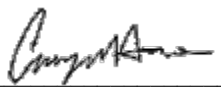
2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.261	250	
NOx	1.420	250	
CO	1.978	250	
SOx	0.004	250	
PM 10	2.889	250	
PM 2.5	0.065	250	
Pb	0.000	25	No
NH3	0.001	250	
CO2e	394.5		

2029 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	
NOx	0.000	250	
CO	0.000	250	
SOx	0.000	250	
PM 10	0.000	250	
PM 2.5	0.000	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	0.0		

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



Carolyn Hein, Contractor

5/10/2023
DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Flightline Access Road Proposed Action (Preferred Alternative) ACAM Detail Report

1. General Information

- Action Location
Base: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Project 2: Flightline Access Road Proposed Action (Preferred Alternative)

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2028

- Action Purpose and Need:
See Section 1.3 of EA.

- Action Description:
See Section 3.4.1 of EA.

- Point of Contact
Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Flightline Access Road Proposed Action (Preferred Alternative)

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

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Flightline Access Road Proposed Action (Preferred Alternative)

- Activity Description:
It was assumed construction for the Flightline Access Road project would occur over a 12-month period, from January 2028 through December 2028.

Site grading would occur on approximately 92,400 ft2. Site grading would begin in January 2028 and last approximately 3 months.

Trenching would be required for curb and gutter construction (approximately 6,600 linear feet) A 1-foot trench width was assumed. Therefore, the total trenched area would be 6,600 ft2. Trenching would begin in April 2028 and last approximately 1 month.

It is assumed the culverts would be prefabricated and would be installed rather than constructed. Therefore, it was assumed construction would not be required for the Preferred Alternative.

Paving for the flightline access road would occur on approximately 92,400 ft2. Paving would begin in May 2028 and last approximately 8 months.

- Activity Start Date
Start Month: 1
Start Month: 2028

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2028

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.260617
SO_x	0.004043
NO_x	1.420169
CO	1.978153
PM 10	2.888754

Pollutant	Total Emissions (TONs)
PM 2.5	0.065493
Pb	0.000000
NH_3	0.001344
CO_2e	394.5

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 3
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 92400
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

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

- Construction Exhaust (default)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

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

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

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

- Worker Trips Vehicle Mixture (%)

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

2.1.3 Site Grading Phase Emission Factor(s)

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

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

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

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

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

- Worker Trips Emissions per Phase

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

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

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

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

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Start Month: 4
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 1
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 6600
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

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

- Construction Exhaust (default)

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

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

2.2.3 Trenching / Excavating Phase Emission Factor(s)

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

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e

Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

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

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

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

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

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

- Worker Trips Emissions per Phase

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

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

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

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

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

2.3 Paving Phase

2.3.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 8
Number of Days: 0

2.3.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 92400

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

2.3.3 Paving Phase Emission Factor(s)

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

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.3.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

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

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

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

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

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

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

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

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

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

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

Flightline Access Road Proposed Action (Alternative 2) ACAM Report

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

a. Action Location:

Base: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Project 2: Flightline Access Road Proposed Action (Alternative 2)

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2028

e. Action Description:

See Section 3.4.1 of EA.

f. Point of Contact:

Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

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

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with

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

net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

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

Analysis Summary:

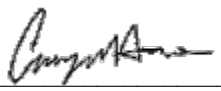
2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.283	250	
NOx	1.533	250	
CO	2.180	250	
SOx	0.005	250	
PM 10	2.892	250	
PM 2.5	0.069	250	
Pb	0.000	25	No
NH3	0.002	250	
CO2e	442.5		

2029 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	
NOx	0.000	250	
CO	0.000	250	
SOx	0.000	250	
PM 10	0.000	250	
PM 2.5	0.000	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	0.0		

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



Carolyn Hein, Contractor

5/10/2023
DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Flightline Access Road Proposed Action (Alternative 2) ACAM Detail Report

1. General Information

- Action Location
Base: SEYMOUR JOHNSON AFB
State: North Carolina
County(s): Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Project 2: Flightline Access Road Proposed Action (Alternative 2)

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2028

- Action Purpose and Need:
See Section 1.3 of EA.

- Action Description:
See Section 3.4.1 of EA.

- Point of Contact
Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Project 2 Alternative 2: Replace Culverts with Bridges

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

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Wayne
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Project 2 Alternative 2: Replace Culverts with Bridges

- Activity Description:
It was assumed construction for the Flightline Access Road project would occur over a 12-month period, from January 2028 through December 2028.

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Site grading would occur on approximately 92,400 ft2. Site grading would begin in January 2028 and last approximately 3 months.

Trenching would be required for curb and gutter construction (approximately 6,600 linear feet) A 1-foot trench width was assumed. Therefore, the total trenched area would be 6,600 ft2. Trenching would begin in April 2028 and last approximately 1 month.

Instead of culverts, two bridges would be constructed where the read crosses over the stream. It is assumed each bridge would be 2,000 ft2, for a total of 4,000 ft2, with a height of 6 feet. Construction would begin in May 2028 and last approximately 2 months .

Paving for the flightline access road would occur on approximately 92,400 ft2. It was assumed paving would occur concurrently with bridge construction. Paving would begin in May 2028 and last approximately 8 months.

- Activity Start Date
Start Month: 1
Start Month: 2028

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2028

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.282901
SO_x	0.004539
NO_x	1.532628
CO	2.179726
PM 10	2.892136

Pollutant	Total Emissions (TONs)
PM 2.5	0.068870
Pb	0.000000
NH_3	0.001537
CO_2e	442.5

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 3
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 92400
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

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

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

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

- Vehicle Exhaust Vehicle Mixture (%)

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

- Worker Trips

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

- Worker Trips Vehicle Mixture (%)

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

2.1.3 Site Grading Phase Emission Factor(s)

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

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_X	NO_X	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

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

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

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

- Worker Trips Emissions per Phase

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

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

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

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

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Phase Start Date
Start Month: 4
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 1
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 6600
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

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

- Construction Exhaust (default)

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

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

2.2.3 Trenching / Excavating Phase Emission Factor(s)

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

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

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

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

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

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

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

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

- Worker Trips Emissions per Phase

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

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

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

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

2.3 Building Construction Phase

2.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 2
Number of Days: 0

2.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 4000
Height of Building (ft): 6
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: No
Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Bore/Drill Rigs Composite	1	2
Cement and Mortar Mixers Composite	1	6
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

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

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

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

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40

- Vendor Trips Vehicle Mixture (%)

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

2.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Bore/Drill Rigs Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0428	0.0017	0.2863	0.5006	0.0041	0.0041	0.0038	164.96
Cement and Mortar Mixers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0085	0.0001	0.0533	0.0413	0.0020	0.0020	0.0007	7.2673
Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

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

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

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

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

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

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

- Worker Trips Emissions per Phase

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

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

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

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

- Vender Trips Emissions per Phase

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

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

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

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

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2.4 Paving Phase

2.4.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 8
Number of Days: 0

2.4.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 92400

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

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

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

- Vehicle Exhaust Vehicle Mixture (%)

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

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

- Worker Trips Vehicle Mixture (%)

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

2.4.3 Paving Phase Emission Factor(s)

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

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.197	000.002	000.102	003.075	000.004	000.003		000.024	00302.069
LDGT	000.206	000.003	000.183	003.484	000.005	000.005		000.026	00392.350
HDGV	000.850	000.006	000.833	013.376	000.024	000.021		000.051	00907.030
LDDV	000.067	000.001	000.079	003.184	000.003	000.002		000.008	00305.844
LDDT	000.071	000.001	000.118	002.164	000.003	000.003		000.009	00355.582
HDDV	000.106	000.004	002.338	001.519	000.041	000.038		000.032	01242.563
MC	002.594	000.003	000.660	012.841	000.024	000.021		000.054	00389.219

2.4.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

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

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

- Vehicle Exhaust Emissions per Phase

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

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

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

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

- Worker Trips Emissions per Phase

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

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

NE: Number of Construction Equipment

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

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

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

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

Social Cost of Greenhouse Gases Calculations

The social cost of greenhouse gases (GHGs) was calculated for all alternatives. The "social cost of GHGs" is an estimate of the monetized damages associated with incremental increases in GHG emissions, such as reduced agricultural productivity, human health effects, property damage from increased flood risk, and the value of ecosystem services. The social cost of the three primary GHGs (i.e., carbon dioxide [CO_2], methane [CH_4], and nitrous oxide [N_2O]) for the year 2028 are shown in **Table 1**. Estimated annual GHG emissions for the alternatives are shown in **Table 2**.

Table 1. 2028 Social Cost of GHGs

GHG	Social Cost ($ per metric ton)
CO_2	60
CH_4	1,900
N_2O	22,000

Note: Social cost shown uses a 3 percent average discount rate in 2020 dollars
Source: IWG-SCGHG 2021

Table 2. Annual Estimated GHG Emissions from Each Alternative

Project Alternative	CO_2e (tons per year)	CO2e (metric tons per year)
Slocumb Road ECF Proposed Action	334.4	303.4
Flightline Access Road Proposed Action (Preferred Alternative)	394.5	357.9
Flightline Access Road Proposed Action (Alternative 2)	442.5	401.4

Note: 1 US ton is equal to 0.907 metric tons.

The annual social cost of GHGs was calculated for the construction period for each alternative. To calculate social cost of GHGs, CO_2e emissions were broken down using the following distribution assumption: 80 percent CO_2, 13 percent CH_4, and 7 percent N_2O (USEPA 2022). It was assumed construction for each alternative would occur over a 1-year period. A surrogate year of 2028 was used.

CO2e is a representation GHG emissions relative to a reference gas, CO_2. It is calculated by adding GHGs which have been multiplied by their global warming potential (GWP). CO_2 has a GWP equal to 1, while the GWP of CH_4 is 25 and the GWP of N_2O is 298. Based on these assumptions, the following equation was used to calculate the social cost of GHGs. **Table 3 through Table 5** shows the social cost of GHGs that were calculated for each alternative.

$$\text{Social Cost} = 60((CO_2e*0.8)/1) + 1{,}900((CO_2e*0.13)/25) + 22{,}000((CO_2e*0.07)/298)$$

Social Cost = social cost of GHGs ($)
60 = social cost of CO_2 ($ per metric ton)
CO_2e = equivalent emissions of CO_2 (metric tons)
0.8 = percent of CO_2e that is CO_2
1 = GWP of CO_2

1,900 = social cost of CH_4 ($ per metric ton)
0.13 = percent of CO_2e that is CH_4
25 = GWP of CH_4
22,000 = social cost of N_2O ($ per metric ton)
0.07 = percent of CO_2e that is N_2O
298 = GWP of N_2O

Table 3. Social Cost of GHGs for the Slocumb Gate ECF Proposed Action

Year	CO_2e (metric tons)	Social Cost
2028	303.4	$19,128.70

Table 4. Social Cost of GHGs for the Flightline Access Road Proposed Action (Preferred Alternative)

Year	CO_2e (metric tons)	Social Cost
2028	357.9	$22,564.80

Table 6. Social Cost of GHGs for the Flightline Access Road Proposed Action (Alternative 2)

Year	CO_2e (metric tons)	Social Cost
2028	401.4	$25,307.38