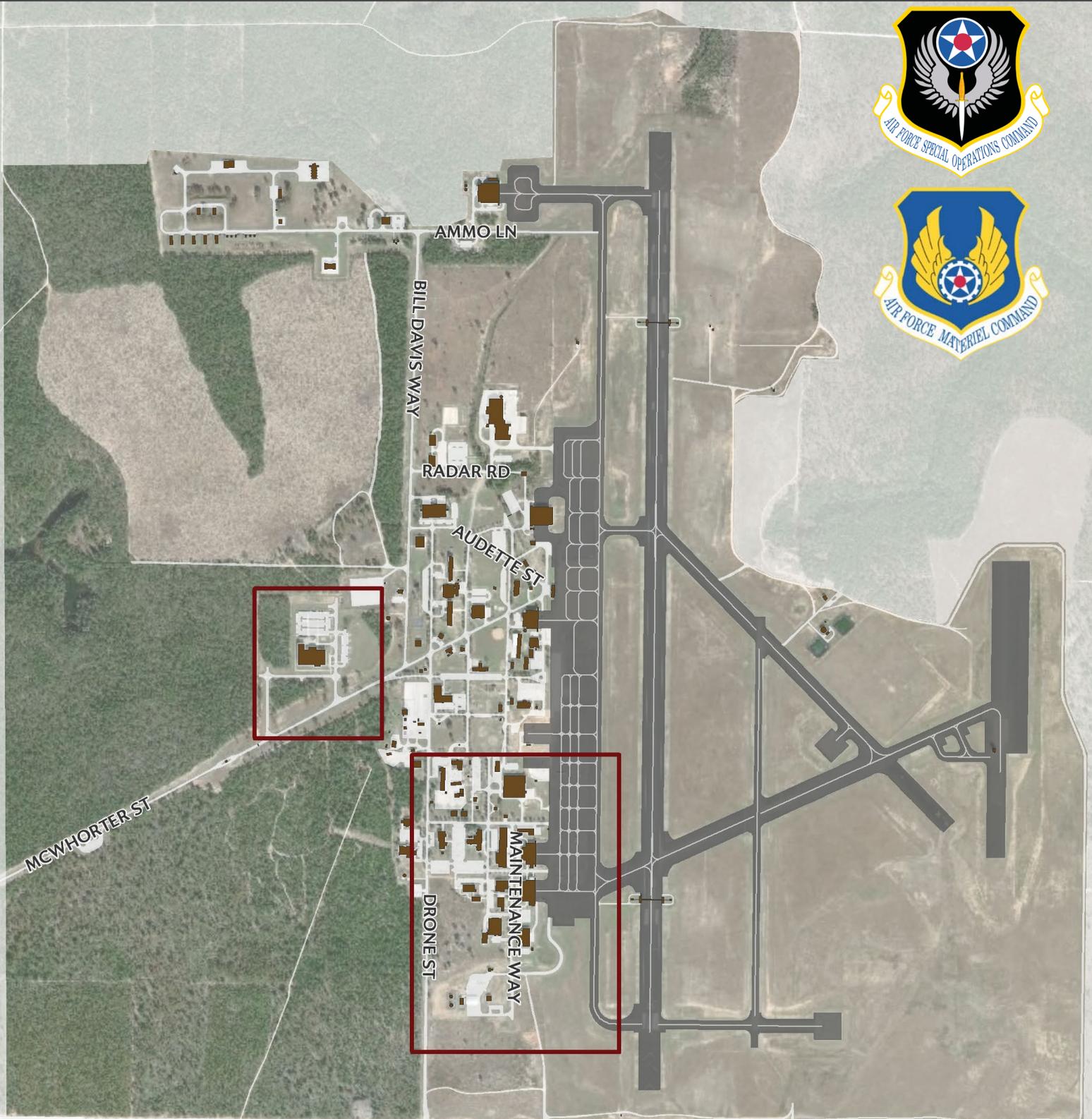


Preliminary Draft

# ENVIRONMENTAL ASSESSMENT (EA)

## Aviation Foreign Internal Defense and Fixed Wing Aircraft Growth

Duke Field, Eglin AFB, Florida • Prepared For: Department of the Air Force • February 2020





**Draft**  
**Environmental Assessment (EA)**  
**Aviation Foreign Internal Defense and Fixed Wing Aircraft Growth**  
Duke Field, Eglin AFB, Florida



PREPARED FOR:  
**Department of the Air Force**

*February 2020*

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**DRAFT**  
**FINDING OF NO SIGNIFICANT IMPACT**  
**AVIATION FOREIGN INTERNAL DEFENSE & FIXED WING AIRCRAFT**  
**GROWTH AT DUKE FIELD, FLORIDA**

Pursuant to provisions of the National Environmental Policy Act (NEPA), Title 42 United States Code (U.S.C.) Sections (§§) 4321 to 4347, implemented by Council on Environmental Quality (CEQ) Regulations, Title 40, Code of Federal Regulations (CFR) §§ 1500-1508, and 32 CFR § 989, Environmental Impact Analysis Process, the U.S. Air Force (Air Force) assessed in this Environmental Assessment (EA) for the Aviation Foreign Internal Defense & Fixed Wing Aircraft Growth at Duke Field, Florida, the potential environmental consequences associated with Proposed Action (Proposed Action; EA § 2.2.2, Figures 2-1 and 2-2).

**PURPOSE OF AND NEED FOR ACTION:**

**Purpose (EA § 1.3, page 1-4):** The *purpose* of the Proposed Action is to grow 6 Special Operations Squadron (SOS) Aviation Foreign Internal Defense (AvFID) personnel and equipment functions at Duke Field. This growth, as directed by United States Special Operations Command (USSOCOM), will provide the necessary trained Combat Aviation Advisors (CAA) personnel to sustain five, year-round advisory sites around the world. The current force structure of available personnel and equipment is only capable of supporting two sets of advisory sites. The addition of a new aircraft type to train with will better prepare CAAs when advising and working with the partner nation.

**Need (EA § 1.3, page 1-4):** The *need* of the Proposed Action is driven by the requirement to increase the number of available CAAs to help partnering governments counter the ever-growing threats that they may face, such as lawlessness, drug activity, or terrorism. Currently, AvFID CAAs are considered a critically manned organization and AFSOC needs to retain and increase the CAA personnel. Under the current conditions, the demand for personnel outpaces their availability. The action of locating new personnel and aircraft to Duke Field is expected to enhance training along with CAA recruitment, retention and resiliency.

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

**Proposed Action (EA § 2.2, page 2-1):** The Proposed Action for Duke Field is a basing action in accordance with (IAW) Air Force Instruction (AFI) 10-503 para 1.7.1.1 & 1.7.1.2 (unit aircraft and personnel increases). Currently, the 6 SOS force structure at Duke Field is comprised of 144 CAA positions, including 59 officers, 84 enlisted, and one civilian. This action proposes a force structure for full growth potential for the 6 SOS. This includes an additional 294 personnel, of which 123 will be CAA positions and 171 will be support positions. Most of these positions will be filled by military personnel. It also includes five armed, Intelligence, Surveillance and Reconnaissance (ISR) aircraft (e.g., Cessna 208 Caravan [C-208]) for CAA training. Aircraft training activities would occur approximately 260 days per year, at an average of five sorties per day for a total of 1,300 sorties/training missions per year. The sorties would occur primarily during weekdays with 70 percent occurring at night. Each sortie is approximately three hours long and consists of two air operations (e.g., single takeoff and landing) at airfields and landing zones (LZs) both on and off Eglin AFB. This would result in an increase of approximately 2,600 annual air operations or approximately 75 hours per week of flight training, of which 52 hours of flying would be at night. Annual operations would be split between Duke Field at

approximately 1,820 operations or 70 percent, and approximately 780 air operations at other locations on Eglin AFB (VPS) or at nearby airfields including Hurlburt Field (HRT) and Bob Sikes Airport (CEW).

Facility requirements were determined for the action and facilities sited for construction include a one-bay hangar and aircraft maintenance unit (AMU) facility with a separate covered maintenance storage area, weapons system trainer (WST), storage warehouse, and a squadron operation facility (for AvFID). With the impending ramp up of personnel by 2022, temporary facilities will be required to support the mission.

**No Action Alternative (EA § 2.5.2, page 2-9):** The No-Action Alternative would not support the 6 SOS growth at Duke Field including five armed ISR single-engine aircraft (e.g., C-208), 294 associated CAA personnel, short-term use of temporary facilities, and construction of permanent operations and maintenance facilities to support the squadron growth. AFSOC would be unable to strengthen and expand its capabilities for training partner-nation aviation forces, and the realization of sustaining five year-round advisory sites would likely not be achieved. Additionally, there would be no new construction of facilities for CAAs and their aircraft at Duke Field. Conditions at Duke Field would remain as they are under this alternative.

## **ENVIRONMENTAL CONSEQUENCES**

Environmental analyses focused on the following areas: Air Space Management, Safety, Air Quality, Noise Environment, Land Use, Geology and Soils, Water Resources, Biological Resources, Cultural Resources, Socioeconomics, Environmental Justice and Protection of Children, Infrastructure, and Hazardous Materials and Waste. Overall, environmental analyses did not identify any significant impacts to any of the above resources. In addition, no significant cumulative impacts caused by implementation of the Proposed Action when combined with other past, present, and reasonably foreseeable actions occurring at Eglin Air Force Base (AFB) were identified (EA § 4.3, pages 4-1 to 4-14).

**Airspace Management (EA § 3.2, p. 3-3):** Short- and long-term, minor, adverse impacts would be expected following implementation of the Proposed Action and the other identified cumulative projects on airfield and airspace management at Duke Field and Eglin AFB. The proposed growth in AvFID aircraft operations would result in an increase in annual operations of AFSOC's 492 Special Operations Wing (SOW) at Duke Field. There are no anticipated changes to the configuration (i.e., size, shape, or location) of airspace required to support implementation of the Proposed Action. Relative to regional aircraft activity, the net increases in flight activity over current operations at Hurlburt Field, Destin-Fort Walton Beach Airport, which is collocated with Eglin AFB, and Bob Sikes Airport are expected to be minor. As a result, any impacts on airspace management at Eglin AFB or within the southeast region would be less than significant. Additionally, because the Proposed Action and other cumulative projects would not require alterations of the existing airspace, runway, or airfield configurations, no additional impacts on these resources would be expected. However, there could be an expected increase in air traffic control workload and may cumulatively contribute to increased congestion of other airspaces and nearby airfields within the region. Overall, no significant adverse impacts on airspace management would be anticipated.

**Air Quality (EA § 3.3, p. 3-7):** Long-term, minor, adverse impacts on ambient air quality (pollutant and greenhouse gas [GHG] emissions) would be expected following implementation of the Proposed Action (including construction operations, air operations [plus aircraft surface coating operations], commuter vehicles, facility construction, and the other identified cumulative projects at Duke Field and Eglin AFB.

Emissions from the Proposed Action are not expected to significantly add to the cumulative impacts on existing air quality of all past, present, and reasonably foreseeable actions. No mitigation measures or development of adaptive measures for sea-level rise are necessary in order to mitigate for potential climate change (revoked by Executive Order [EO] 13783) impacts for years 2046 to 2065 due to the implementation of the Proposed Action. Overall, no significant adverse impacts on ambient air quality would be anticipated.

**Biological Resources (EA § 3.4, p. 3-15):** Temporary, minor, adverse impacts on biological resources would be expected following implementation of the Proposed Action and the other identified cumulative projects at Duke Field and Eglin AFB. The quality of wildlife habitat in the immediate vicinity of each of the locations for the new facility construction at Duke Field is low due to land disturbance and human activity; wildlife habitat quality improves with distance from the sites. Wildlife that currently utilize habitat within these areas would be able to move to other similar areas on and off the installation. New facility construction on Duke Field is not anticipated to disturb or displace any protected species due to avoidance. The gopher tortoise, eastern indigo snake, Florida pine snake, and Florida burrowing owl occur on the Study Area and, therefore, have the potential to occur near sites proposed for facility construction. Although coordination with Eglin Natural Resources Office has occurred as part of this EA process, should resource circumstances change prior to the construction of the projects additional coordination would occur prior to any ground disturbing activities. A gopher tortoise survey and red-cockaded woodpecker (RCW) survey may also be required. If a gopher tortoise burrow is located within the project area and cannot be avoided, the tortoise would be relocated in accordance with Florida Fish and Wildlife Conservation Commission (FWC) guidelines. If an RCW cavity tree is found and anticipated to be negatively impacted within the Study Area, Terms and Conditions from the completed Endangered Species Act (ESA) Section 7 consultation from 2013, 'Red-cockaded Woodpecker Programmatic Biological Opinion [for] Eglin Air Force Base, NE Gulf of Mexico [,] Walton, Okaloosa, and Santa Rosa Counties, Florida' will be followed. Although aircraft operations would continue to adhere to all established flight safety guidelines and protocol, the bird-aircraft strikes likely may be expected to increase; however, this increase would not result in long-term (i.e., population-level) impacts on birds. Overall, no significant adverse impacts on biological resources would be anticipated.

**Cultural Resources (EA § 3.5, p. 3-27):** No adverse impacts on cultural resources would be expected following implementation of the Proposed Action and the other identified cumulative projects at Duke Field and Eglin AFB. The single significant archaeological resource, 8OK148, does not extend into the footprint for any of the facility construction actions. The proposed project has been reviewed by the Cultural Resource Manager of Eglin AFB in accordance with the SOPs contained in the 2018 Integrated Cultural Resources Management Plan (ICRMP). No National Register of Historic Places (NRHP)-eligible or listed aboveground or architectural resources, previously identified cemeteries, or traditional cultural properties (TCPs) have been identified within the construction footprints at Duke Field. Consultation with the SHPO in accordance with Section 106 of the National Historic Preservation Act (NHPA) has been completed as part of this EA process. Should resource circumstances change prior to or during project construction additional consultation would be conducted in accordance with Section 106 of the NHPA. Overall, no significant adverse impacts on cultural resources would be anticipated.

**Geology and Soils (EA § 3.6, p. 3-33):** Long-term, moderate, adverse impacts on soils would be expected following implementation of the Proposed Action and the other identified cumulative projects at Duke Field and Eglin AFB. The grading and excavating of soils and removal of geotechnically incompatible soils for construction site preparation would have no impacts on geology, but would impact less than 1 acre

(0.895) of soils, as these soils would be removed from biological activity. Cumulative impacts on soils would be not be readily apparent and would not result in a change to the character of the resource over a relatively wide area. Further, no mitigation measures would be necessary to offset adverse impacts on soils. Duke Field would ensure that best management practices (BMPs) are employed during these activities to minimize effects on soil and prevent erosion and sediment runoff. All activities would comply with the installation's stormwater pollution prevention plan (SWPPP) and would employ erosion-control techniques. In addition, Duke Field would revegetate, according to the current landscape management plan, which helps with erosion control and soil stability, while adhering to all Federal, state, and local regulations. Overall, no significant adverse cumulative impacts on geology and soils are anticipated.

**Hazardous Materials and Waste (EA § 3.7, p. 3-37):** Short-term, negligible, adverse impacts on hazardous materials and waste would be expected following implementation of the Proposed Action and the other identified cumulative projects at Duke Field and Eglin AFB. Construction activities from the Proposed Action projects would increase the amount of hazardous materials used and wastes generated, but the use and disposal of these materials would be governed by existing management plans. The use of hazardous materials during construction would be coordinated with the Hazardous Material Pharmacy (HAZMART) and Eglin AFB to prevent any release to the environment. The proposed construction site for the future parts warehouse is located adjacent to Building 3032, which is just north of, and adjacent to SS-55 (Duke Field Tank Farm). This Environmental Restoration Program (ERP) site is listed as Active due to the presence of small quantities of contaminated soil resulting from a leaking underground storage tank (UST) (1994). Management of disturbed soils would follow the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities (2003), including a notice of intent (NOI) filed prior to commencing construction activities. A construction waiver request letter, along with an approved work plan, must be sent through Eglin AFB prior to any construction activities. Overall, no significant adverse impacts on hazardous materials and waste would be anticipated.

**Infrastructure (EA § 3.8, p. 3-43):** Temporary, minor, adverse impacts on infrastructure would be expected following implementation of the Proposed Action and the other identified cumulative projects at Duke Field and Eglin AFB. During construction, there would be temporary, minor increases in construction-related traffic as construction workers access the site and construction materials and equipment are delivered. There would be a long-term, minor adverse impacts to the regional road system and congestion due to the increase in 6 SOS and support personnel. The adverse impacts would be mitigated because the 6 SOS personnel would work split shifts. No effect on utilities would be anticipated, as there would be no net increases in the demand for utilities associated with new facility construction. Overall, no significant adverse impacts on infrastructure would be anticipated.

**Land Use (EA § 3.9, p. 3-51):** Negligible, long-term adverse impacts on land use would be expected following implementation of the Proposed Action and the other identified cumulative projects at Duke Field and Eglin AFB. The construction projects would not conflict with applicable ordinances and/or permit requirements and would not cause nonconformance with the current general plans and land use plans, or preclude adjacent or nearby properties from being used for existing activities. The Proposed Action considered in this document would be consistent with Air Force planning policies and guidelines and would be compatible with land use guidelines established in the Duke Field ADP. The construction of the 6 SOS Squadron Operations Facility is consistent with ADP future land use recommendations. The proposed permanent single-engine aircraft WST is designated as an industrial function, and this industrial function along with the parking lot are not recommended for this area. As such, the 6 SOS

compound would require revisions to the land use and form-based code maps, as well as the report narrative of the Duke Field ADP when it is updated. Duke Field seeks to avoid operational and environmental constraints that would result in land use conflicts, and plans to correct existing land use conflicts through the demolition and modernization of facilities, where possible. Overall, no significant adverse impacts on land use would be anticipated.

**Noise Environment (EA § 3.10, p. 3-59):** Temporary (construction activities) and long-term (air operations), minor impacts on the noise environment would be expected following implementation of the Proposed Action and the other identified cumulative projects at Duke Field and Eglin AFB. Facility construction would involve land clearing, land grading, and building construction. Depending upon the number, type, and distribution of construction equipment being used, the noise levels near the project area could temporarily exceed 64 A-weighted sound levels (dBA) up to 500 feet from the Study Area. The proposed construction projects are located within compatible land uses, the noise generated from the daily activities at the building would be typical of existing buildings, and the noise intensity, therefore, would not increase. Once the construction projects are completed, the ambient noise level would return to normal. Approximately 2,600 additional single-engine aircraft operations per year would occur because of the Proposed Action. Operations include approximately 1,820 at Duke Field and 780 at other nearby airports mostly on Eglin AFB including VPS. With training operations occurring approximately 260 days a year at Duke Field. This is an increase of approximately 5 percent when compared to the existing condition of 38,000 operations over 260 days at Duke Field. As a comparison, it would take a doubling (100 percent increase) in air operations to have even a barely perceptible change to the noise environment (e.g., greater than 3 dBA). Therefore, this 5 percent increase in air operations would be very small when compared to existing conditions and would have no appreciable effect on the overall noise environment in the surrounding areas. As such, the proposed beddown of AvFID aircraft would not be expected to result in any measurable changes to the established noise contours at Duke Field. Although there would be only a small change in the overall noise environment at nearby airfields, noise from individual overflights would have the potential from time-to-time to annoy residents directly under their flight path; these effects would be considered minor. Overall, no significant adverse impacts on the noise environment would be anticipated.

**Safety (EA § 3.11, p. 3-69):** Short- and long-term, negligible adverse impacts would be expected following implementation of the Proposed Action and the other identified cumulative projects on safety at Duke Field and Eglin AFB. Aircraft operations would continue to adhere to all established flight safety guidelines and protocol, including those identified in the Standard Operating Procedures (SOP) and the Bird Aircraft Strike Hazard (BASH) Plan for Eglin AFB and Duke Field. The operational altitudes for the growth in operations also minimize the risk of BASH. Conflicts with the BASH plan or an increase in BASH related incidences are not anticipated under the implementation of the Proposed Action. New facilities supporting the Proposed Action would be constructed west of Building 3144, near the southwest corner of the airfield, and south of Building 3032. None of these facilities would be constructed within a Clear Zone (CZ) or Accident Potential Zone (APZ). These facilities would be underneath the imaginary surface and transitional plans for the airfield but would present no hazard to aircraft operations or human safety per requirements in AFI 32-7063 and Unified Facilities Criteria (UFC) 3-260-01. Based on the restrictions on public access and the safety procedures that are implemented, the combination of the Proposed Action and other military operations would not result in adverse cumulative safety impacts on military personnel, employees, or the general public. Overall, no significant adverse impacts on safety would be anticipated.

**Socioeconomics, (EA § 3.12, p. 3-75):** Temporary, minor, adverse impacts on socioeconomics would be expected following implementation of the Proposed Action and the other identified cumulative projects at Duke Field and Eglin AFB. Temporary and minor noise impacts would result from implementing the Proposed Action, and other cumulative projects. There would be some short-term construction employment, and some permanent jobs associated with the proposed action. Short-term construction employment would likely be accommodated by labor resources already in the region. Minor beneficial temporary impacts in the form of jobs and income for area residents, revenues to local businesses, and sales taxes to Okaloosa County and the State of Florida could be realized if construction materials are purchased locally or local construction workers are hired for repairs and maintenance. No impact to housing is expected with a 27% vacancy rate in the area.

**Water Resources (EA § 3.13, p. 3-81):** Long-term, negligible, adverse impacts on water resources would be expected following implementation of the Proposed Action and the other identified cumulative projects at Duke Field and Eglin AFB. Changes to the impervious surface at Duke Field could change the permeability of the drainage basin and increase the flow of water and potentially change flow characteristics. However, the collective acreage (2.3) affected by the Proposed Action and other cumulative projects would be minimal when compared to the available acreage in the drainage basin. No Florida Department of Environmental Protection (FDEP) or U.S. Corps of Engineers (USACE) jurisdictional wetlands or floodplain acreage is anticipated to be affected by the implementation of the Proposed Action. The collective groundwater usage and increase for landscape irrigation affected by the Proposed Action, and other cumulative projects would be minimal compared to Duke Field's maximum permitted daily withdraw. With coordination, utilization of BMPs, and proper permitting, the implementation of these projects would be consistent with the Florida Coastal Management Program (FCMP) and the Federal Coastal Zone Management Act (CZMA). Eglin has Concurrence on their Consistency Determination from the Florida State Clearinghouse covering facility construction, demolition activities in cantonment areas, and other proposed actions identified in this EA. Overall, no significant adverse impacts on water resources would be anticipated.

## **SUMMARY OF FINDINGS**

The analyses of the affected environment and environmental consequences of implementing the Proposed Action (Proposed Action) presented in the EA concluded that by fulfilling the Management Actions, as discussed in Section 4.0 of the EA, Eglin AFB would be in compliance with all terms and conditions and reporting requirements for implementation of reasonable and prudent measures stipulated by the USFWS with Section 7 of the ESA, with the conditions stipulated in Section 106 of the NHPA and implementing regulations (36 CFR Part 800), the Migratory Bird Treaty Act, and the Coastal Zone Management Act.

The result presented in the EA find no significant adverse impacts would occur on the following resources as a result of implementing the Proposed Action: Air Space Management, Safety, Air Quality, Noise Environment, Land Use, Geology and Soils, Water Resources, Biological Resources, Cultural Resources, Socioeconomics, Environmental Justice and Protection of Children, Infrastructure, and Hazardous Materials and Waste. No significant adverse cumulative impacts would result from activities associated with the Proposed Action when considered with past, present, or reasonably foreseeable future projects at or in proximity to Duke Field.

**PUBLIC NOTICE**

NEPA, 40 CFR Parts 1500-1508, and 32 CFR Part 989 require public review of the EA before approval of the Finding of No Significant Impact (FONSI) and implementation of the Proposed Action. A Notice of Availability for public review of the Draft EA was published in *Northwest Florida Daily News* on February 12, 2020 and made available for public review on Eglin AFB's website from February 12, 2020 to March 13, 2020. The total review period for public comments was 30 days. Public comments were received on the Draft EA and incorporated into the Final EA. In accordance with the Interagency and Intergovernmental Coordination for Environmental Planning process, the Air Force notified relevant Federal, state, and local agencies through the Florida State Clearinghouse and allowed them sufficient time to make known their environmental concerns specific to the Proposed Action. Letters received from public agencies were incorporated and attached to the Final EA. In addition, no comments were received from relevant Native American tribes.

**FINDING OF NO SIGNIFICANT IMPACT**

Based on my review of the facts and analyses contained in the attached EA, conducted under the provisions of NEPA, CEQ Regulations, and 32 CFR Part 989, I conclude that none of the projects or air operations analyzed as part of this EA would have a significant environmental impact, either by itself or cumulatively with other projects at Duke Field. Accordingly, an Environmental Impact Statement is not required. The signing of this Finding of No Significant Impact completes the environmental impact analysis process.

\_\_\_\_\_  
**Ronald J. Onderko, P.E.**  
**Command Senior Civil Engineer**  
**Logistics, Civil Engineering, and Force Protection**  
**Eglin Air Force Base, Florida**

Date \_\_\_\_\_

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## SECTION 1

# Purpose and Need for the Proposed Action

## 1.1 Introduction

The U.S. Air Force (USAF) proposes growth in their Aviation Foreign Internal Defense (AvFID) fixed-wing (FW) aircraft mission at Duke Field, located within Eglin Air Force Base (AFB) in northwestern Florida. The growth includes more personnel, aircraft operations, and associated construction projects. This Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (Title 40 Code of Federal Regulations [CFR] §§ 1500-1508); and the USAF-implementing regulations for NEPA, the *Environmental Impact Analysis Process* (EIAP) (32 CFR § 989), as amended. This EA is organized into six sections, plus appendices.

- **Section 1** of the EA provides background information, the project location, and the purpose of and need for the Proposed Action.
- **Section 2** provides a description of the Proposed Action and alternatives, including the No Action Alternative.
- **Section 3** describes the existing conditions of the potentially affected environment and identifies the environmental consequences of all alternatives. This is followed by an assessment of cumulative impacts that take into consideration past, present, and future actions occurring on or near Duke Field.
- **Section 4** includes environmental management requirements and actions.
- **Section 5** provides the names of the preparers for this EA.
- **Section 6** lists the references used in the preparation of this document.

## 1.2 Location and Background

Eglin AFB, located in northwestern Florida, is home of the Eglin Test and Training Complex and is one of ten Air Force Materiel Command host bases. As a critical part of the Major Range Test Facilities Base, Eglin AFB's primary functions are to support research, development, testing, and evaluation of conventional weapons and electronic systems and to support multi-service air and ground training of operational units. Eglin AFB contains over 726 square miles in the northwestern Florida panhandle, just north of Niceville and Fort Walton Beach, Florida, and includes parts of Okaloosa, Walton, and Santa Rosa counties. Approximately 1,400 acres are improved; 4,200 acres are semi-improved; and 457,760 acres are unimproved (USAF 2017a). Duke Field, also known as Eglin AFB Auxiliary Field #3, is in the north-central portion of Eglin AFB and includes approximately 2,700 acres of land (Figures 1-1 and 1-2). Duke Field is composed of runways and associated taxiways, aprons, and airfield operations and maintenance facilities (USAF 2016a).

The 6th Special Operations Squadron (6 SOS) at Duke Field is part of the 492d Special Operations Wing (SOW) at Hurlburt Field, Florida. The 6 SOS is the only active duty Combat Aviation Advisor (CAA) squadron. The squadron is currently equipped with five C-145A aircraft. The squadron's primary mission is to assess, train, advise and assist foreign aviation forces in airpower employment, sustainment and

force integration. The CAAs of the squadron make-up the U.S. military’s most advanced team to train foreign partners in AvFID and advanced aviation tactics. Like all Air Commandos, CAAs execute special operations aviation tasks, but CAAs differ in that they specialize in executing those tasks by, with, and through foreign aviation forces. CAAs embed themselves with the partner nation missions to teach them advanced aviation techniques.

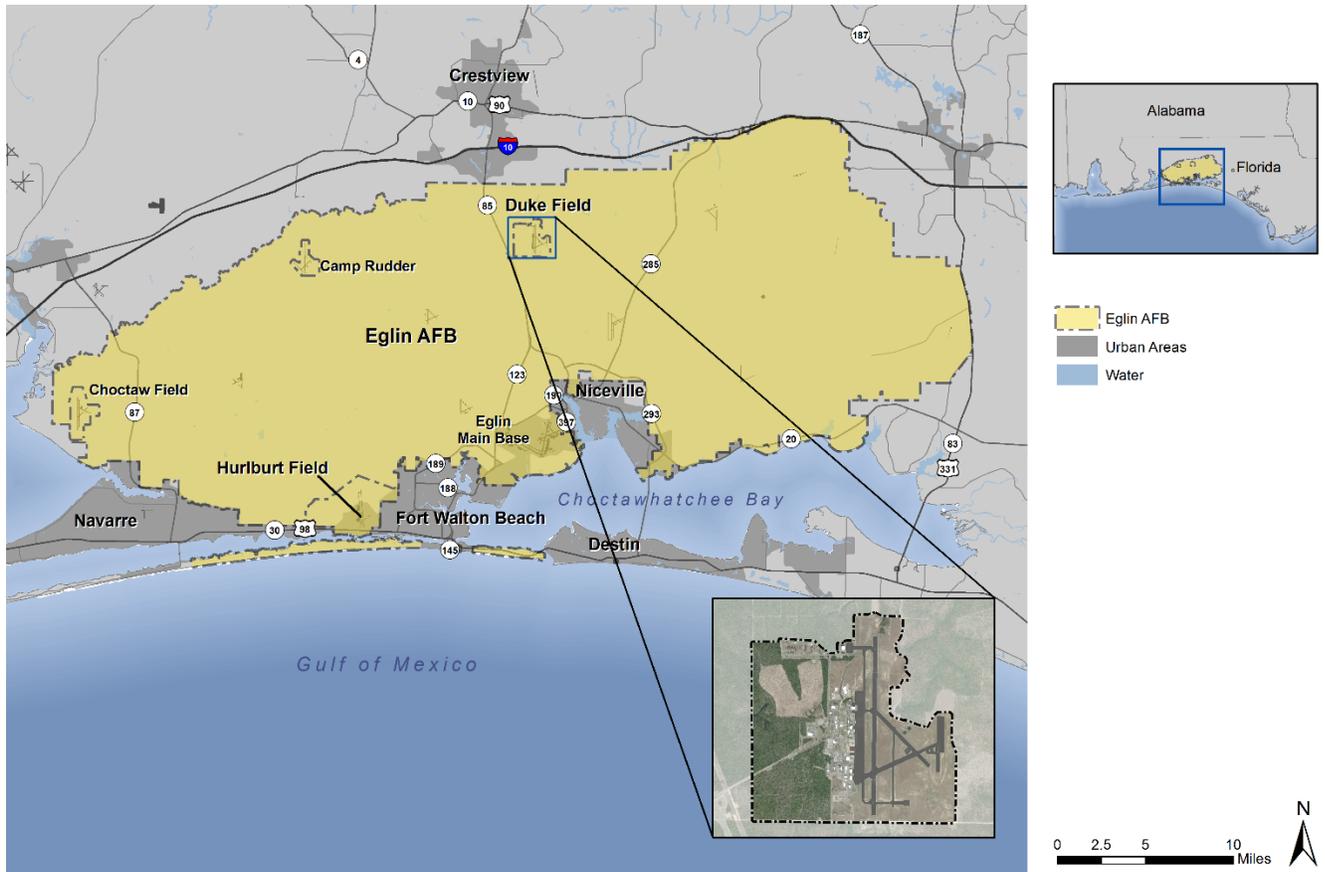


Figure 1-1: Regional Location Map, Duke Field, Eglin, AFB

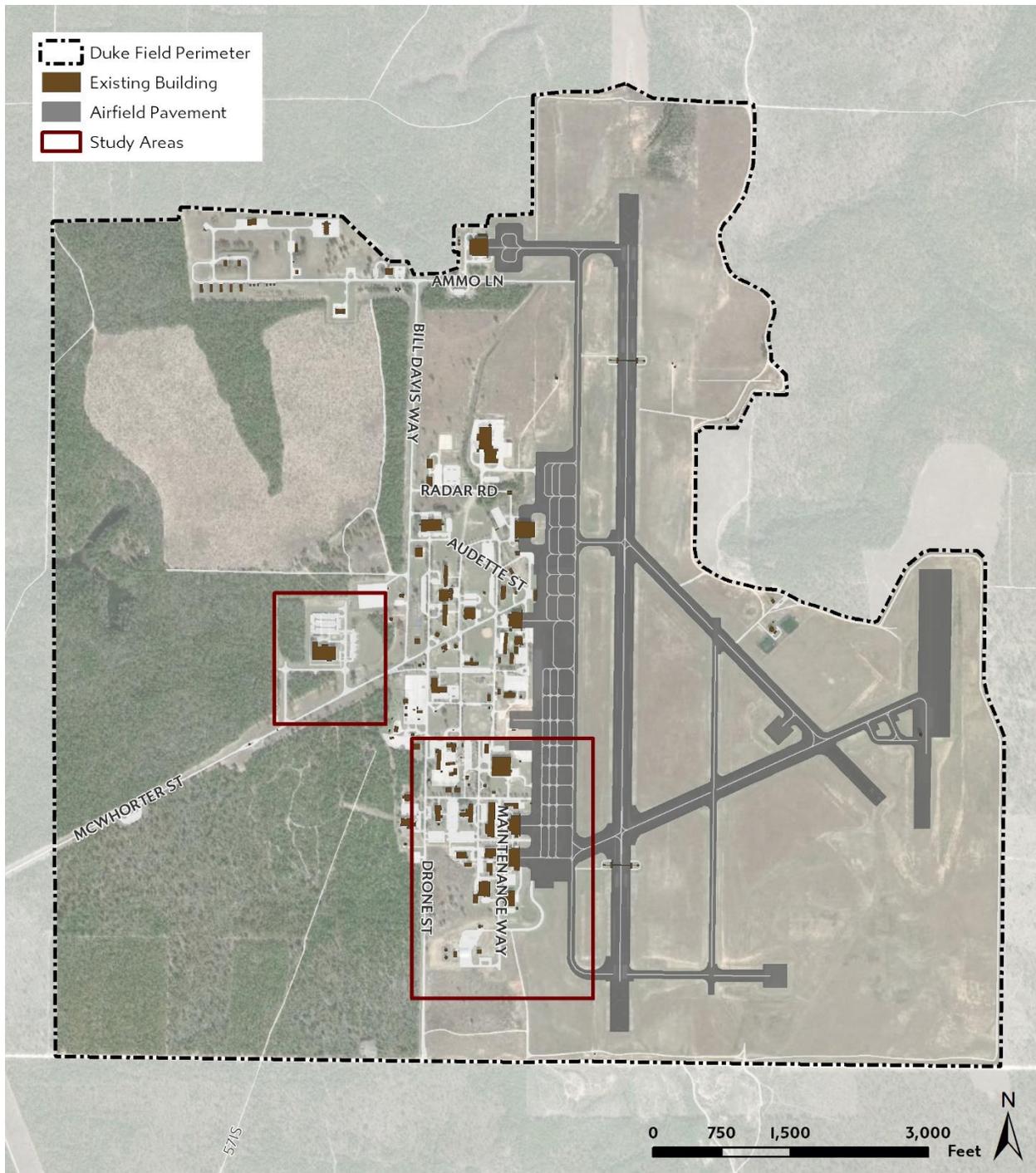


Figure 1-2: Duke Field

Since 2012, CAAs have operated and been organized as a Total Force Integration (TFI) with the Air Force Reserve unit 711 SOS at Duke Field. The 711 SOS is part of the 919 SOW Air Reserve Component. When activated, the 919 SOW reports to the Air Force Special Operations Command (AFSOC) at Hurlburt Field, Florida (USAF 2012a). Air Force Reserve CAAs from the 711 SOS and active duty CAAs from the 6 SOS operate together at home and while deployed. The organizational charts for the 492d and the 919th are shown Appendix A.

The Proposed Action for Duke Field is a basing action in accordance with (IAW) Air Force Instruction (AFI) 10-503 para 1.7.1.1 & 1.7.1.2 (unit aircraft and personnel increases). Currently, the 6 SOS force structure at Duke Field is comprised of 144 CAA positions, including 59 officers, 84 enlisted, and one civilian. This action proposes a force structure for full growth potential for the 6 SOS. This includes an additional 294 personnel, of which 123 will be CAA positions and 171 will be support positions. It also includes five Intelligence, Surveillance and Reconnaissance (ISR) aircraft (e.g., Cessna 208 Caravan) for CAA training. These aircraft would be in addition to the five C-145A aircraft already operated by the 6 SOS at Duke Field. Facility requirements were determined for the action and facilities sited for construction include a one-bay hangar and aircraft maintenance unit (AMU) facility, weapons system trainer (WST), storage warehouse, and a squadron operation facility (for AvFID). With the impending ramp up of personnel by 2022, temporary facilities will be required to support the mission. The Proposed Action and Alternatives are discussed in detail in Sections 2.2 and 2.4.

### 1.3 Purpose and Need for Proposed Action

The purpose of the Proposed Action is to grow 6 SOS CAA personnel and equipment functions at Duke Field. This growth, as directed by United States Special Operations Command (USSOCOM), will provide the necessary trained CAA personnel to sustain five, year-round advisory sites around the world. The current force structure of available personnel and equipment is only capable of supporting two sets of advisory sites. The addition of a new aircraft type to train with will better prepare CAAs when advising and working with the partner nation.

The Proposed Action is needed to increase the number of available CAAs to help partnering governments counter the ever-growing threats that they may face, such as lawlessness, drug activity, or terrorism. Currently, AvFID CAAs are considered a critically manned organization and AFSOC needs to retain and increase the CAAs' personnel. Under the current conditions, the demand for personnel outpaces their availability. The action of locating new personnel and aircraft to Duke Field is expected to enhance training along with CAA recruitment, retention and resiliency.

## 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 this EA and for identifying significant concerns related to the Proposed Action. Per the requirements of Intergovernmental Cooperation Act of 1968 (42 U.S.C. 4231(a)) and Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, Federal, state, and local agencies with jurisdiction that could be affected by the proposed actions were notified during the development of this EA. Appendix B identifies the agencies consulted during this analysis.

### 1.4.2 Government-to-Government Consultations

EO 13175, *Consultation and Coordination with Indian Tribal Governments*, directs Federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on Federally administered lands. Consistent with that EO, Department of Defense (DoD) Instruction 4710.02, *Interactions with Federally-Recognized Tribes*, and AFI 90-2002, *Air Force Interaction with Federally-Recognized Tribes*, Federally recognized tribes that are historically affiliated with the Eglin AFB have been consulted pursuant to a Memorandum of Record between Eglin AFB and identified tribes related to Section 106 of the National Historic Preservation Act and the Native American Graves Repatriation Act. The memorandum is provided in Appendix B. In addition, Eglin AFB has a well-established relationship with various Federally-recognized tribes that have an historic affiliation to the area in and around Eglin AFB. Through several decades of archaeological investigations and tribal consultations, no Traditional Cultural Properties (TCPs) or Sacred Sites have ever been identified by the tribes, and each tribe has stated that they prefer not to be consulted regarding each specific project whose impacts have been previously assessed and/or proposed for construction in areas already surveyed and determined low-risk for TCPs or Sacred Sites. This project will occur in an area that has been previously surveyed and no significant resources were located

### 1.4.3 Other Agency Consultations

Per the requirements of Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations (36 CFR Part 800), Section 7 of the Endangered Species Act (ESA) and implementing regulations consultation for this EA has occurred. Pursuant to the Coastal Zone Management Act (CZMA), findings of effect and request for concurrence, consultation with the Florida State Historic Preservation Office (SHPO) and the Florida Coastal Management Program, Florida Department of Environmental Protection (FDEP) has occurred. Any adverse effects to listed species will be communicated to the U.S. Fish and Wildlife Service (USFWS) via the existing red-cockaded woodpecker (*Picoides borealis*; RCW) Programmatic Biological Opinion (PBO) and the indigo snake (*Drymarchon couperi*) PBO Terms and Conditions from the completed ESA Section 7 consultations.

## 1.5 Public and Agency Review of Environmental Assessment (EA)

A Notice of Availability (NOA) of the Draft EA and Finding of No Significant Impact (FONSI) has been published in the newspaper of record (listed below), announcing the availability of the EA for review. The NOA will invite the public to review and comment on the Draft EA. The public and agency review period is 30 days. Once the EA has been approved and the EA process is concluded, a NOA of the approved FONSI will be published in the newspaper of record. The NOA and public and agency comments will be provided in Appendix C.

- Newspaper of record: Northwest Florida Daily News, 2 Eglin Pkwy NE, Fort Walton Beach, FL 32548

An electronic copy of the Draft EA and FONSI will be made available for review at:

- [www.eglin.af.mil/environmentalassessments.asp](http://www.eglin.af.mil/environmentalassessments.asp)

## 1.6 Decision to Be Made

This EA evaluates whether the Proposed Action would result in significant impacts on the human or natural environments. If significant impacts are identified, Eglin AFB will undertake mitigation to reduce impacts below the level of significance, undertake the preparation of an Environmental Impact Statement (EIS) addressing the Proposed Action or abandon the Proposed Action. This EA is a planning and decision-making tool to guide Eglin AFB in implementing the Proposed Action in a manner consistent with Air Force standards for environmental stewardship.

## SECTION 2

# Proposed Action and Alternatives

## 2.1 Introduction

This section describes details related to the Proposed Action and Alternatives, including the No-Action Alternative. Guidance for complying with NEPA requires an assessment of potentially effective and reasonably feasible alternatives for the implementation of the Proposed Action. Details related to the Proposed Action and the No-Action Alternative, as well as a description of alternatives that were considered but eliminated from further analysis, are provided below. The Proposed Action and the No-Action Alternative will be addressed in this EA.

## 2.2 Proposed Action

The Proposed Action consists of 6 SOS growth at Duke Field including five armed ISR single-engine aircraft (e.g., Cessna 208 Caravan aircraft); 294 additional personnel overtime; short-term use of temporary facilities and construction of permanent operations and maintenance facilities to support the squadron growth. The additional personnel will consist of 123 CAAs that will be part of the 6 SOS and 171 personnel that will fill positions within the 492 SOW at Duke Field in support of the AvFID mission. Personnel growth will occur as three actions:

- Action 1 will include an additional 123 CAAs for the 6 SOS.
- Action 2 includes 116 personnel that will provide personnel, maintenance, etc. functions.
- Action 3 involves an additional 55 support personnel.

The 294 positions will include 63 officers, 201 enlisted, and 30 civilians. Other elements of the Proposed Action are discussed in detail below.

### 2.2.1 Aircraft Beddown and Operations

The Proposed Action includes the beddown of five single-engine aircraft, an increase of 294 additional personnel, and facility construction at Duke Field between Fiscal Year (FY) 20 and FY22. Currently, the 6 SOS leases three single-engine turboprop aircraft that operate out of Destin Executive Airport, which is approximately 17 miles south of Duke Field in Destin, Florida. The 6 SOS will procure five single engine, armed ISR aircraft in FY21. By FY22, all five owned aircraft will have been delivered to Duke Field. These aircraft would be in addition to the five C-145A aircraft already operated by the 6 SOS at Duke Field. Table 2.1 summarizes the proposed increases in aircraft for AvFID and Table 2.2 summarizes the proposed increases in personnel for AvFID growth at Duke Field.

**Table 2.1 Existing and Proposed Aircraft Beddown Per Fiscal Year**

Aircraft	FY19 - Current Number of Aircraft	FY20 – Proposed Number of Aircraft	FY21 – Proposed Number of Aircraft	FY22 – Proposed Number of Aircraft
Single-Engine	3 <sup>1</sup>	4 <sup>2</sup>	3/1 <sup>3</sup>	5 <sup>4</sup>
C-1435A	5	5	5	5

<sup>1</sup> Includes three leased aircraft operating out of Destin Executive Airport

<sup>2</sup> Includes four leased operating out of Duke Field

<sup>3</sup> Includes three leased and one owned (by 4 Quarter (Q) FY21) aircraft operating out of Duke Field

<sup>4</sup> Five 6 SOS owned aircraft operating out of Duke Field. All leased aircraft are divested

Sources: McKinney, 2019; AvFID Expansion/Growth at Duke Field, FL Site Visit Outbrief, Nov 2018; Air Force (AF) Form 813, June 2018; AFSOC Site Survey Report AvFID Growth (6 SOS) at Duke Field, FL, Dec 2018; Planning Requirements in the Environmental Impact Analysis Process (PREIAP) Site Visit, April 2019.

**Table 2.2 Existing and Proposed Growth of AFSOC Personnel Per Fiscal Year**

FY19 - Current Number of AFSOC Personnel	FY20 – Proposed Number of AFSOC Personnel	FY21 - Proposed Number of AFSOC Personnel	FY22 - Proposed Number of AFSOC Personnel
144	267	383	438

Sources: AvFID Expansion/Growth at Duke Field, FL Site Visit Outbrief, Nov 2018; AF Form 813, June 2018; AFSOC Site Survey Report AvFID Growth (6 SOS) at Duke Field, FL, Dec 2018; PREIAP Site Visit, April 2019.

Under the Proposed Action, new aircraft training activities would occur approximately 260 days per year, at an average of five sorties per day for a total of 1,300 sorties/training missions per year. The sorties would occur primarily during weekdays with 70 percent occurring at night. Each sortie is approximately three hours long and consists of two air operations (e.g., single takeoff and landing) at airfields and landing zones (LZs) both on and off Eglin AFB. This would result in an increase of approximately 2,600 annual air operations or approximately 75 hours per week of flight training, of which 52 hours of flying would be at night. Annual operations would be split between Duke Field at approximately 1,820 operations or 70 percent, and approximately 780 air operations at other locations on Eglin AFB Destin - Fort Walton Beach Airport (VPS) or at nearby airfields including Hurlburt Field Airport (HRT) and Bob Sikes Airport (CEW). Table 2.3 summarizes the proposed increase in aircraft operations for AvFID growth at Duke Field.

The training sorties require airspace with a minimum effective altitude of 5,000 feet above ground level (AGL) with altitudes 7,000 feet AGL optimal. It is expected that the single-engine aircraft will be unpressurized with limited oxygen, thus restricting most operations to 10,000 feet mean sea level (MSL). Each mission requires a 1,000-foot altitude block for single-ship operations and a 2,000-foot altitude block for formation operations. Approximately 200 of the annual sorties will use a laser designator installed on the armed ISR aircraft. This will require protected airspace and a protected surface footprint. Note: The Armed Intelligence, Surveillance and Reconnaissance (AISR) training at Eglin AFB will be simulation only. There will be no live fire from the aircraft.

**Table 2.3 Proposed Single-Engine Aircraft Operations at Duke Field and Other Nearby Airfields**

Single-Engine Aircraft at Duke Field	Approximate Annual Sorties	Average Duration of Sortie (Hours)	Sortie Types ISR/AISR Annual <sup>1</sup> (Hours)	Approximate Number of Air Operations		
				Total	Duke Field	Nearby Airports
5	1,300	3	3,900	2,600	1,820	780

<sup>1</sup>Approximate split for ISR and AISR flying hours is 50/50. AISR activities are a combination of two mission sets for CAA training including ISR and the Precision Strike missions.

- “ISR includes tactical overwatch, ground assault force (GAF), helicopter assault force support, border and maritime patrol, air-ground integration, tactical strike coordination required for task, collect, process, exploit and disseminate (TC-PED) functions...”
- “Precision Strike includes side firing, fixed forward firing, and fires coordination. Precision strike provides the joint force commander and the Squadron Operations Facility (SOF) operator with specialized capabilities to find, fix, track, target, engage and assess (F2T2EA) applicable targets. F2T2EA can use a single weapon system or a combination of systems to fulfill elements of the kill chain.” Source: Armed ISR Combat Plans Division (CPD) (Jan 19). Note: the AISR training at Eglin will be simulation only. No live fire.

Sources: AvFID Expansion/Growth at Duke Field, FL Site Visit Outbrief, Nov 2018; AF Form 813, June 2018; AFSOC Site Survey Report AvFID Growth (6 SOS) at Duke Field, FL, Dec 2018; PREIAP Site Visit, April 2019.

## 2.2.2 Facility Construction

Under the Proposed Action, new facility construction would occur at Duke Field to support the 6 SOS growth. The proposed permanent facilities include a combined 12,100-square foot (SF) one-bay hangar and AMU facility with 500 SF of covered maintenance storage; a 9,700 SF weapons system trainer (WST) facility; an 8,000-SF mobile readiness spare parts (MRSP) and storage warehouse; and a 10,900-SF squadron operations facility adjacent to Building 3144. Figures 2-1 and 2-2 show the proposed locations for facility and infrastructure construction associated with the Proposed Action and projects associated with the separate C-146 action. Table 2.4 lists the construction projects that would be executed under the Proposed Action. Each building site would be developed to provide optimum efficiency, adequate stormwater runoff detention, and compliance with all relevant Federal and state safety regulations.

**Table 2.4 Proposed Construction Projects**

Project Key	Project Title	Fiscal Year (FY)	Size (SF)	Key Components
1	6 SOS One-Bay Hangar/AMU Shop	FY23	5,200/6,900	<ul style="list-style-type: none"> <li>• Construction of a consolidated 12,100 SF hangar and AMU shop with an additional 500 SF covered maintenance storage facility</li> <li>• Construction of paved surfaces for Personally Owned Vehicle (POV) parking and a sidewalk.</li> </ul>
2	6 SOS WST/Formal Training Unit (FTU)	FY23	5,200/4,500	<ul style="list-style-type: none"> <li>• Construction of a 9,700 SF single-engine WST facility.</li> </ul>

Table 2.4 Proposed Construction Projects (continued)				
Project Key	Project Title	Fiscal Year (FY)	Size (SF)	• Key Components
3	6 SOS SOF	FY23	10,900	<ul style="list-style-type: none"> <li>• Construction of 10,900-SF SOF including office space, storage areas, planning rooms, weapons vault, aircrew flight equipment (AFE) storage and conference rooms.</li> <li>• Construction of paved surfaces for POV parking and sidewalks</li> </ul>
4	6 SOS Warehouse	FY23	8,000	<ul style="list-style-type: none"> <li>• Construction of an 8,000-SF warehouse to store aircraft parts, (MRSP) kits and medical supplies. This is an addition to Building 3032.</li> </ul>

Sources: AvFID Expansion/Growth at Duke Field, FL Site Visit Outbrief, Nov 2018; AF Form 813, June 2018; AFSOC Site Survey Report AvFID Growth (6 SOS) at Duke Field, FL, Dec 2018; PREIAP Site Visit, April 2019.

### 1 — 6 SOS One-Bay Hangar and AMU Shop

Construction of a 12,100-SF one-bay hangar for a single-engine aircraft and a 500-SF covered maintenance storage facility is proposed for the southern end of the Duke Field flightline (see Figure 2.2). A POV parking lot and sidewalk would be constructed in proximity to the hangar/AMU. Construction of the hangar is proposed to begin in FY23 and be completed by FY25. No demolitions are required for this action. No new roads are required to implement this action. No noise sensitive receptors are located within proximity to the hangar and AMU shop.

### 2 — 6 SOS Aircraft Weapons System Trainer

Construction of a 9,700-SF aircraft WST is proposed for an area northwest of Building 3144 (see Figure 2.1). The facility would include space for the WST, office space, computer room, and utility rooms. Paved access to the facility would connect to a road that would be constructed for previously proposed C-146 complex. Construction of the WST is proposed to begin in FY23 and be completed by FY25. No demolitions are required for this action.

### 3 — 6 SOS Squadron Operations Building

Construction of a 10,900-SF squadron operations building is proposed immediately west of Building 3144 (see Figure 2.1). The squadron operations building would include offices, a weapons vault, AFE storage, conference rooms, planning rooms, and locker rooms. The proposed squadron operations building project would include construction of approximately 53,000 SF POV parking lot and sidewalks. The POV parking lot would connect to a road that would be constructed for the proposed C-146 complex. Sidewalks would connect the POV parking lot with the proposed 6 SOS WST facility and the 6 SOS squadron operations building. Construction of the squadron operations building is proposed to begin in FY23 and be completed by FY25. No demolitions are required for this action.

#### 4 – 6 SOS Storage Warehouse

A warehouse is proposed to be constructed approximately 0.4 miles north of the proposed 6 SOS aircraft hangar on the south end of the Duke Field flightline (see Figure 2.2). The warehouse would be used to store aircraft parts, MRSP kits and medical supplies. Also included is 500 SF of covered maintenance storage. Construction of the 8,000-SF warehouse is proposed to begin in FY23 and be completed by FY25. No demolitions are required for this action.

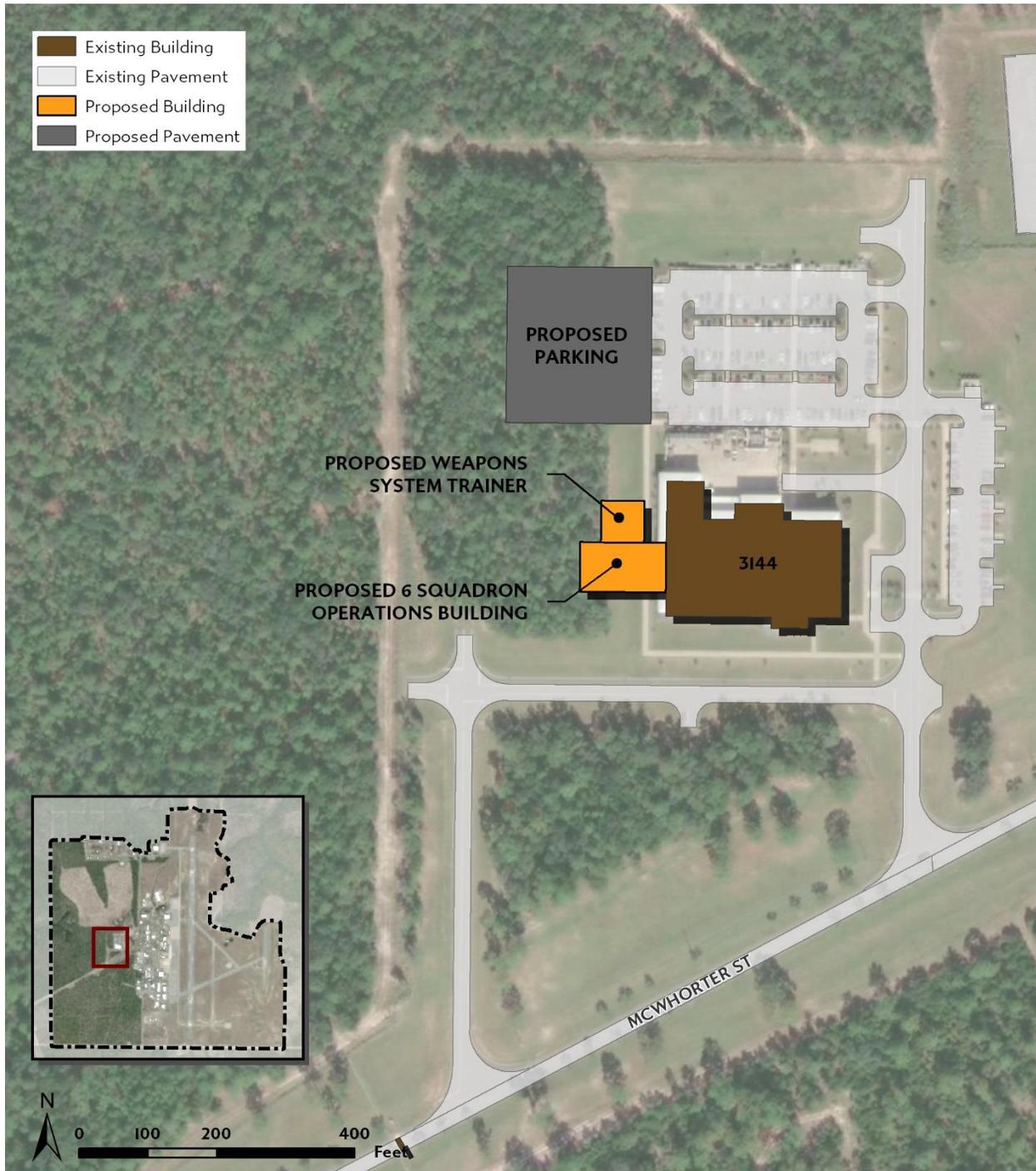


Figure 2-1: Duke Field Site EA Site 1



Figure 2-2: Duke Field Site EA Site 2

## 2.3 Selection Criteria for Alternatives to the Proposed Action

NEPA's implementing regulations provide guidance on the consideration of alternatives to a Federally Proposed Action and require an objective evaluation of reasonable alternatives. Only the alternatives that meet the purpose and need and are determined to be reasonable will require detailed analysis. To be considered reasonable, an alternative must be suitable for decision making, capable of implementation, and sufficiently satisfactory with respect to meeting the purpose of and need for the action. Potential alternatives considered reasonable for meeting the purpose and need were evaluated against the following screening criteria:

- Ability to increase operational capacity (to sustain five year-round advisory sites) of the 6 SOS through integrated growth of personnel and aircraft
- Ability to integrate active duty and reserve forces to achieve TFI
- Compatibility and functionality of adjacent land uses
- Capacity to support personnel in temporary spaces
- Availability of logistics support
- Capacity of airfield operations, range, and airspace to support ISR/AISR training
- Ability to avoid or minimize environmental, operational, and land use impacts to the maximum extent practicable

## 2.4 Alternatives Considered but Eliminated from Detailed Analyses

Besides the Proposed Action, no other reasonable alternatives were identified which would meet the purpose and need for action. Specifically, there were no alternative beddown locations for the 6 SOS personnel and aircraft identified that could meet screening criteria presented in Section 2.3. Alternative locations considered include:

- Conduct the 6 SOS personnel and aircraft beddown at another location on Eglin AFB
- Conduct the 6 SOS personnel and aircraft beddown at Hurlburt Field
- Conduct the 6 SOS personnel and aircraft beddown at Choctaw Field
- Conduct the 6 SOS personnel and aircraft beddown at a different location on Duke Field

**Location to Main Base Eglin AFB.** Under this alternative, the increase in CAAs and their aircraft would relocate to Main Base Eglin AFB other than Duke Field. This alternative has been eliminated from further detailed analysis because it does not meet the following selection criteria:

- **Ability to increase operational capacity (to sustain five year-round advisory sites) of the 6 SOS through integrated growth of personnel and aircraft.** The 6 SOS is located at Duke Field. Relocating additional personnel and aircraft resources for the 6 SOS to Main Base Eglin would not be an

integrated approach to grow the operational capacity of the squadron. Driving distance and time between the two locations is approximately 20 miles and 27 minutes.

- **Ability to integrate active duty and reserve forces to achieve TFI.** TFI aims to improve the Air Force's ability to conduct its mission through the sharing of resources between active duty and the reserve components, including aircraft, crews, maintenance, and support. Currently, Duke Field provides the resources and staffing to support TFI between the 6 SOS and 711 SOS. Positioning 6 SOS personnel and aircraft at Main Base Eglin AFB other than Duke Field would not support an effective TFI.
- **Availability of logistics support.** There is available contract logistic support at Duke Field that is specific to the needs of the 6 SOS. This would have to be replicated at another location.
- **Ability to avoid or minimize environmental, operational, and land use impacts to the maximum extent practicable.** Main Base Eglin AFB has limited space available for new development that is not already constrained. The ongoing Test Town Area and Advanced Programs Area Development Plan (ADP) along Eglin's main base flight line do not support development for the 6 SOS operations.

**Locate to Hurlburt Field.** Under this alternative, the increase in CAAs and their aircraft would relocate to Hurlburt Field. This alternative has been eliminated from further detailed analysis because it does not meet the following selection criteria:

- **Ability to increase operational capacity (to sustain five year-round advisory sites) of the 6 SOS through integrated growth of personnel and aircraft.** The 6 SOS is located at Duke Field. Relocating additional personnel and aircraft resources for the 6 SOS to Hurlburt Field would not be an integrated approach to grow the operational capacity of the squadron. Driving distance and time between the two locations is approximately 30 miles and 45 minutes.
- **Ability to integrate active duty and reserve forces to achieve TFI.** TFI aims to improve the Air Force's ability to conduct its mission through the sharing of resources between active duty and the reserve components, including aircraft, crews, maintenance, and support. Currently, Duke Field provides the resources and staffing to support TFI between the 6 SOS and 711 SOS. Positioning 6 SOS personnel and aircraft at Hurlburt Field would make it difficult and inefficient to support an effective TFI.
- **Availability of logistics support.** There is available contract logistic support at Duke Field that is specific to the needs of the 6 SOS. This would have to be replicated at a Hurlburt Field location.
- **Ability to avoid or minimize environmental, operational, and land use impacts to the maximum extent practicable.** Hurlburt Field has very limited land and facilities for additional mission activities such as aircraft parking, maintenance facilities, aircraft hangars, or unconstrained land for the construction of new operational facilities.

**Locate to Choctaw Field (Eglin AFB Auxiliary Field #10).** Under this alternative, the increase in CAAs and their aircraft would relocate to Choctaw Field. This alternative has been eliminated from further detailed analysis because it does not meet the following selection criteria:

- **Ability to increase operational capacity (to sustain five year-round advisory sites) of the 6 SOS through integrated growth of personnel and aircraft.** The 6 SOS is located at Duke Field. Relocating additional personnel and aircraft resources for the 6 SOS to Choctaw Field would not be an integrated approach to grow the operational capacity of the squadron. Driving distance and time between the two locations is approximately 50 miles and 50 minutes.

- **Ability to integrate active duty and reserve forces to achieve TFI.** TFI aims to improve the Air Force's ability to conduct its mission through the sharing of resources between active duty and the reserve components, including aircraft, crews, maintenance, and support. Currently, Duke Field provides the resources and staffing to support TFI between the 6 SOS and 711 SOS. Positioning 6 SOS personnel and aircraft at Choctaw Field would make it difficult and inefficient to support an effective TFI.
- **Availability of logistics support.** There is available contract logistic support at Duke Field that is specific to the needs of the 6 SOS. There are limited to no facilities available for use at Choctaw Field. All support functions would have to be constructed.
- **Ability to avoid or minimize environmental, operational, and land use impacts to the maximum extent practicable.** Choctaw appears to have land available for the construction of a new compound with new facilities such as aircraft parking, maintenance facilities, aircraft hangars, all new infrastructure (e.g., roads, etc.) and other support facilities. There are no current land use activities to support quality of life activities for the personnel working there.

**Locate to a different location on Duke Field.** This alternative has been eliminated from further detailed analysis because it does not meet the following selection criteria:

- **Compatibility and functionality of adjacent land uses.** Under this alternative the planning goal of the Area Development Plan for Duke Field of distancing the 6 SOS core development away from the negative impacts of noise from aircraft operations from the flightline would not be met. To minimize noise impacts, the proposed projects were located as far west from the airfield as practicable when considering land use compatibility and functional relationship between facilities.
- **Capacity of airfield operations, range, and airspace to support ISR/AISR training.** Other hangar locations along the flightline were eliminated from consideration under the planning goal of maintaining contiguous open space along the flightline for future flightline uses. Therefore, any location other than at the south end of the flightline for the 6 SOS hangar does not meet the planning goal established.
- **Ability to avoid or minimize environmental, operational, and land use impacts to the maximum extent practicable.** Other locations on Duke Field would not achieve the planning goal of locating 6 SOS administrative functions so that they do not interfere with land use activities requiring proximity to the flightline. The proposed action location minimizes the potential for future impacts to operational and land use requirements.

## 2.5 Alternatives Carried Forward for Analysis

### 2.5.1 Proposed Action

As described in Section 2.2, the Proposed Action is carried forward for analysis in this EA.

### 2.5.2 No-Action Alternative

Under the No-Action Alternative, the proposed AvFID beddown of CAAs and aircraft would not occur at Duke Field. AFSOC would be unable to strengthen and expand its capabilities for training partner-nation aviation forces, and the realization of sustaining five year-round advisory sites would likely not be

achieved. Additionally, there would be no new construction of facilities for CAAs and their aircraft at Duke Field. Conditions at Duke Field would remain as they are under this alternative.

Because CEQ regulations stipulate that the No-Action Alternative be analyzed to assess any environmental consequences that may occur if the Proposed Action is not implemented, this alternative will be carried forward for analysis in this EA. The No-Action Alternative also provides a baseline against which the Proposed Action can be compared.

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## SECTION 3

# Affected Environment and Environmental Consequences

## 3.1 Introduction

This section addresses the affected environment and environmental consequences of the alternatives for the Proposed Action. The affected environment is the existing condition of each resource for which the alternatives are assessed. The environmental consequences are the potential direct, indirect, and cumulative impacts of the alternatives on each resource.

Direct impacts are those that would result from the alternatives at the same time and in the same place the action is being implemented. Indirect impacts are those that would result from the alternatives at a later time or would be farther removed in distance from the action, but are still reasonably foreseeable. Cumulative impacts are those that would result from the incremental impacts of the alternatives when added to other past, present, and reasonably foreseeable future actions. As appropriate, impacts are further discussed as being temporary, short-term, or long-term. The magnitude of the impact is considered regardless of whether the impact is adverse or beneficial.

Determination of the significance of the impact, as described in 40 CFR 1508.27, requires considerations of both context and intensity. Context considers the geographic extent of the potential impact (local, regional, or greater extent) while intensity considers the severity of the impact. The following terms are used to describe the magnitude of impacts in this EA:

- No Effect: The action would not cause a detectable change.
- Negligible: The impact would be at the lowest level of detection and would not be significant.
- Minor: The impact would be slight but detectable, although the impact would not be significant.
- Moderate: The impact would be clear, but the impact would not be significant.
- Major: The impact has the potential to be significant and the potential impact can be clearly defined. The priority of both adverse and beneficial impacts is subject to interpretation and should be determined based on the final proposal. In cases of adverse impacts, the impact may be reduced to less than significant by mitigation, design features, and/or other measures that may be taken.

Resources that could be affected include air quality, noise, land use, geology and soils, water resources biological resources, safety, socioeconomics, cultural resources, infrastructure and hazardous materials and wastes. Resource area(s) not carried forward for analysis include:

- Environmental justice/protection of children. Although there would be potential impacts to air quality, noise, traffic, etc. due to construction, these would be minor, and mostly local to the project areas and temporary for the duration of the construction period. Standard construction site safety procedures would be followed to minimize any potential risk to children. Therefore, human populations are not expected to be adversely impacted as a result of the Proposed Action and there would be no increased health or safety risks to children.

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## 3.2 Airspace Management

### 3.2.1 Definition of the Resource

Airspace management is the coordination, integration, and regulation of the use of airspace within defined dimensions. AFI 13-201, *Air Force Airspace Management* provides guidance and procedures for developing and processing Special Use Airspace (SUA), and covers the efficient planning, acquisition, use, and management of airspace required to support USAF air operations. Federal Aviation Administration (FAA) Joint Order (JO) 7400.2M also defines procedures for handling airspace matters. JO procedures apply to both civilian and military activities and are recognized as a source document. Eglin AFB Instruction 11-201, Air Operations, implements aircraft rules and procedures that apply to all air operations at Eglin AFB. USAF also follows FAA JO 7110.65R, Air Traffic Control, and FAA JO 7610.4, Memorandum of Agreement between Department of the Air Force and Federal Aviation Administration on Safety for Space Transportation and Range Activities (USAF 2016a).

### 3.2.2 Affected Environment

Eglin's airspace extends outward from the installation to approximately three nautical miles offshore into the Gulf of Mexico to the northern boundary of the Eglin Gulf Test and Training Range warning areas. It consists of Restricted Area Airspaces, Military Operating Areas (MOAs), Military Training Routes (MTRs), and Air Traffic Control Assigned Airspace (USAF 2016a) (see Figure 3-1).

- **Restricted Area Airspace.** Eglin's restricted areas are located mostly over the land portion of the Eglin Reservation and include R-2914A and B; R-2915A, B, and C; R-2917 (within R-2914A); R-2918; and R-2919A and B. Eglin AFB is the controlling agency for its Restricted Airspace.
  - Restricted Airspaces R-2914A, R-2915A, R-2915B, and R-2119A extend from the surface into an unlimited ceiling.
  - Restricted Airspaces R-2914B, R-2914C, R-2915C, and R-2919B extend from 8,500 ft above MSL to an unlimited ceiling.
- **MTRs:** Military Training Routes are divided into Instrument Routes (IR), and Visual Routes (VR). Within or near Eglin AFB are MTRs VR1085, VR1082, IR301, and IR017. These aerial corridors permit military aircraft to operate below 10,000 ft MSL and faster than the maximum safe speed of 250 knots that all other aircraft are restricted to while operating below 10,000 ft MSL.
- **MOAs.** This block of airspace is jointly used by military, private, and commercial aircraft. MOAs are established to separate certain military training activities from Instrument Flight Rule (IFR) traffic and to identify Visual Flight Rule (VFR) traffic where military activities are conducted.
  - Jacksonville Air Traffic Control Center controls Eglin MOAs A East and West, MOA B, and MOA C above 11,000 ft MSL. Eglin AFB controls the mentioned MOAs up to 10,000 ft above MSL and MOAs D, E, and F.

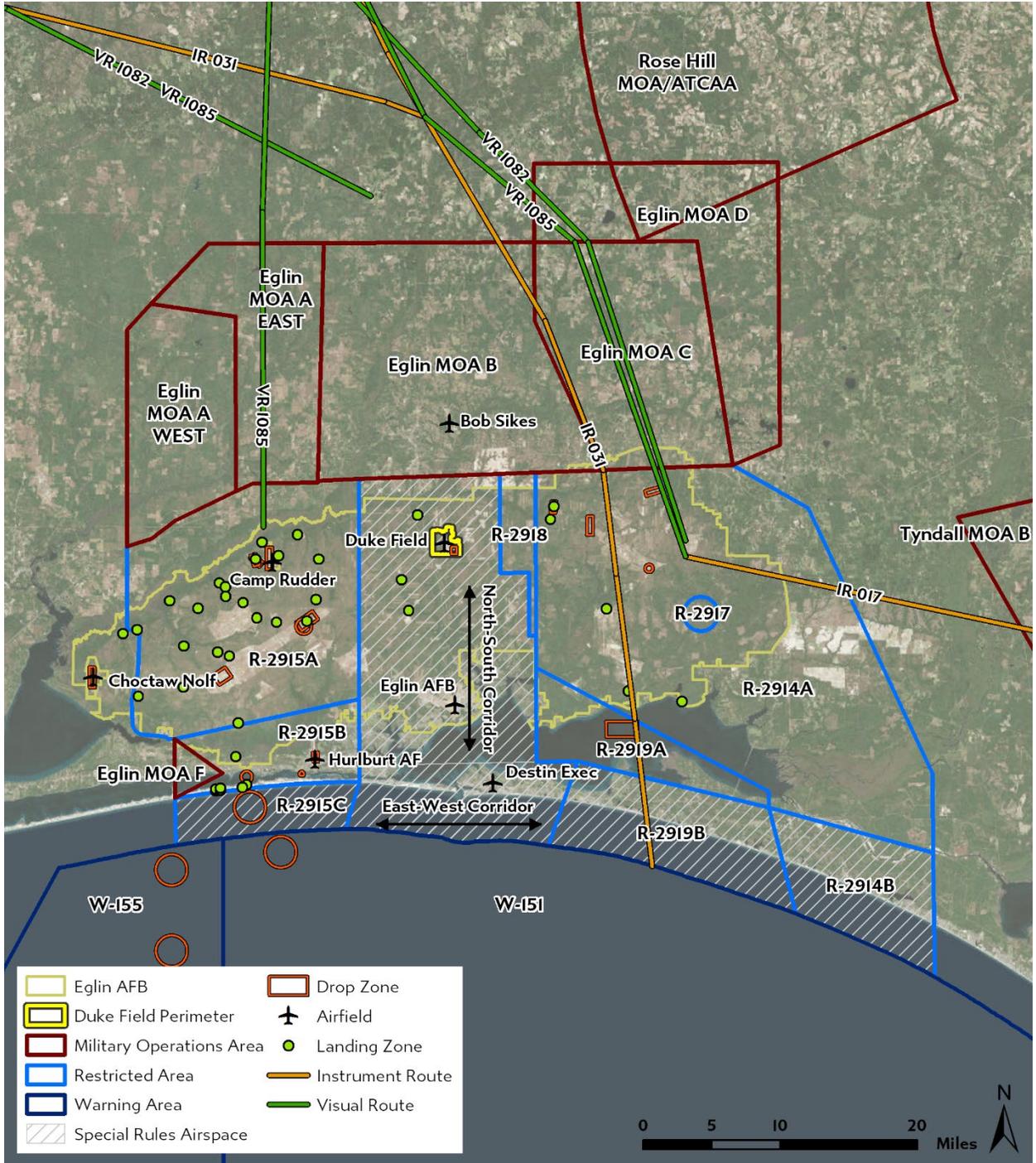


Figure 3-1: Eglin AFB Airspace and Training Areas

- The vertical limits of MOAs A East and West, B, C, D, E, and F are from 1,000 ft AGL to 18,000 ft above MSL.
- Rose Hill MOA/Air Traffic Control Assigned Airspace is controlled by the Jacksonville Air Traffic Control Center; Eglin AFB schedules this airspace.
- The Rose Hill MOA extends from 8,000 ft above MSL to 18,000 ft above MSL
- **Other air operation assets located on or near Eglin AFB include:**
  - The four active airfields: Eglin Main Base, Choctaw, Duke Field, and Camp Rudder.
  - The drops zones (DZs) for paratrooping troops and equipment.
  - The assault LZs, which range in size from less than an acre to several hundred acres. The LZs are primarily used for touchdown and takeoff exercises using fixed-wing aircraft (USAF 2016a).
  - Access corridors that are used by military, private, and commercial aircraft to access airports within and near Eglin AFB.
- **Other Nearby Airfields include (see Figure 3-1):**
  - HRT, a military airfield with one runway located on the Gulf of Mexico in Mary Esther, FL. HRT is within Eglin’s restricted airspace.
  - CEW, a public airport with one runway located approximately 39 miles north of Eglin AFB in the city of Crestview, FL. CEW lies within Eglin’s MOA B.

### 3.2.3 Environmental Consequences

Potential impacts on airspace, and their significance are related to and measured by how implementation of the Proposed Action would: 1) restrict or limit current civilian and military aircraft operations; 2) require airspace modifications impose; or 3) require modifications to air traffic control systems.

#### 3.2.3.1 Proposed Action

Under the Proposed Action, growth in new aircraft training activities at Duke Field would occur approximately 260 days per year, at an average of five sorties per day for a total of 1,300 sorties/training missions per year. The sorties would occur primarily during weekdays with 70 percent occurring at night. Each sortie is approximately three hours long and consists of two air operations (e.g., single takeoff and landing) at airfields and LZs both on and off Eglin AFB. This would result in an increase of approximately 2,600 annual air operations or approximately 75 hours per week of flight training, of which 52 hours of flying would be at night. Annual operations would be split between Duke Field at approximately 1,820 operations or 70 percent, and approximately 780 air operations at other locations on Eglin AFB (VPS) or at nearby airfields including HRT and CEW. Air operations associated with the additional aircraft operating from Duke Field would be conducted in the same manner and at the locations as currently used by the C-145s at Duke Field.

According to the *2018 Air Installations Compatible Use Zone (AICUZ) Study for Eglin AFB and Duke Field*, 2019 annual flight operations at EGI were projected to be approximately 46,000 (USAF 2018a). However, due to a reduction in F-35 operations the projection was revised to approximately 38,000, which is 8,000

fewer operations (Chase, personnel communication, 2019). As a result, the 17% increase in air operations at Duke Field that was expected for 2019 never occurred.

There were a total 67,965 aircraft operations from Main Base Eglin AFB and the co-located civilian airport for FY 2018. Operations for FY 2019 are expected to increase by approximately 14,400 for a total of 82,365 operations. The increase at Eglin is due primarily to F22 and T38 operations (Chase, personnel communication, 2019). The number of operations projected for 2019 are comparable to the operational tempo in the 2006 and 2007 timeframe. The total number of projected air operations, by combining Duke Field with Main Base Eglin AFB and the co-located civilian airport, for 2019 is 120,365. An increase of 2,600 aircraft operations as a result of the Proposed Action represents a 2.2% overall increase in air operations to be flown locally (i.e. within Eglin's Terminal and Restricted Airspace), which is negligible.

The proposed growth in AvFID aircraft operations would result in an increase in annual operations of AFSOC's 492 SOW at Duke Field. There are concerns regarding airspace availability and scheduling for the Proposed Action due to AFSOC operations. The concerns have been identified as: (1) The need to remain within the existing AFSOC allocation for use of Eglin's ranges and airspace. This needs to be addressed through prioritization and the sub-allocation of range and airspace usage for the 492 SOW and (2) Addressing the scheduling capacity of the SOW 1 for the increase in 492 SOW air operations. These concerns are expected to be worked out by AFSOC/A3. To address these concerns, AFSOC/A3 is working towards the effective sub-allocation of AFSOC-allocated airspace within the approved operating hours for Duke Field. They are also looking at possibly extend the operating hours for Duke Field or obtaining uncontrolled field operations approval (*AFSOC Site Survey Report AvFID Growth (6 SOS) at Duke Field, FL*, Dec 2018). Aware of AFSOC's allocation and capacity concerns, Eglin AFB's 96 Operations Support Squadron (96 OSO) finds the air operations of the Proposed Action from an airspace perspective as negligible and compatible with current operations (Chase, personnel communication, 2019).

There are no anticipated changes to the configuration (i.e., size, shape, or location) of airspace required to support implementation of the Proposed Action. Relative to regional aircraft activity, the net increases in flight activity over current operations at HRT and CEW are expected to be minor under the Proposed Action. There is no indication of impacts associated with the existing LZs and DZs to be used for the Proposed Action.

### 3.2.3.2 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Flight operations would remain the same. Therefore, no impacts on airspace management would be expected under the No-Action Alternative.

## 3.3 AIR QUALITY

### 3.3.1 Definition of the Resource

#### 3.3.1.1 National Ambient Air Quality Standards and Criteria

The United States Environmental Protection Agency (USEPA) established National Ambient Air Quality Standards (NAAQS) for specific pollutants determined to be of concern with respect to the health and welfare of the general public. Ambient air quality standards are classified as either “primary” or “secondary.” The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM) less than 10 microns (PM-10), particulate matter less than 2.5 microns (PM-2.5), and lead (Pb). NAAQS represent the maximum levels of background pollution that are considered safe, within an adequate margin of safety, to protect the public health and welfare. NAAQS are included in Table 3.1.

Table 3.1: National Ambient Air Quality Standards					
Air Pollutant	Florida Standards	National Ambient Air Quality Standards			
		Primary Standards		Secondary Standards	
	Level	Level	Averaging Time	Level	Averaging Times
Carbon Monoxide	9 ppm (10 mg/ cubic meter [m <sup>3</sup> ])	9 ppm (10 mg/ cubic meter [m <sup>3</sup> ])	8-hour <sup>(1)</sup>	None	
	35 ppm (40 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	1-hour <sup>(1)</sup>		
Lead	None	0.15 µg/m <sup>3</sup> <sup>(2)</sup>	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>	Quarterly Average	Same as Primary	
Nitrogen Dioxide	100 µg/m <sup>3</sup> (0.05 ppm)	53 ppb <sup>(3)</sup>	Annual (Arithmetic Average)	Same as Primary	
	None	100 ppb	1-hour <sup>(4)</sup>	None	
Particulate Matter (PM-10)	50 µg/m <sup>3</sup>	None	Annual	Same as Primary	
	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	24-hour <sup>(5)</sup>	Same as Primary	
Particulate Matter (PM-2.5)	None	12.0 µg/m <sup>3</sup>	Annual <sup>(6)</sup> (Arithmetic Average)	15.0 µg/m <sup>3</sup>	Annual <sup>(6)</sup> (Arithmetic Average)
	None	35 µg/m <sup>3</sup>	24-hour <sup>(7)</sup>	Same as Primary	
Ozone	None	0.075 ppm (2008 std)	8-hour <sup>(8)</sup>	Same as Primary	
		0.070 ppm (2015 std)	8-hour <sup>(9)</sup>	Same as Primary	
		0.12 ppm	8-hour <sup>(10)</sup>	Same as Primary	
Sulfur Dioxide	60 µg/m <sup>3</sup> (0.02 ppm)	0.03 ppm	Annual (Arithmetic Average)	None	
	260 µg/m <sup>3</sup> (0.10 ppm)	0.14 ppm	24-hour <sup>(1)</sup>	None	
	1300 µg/m <sup>3</sup> (0.5 ppm)	None	3-hour	0.5 ppm	3-hour <sup>(1)</sup>
	None	75 ppb <sup>(11)</sup>	1-hour	None	

**Source: USEPA 2016**  
Notes:  
Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb - 1 part in 1,000,000,000) by volume, milligrams per cubic meter of air (mg/m<sup>3</sup>), and micrograms per cubic meter of air (µg/m<sup>3</sup>).  
(1) Not to be exceeded more than once per year.  
(2) Final rule signed October 15, 2008.  
(3) The official level of the annual NO<sub>2</sub> standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

- (4) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).
- (5) Not to be exceeded more than once per year on average over 3 years.
- (6) To attain this standard, the 3-year average of the weighted annual mean PM-2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m<sup>3</sup>.
- (7) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m<sup>3</sup> (effective December 17, 2006).
- (8) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective May 27, 2008).
- (9) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.070 ppm (effective December 28, 2015).
- (10) (a) USEPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").
- (b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.
- (11) (a) Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Areas that do not meet NAAQS standards are called non-attainment areas. Areas that meet both primary and secondary standards are known as attainment areas. The Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria or requirements for conformity determinations for Federal projects occurring in non-attainment areas. The rule mandates that a conformity analysis must be performed when a Federal action generates air pollutants in a region that has been designated as a non-attainment or maintenance area for one or more NAAQS.

The General Conformity Rule divides the air conformity process into two distinct areas, applicability and determination. Federal agencies must initially assess if an action is subject to the Conformity Rule (Applicability Analysis) and then if the action conforms to an applicable implementation plan (Conformity Determination). A Conformity Applicability Analysis is the process used to determine whether a Federal action meets the requirements of the general conformity rule. It requires the responsible Federal agency to evaluate the nature of a proposed action and associated air pollutant emissions and calculate emissions as a result of the proposed action. If the emissions exceed established limits, known as *de minimis* thresholds, the proponent is required to then perform a more detailed Conformity Determination. The CAA provides that Federal actions occurring in non-attainment and maintenance areas should not hinder future attainment with the NAAQS and would conform to the applicable State Implementation Plan (i.e., Florida's State Implementation Plan).

Okaloosa County is considered by the U.S. EPA to be in attainment for all criteria pollutants; therefore, the General Conformity rule does not apply, nor are there any requirements posed by the FDEP for a conformity analysis of the Proposed Action. Although General Conformity does not apply, the proponent is still required, by NEPA, to evaluate the significance of the emissions increases from the Proposed Action.

### 3.3.1.2 Greenhouse Gases and Climate Change

CEQ released a *Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts* (December 18, 2014) to provide Federal agencies direction on when and how to consider the effects of greenhouse gas (GHG) emissions and climate change in their evaluation of proposed Federal actions. To be in accordance with this guidance, Federal agencies should consider the potential effects of a Proposed Action on climate change as indicated by its GHG emissions and the implications of climate change for the environmental effects of a proposed action.

Global climate change refers to a change in the average weather on the earth. GHGs are gases that trap heat in the atmosphere. They include water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), fluorinated gases including chlorofluorocarbons (CFCs) and hydrofluorocarbons (HFCs), halons, as well as ground-level O<sub>3</sub> (California Energy Commission 2007). The major GHG-producing sectors in society include transportation, utilities (e.g., coal and gas power plants), industry/manufacturing, agriculture, and residential. End-use sector sources of GHG emissions include transportation (40.7 percent), electricity generation (22.2 percent), industry (20.5 percent), agriculture and forestry (8.3 percent), and other (8.3 percent) (California Energy Commission 2007). The main sources of increased concentrations of GHG due to human activity include the combustion of fossil fuels and deforestation (contributing CO<sub>2</sub>), livestock and rice farming, land use and wetland depletions, landfill emissions (contributing CH<sub>4</sub>), refrigeration system and fire suppression system use and manufacturing (contributing CFC), and agricultural activities, including the use of fertilizers (California Energy Commission 2007).

### 3.3.1.3 GHG Threshold of Significance

The CEQ GHG final guidance is currently undergoing further consideration; however, the draft guidance states that if the proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons (27,557 U.S. tons) or more of CO<sub>2</sub> GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public.

For long-term actions that have annual direct emissions of less than 25,000 metric tons (27,557 U.S. tons) of CO<sub>2</sub>, CEQ encourages Federal agencies to consider whether the action's long-term emissions should receive similar analysis. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs (CEQ 2014).

GHG include CO<sub>2</sub>, CH<sub>4</sub>, NO<sub>2</sub>, hydrochlorofluorocarbons (HCFCs), perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. These GHG have varying heat-trapping abilities and atmospheric lifetimes. CO<sub>2</sub> equivalency (CO<sub>2</sub>e) is a measuring methodology used to compare the heat-trapping impact from various GHG relative to CO<sub>2</sub>. Some gases have a greater global warming potential than others. Nitrogen oxides (NO<sub>x</sub>), for instance, have a global warming potential that is 310 times greater than an equivalent amount of CO<sub>2</sub>, and CH<sub>4</sub> is 25 times greater than an equivalent amount of CO<sub>2</sub>.

## 3.3.2 Affected Environment

Duke Field is located in Okaloosa County in the Florida panhandle, 50 miles east of Pensacola, Florida, and occupies approximately 2,700 acres of land. As defined by 40 CFR Part 81.68, Okaloosa County is part of the Mobile, Alabama (AL) – Pensacola – Panama City, Florida (FL) – Southern Mississippi Interstate Air Quality Control Region. Regional attainment status designations are defined in 40 CFR Part 81, Subpart C. This region is classified as Attainment/Unclassifiable for all criteria pollutants.

Eglin AFB currently operates under Title V Air Operating Permit Renewal number 0910031-022-AV issued by FDEP on May 30, 2019 with an expiration date of May 30, 2022 (FDEP 2019). The purpose of this permit is to renew the recently expired (5/30/19) 0910031-017-AV Title V air operation permit and incorporate the concurrently-processed permit No. 0910031-023-AC.

Permit No. 0910031-023-AC authorizes the addition of a paint booth; reclassifies the facility as an area source with respect to hazardous air pollutants (HAPs); establishes facility wide limits for HAPs; and modifies Title V permit No. 0910031-020-AV text, individual permit conditions, and appendices to address corrections, clarifications, and rule updates to be consistent with current operation.

The Title V air operation permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-213. Table 3.2 provides a comparison of allowable annual air emissions and the history of actual annual emissions (tons per year).

Pollutants	Allowable	History				
	2019	2018	2017	2016	2015	2014
CO	321.24	25.9426	31.0324	26.8205	27.7586	27.0764
HAPS	6.38	5.96978	4.6969	5.31592	5.3068	6.1490
NO <sub>x</sub>	230.16	35.8452	47.2852	35.4840	37.3604	37.9170
PB	–	0.0003	0.0003	0.0002	0.0003	0.0002
PM	58.36	2.8020	3.5017	2.9758	3.0613	3.0488
PM <sub>10</sub>	–	2.8019	3.5017	3.0035	3.1355	3.0712
PM <sub>2.5</sub>	–	2.1083	2.1486	1.96771	2.0205	–
SO <sub>2</sub>	5.39	0.9105	1.6253	0.9952	1.2064	1.2704
VOC	198.86	121.5589	101.5795	108.3850	101.2099	101.1820

Source: FDEP 2019

### 3.3.3 Environmental Consequences

#### 3.3.3.1 Analysis Approach

The purpose of this Air Quality Analysis is to evaluate the potential impacts on ambient air quality from the proposed actions. Criteria pollutant and greenhouse gas emissions from proposed installation construction activities and post-construction installation activities are expected to result from the following activities:

- Direct stationary source emissions (e.g., a new natural gas boiler and emergency generators) from new facilities,
- Indirect mobile source emissions from commuting workers and delivery vehicles during construction (e.g., on-road vehicles),
- Direct mobile source emissions from construction equipment (e.g., off-road equipment), and
- Fugitive dust emissions from land disturbance (e.g., construction) and from vehicles traveling on unpaved roads.

A list of emissions-generating equipment and activities was developed, by project and by alternative, from the information provided in the Description of Proposed Action and Alternatives (DOPAA). Expected usage quantities (e.g., mileage, operating hours, etc.) were taken directly from the DOPAA, if available, or were otherwise estimated using best engineering judgement. In developing calculation methodologies for these different emissions sources, the following resources were utilized:

- Air Emissions Guide for Air Force Transitory Sources (July 2018; USAF 2018b), Chapter 4
- Air Emissions Guide for Air Force Mobile Sources (July 2018; USAF 2018c), Chapter 5
- Air Emissions Guide for Air Force Stationary Sources (July 2018; USAF 2018c), Chapters 2, 3, and 19
- Determination of Indiana Department of Transportation (INDOT) Highway Construction Production Rates and Estimation of Contract Times (Final Report FHWA/IN/JTRP-2004/11)
- Urban Emissions (URBEMIS) Software 2007 User’s Manual Appendix A and Appendix H
- Mass balance and best engineering judgement, where necessary

Pollutants considered in this EA are SO<sub>2</sub> and other compounds (i.e., oxides of sulfur or SO<sub>x</sub>); volatile organic compounds (VOCs), which are precursors to O<sub>3</sub>; NO<sub>x</sub>, which are also precursors to O<sub>3</sub>, and include NO<sub>2</sub> and other compounds; CO; PM-10; PM-2.5; and Pb. These criteria pollutants are generated by the types of activities (e.g., construction and mobile source operations) associated with the Proposed Action.

In determining the effects of the Proposed Actions, the resulting potential emissions for all compounds, per year, would be compared to significance levels. The Air Force Air Quality EIAP Guide – Fundamentals Volume 1 (USAF 2016b) and Volume II (Advance Assessments; USAF 2016c) were referenced in order to perform evaluations of threshold significance. Air quality impacts from the Proposed Action would be significant if emissions

- Increase ambient air pollution concentrations above the NAAQS,
- Contribute to existing violations of the NAAQS,
- Interfere with, or delay timely attainment of, the NAAQS,
- Impair visibility within federally mandated Prevention of Significant Deteriorations Class I areas,
- Result in the potential for any new stationary source to be considered a major source of emissions as defined in 40 CFR 52.21 (total emissions of any pollutant subject to regulations under the CAA that is greater than 100 tons per year for attainment areas); or
- Increase mobile source emissions in excess of 100 tons per year for any pollutant.

Because the Mobile, AL – Pensacola – Panama City, FL– Southern Mississippi Interstate Air Quality Control Region is in attainment for all pollutants, General Conformity does not apply; therefore, the significance threshold for all criteria pollutant emissions is 100 tons per year (from both mobile and stationary sources).

### 3.3.3.2 Proposed Action

Implementation of the Proposed Action would have short-term, minor, adverse impacts on ambient air quality. All developments from this alternative were assumed to occur in a single year.

**Construction Activities** - Construction activities would result in short-term, minor, adverse impacts on ambient air quality. Facility construction would involve land clearing, land grading, and building construction. Construction projects would require the use of common construction equipment, all of which would be expected to meet local, state, and Federal air emission regulations. Table 3.3 provides a summary of short-term construction emissions from the Proposed Action.

Pollutant	Total (tons/year)
CO	1.28
VOC	0.29
NO <sub>x</sub>	1.33
Pb	0.00
PM-10	10.09
PM-2.5	0.68
SO <sub>2</sub>	0.00
CO <sub>2</sub> e	310.80

**Commuter Vehicles** – The Proposed Action would result in an increase of 294 new, full time personnel. It was assumed that each of these personnel would commute in their POV with an average commute of 36 miles round trip. Table 3.4 provides a summary of POV emissions from the Proposed Action.

Pollutant	Total (tons/year)
CO	0.05
VOC	0.00
NO <sub>x</sub>	0.00
Pb	0.00
PM-10	0.00
PM-2.5	0.00
SO <sub>2</sub>	0.00
CO <sub>2</sub> e	4.90

**Aircraft Operations** - Implementation of the Proposed Action would result in the bed down of five single-engine, fixed wing aircraft (e.g., C-208 using the Pratt and Whitney PT6A-27 as a surrogate engine). Long-term, minor, adverse effects on ambient air quality would occur due to an incremental increase in aircraft operations at Duke Field. In the immediate area surrounding Duke Field, air quality impacts would be dominated by aircraft landing and takeoff (LTO) operations (also known as sorties). Additionally, minor emissions would occur from the use of Aerospace Ground Equipment (AGE), such as

tow tractors and auxiliary power units. Table 3.5 provides a summary of aircraft operations emissions from the Proposed Action.

Table 3.5: Aircraft Operations Air Emissions (tons/year) from Proposed Action								
Air Operations	CO	VOC	NO <sub>x</sub>	Pb	PM-10	PM-2.5	SO <sub>2</sub>	CO <sub>2</sub> e
Sorties (LTOs)	2.33	1.90	0.26	0.00	0.02	0.02	0.12	180.04
AGE	10.68	0.96	7.30	0.00	0.60	0.58	0.17	544.47

**Aircraft Surface Coating Operations** - Implementation of the Proposed Action would result in the bed down of five single-engine, fixed wing aircraft (e.g., C-208 using the Pratt and Whitney PT6A-27 as a surrogate engine). Long-term, minor, adverse effects on ambient air quality would occur due to an incremental increase in aircraft surface coating operations at Duke Field. Based on estimated usage for aircraft surface coating operations, PM emissions were assumed to be negligible and were not estimated. Table 3.6 provides a summary of aircraft surface coating emissions from the Proposed Action.

Table 3.6: Aircraft Surface Coating Air Emissions (tons/year) from the Proposed Action	
Air Operations	VOC
Surface Coating	0.24

**New Facilities** – The Proposed Action would result in the construction of 4 new buildings. It was assumed that 4 of these buildings would be equipped with natural gas boilers and 3 of these buildings would be equipped with diesel fuel generators which would generate pollutants as a result of fuel combustion. Table 3.7 provides a summary of new building emissions from the Proposed Action.

Table 3.7: New Building Air Emissions (tons/year) from Proposed Action	
Pollutant	Total (tons/year)
CO	0.11
VOC	0.01
NO <sub>x</sub>	0.17
Pb	6.78 E-07
PM-10	0.01
PM-2.5	0.01
SO <sub>2</sub>	0.00
CO <sub>2</sub> e	0.00

**Total Emissions** - Implementation of the Proposed Action would have long-term, minor, adverse impacts on ambient air quality. Minor temporary increases in NO<sub>x</sub>, CO, and CO<sub>2</sub>e are primarily resultant from construction and air operations that are presumed to be accomplished during one calendar year. Following this temporary construction and growth, air operations and bed-down permanent effects on

ambient air quality are expected to be negligible from this alternative. The estimated annual air emissions from the Proposed Action would be well below significance thresholds. The limited annual emissions of GHGs would not likely contribute to global warming to any discernible extent. Potential changes to local temperature and precipitation patterns as a result of ongoing global climate change would not affect the ability to implement the Proposed Action.

### 3.3.3.3 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Therefore, the No Action Alternative would have no effect on ambient air quality. A no-effect determination has been made, since there would be no project implemented. Overall, there would be no significant impacts on ambient air quality as a result of implementing the No Action Alternative.

## 3.4 Biological Resources

### 3.4.1 Definition of the Resource

Biological resources analyzed in this EA generally include the plants, animals, and habitats that occur in the Duke Field Study Area of the Eglin Reservation. Specific areas exist that are unique due to their high-quality examples of natural communities or presence of rare species. Termed “High-Quality Natural Communities,” the Florida Natural Areas Inventory (FNAI) has identified these areas as sites distinguished by the uniqueness of the community, ecological condition, species diversity, and presence of rare species. FNAI also identified special habitats that support rare plants on Eglin called Significant Botanical Sites (SBSs), as well as larger-scale landscapes containing complexes of these High-Quality Natural Communities and rare species, which FNAI named Outstanding Natural Areas (ONAs) (FNAI 1997). Sensitive biological resources are defined as those plant and animal species listed as Threatened or Endangered, or proposed as such, by the USFWS. Plant and animal species that are Federally listed as Endangered or Threatened are afforded legal protection under the ESA. Florida’s imperiled species are fish and wildlife species that meet criteria to be listed as Federally Endangered, Federally Threatened, state threatened, or Species of Special Concern (Florida Administrative Code: Rule 68A-27.003). While the USFWS has primary responsibility for Florida species that are Federally Endangered or Threatened, the Florida Fish and Wildlife Conservation (FWC) Commission works in partnership with USFWS to help conserve these species.

The Migratory Bird Treaty Act makes it illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid Federal permit (50 CFR 10.13). EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, was issued on January 10, 2001. The EO directs Federal agencies that take actions that either directly or indirectly affect migratory birds to develop a MOU, and to work with the USFWS and other Federal agencies to promote the conservation of migratory bird populations.

Aircraft mishaps caused by mid-air collisions with bird-aircraft strikes is a primary concern to military training flights. Mishaps have the potential to cause serious damage to aircraft as well as the loss of human life of aircrews and passengers. The goal of the Bird/Wildlife Aircraft Strike Hazard (BASH) program is the preservation of war fighting capabilities through the reduction of wildlife hazards to aircraft operations. The BASH program is managed by the Wing Flight Safety Office, which has the primary responsibility for monitoring and implementation of the installations BASH Plan (USAF 2015). This organization coordinates and develops policy, collect and analyze wildlife strike data through the Air Force Safety Automated System (AFSAS), provide the Bird Avoidance Model/Avian Hazard Advisory System (BAM/AHAS) for low-level BASH awareness, and coordinate for BASH equipment approval. Wildlife at Eglin AFB is actively discouraged through landscaping and vegetation management techniques for the purpose of reducing BASH. The USAF Mishap Prevention Program (AFI 91-202) provides guidance for the development of a BASH Plan to address and reduce potential bird/wildlife strikes to aircraft. Eglin AFB’s Natural Resources Office implements the BASH program as directed by AFI 32-7064. Eglin’s 2017 Integrated Natural Resources Management Plan (INRMP) contains the BASH Plan as an Associated Component Plan in Tab 1 and includes a wildlife/bird hazard assessment of Eglin AFB airfields, including Duke Field. Additionally, in order to maintain a clear airfield, Eglin’s support of the BASH program does result in take of wildlife which is covered in the 2017 INRMP (USAF 2017c).

## 3.4.2 Affected Environment

### 3.4.2.1 Vegetation

There are 34 distinct natural vegetative communities that have been identified on Eglin AFB, which have been grouped into four broad ecological associations: sandhill matrix, flatwoods matrix, wetland/riparian matrix, and barrier island matrix (USAF 2017c). Other ecological associations on Eglin AFB include open grasslands/shrublands and urban/landscaped areas, which are artificially maintained vegetative communities. The ecological associations on Eglin AFB are shown in Figure 3-2 and described below. Further information on the ecological associations that occur on Eglin AFB can be found in the INRMP, Eglin AFB (USAF 2017c).

- The most extensive natural community type on Eglin AFB is the sandhill matrix, which accounts for approximately 80 percent of the total area of the AFB. This upland community has a canopy dominated by longleaf pine (*Pinus palustris*), a sparse midstory of turkey oak (*Quercus laevis*) and other hardwoods, and a ground layer covered by a high diversity of herbaceous species. The sandhill community is highly adapted to— and dependent on—fire, which maintains its vegetative structure and composition.
- The flatwoods matrix is an upland community that has a canopy typically dominated by slash pine (*Pinus elliottii*) and an understory dominated either by shrubs or herbaceous vegetation. Pine flatwoods occur on flat, moderately well drained soils, and have higher groundwater tables than sandhills. Like sandhill communities, pine flatwoods at Eglin AFB are adapted to recurrent fires.
- The wetland/riparian matrix at Eglin AFB includes wetlands, surface water bodies, and riparian areas, which are land corridors adjacent to rivers, streams, and creeks. Wetland types within this matrix include depression wetlands, seepage slopes, and floodplain wetlands. Surface water bodies within this matrix include seepage streams, spring-fed streams, blackwater streams, alluvial rivers, and lakes. The communities of the wetland/riparian matrix vary in hydrological regime, substrate, and vegetative composition. Wetlands and riparian areas are typically densely vegetated while vegetative cover in surface water bodies is relatively sparse, and often limited to emergent vegetation within shallow littoral zones and submerged and floating vegetation within the deeper portions of the water bodies.
- Grasslands/shrublands at Eglin AFB are disturbed communities that occur primarily on active test areas. Many of these communities were originally natural sandhills. They consist primarily of grasses and low shrubs, which are maintained by mechanical cutting or prescribed fire.
- Urban/landscaped areas at Eglin AFB include improved and semi-improved areas that contain turf grasses and landscaping vegetation. These communities occur primarily in cantonment areas and other portions of the Base that are developed or otherwise used for testing and training operations.

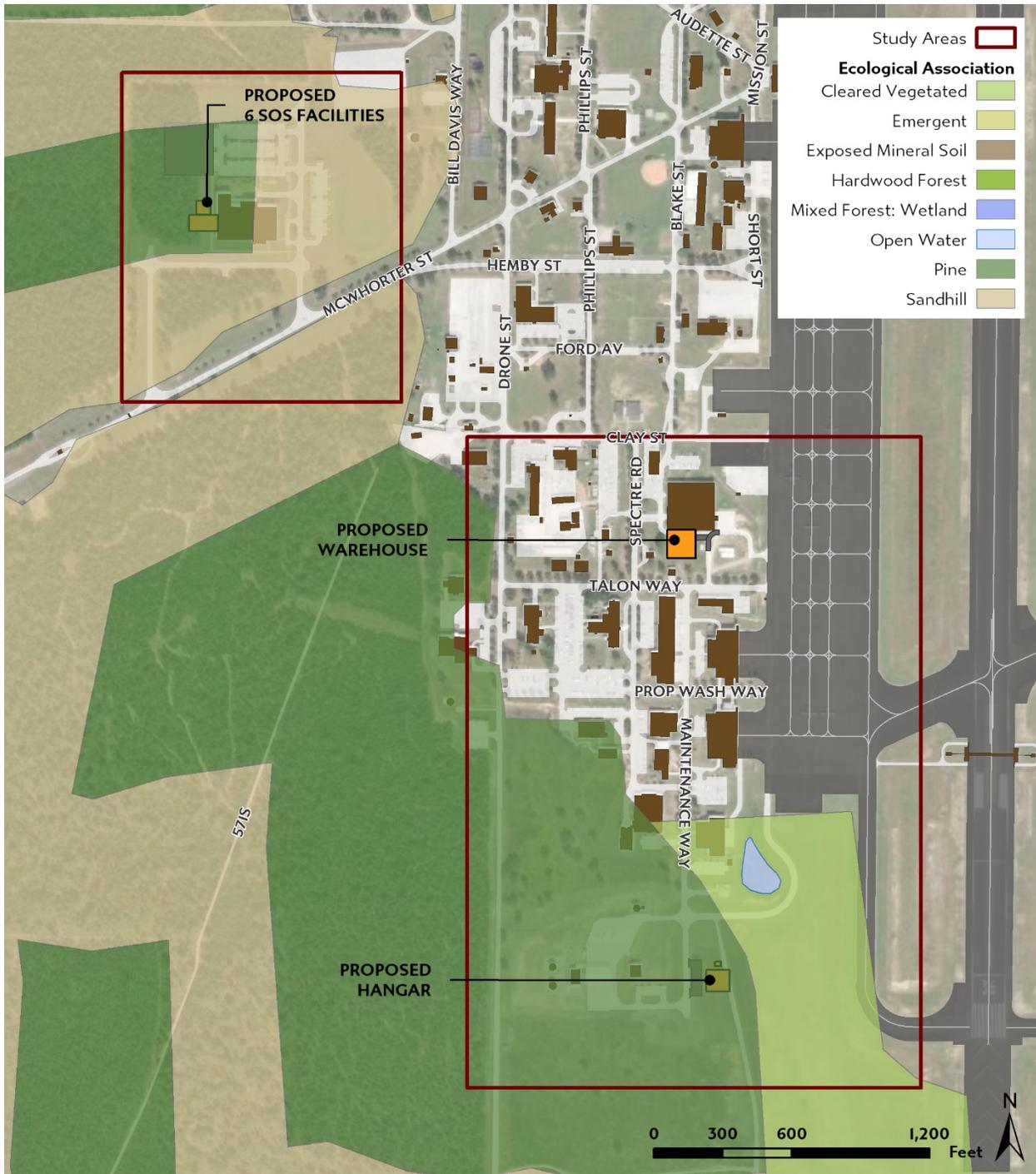


Figure 3-2: Ecological Associations in Proximity to Duke Field

### 3.4.2.2 Wildlife

Eglin AFB provides habitat for a wide variety of mammal, bird, reptile, amphibian, and fish species. Common wildlife that occur in upland communities on the Eglin Reservation include, but are not limited to, white-tailed deer (*Odocoileus virginianus*), Eastern cottontail rabbit (*Sylvilagus floridanus*), gray fox (*Urocyon cinereoargenteus*), various rodent species, Virginia opossum (*Didelphis virginiana*), fox squirrel (*Sciurus niger*), northern bobwhite (*Colinus virginianus*), great horned owl (*Bubo virginianus*), various songbird species, six-lined racerunner (*Aspidoscelis sexlineata*), Eastern diamondback rattlesnake (*Crotalus adamanteus*), common five-lined skink (*Plestiodon fasciatus*), and green anole (*Anolis carolinensis*).

Wetland and freshwater aquatic communities on the Eglin Reservation provide habitat for raccoon (*Procyon lotor*), American beaver (*Castor canadensis*), American alligator (*Alligator mississippiensis*), various frogs, various wading birds, largemouth bass (*Micropterus salmoides*), and sailfin shiner (*Pteronotropsis hypselopterus*). Upland habitats on Santa Rosa Island, including the dune systems, provide habitat for a number of the same wildlife species that occur on the Eglin Reservation. Sea turtles and numerous species of shorebirds, seabirds, and wading birds occur on the beaches of Santa Rosa Island. Further information on fish and wildlife species that occur at Eglin AFB can be found in the Eglin AFB INRMP (USAF 2017c).

### 3.4.2.3 Sensitive Species and Habitats

Plant and animal species that are Federally listed as Endangered or Threatened are afforded legal protection under the ESA. The ESA requires Federal agencies to ensure that the actions they authorize, fund, or carry out will not likely jeopardize the continued existence of Federally listed species, or result in the destruction or adverse modification of designated critical habitat of such species. Critical habitat is defined by the ESA as specific areas within or outside the geographical area occupied by a listed species that contain physical or biological features essential to the species' conservation, and that may require special management considerations or protection. The ESA also requires that Federal agencies implement measures to conserve, protect, and, where possible, enhance any Federally listed species and its habitat. The ESA is administered by the USFWS and the National Marine Fisheries Service (NMFS). Generally, USFWS manages land and freshwater species and NMFS manages marine and anadromous species, which are species that breed in freshwater but live most of their lives in the sea. Section 7 of the ESA requires that Federal actions determined to potentially impact Federally listed species be consulted with USFWS or NMFS.

Animal species in Florida may also be awarded state listing and associated regulatory protection in accordance with Rule 68A-27, F.A.C. The FWC maintains the state's list of such animal species. Animal species that are not Federally listed, but which are determined to be at risk of extinction in the state, are state-listed as Threatened. Species that are considered vulnerable and have the potential to become threatened are state-listed as Species of Special Concern. Plant species in Florida may also be awarded state listing and associated regulatory protection in accordance with Chapter 5B-40, F.A.C. The Florida Department of Agriculture and Consumer Services (FDACS) maintains the state's list of such plant species.

Sensitive species also include species not ESA-listed or state-listed but which are protected under the Marine Mammal Protection Act, Bald and Golden Eagle Protection Act, or Migratory Bird Treaty Act. The Eglin Natural Resources Office has primary responsibility for the management of sensitive species and habitats, including evaluation of potential impacts to the species and habitats by proposed actions, at

Eglin AFB (USAF 2017c). The Eglin AFB INRMP (USAF 2017c) includes guidance on the management and protection of sensitive species and habitat at Eglin AFB. The Federal and state-listed species having the potential to occur within the Study Area are identified in Table 3.8.

Table 3.8 species have predominately been documented to occur seasonally or year-round in the Study Area. The wood stork (*Mycteria americana*) has been documented to occur on or near Eglin AFB only during its seasonal migration. The Federally listed American alligator is common on Eglin AFB but is not included in Table 3.8 because it is Federally listed solely due to its resemblance to the Federally listed American crocodile (*Crocodylus acutus*), which does not occur on Eglin AFB. The bald eagle (*Haliaeetus leucocephalus*), which is not Federally listed but protected under the Bald and Golden Eagle Protection Act, also occurs on Eglin AFB. The following four Federally listed freshwater mussel species do not occur on Eglin AFB, but have habitat ranges that border Eglin AFB: southern sandshell (*Hamiota australis*), Choctaw bean (*Villosa choctawensis*), fuzzy pigtoe (*Pleurobema strodeanum*), and narrow pigtoe (*Fusconaia escambia*) (USAF 2017c).

**Table 3.8: Federal and State-Listed Species Having the Potential to Occur Within the Region of Influence**

Common Name	Scientific Name	Federal Status	State Status	Location within Study Area
<b>Fish</b>				
Okaloosa darter	<i>Etheostoma okaloosae</i>	T	FT	ER
<b>Amphibians and Reptiles</b>				
Eastern indigo snake	<i>Drymarchon couperi</i>	T	FT	ER
Florida bog frog	<i>Lithobates okaloosae</i>		T	ER
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>		T	ER
Gopher tortoise	<i>Gopherus polyphemus</i>	C	T	ER
Reticulated flatwoods salamander	<i>Ambystoma bishopi</i>	E	FE	ER
<b>Birds</b>				
Florida Burrowing owl	<i>Athene cunicularia floridana</i>		T	ER
Little blue heron	<i>Egretta caerulea</i>		T	ER
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	FE	ER
Reddish egret	<i>Egretta rufescens</i>		T	ER
Southeastern American kestrel	<i>Falco sparverius paulus</i>		T	ER
Tricolored heron	<i>Egretta tricolor</i>		T	ER
Wood stork	<i>Mycteria americana</i>	T	FT	ER
<p><b>Notes:</b>            1 Federal status for North Atlantic DPS            2 Federal status for Northwest Atlantic DPS            DPS = Distinct Population Segment            ER = Eglin Reservation            FDACS = Florida Department of Agriculture and Consumer Services            FWC = Fish and Wildlife Conservation            USFWS = U.S. Fish and Wildlife Service</p> <p><b>Federal Status</b>            E = Endangered: species in danger of extinction throughout all or a significant portion of its range.            T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.            C = Candidate for Federal listing            CH = Critical Habitat Designated</p> <p><b>State Status</b>  <b>Animals:</b>            FE = Federally listed as Endangered            FT = Federally listed as Threatened            T = State listed as Threatened. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.</p> <p><b>Plants:</b>            E = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. ESA.            T = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.</p> Data Sources: USAF 2017c; USFWS, 2019				

The Federally listed species known to occur on the Eglin Reservation include the Okaloosa darter, eastern indigo snake, reticulated flatwoods salamander (*Ambystoma bishopi*), and red-cockaded woodpecker (RCW). Critical habitat for the previously identified Federally listed freshwater mussel

species has been designated along the northern boundary of the Eglin Reservation. The Okaloosa darter occurs in shallow clear streams, and approximately 90 percent of its range is located within the Eglin Reservation. Optimal habitat for the reticulated flatwoods salamander is fire-maintained mesic flatwoods that contain shallow, ephemeral ponds; three distinct populations of the reticulated flatwoods salamander exist on the Eglin Reservation. The RCW occurs primarily in open, fire-maintained longleaf pine forests, and nests in cavities it creates in living pine trees. The Eglin Reservation supports one of the largest RCW populations in the United States (USAF 2017c). The locations of Federally listed species occurring within the Duke Field Study Area are shown in Figure 3.3.

The state-listed gopher tortoise, which is a candidate for Federal listing, occurs primarily in sandhills and grasslands/shrublands on the Base. The Federally listed eastern indigo snake (*Drymarchon couperi*) and the state-listed Florida pine snake are commensal species of the gopher tortoise that occur on the Eglin Reservation. The eastern indigo snake occurs in a wide range of upland and lowland habitat types including mesic pine flatwoods, scrubby flatwoods, longleaf pine sandhills, oak scrub, sand pine scrub, dry prairie, tropical hardwood hammocks, freshwater and saltwater marshes and swamps, coastal dunes, and some human-altered habitats (USFWS 2019). These species benefit from their association with the gopher tortoise, specifically by their use of gopher tortoise burrows for shelter. Other state-listed species that occur on the Eglin Reservation include the Florida bog frog, Florida burrowing owl (*Athene cunicularia*), Southeastern American kestrel (*Falco sparverius paulus*), and several wading bird species, including the little blue heron (*Egretta caerulea*), reddish egret (*Egretta rufescens*), and tricolored heron (*Egretta tricolor*). The bald eagle, which is protected under the Bald and Golden Eagle Protection Act, is known to occur on the Eglin Reservation. Nearly all the bird species known to occur on the Eglin Reservation are protected under the Migratory Bird Treaty Act (USAF 2017c). The locations of state-listed species on Duke Field are shown in Figure 3.3.

#### 3.4.2.4 High-Quality Habitats

Most of the natural habitat of Eglin AFB supports high biodiversity. Such areas have been identified by FNAI and they are known as High-Quality Natural Communities, SBSs, and ONAs. High-Quality Natural Communities encompass approximately 75,266 acres or 16 percent of Eglin AFB, and SBSs and ONAs combined, encompass approximately 43,210 acres or 9 percent of the Base (USAF 2017c).

The proposed Study Area locations for the Proposed Action for Duke Field are not located within areas designated as SBSs or ONAs. Areas of High-Quality Natural Communities are not found within the boundaries of Duke Field (Figure 3-4).

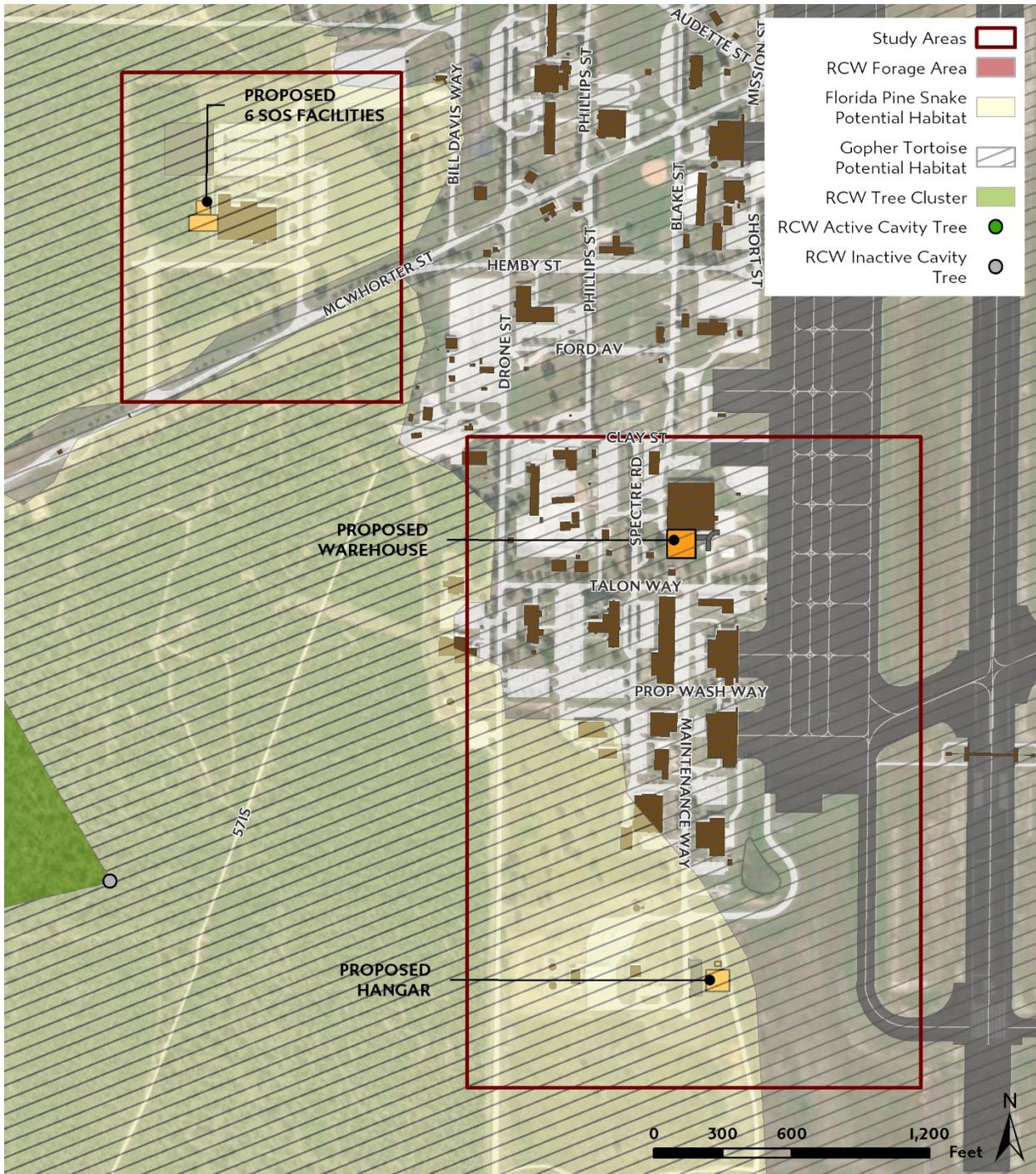


Figure 3-3: Wildlife and Sensitive Species in Proximity to Duke Field

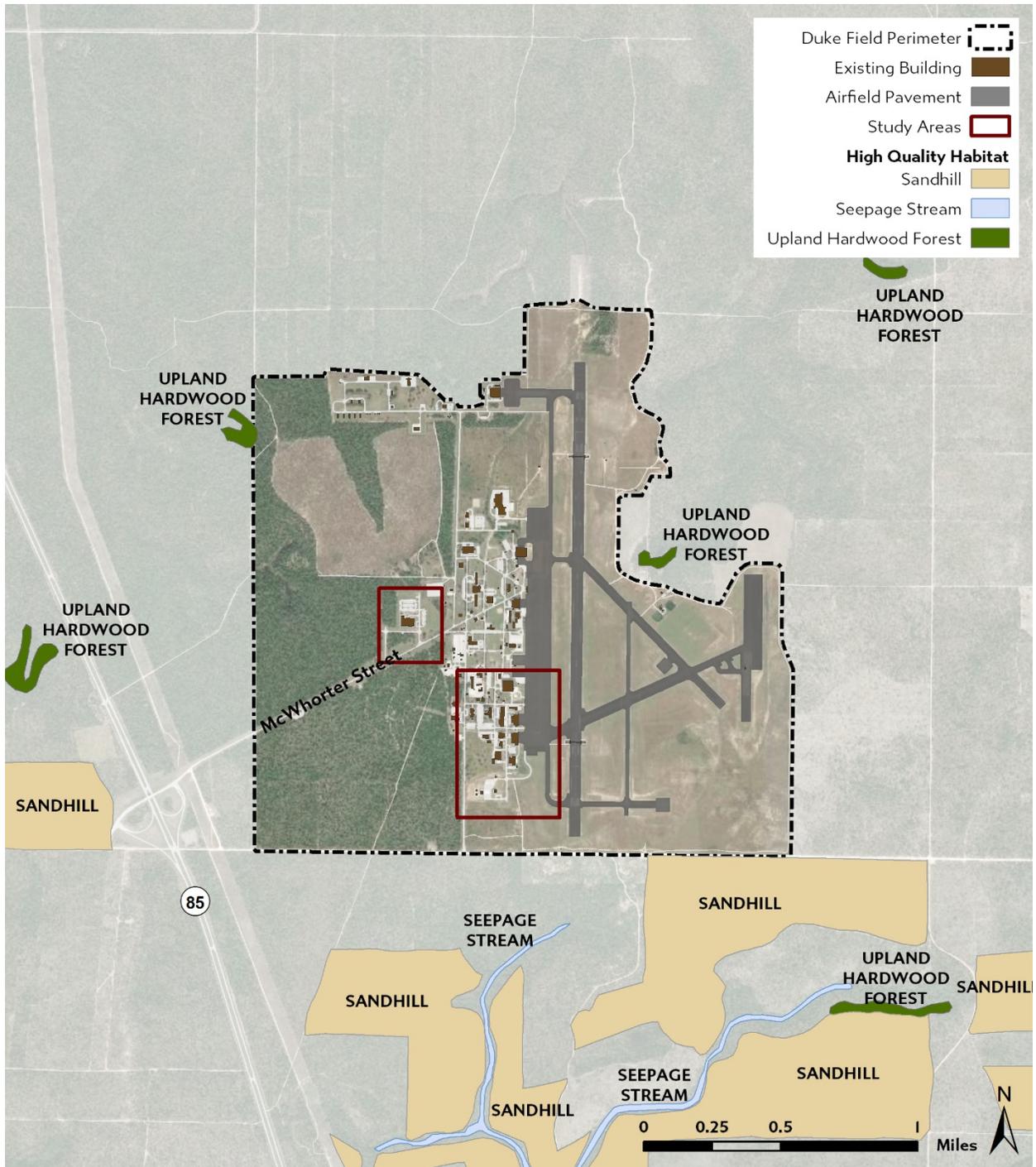


Figure 3-4: High-Quality Habitats in Proximity to Duke Field

### 3.4.3 Environmental Consequences

#### 3.4.3.1 Analysis Approach

In addition to the significance criteria established at the beginning of this section, the following thresholds were used to determine if an impact on biological resources would be significant:

- Impacts on native communities would be detectable, and species would be expected to be outside the natural range of variability for long periods of time or in perpetuity;
- Population numbers or structure, genetic variability, and other demographic factors for species might have significant, short-term declines, with long-term population numbers significantly depressed;
- Frequent responses to disturbance by some individuals would be expected, with negative impacts on feeding, reproduction, or other factors resulting in a long-term decrease in population levels;
- Loss of habitat might affect the viability of at least some native species; or
- Actions could jeopardize the continued existence of a Federally listed species within or outside Duke Field boundaries.

#### 3.4.3.2 Proposed Action

**Vegetation** - The proposed locations for the new facility construction at Duke Field are located on or adjacent to areas where the vegetation has been disturbed. The immediate areas for the combined one-bay hangar and AMU facility; WST facility; aircraft parts, MRSP, and medical storage warehouse; and squadron operations facility (adjacent to Building 3144) consist primarily of grasslands/shrublands that are regularly maintained and are surrounded by sandhills. The future parking area is, however, planned for an area occupied by hardwood forest habitat. The new construction is anticipated to have short-term, moderate impact on vegetation within the Study Area. The Proposed Action, however, would represent a negligible change to the total acreage of hardwood forest habitat on Eglin AFB. The beddown of the five single-engine aircraft, along with the new aircraft training activities, would have no effect on vegetation.

**Wildlife** - The quality of wildlife habitat in the immediate vicinity of each of the locations for the new facility construction at Duke Field is low due to land disturbance and human activity; wildlife habitat quality improves with distance from the sites. Most natural communities on Elgin Reservation provide exceptionally high-quality habitat for wildlife. Proximity of the proposed construction locations to natural communities varies; the combined one-bay hangar and AMU facility is relatively close to natural communities, where the squadron operations facility is separated from the communities over a relatively long distance due to its developed and disturbed area. The AvFID beddown activities associated with the Proposed Action would result in aircraft operations that are similar to existing operations described in Section 3.2, *Airspace Management* with no impacts on wildlife.

Wildlife that currently utilize nearby habitats within this area would be able to move to other similar areas on and off the installation. This loss of habitat utilization would not affect the viability of any native species. While wildlife that occurs on Duke Field are accustomed to human activity such as aircraft noise, vehicular traffic, and human presence, construction noise does not occur regularly and therefore has a possibility to impact wildlife. The animals would likely vacate the area during construction events; however, once construction has ceased, they would return. As construction activity

would be temporary, no decrease in population levels would occur based on disturbance. The AvFID beddown activities associated aircraft operations planned for the Proposed Action would not result in any additional or greater disturbance to wildlife (primarily from noise effects) than what is currently experienced at Duke Field. The new construction and AvFID beddown activities are anticipated to have short-term, minor, adverse impacts on wildlife.

The proposed growth in AvFID aircraft operations would result in an increase in annual operations of AFSOC's 492 SOW at Duke Field. Growth in new aircraft training activities at Duke Field would occur approximately 260 days per year, at an average of five sorties per day for a total of 1,300 sorties/training missions per year. Long-term, minor, adverse effects would be expected on avian species due to a potential for increased bird airstrikes at Duke Field and nearby and remote LZs under the Proposed Action. Duke Airfield has an established two-phase plan of awareness which identifies periods of nominal activity and periods of increased risk. June through September is designated as BASH Phase I, where wildlife activity is generally low during these periods. October through May is designated as BASH Phase II, where wildlife activity is increased and short notice Bird Watch Condition (BWC) increases are anticipated during this period. The number of BASH events at Duke Field over the FY14 through FY18, 5-year history has been relatively low (with only one, four, and two events recorded in FY14, FY15, and FY16, respectively). During the first three quarters of FY19, a total of seven BASH events have been recorded to date; however, there have been no recorded injuries or damage to aircraft. Implementation of the Proposed Action would result in an increase in the current number of annual aircraft operating hours or training missions. Although aircraft operations would continue to adhere to all established flight safety guidelines and protocol, the bird-aircraft strikes likely may be expected to increase; however, this increase would not result in long-term (i.e., population-level) impacts on birds.

***Sensitive Species and Habitats*** - The proposed locations for the new facility construction at Duke Field are located on or adjacent to upland sites and, therefore, are not located within Okaloosa darter streams, freshwater mussel critical habitat, bog frog streams, or reticulated flatwoods salamander ponds. The WST facility, aircraft parts, MSRP, and medical storage warehouse is located in the general vicinity of an RCW cluster (although populated with inactive cavity trees) with suitable foraging habitat for the RCW (see Figure 3-3). This area, however, would be entirely avoided during construction. The gopher tortoise, eastern indigo snake, Florida pine snake, and Florida burrowing owl occur on the Study Area and, therefore, have the potential to occur near sites proposed for facility construction. Coordination with Eglin Natural Resources Office would be required prior to any ground disturbing activities. A gopher tortoise survey and red-cockaded woodpecker survey may also be required. If a gopher tortoise burrow is located within the project area and cannot be avoided, the tortoise would be relocated in accordance with Florida FWC Commission guidelines. If an RCW cavity tree is found and anticipated to be negatively impacted within the project area, Terms and Conditions from the completed ESA Section 7 consultation from 2013, 'Red-cockaded Woodpecker Programmatic Biological Opinion [for] Eglin Air Force Base, NE Gulf of Mexico[,] Walton, Okaloosa, and Santa Rosa Counties, Florida' will be followed. The Proposed Action is not likely to adversely affect any Federally listed species in the vicinity of Duke Field. The Proposed Action is expected to have only short-term, minor impacts on sensitive species as abundant habitat is available elsewhere in the vicinity of Duke Field.

The future parking area is planned for an area occupied by hardwood forest habitat. Long-term, negligible, adverse effects would be expected on migratory birds due to an expected loss of nesting habitat from activities related to construction of the parking lot. Migratory bird airstrikes could occur at Duke Field and nearby and remote LZs. The effects would be similar to those already discussed in the Wildlife paragraph of this section. Based on the final rule on take of migratory birds by the Armed Forces

(50 CFR 14 § 21) and the 2003 NDAA, the Armed Forces are authorized (with limitations) for the incidental taking of migratory birds occurring during military readiness.

**High-Quality Habitats** - The facility construction activities would not occur within any SBSs, ONAs, or High-Quality Natural Communities. The beddown of the five single-engine aircraft, along with the new aircraft training activities would no effect on High-Quality Habitats.

Implementation of the Proposed Action would result in short-term, minor, adverse impacts on vegetation, wildlife, and sensitive species and habitats. Implementation of the Proposed Action would result in no impacts on SBSs, ONAs, or High-Quality Natural Communities. Overall, there would be no significant impacts on biological resources as a result of implementing the Proposed Action. Consultation pursuant to Section 7 of the ESA with State and Federal wildlife agencies has been conducted in accordance with NEPA and the intergovernmental coordination procedures established for Eglin AFB.

### 3.4.3.3 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Therefore, the alternative would have no effect on vegetation, wildlife, High-Quality Habitats, or sensitive species and habitats and there would be no significant impacts on biological resources as a result of implementing the No Action Alternative.

## 3.5 Cultural Resources

Cultural Resources include historic properties, as defined by the NHPA, cultural items as defined by the Native American Graves and Repatriation Act (NAGPRA), archaeological resources as defined by the Archaeological Resources Protection Act (ARPA), sites and sacred objects to which are afforded access under the American Indian Religious Freedom Act (AIRFA), and archaeological collections along with their associated records as defined in 36 CFR 79, Curation of Federally Owned and Administered Archeological Collections.

The Eglin AFB Integrated Cultural Resources Management Plan (ICRMP) provides guidance on how to identify, evaluate, and treat cultural resources on Eglin AFB managed lands, and integrate cultural resources management with mission activities and other Eglin AFB management programs (USAF 2018). Development and approval requirements for the ICRMP are included in Air Force Policy Directive 32-70, *Environmental Quality*, and AFI 32-7065, *Cultural Resources Management*. The Eglin Cultural Resources Office (96 CEG/CEIEA) has primary responsibility for the management of cultural resources at Eglin AFB, including evaluation of potential impacts to cultural resources by proposed actions. If the Proposed Action is determined to have potential to impact cultural resources, Eglin cultural resources staff coordinates the action with the Florida SHPO. If the Proposed Action is determined to adversely affect a historic property, a plan to avoid or mitigate the impact is developed and implemented in consultation with the SHPO.

### 3.5.1 Definition of Resource

#### 3.5.1.1 National Historic Preservation Act

The NHPA instructs Federal agencies to take a leadership role in the preservation of the Nation's historic resources and to make informed decisions about the administration of Federally owned or controlled historic properties. As a result, the NHPA and its implementing regulations provide the basis for Hurlburt Field's overall cultural resources management policy. Historic properties are defined by the NHPA as any prehistoric or historic district site, building, structure, or object included in, or eligible for inclusion in, the NRHP, including artifacts, records, and material remains relating to the district, site, building, structure, or object (National Park Service [NPS] 2006a). To be considered eligible for the NRHP, a property would need to possess integrity of location, design, setting, materials, workmanship, feeling, and association and must also meet at least one of four criteria (NPS 2002):

- Be associated with events that made a significant contribution to the broad pattern of our history
- Be associated with the lives of significant persons in our past
- Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
- Have yielded, or be likely to yield, information important in history or prehistory

A Traditional Cultural Property (TCP) is a specific type of historic property that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining and continuing the cultural identity of the community (Parker and King, 1998). Given the broad range in types of historic properties,

historic properties can often include other types of cultural resources such as cultural items, archaeological resources, sacred sites, and archaeological collections.

### 3.5.1.2 Native American Graves and Repatriation Act

NAGPRA was enacted to ensure the protection and rightful disposition of Native American cultural items located on Federal or Native American lands in the Federal government’s possession or control. Cultural items, as defined by NAGPRA, are defined as human remains, as well as both associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony or objects that have an ongoing historical, traditional, or cultural importance to a Native American group or culture (NPS, 2006b).

### 3.5.1.3 Archaeological Resources Protection Act

The ARPA updates and refines a previously enacted piece of legislation, the Antiquities Act, and establishes a permitting system for the excavation or removal of archaeological resources by qualified researchers, as well as legal penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource that is over 100 years in age on Federal lands. Archaeological resources, as defined by the ARPA, consist of any material remains of past human life or activities that are of archaeological interest and are at least 100 years of age. Such items include, but are not limited to, pottery, basketry, bottles, weapons, weapon projectiles, tools, structures or portions of structures, pit houses, rock paintings, rock carvings, intaglios, graves, human skeletal remains, or any portion or piece of those items (NPS, 2006c).

### 3.5.1.4 American Indian Religious Freedom Act

The AIRFA provides Federal protection of traditional Native American religious freedoms. A subsequent EO 13007 defines Indian Sacred Sites as any specific, discrete, narrowly delineated location on Federal land that is identified by a Native American tribe or Native American individual determined to be an appropriately authoritative representative of an Native American religion as sacred by virtue of its established religious significance, or for ceremonial use by, an Native American religion, provided that the tribe or appropriately authoritative representative of a Native American religion has informed the Federal land-owning agency of the existence of such a site (NPS, 1996).

### 3.5.1.5 Curation of Federally Owned and Administered Archeological Collections, 36 CFR 79

These regulations were implemented in 1990 as required by the NHPA, the Reservoir Salvage Act, and the ARPA, and provide minimum standards for the long-term management and care of archaeological collections, including any associated records or reports related to the collection. It also establishes the responsibility of Federal agencies to fund the long-term care of collections that are recovered on lands that they own or manage. Archaeological collections are defined by 36 CFR Part 79 as material remains that are excavated or removed during a survey, excavation, or other study of a prehistoric or historic resource, as well as the associated records that are prepared or assembled in connection with the survey, excavation, or other study. Material remains are artifacts, objects, specimens and other physical evidence that are excavated or removed in connection with efforts to locate, evaluate, document, study, preserve, or recover a prehistoric or historic resource (U.S. Government Printing Office, 2016).

## 3.5.2 Affected Environment

The Area of Potential Effects (APE) outlines the region affected by proposed activities for cultural resources under the Proposed Action and is defined by the outer boundaries of the Duke Field cantonment area.

According to the 2018 ICRMP, more than 2,600 archaeological sites and 1,000 above-ground or built environment resources have been documented at Eglin AFB (USAF 2018). Of these, there are more than 300 resources that are significant and considered to be historic properties as defined by the NHPA. These include 166 archaeological sites, two of which are listed in the NRHP; 193 aboveground or built environment resources, 55 of which are listed on the NRHP; three cemeteries; and 19 historic districts (USAF 2018).

Within the boundaries of Duke Field itself, 13 archaeological investigations have been previously conducted, which have recorded one archaeological resource (8OK148) that is significant and considered a historic property. Two areas with a high probability of the presence of cultural resources remain to be investigated at Duke Field. Currently, no aboveground or built environment resources, historic districts, cemeteries, or TCPs have been identified at Duke Field (USAF, 2016a).

## 3.5.3 Environmental Consequences

### 3.5.3.1 Analysis Approach

In addition to the significance criteria established at the beginning of this section, the following thresholds were used to determine if an impact on cultural resources would be significant:

Once cultural resources have been identified, an eligibility determination is made according to the criteria set forth in NHPA. The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:

- are associated with events that have made a significant contribution to the broad patterns of our history; or
- are associated with the lives of persons significant in our past; or
- embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- have yielded, or may be likely to yield, information important in prehistory or history (Advisory Council on Historic Preservation 2008).

Significance evaluation is the process by which resources are assessed relative to significance criteria for scientific or historic research, for the public, and for traditional cultural groups. Only cultural resources determined to be significant (i.e., eligible for the NRHP) are protected under the NHPA.

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may occur by 1) physically altering, damaging, or destroying all or part of a resource; 2) altering the characteristics of the surrounding environment that contribute to resource significance;

3) introducing visual, audible, or atmospheric elements that are out of character with the property or alter its setting; or 4) neglecting the resource to the extent that it is deteriorated or destroyed.

Direct impacts can be assessed by identifying the types and locations of Proposed Action and determining the exact locations of cultural resources that could be affected. Indirect impacts primarily result from the effects of project-induced population increases and the resultant need to develop new housing areas, utilities services, and other support functions necessary to accommodate population growth. These activities and facilities' subsequent use can disturb or destroy cultural resources.

### 3.5.3.2 Proposed Action

**Archaeological Resources** – The single previously identified significant archaeological resource, 8OK148, does not extend into the construction footprint of the one-bay hangar and AMU facility, WST facility, storage warehouse, or squadron operations facility. Although less than half of the area where ground disturbance will take place has been surveyed, the construction areas have been determined to be heavily disturbed and have a low probability of containing significant intact archaeological resources. As a result, no significant archaeological resources are anticipated to be impacted by the proposed construction. The proposed projects have been reviewed by the Cultural Resource Manager of Eglin AFB in accordance with the SOPs contained in the 2018 ICRMP. As a result, no archaeological resources would be impacted from the implementation of the Proposed Action.

**Architectural Resources** – Pursuant to Section 106 consultation under the NHPA, no NRHP-eligible or listed above-ground or architectural resources have been identified at Duke Field. As a result, no impacts on architectural resources that are eligible for inclusion in the NRHP are anticipated from the implementation of the Proposed Action.

**Cemeteries** - No previously identified cemeteries are located within the proposed construction footprint for new facilities. As a result, no impacts on cemeteries are anticipated from the implementation of the Proposed Action.

**Sacred Sites and TCPs** - No previously identified sacred sites or TCPs are located within the proposed construction footprint for the new facilities. Eglin has on-going consultations with Native American tribes to identify any potential TCPs or properties of religious or cultural significance. In addition, Eglin AFB has a well-established relationship with various Federally-recognized tribes that have an historic affiliation to the area in and around Eglin AFB. Through several decades of archaeological investigations and tribal consultations, no Traditional Cultural Properties (TCPs) or Sacred Sites have ever been identified by the tribes, and each tribe has stated that they prefer not to be consulted regarding each specific project whose impacts have been previously assessed and/or proposed for construction in areas already surveyed and determined low-risk for TCPs or Sacred Sites. This project will occur in an area that has been previously surveyed and no significant resources were located. All information provided by Native American tribes during consultation has been considered in our environmental analysis. As a result, no impacts on Native American Sacred Sites and TCPs are anticipated from the implementation of the Proposed Action.

Implementation of the Proposed Action would result in no impacts on archaeological resources, architectural resources, cemeteries, sacred sites, or TCPs. Overall, there would be no significant impacts on cultural resources as a result of implementing the Proposed Action. Consultation pursuant to Section 106 of the NHPA, has been conducted in accordance with NEPA and the intergovernmental coordination

procedures established for Eglin AFB. Should resource circumstances change prior to or during project construction additional consultation would be conducted in accordance with Section 106 of the NHPA.

### 3.5.3.3 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Therefore, the alternative would have no effect on archaeological resources, architectural resources, cemeteries, sacred sites, or TCPs and there would be no significant impacts on cultural resources because of the No Action Alternative.

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## 3.6 Geological Resources

### 3.6.1 Definition of Resource

Geological resources consist of surface and subsurface materials and their properties. Geological resources included as part of this assessment are soils and prime farmland, along with topography, geology, and geologic hazards.

**Soils.** Soils are unconsolidated materials overlying bedrock or another parent material. Soils are typically described in terms of their complex type, slope, physical characteristics, and relative compatibility or constraining properties regarding construction activities and types of land use.

**Topography.** Topography is the change in elevation over the surface of a land area. Topography includes surface elevations, slope, and distinct physiographic features (e.g., valleys, mountains) and their influence on human activities and natural- and human-made changes to landforms.

**Prime Farmland.** Protected under the Farmland Protection Policy Act of 1981, Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The land could be cropland, pasture, rangeland, or other land, but not urban built-up land or water. Federal government action should minimize impact to such lands. There are no soils within Duke Field identified by the Natural Resources Conservation Service as Prime Farmland (USAF 2016a). As a result, there is no further analysis for this land.

**Geologic Hazards.** Geologic hazards are natural geologic events that can cause damage or loss of property and life. Geologic hazards of concern at and near Duke Field include karsts, sinkholes, and earthquakes.

**Geology.** Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features.

### 3.6.2 Affected Environment

**Soils.** Lakeland Sand soils are under the Proposed Action areas and occur on 500 acres of Duke Field (see Figure 3-5). The soil series consists of very deep, excessively drained, rapidly permeable soils that formed in, thick sandy sediment. These soils are nearly level to steep uplands. They do not have a water table within a depth of 80 inches. Slopes range from 0 to 30 percent. The soils are thermic, coated Typic Quartzipsamments (Natural Resources Conservation Service, North Dakota [NRCS, ND]). Lakeland Sand soils have a high-erosion risk potential.

Urban Land soils consist of nearly level to gently sloping areas that typically range from 0-5 percent slopes because these areas are generally no longer in their natural state. The soil profiles have been completely disrupted by development of buildings, roads and airfield pavements. Generally, much of an area designated as Urban Land is characterized by fill that was transported to the site to accommodate development (NRCS, ND).

Udorthents are soils that are similar to Urban Land. These areas were created by cutting and mixing soils for use as fill for construction sites (NRCS, ND).

**Topography.** Duke Field is relatively flat in elevation from approximately 190 to 200 feet above MSL. Duke Field is situated in the coastal plain of Florida, surrounded by lower terrain areas and the Shoal River to the north and Choctawhatchee Bay to the south.

**Geologic Hazards.** Geologic hazards including earthquakes, karsts, and sinkholes are uncommon in the panhandle and Okaloosa County. The U.S. Geological Society lists the panhandle of Florida as the lowest hazard area for earthquakes.

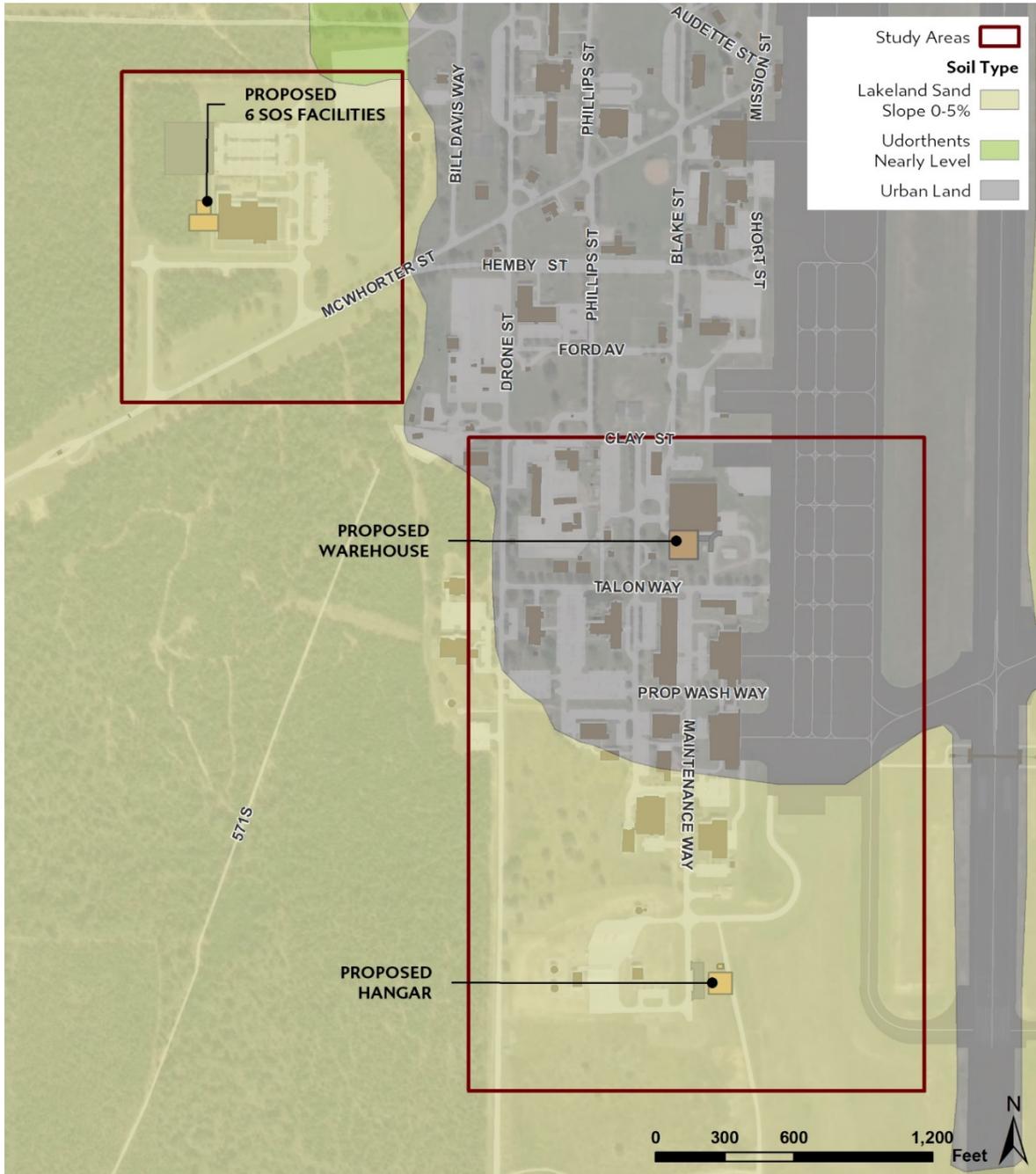


Figure 3-5: Soil Association at Duke Field

**Geology.** The Eglin AFB area consists of unnamed Holocene and Pliocene sands. Underneath these sands is the Citronelle formation, which is predominantly non-marine quartz sands, interspersed with gravel and relatively thin clay lenses for approximately 250 feet. The Citronelle Formation sits on top of the Pensacola confining bed, which ranges from 140 feet above MSL in central Walton County to more than 125 feet below MSL in southwestern Okaloosa County. This impermeable confining bed creates the top layer of a sand and gravel aquifer and the upper limestone of the Floridan aquifer and inhibits the movement of water from the aquifers (USAF 2012a and USAF 2016a).

### 3.6.3 Environmental Consequences

An impact to geological resources would be considered significant if the action would: 1) increase potential occurrences of erosion, siltation, or geological hazards (e.g., landslides) or 2) expose people or structures to major geological hazards.

#### 3.6.3.1 Proposed Action

Under the Proposed Action, potential impacts to geological resources would be limited to ground-disturbing activities (i.e., site preparation and construction) which would take place on undistributed and previously disturbed soils that are known to be capable of supporting such development. The construction of the 6 SOS WST facility, squadron operations facility, and associated parking area would occur on mostly undisturbed property underlain by Lakeland soils, which pose no severe constraints to development. The construction of the warehouse addition to Building 3032, the One-Bay Hangar, and the AMU Shop would occur on mostly disturbed soil.

These short-term, minor impacts on geological resources would include excavated soils and exposed rock materials, temporarily removing vegetation in some areas and exposing soils to erosion.

Although soils would be disturbed by earthmoving and other construction activities, impacts on soil resources would be minor and localized to the project footprint. Lakeland soils are highly susceptible to erosion; however, best management practices (BMPs) would be incorporated as part of the Proposed Action to reduce potential erosion and/or compaction during all construction-related activities.

Construction activities would result in short-term, minor impacts to geological resources from ground disturbing activities. Negligible impacts are expected to occur to topography, geology, and geological hazards resources as there would not be significant alteration to surface landforms or subsurface geological features. Therefore, long-term potential impacts to geological resources resulting from construction activities under the Proposed Action would be negligible.

#### 3.6.3.2 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Therefore, no impacts to geological resources, adverse or otherwise, would be anticipated. Conditions at Duke Field would remain as they are under this alternative.

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## 3.7 Hazardous Materials and Waste

### 3.7.1 Definition of Resource

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act, Resource Conservation and Recovery Act (RCRA), and Toxic Substances and Control Act, hazardous materials are defined as any substance with the physical properties of ignitability, corrosivity, reactivity, or toxicity capable of causing an increase in mortality, serious irreversible illness, incapacitating reversible illness, or a substantial threat to human health or the environment. Hazardous waste is defined as any solid, semisolid, liquid, or gaseous waste or combination thereof that poses a substantial present or potential hazard to human health or the environment. Asbestos-containing materials (ACMs) and lead-based paint (LBP) are additionally included as special hazards which require special handling for demolition and disposal.

### 3.7.2 Affected Environment

#### 3.7.2.1 Hazardous Materials Management

In accordance with AFI 32-7986, *Hazardous Materials Management*, Duke Field manages hazardous materials procured, issued, used, and disposed of on-base through Eglin AFB's Hazardous Materials Program (HMP). One of the keystones of that program is Hazardous Material Management System (HMMS) software, Sphera. Implemented in 2007, HMMS supports proactive material and waste management, effective and accurate regulatory compliance, pollution prevention, and data transparency. HMMS is deployed at 95 active material issue points across the base – locations where chemical-based products are issued to authorized users. During FY 2010, more than 1,900 unique HMMS users recorded 75,000 individual material transactions. Contractors (on-base) are required to abide by the rules and requirements of the HMP and coordinate the import and use of hazardous materials on-base through Eglin AFB. Eglin AFB has recently (11/14/18) developed an installation-specific Environmental Management Plan (EMP) that is based on the USAF standardized Integrated Solid Waste Management (ISWM) Plan (USAF 2018e) template. This Plan is not an exhaustive inventory of all Solid Waste (SW) requirements and practices. Where applicable, external resources, including AFIs; AF Playbooks; federal, state, local and Final Governing Standards; and permit requirements are referenced.

#### 3.7.2.2 Hazardous Wastes Management

AFI 32-7042, *Solid and Hazardous Waste Compliance*, establishes the requirements for waste management at Duke Field. This AFI implements Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*. It identifies compliance requirements for all SW, including hazardous waste (HW), but excludes radioactive waste (except mixed waste) and medical waste. Wastes generated at Duke Field are classified as nonhazardous SW and HW, both of which are removed for off-site disposal by a contractor. Recyclable materials are separated from SW and are also removed off-base by a contractor. Nonhazardous SW, including construction and demolition (C&D) waste, is disposed of at one of several C&D landfills or four Class I municipal SW landfills in proximity of Duke Field (Point Center Landfill in Crestview, FL) (USAF 2010b). Duke Field falls under Eglin AFB's generator status. Eglin AFB is classified as a Large Quantity Generator and maintains a USEPA hazardous waste generator identification number (FL8570024366).

### 3.7.2.3 Asbestos-Containing Materials

ACM is regulated by FDEP, EO 12088, and AFI 32-1052, *Facility Asbestos Management*. ACM is abated in active facilities and removed following regulatory requirements before facility demolition. ACM are managed in accordance with the base's *Asbestos Management Plan* (USAF 2010a) and *Asbestos Operations Plan* (USAF 2006). These plans specify procedures for removal, encapsulation, enclosure, and repair activities associated with ACM abatement projects and are designed to protect Installation personnel and residents from exposure to airborne asbestos fibers. The base manages asbestos in-place where possible; removing it only when there is a threat to human health or the environment or when it is in the way of construction or demolition. Removal and disposal of asbestos is carried out in strict compliance with all applicable federal, state, and local laws, rules, regulations, and standards (USAF 2006 and USAF 2010a).

### 3.7.2.4 Lead-Based Paint

LBP is managed by *Air Force Policy and Guidance on Lead-Based Paint in Facilities* (1993). Duke Field manages LBP according to the *Eglin AFB Lead Based Paint Management Plan*, which provides specific policy and guidance to identify and address LBP hazards and to protect the public from exposure to these hazards (USAF 2010a). The plan also provides guidance on proper management/disposal of material containing LBP, which requires that all facilities constructed prior to 1985 must be tested for LBP prior to renovation or demolition. Any LBP-containing surface to be impacted would be abated according to applicable Federal, state, and local regulations to prevent health hazards.

As with ACM, Eglin has implemented a computerized database system for the management of LBP. Any projects that require alteration or demolition of identified or older structures are reviewed by the Civil Engineering and Bio-environmental Office and may trigger the requirement for LBP surveys. Project designs stipulate appropriate abatement and disposal requirements for LBP. Projects that are likely to crush lead-containing coatings to a form that can be inhaled or ingested are managed in accordance with federal, state, and local transportation, treatment, storage, and disposal requirements.

### 3.7.2.5 Radon

Radon is a colorless, odorless radioactive gas that results from the natural decay of uranium. Radon, a Class A carcinogen, is the second biggest cause of lung cancer. Radon is responsible for more than 21,000 lung cancer deaths a year (one every 25 minutes). In Florida, one in five homes tested has elevated radon levels above the action level of 4 pCi/L (Florida Department of Health, 2019). The Florida Department of Business and Professional Regulation has developed construction standards for radon-resistant new construction (FDH 2015b). These standards are voluntary in Okaloosa County.

### 3.7.2.6 Environmental Restoration Program

The Environmental Restoration Program (ERP), formerly known as the Installation Restoration Program, was established to assess, manage, and restore sites and facilities on-base that have been impacted by the release of hazardous materials or wastes to the environment. The release could be historical due to activities in the past that were not regulated according to current standards, such as landfills, discarded munitions, unexploded ordnance, and fuel storage leaks, or it could be the result of a temporal release due to equipment malfunction or a facility accident. The ERP response to a hazardous material or waste release corresponds with the requirements of CERCLA to mitigate and restore the impacted environment such that no further risk to human health or safety remains for the intended future use of

the impacted site, and the requirements of RCRA to manage the handling of hazardous materials on-base.

There are currently three active ERP sites (storage tank [ST]) located at Duke Field; ST 69 (Waste Oil Tank), ST 55(Duke Field Tank Farm), and Site 274 (Duke Field Fire Training Area; USAF 2017a) (Table 3.9 and Figure 3-6).

Site	Description	Status
ST 69, Waste Oil Tank (Building 3073)	This site, located at the southwest corner of the motor pool compound at Duke Field, is the former site of a waste oil tank that has been inactive since 1989. The soil was contaminated with Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and Perchloroethylene (PCE) and its byproducts in the groundwater. The tank, piping, and approximately 20 cubic yards of soil were removed in 1994. Later in 1994, another 600 cubic yards was removed. Aquifer Air Sparge (AAS) and soil vapor extraction (SVE) were implemented and have been effective in reducing concentrations.	Groundwater monitoring continues semiannually, and site inspections occur quarterly.
ST 55, Duke Field Tank Farm Buildings 3206 & 3208)	This site is a 1.75-acre fenced area serving as a petroleum storage facility. There are two Aboveground Storage Tanks (ASTs) and two pump sheds located at the site. An underground storage tank UST was removed in 1992, and piping was discovered to have leaked petroleum product. Approximately 1,850 gallons of JP-4 leaked in 1991. In 1994, testing revealed a leak in piping. In 1999 and 2000, small quantities of contaminated soil were excavated.	The remedial system remains in operation to reduce target source zones at ST 55 and is funded by compliance funds.
Spill Site (SS) 274, Duke Field Fire Training Area	Located east of the runway and adjacent to the wastewater treatment plant at Duke Field, this site originally consisted of two circular burn pits used in the 1950s for fire training and disposal of waste fuels, oils, and solvents. A 1995 survey revealed JP-8 and benzene in groundwater and VOCs in soils. After 2003 analysis, monitored natural attenuation (MNA) was ruled out as a remedial option.	Active remedial measures at Site SS 274 are currently under way with the operation, maintenance, and monitoring of an AAS/SVE.
Source: USAF 2017a Note: AAS = aquifer air sparge; AST = aboveground storage tank; BTEX = benzene, toluene, ethylbenzene, and xylenes; JP = jet propellant; MNA = monitored natural attenuation; SS = Spill Site; ST = Storage Tank; SVE = soil vapor extraction; UST = underground storage tank; VOC = volatile organic compound		

### 3.7.3 Environmental Consequences

#### 3.7.3.1 Analysis Approach

In addition to the significance criteria established at the beginning of this section, the following thresholds were used to determine if an impact on water resources would be significant:

- Impact would constitute a substantial risk to human health or an environmental exposure;
- Impact would substantially increase solid waste or increase the quantity or toxicity of hazardous substances used or generated; or,
- Impact would change the quantity or types of hazardous substances or solid waste in such a way that current management systems cannot accommodate the change.

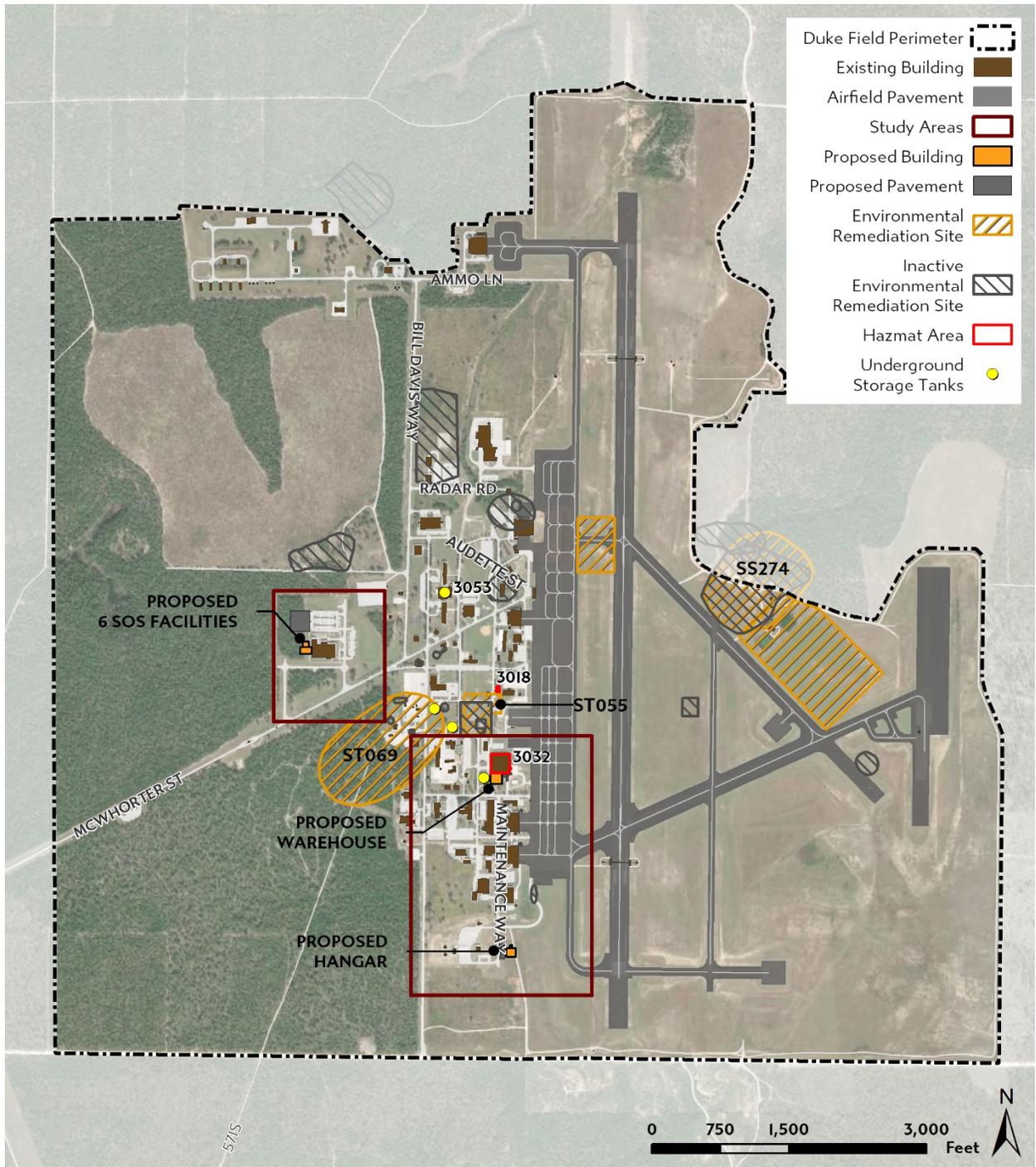


Figure 3-6: Existing Hazardous Waste and ERP Sites in Proximity to Duke Field

### 3.7.3.2 Proposed Action

**Hazardous Materials and Wastes** - Implementation of the Proposed Action would have short-term, negligible, adverse impacts as a result of hazardous materials and waste. Construction activities may require the use of hazardous materials, and hazardous waste may be generated. However, the Proposed Action would not increase hazardous material or hazardous waste significantly. Proper handling, use, and disposal of hazardous materials and waste are routine at Duke Field, personnel would adhere to the present Hazardous Waste Management Plan (HWMP) tracking and reporting requirements. Management of disturbed soils would follow the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities (2003), including a notice of intent (NOI) filed prior to commencing construction activities. The use of hazardous materials during construction (equipment fuel, paints and thinners, and other construction liquids) would be coordinated with the Hazardous Materials Mart (HAZMART) and 1 Special Operations Civil Engineer Squadron (SOCES) to prevent any release to the environment. As a result, harm to the environment from hazardous materials and hazardous waste generated from the Proposed Action is not anticipated.

The growth of the five single-engine aircraft, along with the new aircraft training activities, may require the use of hazardous materials, and hazardous waste may be generated. Similar to the construction activities, proper handling, use, and disposal of hazardous materials and waste are routine at Duke Field, and personnel would adhere to the present HWMP tracking and reporting requirements.

**ACM/LBP** – Should the renovation or demolition of buildings be required in preparation for the new facility construction, these activities could result in the production of LBP or asbestos wastes. The management of these wastes would be performed according to prescribed procedures already in place. Proper disposal of lead-containing wastes would also be conducted in accordance with state and federal regulations, including the Toxic Substances Control Act and the Occupational Safety and Health Act. These wastes would be accompanied by a waste manifest and disposed of at a state-approved facility.

Disposal of asbestos wastes would be conducted under the direction of the National Emissions Standards for Hazardous Air Pollutants (40 CFR 61.40-157). Contracted personnel would have to be trained and certified to remove any asbestos materials. The contractor would submit an asbestos work and disposal plan for any demolition, as well as transport and disposal documentation records, including signed manifests. There is also a pollution prevention plan, designed to prevent or reduce pollution, reduce safety and health risks, and recycle wastes when possible. Wastes that cannot be recycled would be disposed of at licensed facilities in a manner approved by the USEPA. The implementation of these management requirements would mitigate any adverse impacts resulting from ACM or LBP. As ACM and LBP would not be employed for new construction, there would be beneficial impacts associated with the removal of ACM and LBP.

The growth of the five single-engine aircraft, along with the new aircraft training activities are not anticipated to have any impact on ACM/LBP, since only new construction would be anticipated.

**Environmental Restoration Program** - The proposed construction site for the Future Warehouse is located adjacent to Building 3032, which is just north of, and adjacent to (see Figure 3-6), ST 55 (Duke Field Tank Farm). This ERP site is listed as Active due to the presence of small quantities of contaminated soil resulting from a leaking UST (1994). Land use controls are in place for the ERP site to limit soil and groundwater contamination exposure due to ground disturbance. Because the proposed Future Warehouse would require excavation of soil and possible exposure of groundwater at the site, a construction waiver request letter, along with an approved work plan, must be sent through Eglin AFB

prior to any construction activities. Notification to FDEP would also be required. Failure to follow the work plan and implement BMPs to control off-site migration of contaminated soils and groundwater could result in hazardous waste impacts on adjacent properties and safety impacts on workers. Disposal of contaminated soils excavated during construction would require transport to an approved hazardous waste landfill off-base. As a result of these precautions, no impacts to any ERP sites at Duke Field, including ST 55, would be anticipated to occur under the Proposed Action.

The growth of the five single-engine aircraft, along with the new aircraft training activities, are not anticipated to have any impact on ERP.

Implementation of the Proposed Action would result in short-term, negligible, adverse impacts on hazardous materials and waste. Since no building demolitions are anticipated in support of the new facility construction activities, no impacts on ACM/LBP would be anticipated, as none would be generated. As a result of the ERP precautions outlined previously, no impacts to any ERP sites at Duke Field, including ST 55, would be anticipated to occur with the implementation of the Proposed Action.

Overall, there would be no significant impacts on hazardous materials and waste as a result of implementing the Proposed Action. In the short- and long-terms hazardous waste will be managed in accordance with the installation hazardous waste management plan.

### 3.7.3.3 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Therefore, the alternative would have no effect on hazardous materials and waste, ACM/LBP, or ERP and there would be no significant impacts on hazardous materials and waste as a result of implementing the Proposed Action.

## 3.8 Infrastructure and Transportation

### 3.8.1 Definition of the Resource

Infrastructure is the basic facilities and services needed for the functioning of an installation or local community. Infrastructure is completely human-made. A strong correlation exists between the type and extent of infrastructure and the degree to which an area is characterized as urban or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to effective functioning of a military installation or economic growth of a local community. The infrastructure components to be discussed in this section include the electrical, potable water, wastewater, liquid fuel, stormwater, communications, solid waste, natural gas and transportation systems see Figures 3-7.

### 3.8.2 Affected Environment

**Electrical Supply.** Electrical power is supplied to Duke Field via the Valparaiso substation located at Eglin Main Base. Power travels to Duke Field via aboveground transmission lines that parallel Florida Highway 85 for approximately 10 miles. There is a substation that is located near the SR 85 highway interchange at McWhorter Street, but the power from the Valparaiso substation is a direct feed to Duke Field, not the substation. The substation at the highway interchange feeds the 7<sup>th</sup> Special Operations Group campus. Additional capacity at the substation at the highway interchange has been proposed, but not funded, to mitigate voltage loss that occurs between the Valparaiso substation and Duke Field (Choctawhatchee Electric Cooperative [CHELCO], 2019). The electrical power is distributed throughout Duke Field via aboveground transmission lines and has adequate capacity to accommodate growth (CHELCO, 2019).

**Potable Water Supply.** Water wells pump water from deep regional aquifers to serve Duke Field. Water is treated and then pumped up into two elevated storage tanks. The existing water wells are in good condition and provide adequate capacity. The existing water distribution system on Duke Field consists of multiple elevated storage tanks and 8-inch water distribution mains that connect the facilities to the storage tanks. The existing water distribution system is generally in poor condition with numerous dead-ends throughout Duke Field. However, the distribution system is programmed for improvements and some segments of the system have already been looped to mitigate the negative effects of dead-end pipes.

One storage tank is located at the southeast corner of McWhorter Street and Hemby Street. A 200-foot elevated storage tank was constructed south of the medical clinic to increase water pressure throughout Duke Field. A second 200-foot storage tank is programmed. When the second 200-foot storage tank is constructed, the older and smaller water storage tank at McWhorter Street and Hemby Street will be demolished. In addition to the on-base water supply, Okaloosa County has provided a tap to their 30-inch water main, which parallels the highway in case Eglin AFB determines that an additional water source is required.

**Wastewater System.** Wastewater collection at Duke Field consists of gravity flow sewer mains connecting lift stations to the Duke Field Wastewater Treatment Plant (WWTP). The WWTP's estimated capacity is 125,000 gallons per day (gpd). The estimated current usage is approximately 15,000 gpd, which increases to approximately 24,000 gpd during reserve duty weekends. A wastewater line along the north side of McWhorter Street also provides connection for Duke Field wastewater to be

transported to the Arbiene Pritchett Water Reclamation Facility (WRF) near Fort Walton Beach. The Arbiene Pritchett WRF was designed for an average daily flow of 10 million gpd (Okaloosa County, 2019).

**Liquid Fuel Supply.** The aviation fuel storage facility is located at the south end of Duke Field. The fuel facility has a total capacity of 210,000 gallons, which is stored in two 105,000-gallon above ground tanks. Additional fuel points at Duke Field include the Aerospace Ground Equipment on the eastside of Spectre Road, the military fuel point at the Corner of Clay Street and Phillips Street, and the Army Air Force Exchange Service (AAFES) service station at the corner of Drone Street and Ford Avenue.

**Stormwater Drainage.** The existing stormwater system at Duke Field is a combination of direct infiltration into the ground and concrete and natural drainage swales, which transport stormwater to existing detention ponds at Duke Field.

**Communications.** Duke Field has copper cable and fiber optic cable (supporting local area networks and wide area networks), SIPRNet, and NIPRNet at all major Duke Field facilities. Additionally, like Eglin Main Base, Duke Field has extensive and well-developed communications infrastructure (USAF 2016a).

**Solid Waste Management.** There are no active solid waste landfills at Eglin AFB so all solid waste, which includes garbage, bulky wastes, sludges, and demolition and construction debris, is hauled to regional landfills. A private contractor hauls all refuse to a transfer station in Fort Walton Beach, where the refuse gets transferred to another vehicle that will haul it to regional, licensed landfills. Most demolition and construction debris is taken to Point Center Landfill, located in Okaloosa County. All landfills that process solid waste from Eglin AFB are permitted by FDEP (USAF 2016a).

**Natural Gas.** Okaloosa County supplies Duke Field with natural gas through a 4-inch high pressure pipeline along the McWhorter Street. Natural gas is piped throughout Duke Field via 4- and 2-inch pipes and each facility is connected to either a 4- or 2-inch main with a ½-inch lateral pipe (Atkins, 2012).

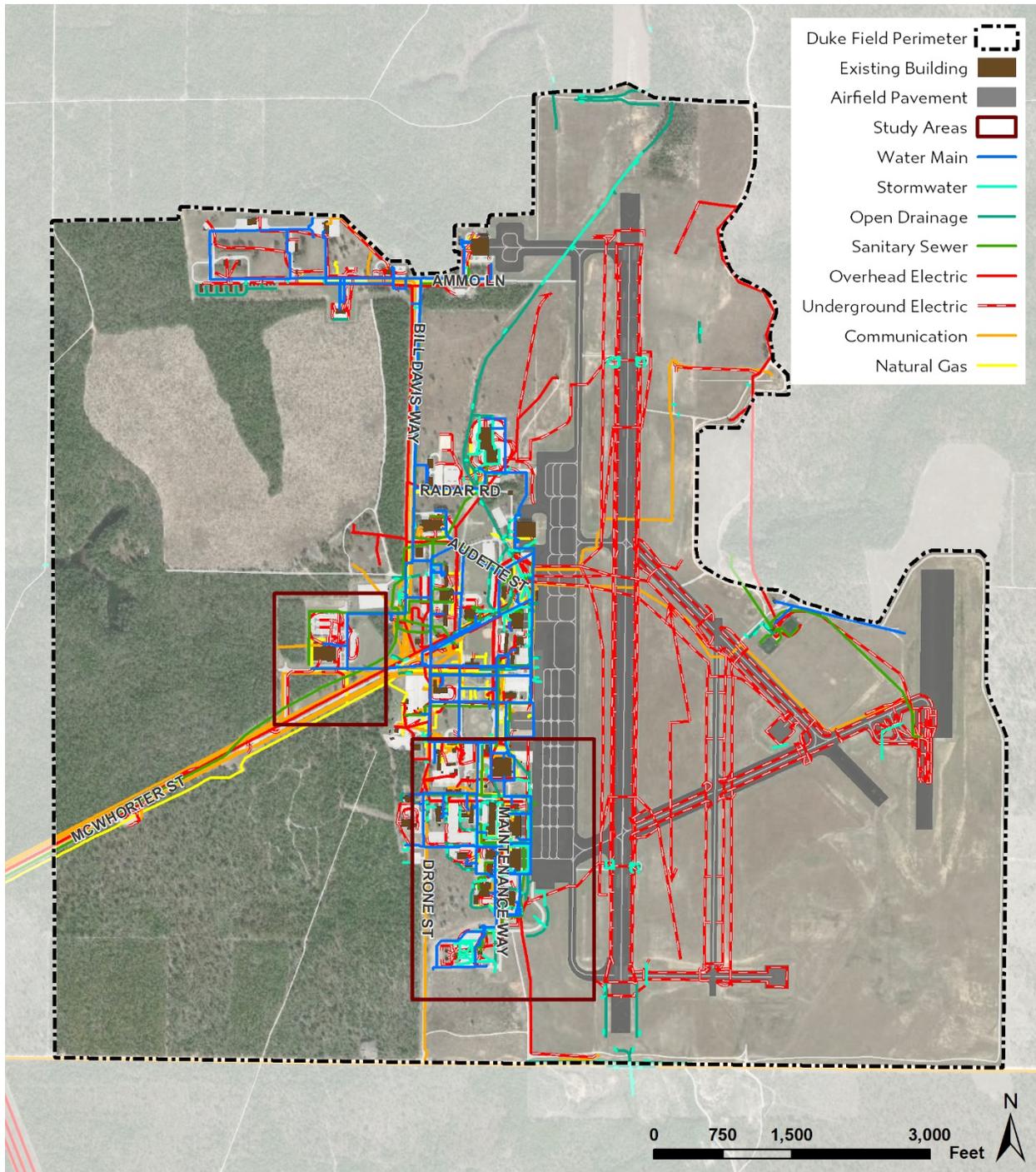


Figure 3-7: Utility Infrastructure

**Transportation.** The primary east-west transportation routes in this part of Florida are Interstate 10, which is approximately 2.5 miles north of Duke Field, and U.S. Route 98, which parallels the gulf coast shore approximately 19 miles to the south. A combination of city roads and Florida State Routes (SRs) 85 and 123 provide a connection between those two major transportation routes. Florida SR 85 is a four-lane, high volume highway that intersects with McWhorter Street and is the primary access to Duke Field.

*The Okaloosa-Walton Transportation Planning Organization's Congestion Management Process Plan 2018 Minor Update* identifies road congestion using data that includes Annual Average Daily Traffic (AADT) to determine a road's level of service (LOS). LOS is a measure of the operational conditions on a roadway or at an intersection. LOS range from A to F, with "A" representing the best operating conditions (free flow, little delay) and "F" the worst (congestion, long delays). LOS A, B, or C are typically considered good operating conditions.

Florida SR 85, from College Boulevard in Niceville to Antioch Road in Crestview, has an AADT of 29,547 and a LOS value of C. The stretch of SR 85 from Antioch Road to Interstate 10 had a 2017 AADT of 52,000 and a LOS of F. The LOS rating of F and high AADT extends north along SR 85 to U.S. Route 90. Although the LOS of the stretch of SR 85 in the vicinity of the McWhorter Street interchange is still within the LOS of C, it is being negatively affected by conditions farther to the north and traffic backups are common during evening peak hours. Road improvements are programmed for SR 85 that will reduce congestion. The road will be widened to three lanes in each direction south of Interstate 10, but improvements to the SR 85/Interstate 10 interchange and further north along SR 85 are scheduled to be completed first to improve throughput of vehicles prior to increasing overall capacity of SR 85, which should reduce evening congestion along SR 85 in the vicinity of the SR 85/McWhorter Street interchange (see Figure 3-8).

McWhorter Street connects Highway 85 to Duke Field. McWhorter Street is a two-lane paved road that runs southwest to northeast, connecting to the street grid at Duke Field. The existing vehicle network throughout Duke Field consists of two-lane asphalt roads servicing developed areas and the road orientation generally parallels the flightline. Not all roads are paved, including the perimeter road that provides access for security forces or to personnel needing access to less developed areas of Duke Field.

The pedestrian circulation network at Duke Field is very limited and does not offer opportunities for personnel to walk between facilities. Sidewalks are primarily for access to facilities from the parking lot associated with a particular facility.

Personal vehicle parking is limited to the spaces constructed for a facility and there is not enough parking during reserve weekends. During reserve training weekends, parking occurs in non-designated areas, which violates safety setback distances in some locations and can become a safety hazard to pedestrians.

The Duke Field ADP includes numerous recommendations to improve vehicular circulation, pedestrian circulation, and parking.

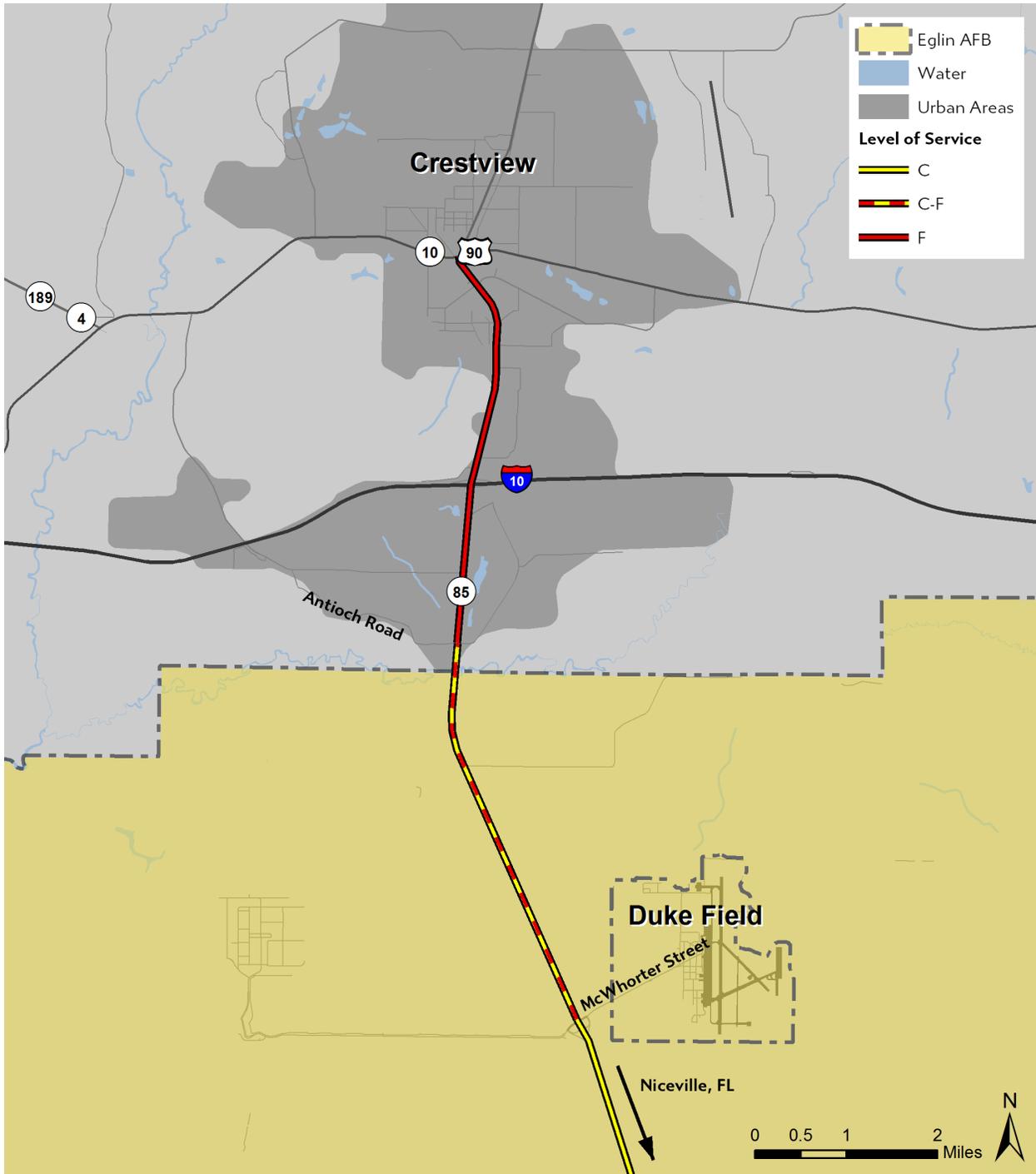


Figure 3-8: Region Transportation Network

### 3.8.3 Environmental Consequences

Infrastructure impacts are assessed for their potential to affect existing infrastructure service levels and create additional needs for utilities. An adverse impact could be significant if it:

- Exceeds capacity of a utility
- Results in a long-term interruption of the utility
- Substantially increases in traffic LOS values
- Results in a violation of a permit condition

#### 3.8.3.1 Proposed Action

Because certain components of the infrastructure at Duke Field would be temporarily shutdown while new components and structures are brought online, short-term adverse impacts would be expected. However, long-term beneficial impacts would also be expected from replacement of older, inefficient utilities and structures.

**Electrical Supply.** There is currently adequate electrical capacity to support future development at Duke Field (CHELCO, 2019). Short-term, negligible-to-minor adverse impacts on the electrical supply system would occur from a temporary increase in demand for electricity related to demolition and construction activities. The new single engine aircraft maintenance hangar/AMU, warehouse addition, 6 SOS squadron operations facility, temporary and permanent WSTs, and associated 294 personnel will add to the power requirements at Duke Field. Older utility lines within the project areas will be relocated and upgraded as necessary, which will result in a negligible beneficial impact. Long-term, negligible-to-minor adverse impacts due to the addition of 294 personnel and operation of the new facilities would be expected on the electrical supply at Duke Field from increased electrical power consumption, although new facilities would be constructed to meet DoD energy efficient requirements for new facilities.

**Potable Water Supply.** An initial, yet temporary increase in water demand would be related to demolition and construction activities. Minor adverse impacts would occur, both short- and long-term, on the water distribution system at Duke Field under the Proposed Action. If implemented, the 6 SOS growth will result in an increase of 294 personnel at Duke Field, which could result in an average daily increase of potable water usage by approximately 4,410 gpd, based on an individual consumption rate of 15 gpd (Department of Energy, 2019). Although the existing potable water distribution system is in poor condition, this daily increase would be within the operating capacity of the system. Any required improvements to potable water systems to accommodate the Proposed Action, in addition to already programmed system improvements, would be conducted in accordance with FDEP and federal regulations, including the federal and state Safe Drinking Water Acts and the National Primary Drinking Water Regulations. Therefore, impacts on the potable water supply would be short and long-term and minor, adverse impacts would be expected.

**Wastewater System.** The daily increase in sanitary wastewater due to the increase in 294 personnel is estimated to be approximately 3,234 gpd based on a typical individual wastewater flow rate from commercial sources at 11 gpd (USEPA, 2002). This projected increase could be accommodated by the current Duke Field facilities, which have a capacity of 125,000 gpd, and the Arbienné Pritchett WRF, which has capacity of 10 million gpd. Standard operating procedures would be used in conducting aircraft maintenance to ensure that industrial wastewater is properly disposed. Long-term, negligible

impacts on the sewer and wastewater system at Duke Field and at the regional WRF would be expected. Therefore, no significant impacts would be expected, and the wastewater treatment facilities would continue to accommodate demand on the sewer and wastewater system.

**Liquid Fuel Supply.** The aviation fuel storage facility has the capacity to support the five single-engine aircraft as part of the Proposed Action. The additional 294 personnel would increase the demand for personal vehicle fuel at the AAFES gas station at Duke Field. Short and long-term minor adverse impacts can be expected for the aviation and personal vehicle fuel supply at Duke Field as a result of the additional 6 SOS single-engine aircraft operations and 294 personnel.

**Stormwater Drainage.** Ground disturbance associated with construction activities would disrupt natural stormwater drainage flows and increase soil erosion in the short-term. Implementation of the Proposed Action would result in approximately 92,000 SF of additional impervious surfaces at Duke Field. All stormwater resulting from the 6 SOS squadron operations facility and WST facility would be directed to the existing stormwater retention area east of Building 3144 and depth would be added for the increased volume of stormwater.

Stormwater permits would be required, and BMPs and low-impact development (LID) measures would be implemented at project sites, which would mitigate impacts on stormwater drainage from the Proposed Action. Therefore, the Proposed Action should result in short and long-term, minor, adverse impacts on stormwater drainage at Duke Field.

**Communications.** The increase in the personnel and facilities relying on the communication infrastructure at Duke Field would not be expected to result in identifiable impacts.

**Solid Waste Management.** Solid waste generated from construction activities would be disposed of in accordance with relevant federal, state, and local regulations. Construction waste materials would be recycled or reused to the maximum extent possible. The additional 294 personnel stationed at Duke Field would result in an increased quantity of solid waste generated on a daily basis. However, the increase in solid waste is not anticipated to have a significant impact on the existing solid waste disposal stream. It is anticipated that the increase would be minor compared to the total volume of solid waste generated by Duke Field and Eglin AFB. Regional landfills have capacity to accommodate the solid waste associated with the Proposed Action (Eglin AFB, 2014b). Therefore, the Proposed Action should result in minor adverse impacts, both short- and long-term, on solid waste management at Duke Field, Eglin AFB, and regional landfills.

**Natural Gas.** The new single-engine aircraft maintenance hangar/AMU, warehouse addition, 6 SOS squadron operations facility, temporary and permanent WSTs, and associated 294 personnel will add to the natural gas requirements at Duke Field. Older natural gas lines within the project areas will need to be relocated and upgraded as necessary, which would result in a long-term, minor beneficial impact to the distribution system. There is sufficient natural gas capacity to support long-term future development, including the Proposed Action at Duke Field. New facilities would be constructed to meet DoD energy efficient requirements for new facilities, which would likely reduce the rate of increase for natural gas consumption; however, implementation of the Proposed Action would result in minor long-term negative impacts to natural gas consumption.

**Transportation.** Construction traffic would use SR 85 and McWhorter Street to access Duke Field, which could add to SR 85 congestion if the construction vehicles and workers live north of Duke Field. Portions

of roads or lanes near the project areas may be temporarily reconfigured or closed to accommodate construction traffic and activities. Minor demolition and construction would require delivery of materials and removal of construction debris to/from project sites. Most heavy construction vehicles/equipment would be driven to the site and kept there for the duration of demolition and construction. Increases in traffic volume associated with the proposed construction would be temporary. Construction traffic and activities on Duke Field would have a short-term, minorly negative impact to the Duke Field road system and airfield operations because projects associated with the Proposed Action would be phased.

The proposed increase of 294 personnel would be implemented over a multi-year period. In addition to a multi-year growth process, not all 6 SOS personnel would be entering and exiting Duke Field at the same time during morning and evening peak commute hours. There will be split shifts with some personnel working nights. Precise work schedules are not currently known but when full growth of the Proposed Action is accomplished, approximately 62 percent (182 personnel) of the new population could be working the day shift and approximately 38 percent (112 personnel) could be working the night shift. Although it can be assumed that some personnel could rideshare, the number of vehicles added to SR 85 throughout the day could be as many as 294 vehicles, which is less than one percent of the AADT of SR 85. If all 294 personnel drive their own personal vehicle, then the effect may be noticeable at the SR 85/McWhorter Street interchange during evening peak hours; however, in most cases, there is a time overlap between shifts and not all personnel will be exiting and arriving at the same time.

There is no permanent housing at Duke Field and it is unknown where all of the proposed 6 SOS personnel would choose to live but the likely locations would be Hurlburt Field housing; Niceville, FL; Valparaiso, FL; Fort Walton Beach, FL; or Crestview, FL, which would likely result in personnel arriving and departing Duke Field traveling north and south on SR 85. In addition to split shifts for 6 SOS personnel, programmed improvements to the SR 85 corridor by the State of Florida should mitigate increases in traffic from the Proposed Action. Overall, this would result in both short and long-term, minor-to-moderate adverse impacts on the regional road systems.

### 3.8.3.2 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Therefore, no impacts to infrastructure and transportation systems would be expected under the No Action Alternative.

## 3.9 Land Use

### 3.9.1 Definition of the Resource

**Land Use.** The term land use refers to real property classifications that indicate undeveloped land or developed human activity occurring within a specified area of the installation. Land use planning will promote orderly growth and compatible uses among adjacent areas and, to that end, Eglin AFB has completed the Eglin AFB Installation Development Plan (IDP) and the Duke Field ADP. The location and extent of a Proposed Action needs to be evaluated for its potential effects on a project site and adjacent land uses as established in the Eglin AFB IDP and Duke Field ADP. Factors affecting a Proposed Action include compliance with the plan's future land use and form-based code regulations; existing land use at the project site; the types of land uses on adjacent parcels and their proximity to a Proposed Action; the duration of a proposed activity; and the permanence of the proposed activity.

### 3.9.2 Affected Environment

**Land Use.** Duke Field is located in the northern portion of Eglin AFB and is approximately 2,700 acres in size. There is a significant amount of open space around Duke Field, which buffers the airfield from any other on-base development and local community land uses. The nearest city to Duke Field is Crestview, FL and the southern end of city development is approximately 4.5 miles north of Duke Field. The land between Duke Field and the city is mostly Eglin AFB range and the riparian land associated with Shoal River.

The Duke Field ADP identifies 11 land use categories including administration, airfield clearance (including primary surface, transitional surface, and clear zones), airfield pavement (including runways, taxiways, and aprons), aircraft operations and maintenance, industrial, community service, community commercial, unaccompanied housing, medical, open space, and outdoor recreation (USAF 2017b and USAF 2012b). The primary functions at Duke Field are aviation related, so the airfield, which includes airfield pavement and clearances, is the largest land area. Figure 3-9 shows the existing land use at Duke Field. Aviation activities are directly served by the aircraft operations and maintenance functions along the west side of the aircraft parking ramp and include aircraft maintenance hangars, parts storage, and AGE facilities. Industrial functions at Duke Field that have a direct relationship with the airfield include the crash/rescue station, aircraft fuel storage facility, and munitions storage. Munitions storage and the aircraft fuel storage facility are not located along the flightline, but for safety purposes they are sited at a distance from all other functions and the airfield. Although there are numerous facilities along the flightline, there are still some parcels available for development within the area designated for aircraft operations and maintenance land use. Much of the land on the western portion of Duke Field is shown as open space in the 2012 ADP; however, new development has occurred since completion of the ADP. Most notable is Building 3144, which accommodates administrative functions for the 919 SOW.

The Duke Field ADP future land use recommendations include a second tier of administrative functions which should be located along the flightline, west of the aircraft operations and maintenance area. Figure 3-10 shows the future land use recommendations for Duke Field. An area of open space and outdoor recreation is recommended as a physical separation between the administrative functions and the airfield-oriented functions. The proposed open space buffer between aviation operations and maintenance and the administrative core may also function as mitigation from noise impacts associated with F-35 aircraft operations. Community service and community commercial land uses are recommended west of the administrative core of Duke Field. These proposed land use categories

include the potential for unaccompanied housing, a physical fitness gym, a medical clinic, and some community commercial and community service facilities.

The 6 SOS aircraft maintenance hangar/AMU is proposed for the southern end of the flightline in an area designated for aircraft operations and maintenance in the Duke Field ADP. Figures 3-10 and 3-11 shows the proposed locations of the 6 SOS aircraft maintenance hangar/AMU and warehouse along the flightline. The warehouse, which would be used for parts and medical storage, is proposed as an addition to Building 3025, which is currently a warehouse. Building 3025 is along the flightline in an area designated as aircraft operations and maintenance in the Duke Field ADP. The 6 SOS squadron operations building is proposed as an addition to Building 3144 and is an appropriate function for the administrative land use designation. Figures 3-10 and 3-12 shows the proposed location of the squadron operations facility and WST. The WST for a single-engine aircraft will be an addition to the proposed 6 SOS squadron operations facility. A WST facility is designated as an industrial land use but are compatible with administrative functions.

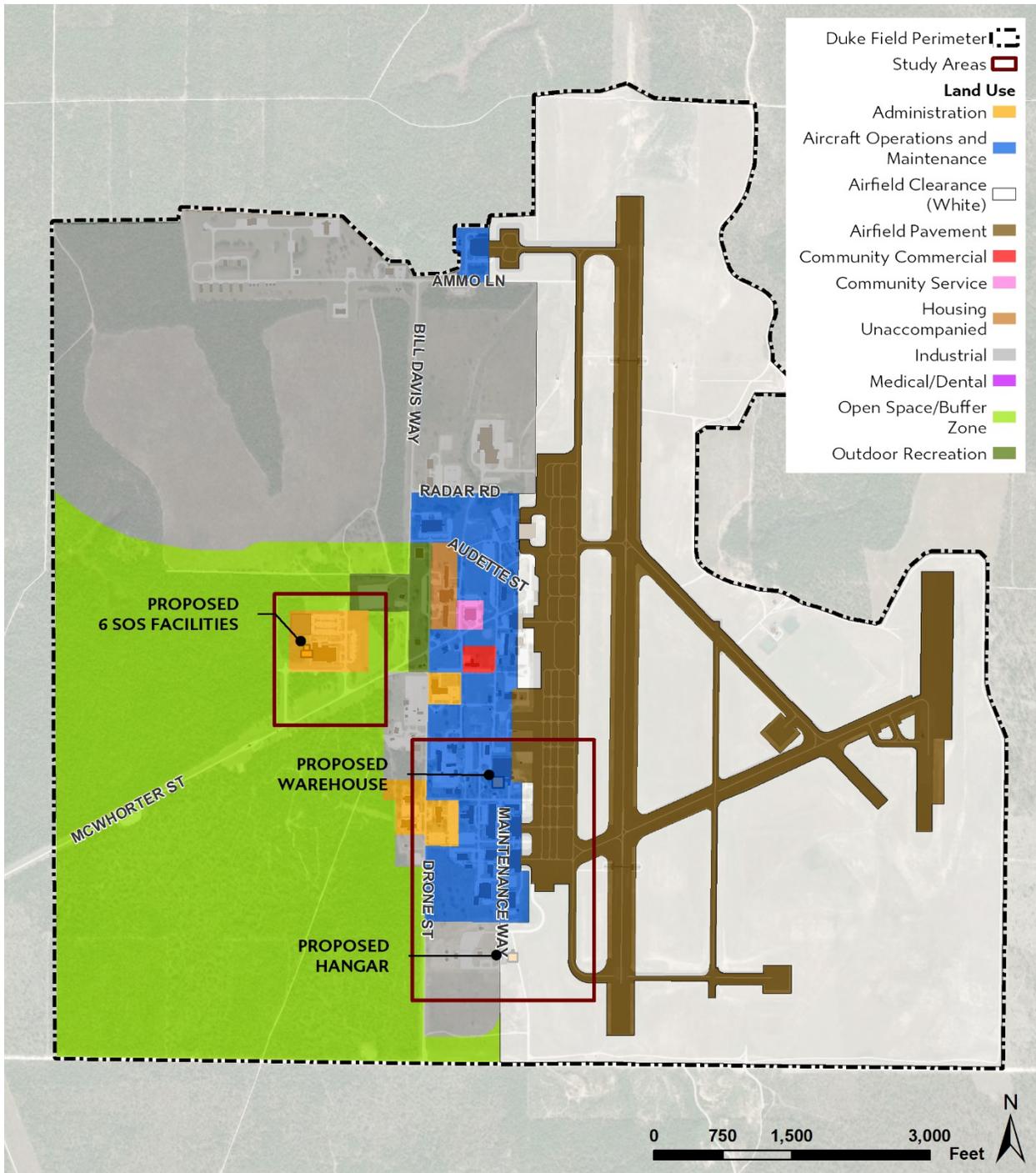


Figure 3-9: Existing Land Use

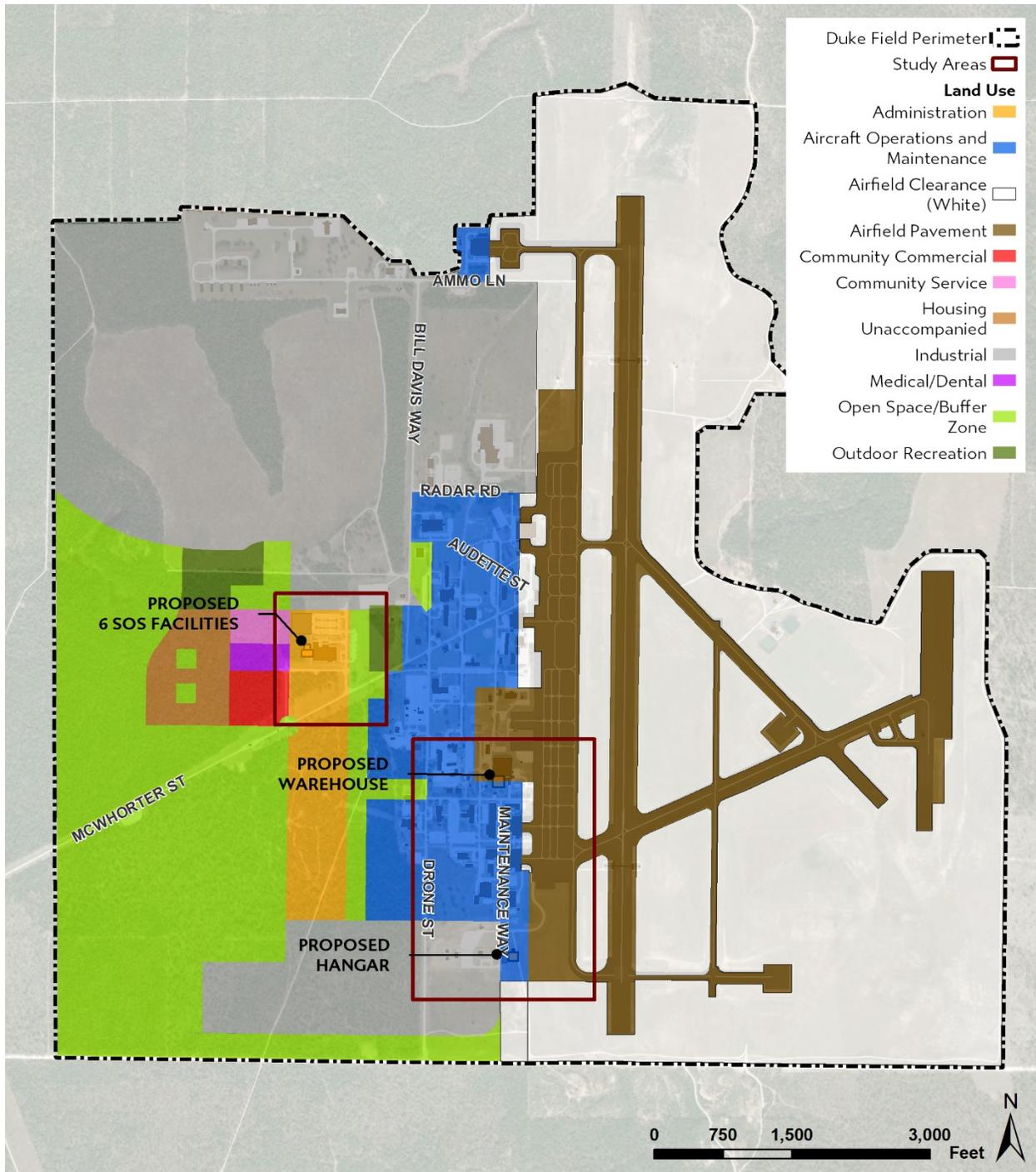


Figure 3-10: Future Land Use Duke Field

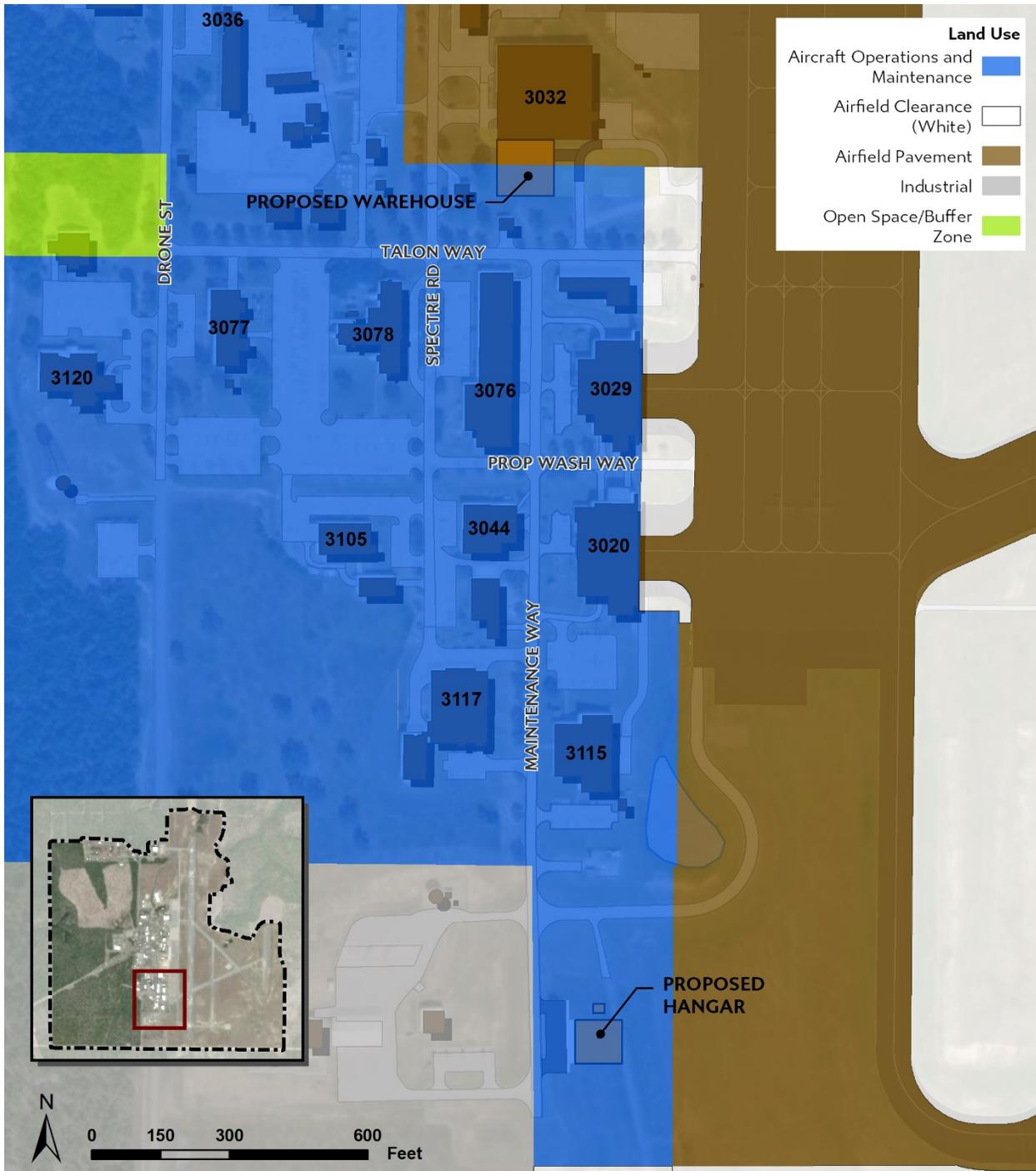


Figure 3-11: Future Land Use Hangar and Warehouse Facilities

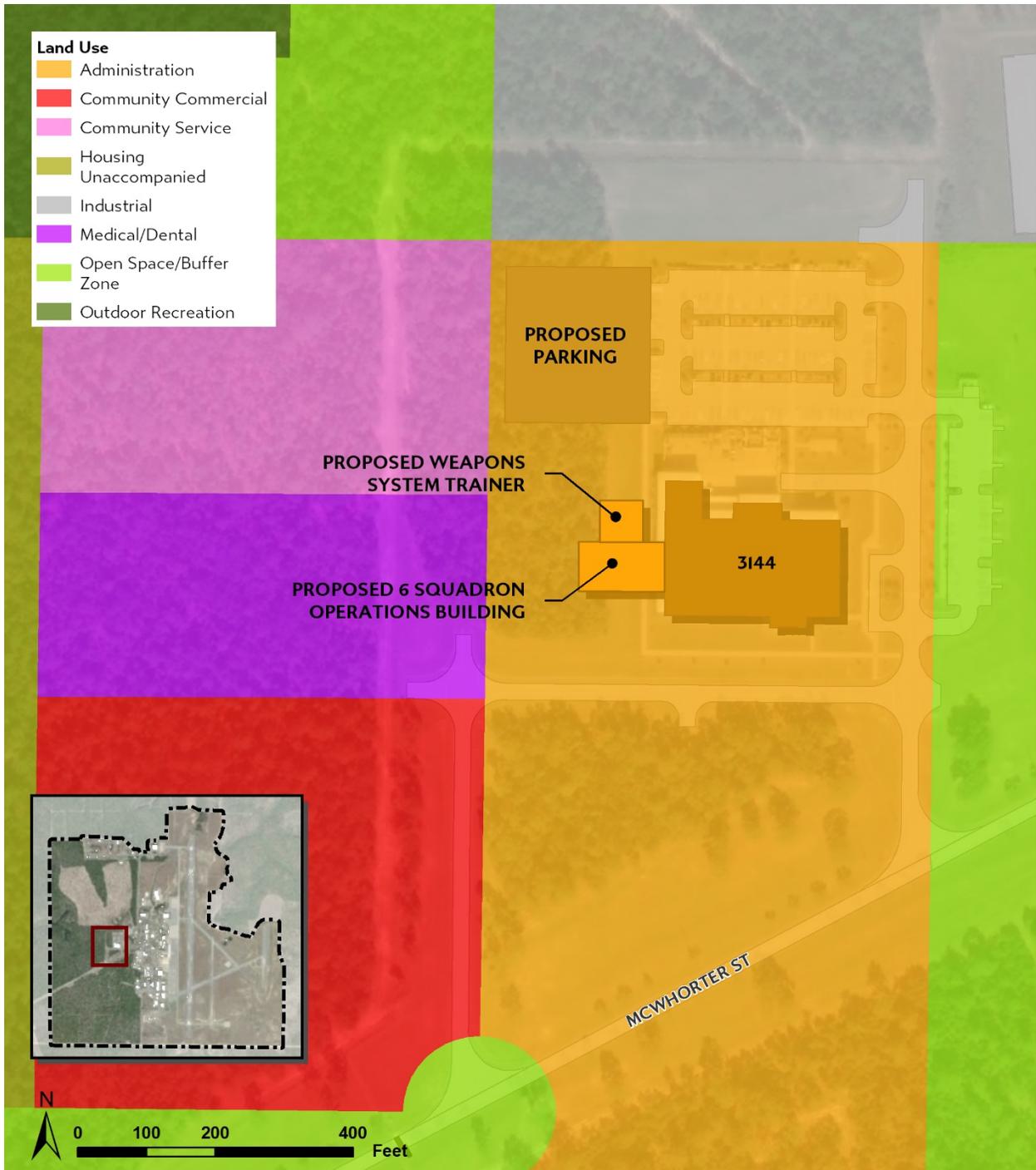


Figure 3-12: Future Land Use Squadron and Weapons System Trainer Facilities

### 3.9.3 Environmental Consequences

Land use impacts are assessed for compatibility, safety and health, and adjacency to other land uses. In general, a land use impact would be significant if it was:

- Inconsistent with the Eglin's IDP or ADP
- Disruptive or functionally incompatible with existing land use
- Incompatible with adjacent land use to the extent that public health or safety is threatened

#### 3.9.3.1 Proposed Action

**Land Use.** The Proposed Action considered in this document would be consistent with USAF planning policies and guidelines and would be compatible with land use guidelines established in the Duke Field ADP. The construction of the 6 SOS Squadron Operations Facility is consistent with ADP future land use recommendations. The proposed personal vehicle parking lot associated with the squadron operations facility and WST are not identified in the future land use plan or form-based code section of the ADP; however, growth in this area will require an additional parking lot. The proposed permanent single-engine aircraft WST, which would be an addition to the 6 SOS squadron operations facility, is designated as an industrial function, but this function is compatible with administrative functions. The industrial function and parking lot are not recommended for this area, but are compatible with administrative functions, so the 6 SOS compound could result in negligible, long-term adverse impacts to land use and would require revisions to the land use and form-based code maps, as well as the report narrative of the Duke Field ADP when it is updated. Although the 2012 Duke Field ADP recommends that unaccompanied housing be relocated approximately 700 feet to the west of the AFSOC/6 SOS campus, the proposed action would occur in an area currently Open Space and would be consistent with the 2012 Duke Field ADP.

Construction of the aircraft maintenance hangar/AMU at the south end of the flightline and the warehouse addition to Building 3025 would increase the development density of the flightline but is consistent with Duke Field ADP land use recommendations and would result in a minor, direct, long-term positive effect to flightline land use.

The Proposed Action would not alter any land use off Duke Field, resulting in no short or long-term impact to existing or future land use at Duke Field. Training operations by the 6 SOS single-engine aircraft at offsite locations would be conducted in a manner to ensure that the operations remain compatible with existing and proposed adjacent land uses. Although there would be only a small change in the overall noise environment at nearby airfields, noise from individual overflights would have the potential from time-to-time to annoy residents directly under their flight path; these effects would be considered minor. Overall, no significant adverse impacts would be anticipated.

#### 3.9.3.2 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Therefore, no short or long-term effect to land use at Duke Field would be anticipated under the No Action Alternative.

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## 3.10 Noise Environment

Noise is commonly defined as unwanted or unwelcome sound. Sound is measured with instruments that record instantaneous sound levels in decibels (dB). Sound level measurements used to characterize sound levels that can be sensed by the human ear are designated as “A-weighted decibels” (dBA). “A-weighted” denotes the adjustment of the frequency content of a noise event to represent the way in which the average human ear responds to the noise event. Equivalent Sound Level (Leq) is the average sound level in dBA.

Noise levels used to characterize community noise effects from such activities as aircraft or building construction are measured in the day-night average of A-weighted sound levels (DNL). The DNL metric accounts for the greater annoyance of noise during nighttime hours and is calculated by averaging hourly sound levels for a 24-hour period and adding a weighting factor to the nighttime values. DNL, when used as a metric for aircraft noise, represents the accumulation of noise energy from all aircraft noise events in 24 hours. Additionally, for all operations between 10:00 PM and 7:00 AM, 10 dB are added each event to account for the intrusiveness of nighttime operations. As is implied in its name, the DNL represents the noise energy present in a daily period. However, because aircraft operations at military airfields fluctuate from day to day, DNL is typically based upon a year’s worth of operations and thus represents annual average daily aircraft events (USAF 2018a). A-weighted DNL is used to assess aircraft noise, and C-weighted DNL is used for demolition and heavy artillery noise.

### 3.10.1 Definition of the Resource

Acceptable noise levels have been established by the U.S. Department of Housing and Urban Development (HUD) for construction activities in residential areas (HUD, 1984).

**Acceptable** (not exceeding 65 dBA) – The noise exposure may be of some concern, but common building construction would make the indoor environment acceptable, and the outdoor environment would be reasonably pleasant for recreation and play.

**Normally Unacceptable** (above 65 but not greater than 75 dBA) – The noise exposure is more severe; barriers may be necessary between the site and prominent noise sources to make the outdoor environment acceptable; special building construction may be necessary to ensure that people indoors are sufficiently protected from outdoor noise.

**Unacceptable** (greater than 75 dBA) – The noise exposure at the site is so severe that the construction costs to make the indoor noise environment acceptable may be prohibitive, and the outdoor environment would still be unacceptable.

Typical day-night average outdoor noise levels (Table 3.10) range from 50 dBA in a quiet, residential setting to 88 dBA for a 3rd floor apartment in a major city next to a freeway.

As a general rule, noise generated by a stationary noise source, or “point source,” would decrease by approximately 6 dBA over hard surfaces and 9 dBA over soft surfaces for each doubling of the distance. For example, if a noise source produces a noise level of 85 dBA at a reference distance of 50 feet over a hard surface, then the noise level would be 79 dBA at a distance of 100 feet from the noise source, 73 dBA at a distance of 200 feet, and so on (Occupational Safety and Health Administration [OSHA] 2019).

Based on data presented in the USEPA publication, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances* (USEPA, 1971), outdoor construction noise levels range from 78 dBA to 89 dBA, approximately 50 feet from a typical construction site. Noise levels at 50 feet from a source decrease by approximately 3 dBA over a hard, unobstructed surface (such as asphalt), and by approximately 4.5 dBA over a soft surface (such as vegetation). Table 3.11 presents typical noise levels (dBA at 50 feet from source) estimated by USEPA for the main phases of outdoor construction.

<b>Table 3.10: Typical Outdoor Noise Levels</b>	
<b>Day-Night Noise Level</b>	<b>Location</b>
50 dBA	Residential area in a small town or quiet suburban area
55 dBA	Suburban residential area
60 dBA	Urban residential area
65 dBA	Noisy urban residential area
70 dBA	Very noisy urban residential area
80 dBA	City noise (downtown of major metropolitan area)
88 dBA	3rd floor apartment in a major city next to a freeway
Source: Federal Highway Administration (FHWA), 2006	

<b>Table 3.11: Typical Noise Levels 50 Feet from the Noise Source for Outdoor Construction Activities</b>	
<b>Day-Night Noise Level</b>	<b>Location</b>
84 dBA	Ground Clearing
89 dBA	Excavation and Grading
78 dBA	Foundations
85 dBA	Structural
89 dBA	Finishing
Source: USEPA, 1971	

Table 3.10 guidelines stem from the 2006 FHWA document which suggested continuous and long-term noise in excess of DNL 65 dBA are normally incompatible with noise-sensitive land uses such as residences, schools, churches, and hospitals. USAF has recently updated (12/18/15) AFI 32-7063, *Air Installations Compatible Use Zones Program*, which provides prescriptive guidance on the recommended land use compatibility for noise zones. Table 3.12 provides general categories of noise ranges from aircraft operations to achieve compatible land use planning as determined in the AFI 32-7063.

Table 3.12: Recommended Noise Ranges for Compatible Land Use Planning		
Ground Level Noise - Acceptability	Aircraft Noise (DNL)	Recommended Users
Low – Acceptable	> 65 dBA	Noise-sensitive land compatible
Moderate – Normally Acceptable	65 – 75 dBA	Noise-sensitive land uses normally not compatible
High – Unacceptable	>75 dBA	Noise-sensitive land uses not compatible
Source: HUD, 1984		

### 3.10.2 Affected Environment

#### 3.10.2.1 Duke Field

The 2018 Air Installation Compatible Use Zone (AICUZ) Study for Eglin AFB and Duke Field in Okaloosa County, FL provides noise contours to assess the compatibility of aircraft operations (USAF 2018a). This AICUZ Study presents noise contours reflecting currently based units operating at full strength. USAF utilizes NOISEMAP, the DoD model for assessing noise exposure from military aircraft operations at air installations.

The 2018 AICUZ noise contours and the 2014 Supplemental Environmental Impact Statement (SEIS) for the F-35 Beddown at Eglin AFB noise contours reflect the effects of topography (e.g., hills can block sound, sound energy flows more smoothly over water than over land) as calculated using the current version of DoD noise modeling software, NOISEMAP version 7.3.

The contours are measured in 5 dB increments and range from 65 to 85 dBA DNL. The 65 dBA DNL noise contour extends approximately 1.5 miles from both ends of the Duke Field main runway (Figure 3-13). The 65 dBA DNL is the noise level below which all land uses are compatible with noise generated from airfield operations. All areas exposed to noise levels equal to or greater than 65 dBA DNL other than a small area off the installation to the north of the airfield are entirely within Eglin AFB installation boundary. Table 3.13 shows the projected air operations from the 2018 AICUZ study for Eglin AFB and Duke Field and the operations associated with the Proposed Action. This level of activity and associated noise is considered the comparative baseline in the noise analysis.

Noise contours at Duke Field also reflect 33 FW F-35 units at full-strength, and an increased tempo of transient operations relative to that which has been experienced in the recent past. Duke Field noise contours reflect current AF policies, as well as current operating parameters for all aircraft types. At the time the SEIS was being conducted, Duke Field was intended to be used heavily by F-35B aircraft. F-35B aircraft are no longer scheduled to beddown at Eglin AFB, and noise levels near Duke Field are less intense than was expected during preparation of the SEIS. Although noise generated by Duke Field aircraft operations is sometimes audible in nearby communities, off-base time-averaged noise levels are below 65 dB DNL. Because the contours do not extend outside of DoD-owned land, zero acres of off-base land, and zero off-base residents are affected by 65 dB DNL or greater.

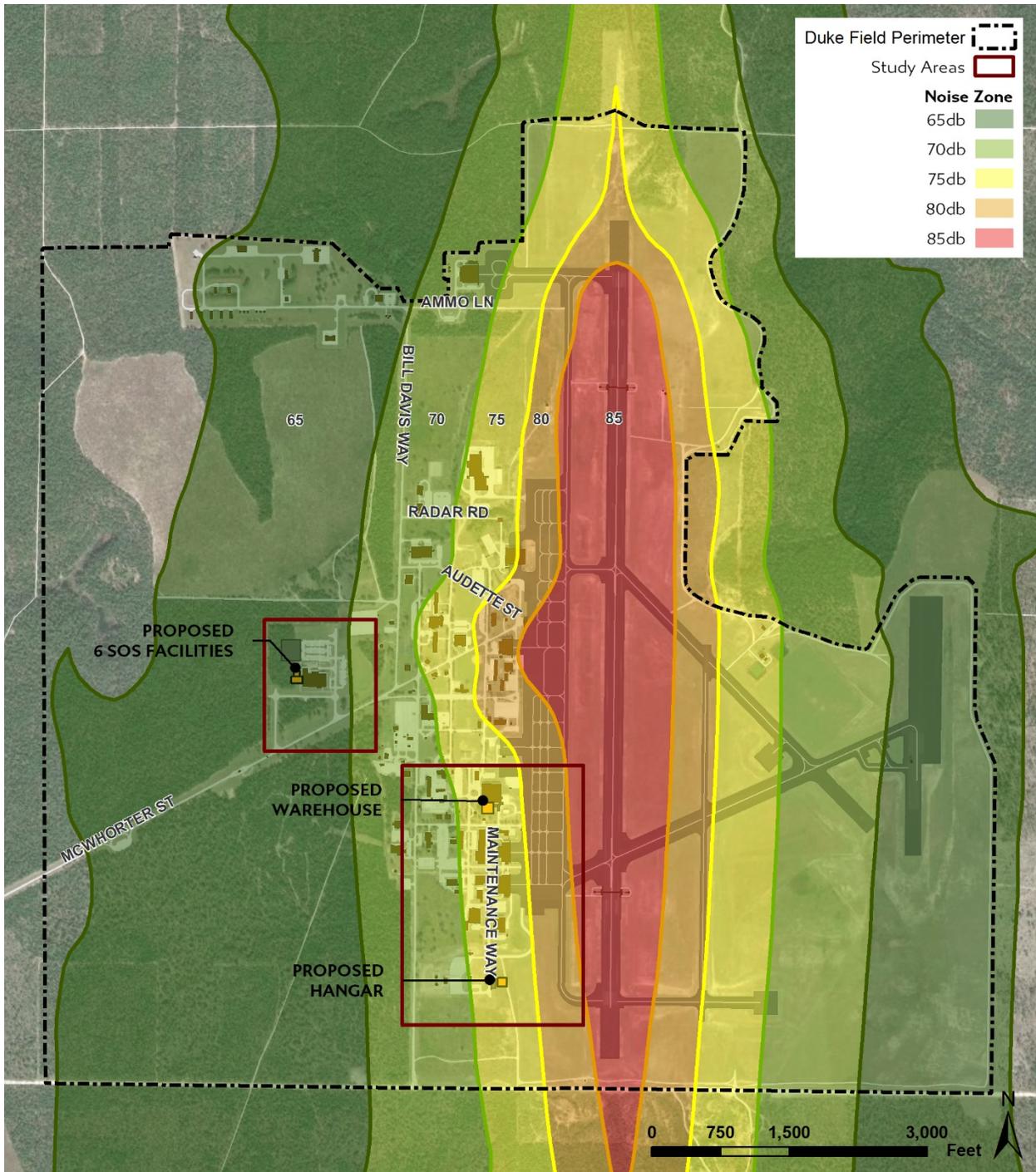


Figure 3-13: Existing Aircraft Noise Contours Near Duke Field

**Table 3.13: Projected and Proposed Aircraft Operations**

Aircraft	2018 AICUZ Projected							Proposed Action			Total Ops
	Eglin/Civilian			Duke Field			Total Ops	Duke Field			
	Day	Night	Total	Day	Night	Total		Day	Night	Total	
ISR Aircraft	0	0	0	0	0	0	0	780	1,800	2,600	2,600
C-145	0	0	0	1,900	1,300	3,200	3,200	0	0	0	3,200
C-146	0	0	0	13,200	5,880	19,200	19,200	0	0	0	19,200
F-35A	16,499	1	16,500	8,000	0	8,000	24,500	0	0	0	24,500
F-35C	4,799	1	4,800	5,000	0	5,000	9,800	0	0	0	9,800
A-10	182	0	182	0	0	0	182	0	0	0	182
C-130	2,880	120	3,000	0	0	0	3,000	0	0	0	3,000
F-15C	2,920	0	2,920	0	0	0	2,920	0	0	0	2,920
F-15E	1,044	0	1,044	0	0	0	1,044	0	0	0	1,044
F-16C	4,380	0	4,380	0	0	0	4,380	0	0	0	4,380
UH-1	315	1	316	0	0	0	316	0	0	0	316
C-32	355	11	366	0	0	0	366	0	0	0	366
Twin-driven	398	4	402	0	0	0	402	0	0	0	402
Single-driven	1,569	45	1,614	0	0	0	1,614	0	0	0	1,614
A-10	44	0	44	0	0	0	44	0	0	0	44
B-737	18	0	18	0	0	0	18	0	0	0	18
H-60	192	0	192	500	0	500	692	0	0	0	692
UH-1	0	0	0	1,200	300	1,500	1,500	0	0	0	1,500
C-12	68	0	68	0	0	0	68	0	0	0	68
C-130	812	0	812	1,600	250	1,850	2,662	0	0	0	2,662
C-17	166	0	166	97	1	98	264	0	0	0	264
C-21	22	0	22	0	0	0	22	0	0	0	22
C-32	68	0	68	0	0	0	68	0	0	0	68
C-5	20	0	20	0	0	0	20	0	0	0	20
CV-22	0	0	0	1,590	210	1,800	1,800	0	0	0	1,800
F-15	14	0	14	144	2	146	160	0	0	0	160
F-16	496	0	496	1,793	33	1,826	2,322	0	0	0	2,322
F-18	368	0	368	0	0	0	368	0	0	0	368
F-22	16	0	16	0	0	0	16	0	0	0	16
F-35	180	0	180	0	0	0	180	0	0	0	180
TH-57	0	0	0	200	40	240	240	0	0	0	240
U-28	0	0	0	800	2,400	3,200	3,200	0	0	0	3,200
KC-10	22	0	22	0	0	0	22	0	0	0	22
KC-135	456	0	456	0	0	0	456	0	0	0	456
T-1	20	0	20	0	0	0	20	0	0	0	20
T-38	316	0	316	0	0	0	316	0	0	0	316
T-45	36	0	36	0	0	0	36	0	0	0	36
T-6	100	0	100	0	0	0	100	0	0	0	100
A320	281	23	304	0	0	0	304	0	0	0	304
DC-9	2,170	176	2346	0	0	0	2,346	0	0	0	2,346
SAAB-340	115	9	124	0	0	0	124	0	0	0	124
MD-82	1,228	100	1328	0	0	0	1,328	0	0	0	1,328
CL-602	8,369	679	9048	0	0	0	9,048	0	0	0	9,048
<b>Total</b>	<b>50,938</b>	<b>1,170</b>	<b>52,108</b>	<b>36,024</b>	<b>10,416</b>	<b>46,560</b>	<b>98,668</b>	<b>0</b>	<b>0</b>	<b>2,600</b>	<b>101,268</b>

Source: USAF, 2018a

### 3.10.2.2 Nearby Airfields

There are additional nearby airfields in proximity to Duke Field that may serve as takeoff and LZs for the single-engine aircraft including Eglin AFB/VPS, HRT, and CEW. Existing sources of noise at these airfields are consistent with active military airfields and midsize civilian airports. Background noise in areas surrounding the LZs range from 48 to 60 dBA during the daytime and 42 to 54 dBA during the nighttime. Aircraft operations are loud to individuals under the flight path and, as with Duke Field, air operations normally are sufficient to generate greater than 65 dBA DNL beyond the immediate area of the runways.

### 3.10.2.3 Remote DZs/LZs

Only DZs and LZs that are located on Eglin AFB property will be used under the Proposed Action. All drops will be conducted at Duke Field. The primary LZ would be LZ East and the secondary LZ would be LZ Silent Night East.

## 3.10.3 Environmental Consequences

### 3.10.3.1 Analysis Approach

In addition to the significance criteria established at the beginning of this section, the following thresholds were used to determine if an impact on the noise environment would be significant:

- Conflict with applicable Federal, state, interstate, or local noise control regulations; or
- Result in continuous and long-term noise levels at 85 dB and above, which is the threshold of hearing damage with prolonged exposure.

### 3.10.3.2 Proposed Action

The Proposed Action would have short- and long-term, minor effects on the existing noise environment. Short-term effects would be primarily due to use of heavy equipment during construction activities. Long-term effects would be due to incremental increases resulting in the additional single-engine aircraft operations at Duke Field and other nearby airfields of Eglin AFB. These effects would not result in the violation of applicable noise regulations or create incompatible land uses.

**Construction Activities** - Construction activities would result in temporary, minor noise effects. Facility construction would involve land clearing, land grading, and building construction. Table 3.14 presents noise emission levels for types of construction equipment expected to be used during the proposed construction activities. Construction projects would require the use of common construction equipment, all of which would be expected to meet local, state, and Federal noise regulations. Depending upon the number, type, and distribution of construction equipment being used, the noise levels near the project area could temporarily exceed 64 dBA up to 500 feet from the Study Area shown in Figure 3-14.

**Table 3.14: dBA Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances<sup>1</sup>**

Noise Source	50 feet	100 feet	200 feet	500 feet	1000 feet
Backhoe	78	72	68	58	52
Crane	81	75	69	61	55
Dump truck	76	70	64	56	50
Excavator	81	75	69	61	55
Front-end loader	79	73	67	59	53
Concrete mixer truck	79	73	67	59	53
Auger drill rig	84	78	72	64	58
Bulldozer	82	76	70	62	56

Source: FHWA 2006

Note:

<sup>1</sup>The dBA at 50 feet is a measured noise emission. The 100- to 1,000-foot results are Gulf South Research Corporation (GSRC)-modeled estimates.

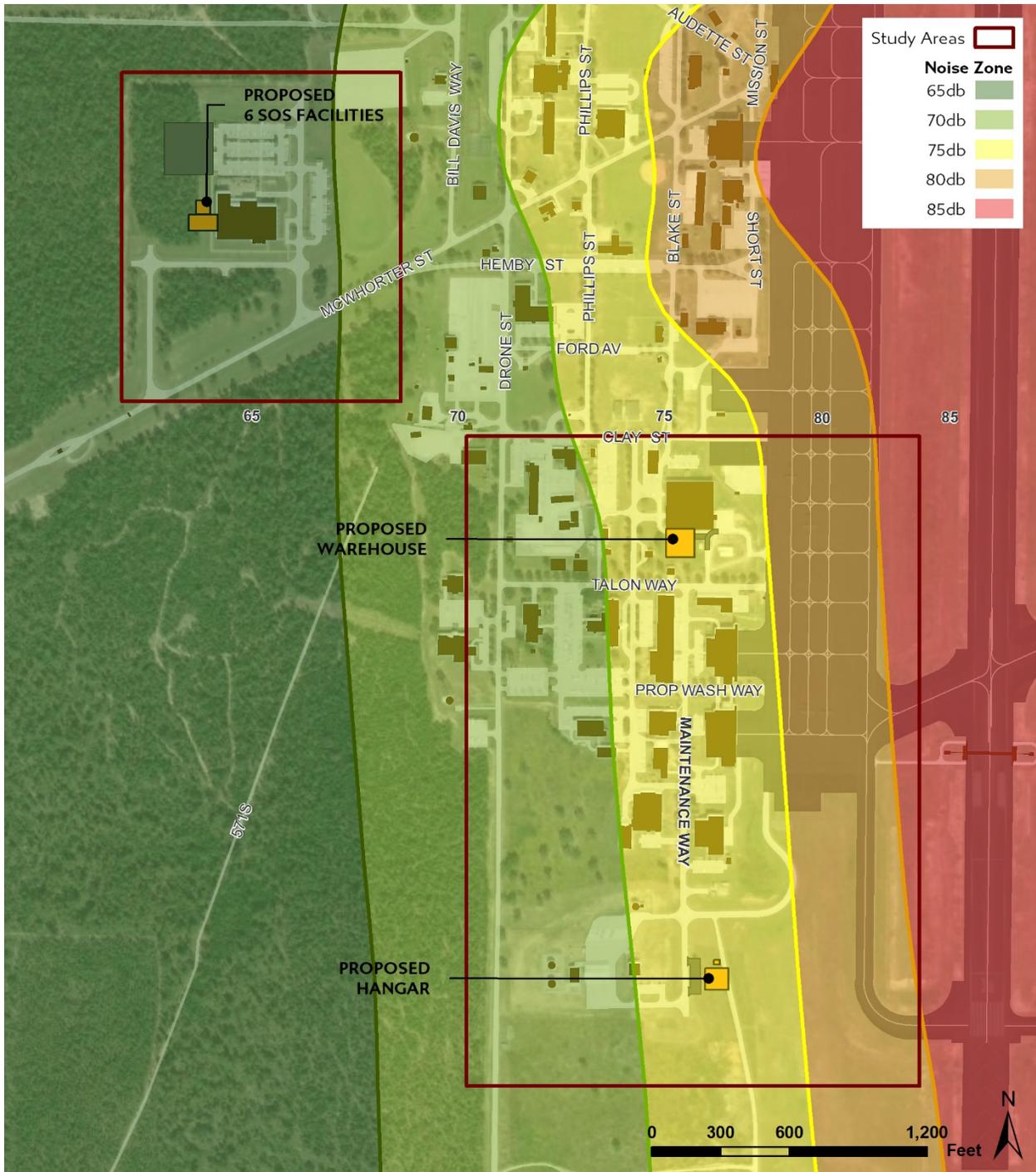


Figure 3-14: Construction Activities and Aircraft Noise Contours

Anticipated sound levels at 50 feet from the source range from 76 dBA to 84 dBA based on data from the FHWA (FHWA, 2006). As a general rule, the sound intensity decreases 6 dBA with each doubling of the distance from the source (USEPA, 1971). However, there are no noise-sensitive receptors in the vicinity of the areas proposed for facility construction activities.

Equipment and machinery utilized on the project area would be expected to meet all local, state, and Federal noise regulations. Construction activities would be conducted during daylight hours to minimize impacts.

Once the construction projects are completed, the ambient noise level would return to normal. With the Proposed Action construction projects located within compatible land uses, the noise generated from the daily activities at the building would be typical of existing buildings, and the noise intensity would not increase. No long-term impacts on the ambient noise level would occur as a result of implementing the Proposed Action.

The Noise Control Act of 1972 (PL 92-574) directs Federal agencies to comply with applicable Federal, state, and local noise control regulations, and specifically exempts military training activities such as munitions and demolition training, and aircraft operations. Eglin AFB is required to comply with local noise control regulations only for areas outside the installation. As construction would be confined to on-base areas, local noise ordinances would not apply.

***Aircraft Operations*** - Implementation of the Proposed Action would result in an additional five single-engine, fixed wing aircraft. Long-term, minor, adverse effects on the noise environment would occur due to an incremental increase in aircraft operations at Duke Field. In the immediate area surrounding Duke Field, the noise environment would continue to be dominated by aircraft takeoff and landing operations.

Approximately 2,600 additional single-engine aircraft operations per year would occur because of the Proposed Action. Operations include approximately 1,820 at Duke Field and 780 at other nearby airports mostly on Eglin AFB including VPS. With training operations occurring approximately 260 days a year at Duke Field, this equates to an average of 7 additional operations per training day. This is an increase of approximately 5 percent when compared to the existing condition of 38,000 operations over 260 days. As a comparison, it would take a doubling (100 percent increase) in air operations to have even a barely perceptible change to the noise environment (e.g., greater than 3 dBA; FHWA, 2006); therefore, this 5 percent increase in air operations would be very small when compared to existing conditions and would have no appreciable effect on the overall noise environment in the surrounding areas. As such, the proposed beddown of AvFID aircraft would not be expected to result in any measurable changes to the established noise contours at Duke Field, which are almost entirely dominated by operations associated with the much louder F-35 aircraft. Although there would be only a small change in the overall noise environment at nearby airfields, noise from individual overflights would have the potential from time-to-time to annoy residents directly under their flight path. These effects would be considered minor.

There would be no significant impacts on the noise environment from implementing the Proposed Action.

### 3.10.3.3 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Therefore, the No Action Alternative would have no effect on the noise environment.

## 3.11 Safety

Safety concerns are related to aircraft operations, explosive munitions storage, and risks associated with construction activities.

**Construction Activities.** The Proposed Action would not introduce new construction safety hazards to Duke Field. All project actions would involve the inherent risks associated with construction activities; however, all applicable state, Federal, and Air Force regulations would be followed. Typical safeguards during construction work would be standard safety practices as directed by the OSHA for construction work areas and the Air Force Occupational Safety and Health standards that can be found in AFI 91-202, *The USAF Mishap Prevention Program*. Safety standards and procedures for general construction projects at Eglin AFB would be applied. Where individual projects would incur worker safety risks due to potential exposure to hazardous waste, compliance with OSHA safety requirements for workers and proper handling of hazardous waste would be the responsibility of the contractor for each individual project. Therefore, the Proposed Action would have no effect on safety and a detailed analysis of this resource has not been carried forward.

### 3.11.1 Definition of Resource

**Aircraft Safety.** The concern regarding aircraft operation is the potential for BASH, vertical obstructions, and human populations within safety zone.

**BASH.** Birds and wildlife have the potential to cause damage to aircraft as well as the loss of human life of aircrews and people on the ground. Flight Safety is the office of primary responsibility for monitoring and implementation of a BASH Plan (USAF 2015). AFI 91-212 31, May 2018, BASH Management Program, establishes program requirements, assigns responsibilities for program elements, and contains program management information for addressing BASH. Eglin AFB's Natural Resources Office implements the BASH program for Eglin AFB and Duke Field, as directed by AFI 32-7064. A BASH assessment of Eglin AFB airfields, including Duke Field, and a BASH management plan for the installation have been developed (USAF 2017c).

**Vertical Obstructions and Populations.** AFI 32-7063 implements DoD Instruction 4165.57 and applies to all Air Force installations with active runways located in the U.S. and its territories. This instruction provides guidance for implementation of the installation's AICUZ Program. The purpose of the AICUZ program is to achieve compatibility between air installations and neighboring communities by protecting the health, safety, and welfare of civilians and military personnel by encouraging land usages which are compatible with aircraft operations; protecting the installation investment by safeguarding operational capabilities; and reducing noise impact while meeting mission requirements. The AICUZ study for Eglin AFB and Duke Field identifies three areas that, because of accident potential, should be considered for density and land use restrictions. The areas are the Clear Zone (CZ), Accident Potential Zone (APZ) I, and APZ II (USAF 2018a).

- **Clear Zone.** The CZ begins at the end of the runway and is the area of highest accident potential; it has few land uses that are compatible. The Air Force concluded that the CZs warranted special attention due to the high incidence of accident potential severely limiting acceptable land uses (USAF 2017d).

- Accident Potential Zones. The percentages of accidents within the two APZs are such that, some type of land use control is essential. APZ I is beyond the CZ and is of lower but still considerable accident potential. APZ II is beyond APZ I and possesses less accident potential than APZ I but still warrants land use restriction recommendations. The AF recommends limiting the number of people within APZs through focused land use planning (USAF 2017d).

Hazards to Aircraft Flight Zone is the area on the ground within the “Imaginary Surfaces” that are described in the UFC 3-260-01, and in Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace, Subpart C: Obstruction Standards. This is an area that is evaluated for the compatibility of proposed activities and actions as related to aircraft safety. Categories for evaluation include structural height, visual interference, glint/glare, BASH, and radio frequency/electromagnetic interference.

**Explosive Storage.** Siting requirements for explosive materials storage (e.g., munitions) and handling facilities are based on safety and security criteria. AFM 91-201, *Explosives Safety Standards*, requires that defined distances be maintained between munitions storage and handling facilities and a variety of other types of facilities. Explosive Safety Quantity Distance (ESQD) arcs are determined by the type and quantity of explosive materials to be stored; each explosive material storage or handling facility has ESQD arcs extending outward from its sides and corners for a prescribed distance. Within ESQD arcs, development is either restricted or prohibited to maintain safety of personnel and minimize the potential for damage to other facilities in the event of an accident. Explosive materials storage and build-up facilities must be in areas where security can be assured.

### 3.11.2 Affected Environment

**BASH.** The 96 Test Wing Flight Safety Office TW/SEF contracts with the U.S. Department of Agriculture (USDA) Wildlife Services (WS) to provide employees for assistance with the implementation and management of the BASH program at Eglin AFB and Duke Field. The USDA WS has developed a BASH assessment for Eglin and Duke Field airfields, created a BASH management plan, and maintains a database to develop strategies for improved management of the airfield environment and to better understand and prepare for trends in bird and wildlife activity (USAF 2015). The Eglin Natural Resource Officer’s (NRO’s) role is to support and provide assistance to USDA personnel for bird and wildlife harassment, lethal control activities, and other projects such as vulture roost monitoring, effigy placement, and migratory bird nest removal activities. Both passive (e.g., elimination of food and roost sources) and active (e.g., pyrotechnics) are used as deterrent methods (USAF 2017c).

Currently, there are no major issues with BASH control or persistent species. Eglin personnel are aware of all migratory timeframes and plan accordingly for BASH control (LeGrande, 2019). Table 3.15 shows wildlife harassment and event data.

Fiscal Year	Number of Wildlife Harassed	Duke Depredation Activity	Confirmed Bird/Mammal Strike Events	Total Wildlife Events
2011	2,627	254	1	2,881
2012	4,051	473	0	4,524

**Table 3.15: Duke Field USDA Wildlife Harassment Data FY13-FY19<sup>1</sup>**

Fiscal Year	Number of Wildlife Harassed	Duke Depredation Activity	Confirmed Bird/Mammal Strike Events	Total Wildlife Events
2013	5,455	364	0	5,819
2014	4,230	278	1	4,508
2015	2,212	179	4	2,391
2016	3,790	281	2	4,071
2017	2,939	174	0	3,113
2018	3,223	246	0	3,469
2019	4,245	181	1	4,426
<b>Totals</b>	<b>32,772</b>	<b>2,430</b>	<b>9</b>	<b>35,202</b>

<sup>1</sup>FY 19 is only current through May

Source: LeGrande, 2019

**Vertical Obstructions and Populations.** The *2018 AICUZ Study for Eglin AFB and Duke Field*, establishes the CZs, APZs, imaginary surfaces, and transition planes for Duke Field (USAF 2018a), as shown in Figure 3-15. There are CZs and APZs for the primary runway, landing helicopter assault (LHA) pad, a short take-off vertical landing (STOVL) pad, and an assault landing zone (ALZ) STOVL pad for rotary- and fixed-wing aircraft operations. The only APZ that extends off-base is APZ II to the north. Table 3.16 lists the off-base land acreage and estimated population within the CZs and APZs at Duke Field.

**Table 3.16: Off-Base Land Area and Estimated Population within the APZ/CZ for Duke Field**

Zone	Acres	Population
CZ	0	0
APZ 1	0	0
APZ II (North) <sup>1</sup>	196	404
Total	196	404

<sup>1</sup> Only the north APZ II extend of the Eglin AFB

Source: USAF 2018

**Explosive Storage.** ESQD arcs are identified at Duke Field for all activities involving the use, handling, and storage of explosive materials and munitions. The arcs are shown in Figure 3-15.

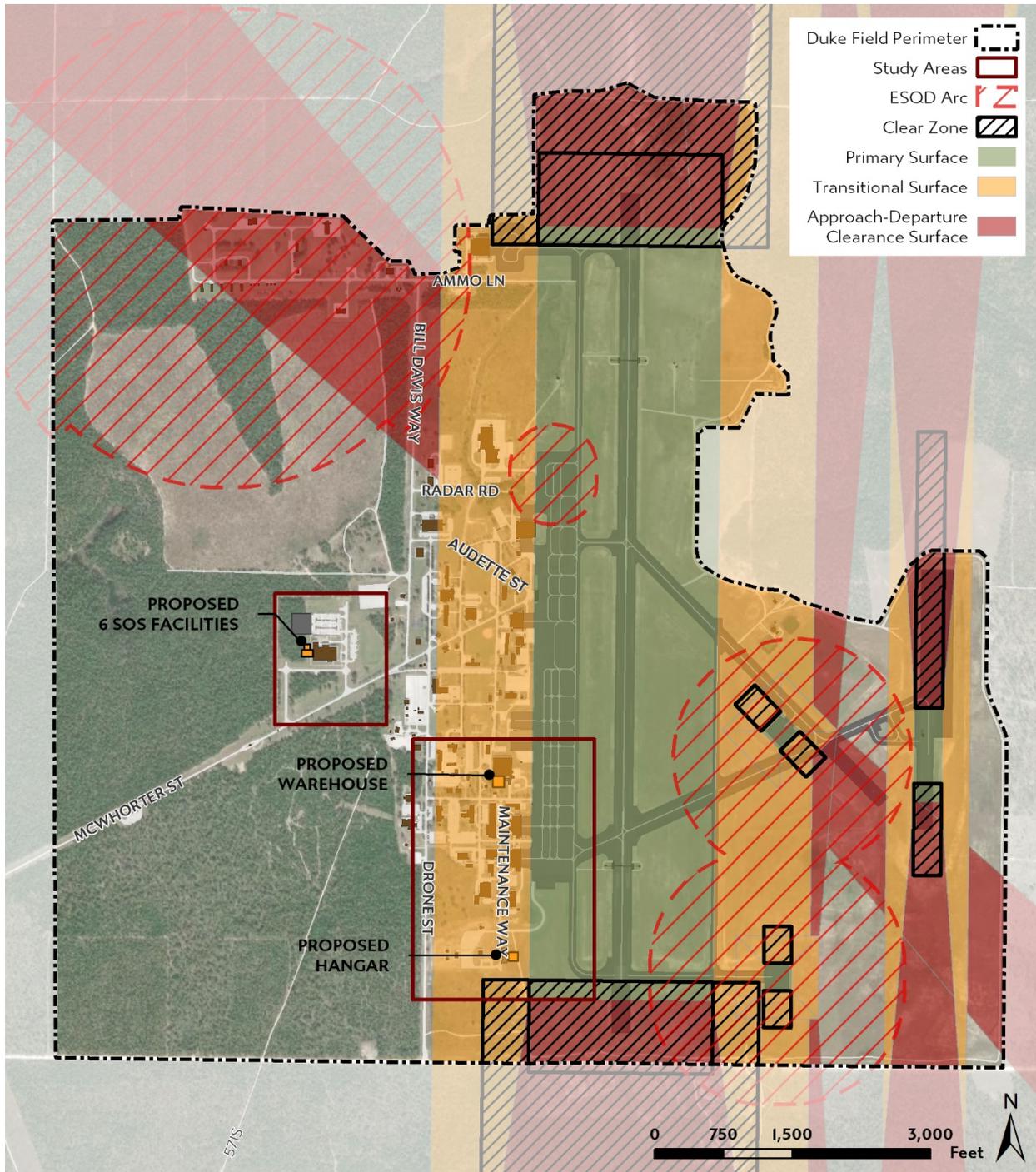


Figure 3-15: Safety Zones at Duke Field

### 3.11.3 Environmental Consequences

Significant impacts on health and safety would be expected if the Proposed Action does either of the following:

- Noticeably increases risks associated with personnel working on Duke Field or the public.
- Introduces a new risk for which USAF is not prepared or does not have adequate management and response plans in place.

#### 3.11.3.1 Proposed Action

The Proposed Action would result in a slight increase in the current number of annual aircraft operating hours and sorties at Duke Field. Aircraft operations would continue to adhere to all established flight safety guidelines and protocol, including those identified in the Standard Operating Procedures and the BASH Plan for Eglin AFB and Duke Field. The operational altitudes for the growth in operations also minimize the risk of BASH. Historically, the BASH risk is highest in lower altitude airspace below 2,500 feet AGL, where approximately 92 percent of previously recorded BASH incidents have occurred (USAF 2016a). The proposed 6 SOS training sorties require airspace with a minimum effective altitude of 5,000 feet AGL, with optimal altitudes of 7,000 feet AGL. Conflicts with the BASH plan or an increase in BASH related incidences are not anticipated under the implementation of the Proposed Action. Therefore, there would be negligible impacts related to safety resulting from the action.

Under the Proposed Action, new facilities would be constructed west of Building 3144, near the southwest corner of the airfield, and south of Building 3032. None of these facilities would be constructed within a CZ or APZ. These facilities would be underneath the imaginary surface and transitional plans for the airfield but would present no hazard to aircraft operations or human safety per requirements in AFI 32-7063 and UFC 3-260-01. Therefore, there would be no safety hazard effect from implementation of the Proposed Action.

Similarly, none of these facilities would be constructed within the ESQD arcs established for Duke Field. None of the activities under the Proposed Action would result in a change/reconfiguration of the ESQD arcs or impact the movement of munitions. Therefore, there would be no safety hazard effect from the location and construction of these facilities.

#### 3.11.3.2 No-Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. As a result, safety conditions would remain the same. Therefore, the alternative would have no effect on safety and there would be no significant impacts on safety resources because of the No Action Alternative.

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## 3.12 Socioeconomics

### 3.12.1 Definition of the Resource

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly characteristics of population and economic activity. Economic activity typically encompasses employment, household income, and industrial or commercial growth. Changes in these fundamental socioeconomic indicators often result in changes to additional socioeconomic indicators, such as housing availability and the provision of public services. Socioeconomic data at county and state levels permit characterization of baseline conditions in the context of regional and state trends. The socioeconomic region of influence (ROI) for the Proposed Action includes Okaloosa County, Walton County, and Santa Rosa County, which borders Okaloosa County to the west and Walton County to the east.

### 3.12.2 Affected Environment

**Demographics.** Population data trends from the U.S. Census Bureau (USCB) provides an overview of the total population within the region most likely affected by the Proposed Action. Duke Field is located in Okaloosa County, FL and in proximity to regional transportation routes, which makes it possible that the surrounding counties could be affected by the Proposed Action.

The rate of growth in ROI population has exceeded the rate of growth for the State of Florida over the past seven years. Although Okaloosa County had a lower rate of increase than Santa Rosa or Walton Counties, the overall population is still larger than the neighboring counties and it is likely that a majority of personnel and their families would live in Okaloosa County. Table 3.17 summarizes the growth in regional population.

Populations Years	Okaloosa County	Santa Rosa County	Walton County	State of Florida
Population 2010	180,822	151,372	55,043	18,804,623
Population 2017*	197,591	166,778	63,457	20,278,447
Percent change	9.3%	10.2%	15.3%	7.8%

Source: U.S. Census Bureau 2010 Decennial Census, U.S. Census Bureau American Community Survey 2017 5-year Estimates  
 \* Estimated data from the American Community Survey (ACS) 2017

**Housing and Schools.** There are over 200,000 housing units in the ROI and about 27 percent of the total housing units are vacant (USCB 2019). The estimated vacancy rate in 2017 is lower than the estimated vacancy rate of 29 percent in the 2010-2012 timeframe (AFSOC 2016), which may be due to the increased population absorbing vacant units. Table 3.18 summarizes regional housing characteristics.

There are three school districts in the ROI. Each county is a designated school district. Okaloosa County has the largest district with 23 elementary schools, 12 middle schools, and eight high schools. There are approximately 27,000 students (including adult education) in public schools, charter schools, and private/specialized schools (Okaloosa County 2019). Santa Rosa County is similar to Okaloosa County and has approximately the same number of students spread over 18 elementary schools, eight middle schools, 11 high schools, and several specialized schools (Santa Rosa County 2019). Walton County's population is much lower than Santa Rosa and Okaloosa counties. There are approximately 10,000 students spread over six elementary schools, three middle schools, three high schools, and a few specialized schools (Walton County 2019).

Housing Types	Okaloosa County	Santa Rosa County	Walton County	ROI
Total Housing units	95,651	69,166	49,446	214,263
Percent Single Unit	66.6%	78.4%	59.0%	68.0%
Percent multi-unit	27.5%	9.8%	27.1%	21.5%
Percent Mobile homes	5.8%	11.8%	13.3%	10.3%
Percent Vacant	19.9%	12.4%	48.5%	26.93%

Source: USCB American Community Survey 2017 five-year estimates

**Employment Characteristics.** The estimated number of the civilian employed population in the region was 203,077 in 2018, which was an increase from the 2012 estimate of 172,322. Education and health care accounted for the highest percentage of ROI employment in 2018. Construction employment accounted for less than half of the regional labor force for education and health services. Table 3.19 summarizes regional civilian labor force.

Industry	Okaloosa County	Santa Rosa County	Walton County	ROI Average
Civilian Population 16 Years and over	64%	59%	57%	60%
Civilian Labor Force	91,779	80,654	30,644	NA
Agriculture, forestry, fishing and hunting, and mining	0.60%	1.30%	0.90%	0.93%

**Table 3.19: Region of Influence Labor Force Characteristics**

Industry	Okaloosa County	Santa Rosa County	Walton County	ROI Average
Construction	7.70%	7.10%	11.00%	8.60%
Manufacturing	4.60%	5.70%	4.30%	4.87%
Wholesale trade	1.60%	1.60%	1.40%	1.53%
Retail trade	12.70%	12.80%	12.80%	12.77%
Transportation, warehousing, and utilities	4.50%	5.60%	4.20%	4.77%
Information	1.00%	1.50%	1.10%	1.20%
Finance and insurance, and real estate and rental leasing	6.90%	7.40%	9.20%	7.83%
Professional, scientific, management, administrative, and waste management services	12.50%	11.40%	13.70%	12.53%
Educational services, health care, and social assistance	16.90%	21.90%	15.90%	18.23%
Arts, entertainment	14.10%	10.00%	14.90%	13.00%
Other services	5.90%	6.00%	5.00%	5.63%
Public administration	11.00%	7.60%	5.70%	8.10%

Source: USCB 2010 Decennial Census, USCB American Community Survey 2017 five-year estimates

**Population.** Generally, it appears that Okaloosa County is slightly more diverse than Santa Rosa and Walton counties (Table 3.20). The age distribution is relatively consistent throughout the ROI with Okaloosa County having approximately 22 percent of the population under the age of 18, while the ROI average is 21.7 percent.

There is wider variation when comparing household incomes and the percentage of population living below the poverty line. Santa Rosa County has the highest median household income and the lowest percentage of families living below the poverty line. Okaloosa County has similar income characteristics as Santa Rosa County. Walton County has the lowest median household income and the highest percentage of families living below the poverty line.

Population	Okaloosa County	Santa Rosa County	Walton County	ROI
Percent Under 18 years of Age	22.3%	22.4%	20.4%	21.7%
Percent over 65 years of Age	15.1%	14.9%	18.9%	16.3%
Percent White	78.8%	85.8%	86.2%	83.6%
Percent Black or African American	9.8%	5.8%	4.9%	6.8%
Percent American Indian and Alaska Native	0.6%	0.5%	0.6%	0.6%
Percent Asian	2.9%	1.9%	1.3%	2.0%
Percent Native Hawaiian and Other Pacific Islander	0.2%	0.2%	0.2%	0.2%
Percent Hispanic or Latino	8.7%	5.2%	6%	6.6%
Median Household Income	\$59,955	\$62,731	\$50,619	\$57,768
Percent Families living below Poverty	11.5%	11.3%	17.0%	13.3%

Source: USCB American Community Survey 2017 five-year estimates

### 3.12.3 Environmental Consequences

Socioeconomic impacts would be considered potentially significant if the Proposed Action substantially affected the demand for housing or community services, substantially affected economic stability in the region, or result in a disproportionately effects on minority, low-income populations, or children.

#### 3.12.3.1 Proposed Action

Implementation of the Proposed Action should provide short-term and long-term, negligible-to-minor benefits to the local economy, including construction worker employment and materials purchasing. However, short-term and long-term beneficial impacts from employment gains would be negligible on a regional scale.

Using methodology from the *Supplemental Environmental Impact Statement for F-35 Beddown at Eglin Air Force Base, Florida, January 2014*, the number of dependents accompanying each personnel member would be an average of 2.2, which would result in a total population increase under the Proposed Action of approximately 647 people. This increase would represent an increase of less than 0.1 percent of the ROI population. Continued use of that methodology, when applied to school age dependents, could show an increase of approximately 352 students, an increase of less than 0.1 percent in the student population for the ROI. The negligible increase in population associated with the Proposed Action is not expected to change the demand for law enforcement, fire-fighting services, education, or health care professionals and would result in negligible impacts both short- and long-term. The Proposed Action would result in an increase in student population; however, the impacts to the local school systems should be negligible.

The Proposed Action would likely result in an increase in the demand for housing by approximately 294 units. Because there is an average vacancy rate of 27 percent throughout the ROI vacancy and new housing being constructed, there should be adequate capacity to accommodate 6 SOS growth. Therefore, there should be a short- and long-term, minor beneficial impact to the regional housing market if the Proposed Action is implemented. The impacts associated with the Proposed Action mostly occur within the boundaries of Duke Field.

#### 3.12.3.2 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. If the No Action Alternative were implemented there would be no significant short or long-term adverse impacts to the region's economy, population, or school systems.

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## 3.13 Water Resources

### 3.13.1 Definition of the Resource

Water resources include those waters that are above and below the surface of the Earth. Water resources for this EA include floodplains (drainage basins), wetlands (and waters of the U.S.), groundwater, and coastal zone management. Surface and groundwater resources are protected by Federal and state laws and regulations, including the Clean Water Act (CWA) [Sections 401, 402, and 303(d)], the Safe Drinking Water Act, Section 438 of the Energy Independence and Security Act, and the USEPA's National Pollutant Discharge Elimination System (NPDES), administered by the FDEP.

#### 3.13.1.1 Floodplains

**Floodplains.** Floodplains are lands bordering rivers and streams that normally are dry but are covered with water during floods. They occur in both inland and coastal areas. Risk of flooding typically hinges on local topography, the frequency of precipitation events, size of the watershed above the floodplain, and in the case of coastal areas, storm surge intensity. The direct function of a floodplain is to absorb water and energy from storms. Indirect benefits are groundwater recharge from stormwater absorption, nutrient cycling, waste disposal, carbon sequestration, wildlife habitat, vegetative diversity, and aesthetic qualities.

**EO 11988, Floodplain Management** - EO 11988 requires Federal agencies to avoid direct or indirect support or development within or affecting the 1 percent annual chance Special Flood Hazard Area (SFHA) (i.e., the 100-year floodplain) whenever there is a practicable alternative for Critical Actions, within the 0.2 percent annual chance SFHA (i.e., the 500-year floodplain). EO 11988 further directs all Federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The FEMA regulations for complying with EO 11988 are found in 44 CFR Part 9, Floodplain Management and Protection of Wetlands (1980).

#### 3.13.1.2 Wetlands and Waters of the United States

**Wetlands.** Wetlands are transitional areas of land between well-drained uplands and permanently flooded or aquatic systems. They include swamps, marshes, and bogs and are found in both coastal and inland settings. Their soils are typically hydric, and the water table is commonly at or near land surface for much of the year. Wetlands filter water to remove nutrients, contaminants, and sediment, thereby improving water quality. They recharge water supplies, reduce risk of flood because of storage capacity, and provide important habitat for fish and wildlife.

**Surface Water.** Surface water is water collected on the ground. It is any body of water at land's surface and includes natural features such as wetlands, swamps, streams, rivers, ponds, lakes, marshes, bayous, and oceans. Man-made surface waters include impoundments, canals, drainage ditches, and stormwater catchments (but not necessarily waters of the U.S.).

**Section (§) 401 of the CWA** - Section 401 of the CWA requires state certification of all Federal licenses and permits in which there is a “discharge of fill material into navigable waters.” The certification process is used to determine whether an activity, as described in the Federal license or permit, would impact established site-specific water quality standards. A water quality certification from the issuing state, the FDEP in this case, is required prior to the issuance of the relevant Federal license or permit. The most common Federal license or permit requiring certification is the United States Army Corp of Engineers (USACE) CWA § 404 Permit.

**§ 402 of the Clean Water Act** - The NPDES program was created by § 402 of the CWA. This program authorizes the USEPA to issue permits for the point-source discharge of pollutants into waters of the U.S. The NPDES permitting program controls water pollution by regulating point sources that discharge pollutants into waters of the U.S.

Stormwater from construction sites that would result in a disturbance of 1 acre or more are regulated under the FDEP NPDES, *Generic Permit for Stormwater Discharge from Large and Small Construction Activities* (FDEP 2015; stormwater construction permit).

Additionally, the Energy Independence and Security Act (EISA) Section 438 requires Federal agencies to replicate the pre-development hydrology of facility construction and demolition activities in order to protect and preserve both the water resources onsite and those downstream (USEPA 2009).

**§ 404 of the Clean Water Act** - The USACE, through its permit program, regulates the discharge of dredged or fill material into waters of the U.S., including wetlands, pursuant to § 404 of the CWA. In addition, the USEPA has regulatory oversight of the USACE permit program, allowing the agency under § 404c to veto USACE-issued permits where there are unacceptable environmental impacts. As defined in 33 CFR § 328.3:

- (a) The term *waters of the U.S.* means
- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
  - (2) All interstate waters including interstate wetlands;
  - (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:
    - (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    - (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    - (ii) Which are used or could be used for industrial purpose by industries in interstate commerce;
  - (4) All impoundments of waters otherwise defined as waters of the U.S. under the definition;
  - (5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;
  - (6) The territorial seas; and

- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.

Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 CFR § 328.3[b]) (USACE, 1986).

Section 303(d) of the CWA requires states to develop a list of waters that do not meet established water quality standards and to develop corrective action plans for those waters on the list. Surface waters that do not meet established water quality standards are designated as being “impaired”.

**§ 10 of the Rivers and Harbors Act of 1899** - Section 10 of the Rivers and Harbors Act of 1899 regulates structures or work in or affecting navigable waters. Navigable waters under this statute are defined as “those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce” (33 CFR § 329.4). The USACE implements a permit program to evaluate impacts on navigable waters and their navigable capacity under § 10 (jointly with § 404 of the CWA when a discharge of fill material is also involved). Regulated structures include such objects as buoys, piers, docks, bulkheads, and jetties, while work includes dredging or filling activities.

**EO 11990 – Protection of Wetlands** - EO 11990 directs Federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the values of wetlands for Federally funded projects. FEMA regulations for complying with EO 11990 are found at 44 CFR § 9, Floodplain Management and Protection of Wetlands (1980).

**Air Force Instruction (AFI) 32-7064** - AFI 32-7064 directs that installations shall develop and maintain current inventories of wetlands in order to plan for long-term protection or mitigation.

### 3.13.1.3 Groundwater

**Groundwater.** Groundwater is classically defined as subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated (i.e., the pore spaces in the subsurface materials are completely filled with water). It is part of the hydrologic cycle, originating as precipitation that infiltrates or seeps into the subsurface and then moves toward surface water bodies, where it discharges to complete the hydrologic cycle.

The potable water system at Duke Field is permitted and regulated through the FDEP, under the authority of Chapter 403, Part IV, Florida Statutes. FDEP also monitors and regulates drinking water standards under the authority of Chapter 62.550, FAC. A number of facilities and all family housing units use potable water from the Floridan aquifer for lawn watering and irrigation.

### 3.13.1.4 Coastal Zone Management

The coastal zone includes those coastal lands or water uses governed by the FDEP, pursuant to the Federal CZMA. The outer boundary of Florida’s coastal zone is the limit of state waters, which for the Atlantic Ocean coast of Florida is 3 nautical miles from shore and for the Gulf of Mexico coast of Florida is 9 nautical miles from shore.

The CZMA (16 United States Code [U.S.C]. 1451 et seq., as amended) was enacted to preserve, protect, develop, and, where possible, restore and enhance the resources of the Nation’s coastal zone. Federal agency activities affecting a state’s coastal zone must be consistent to the maximum extent practicable with the enforceable policies of the state’s coastal management program. The CZMA allows coastal states to develop a Coastal Zone Management Plan (CZMP) whereby it designates permissible land and water use within the state’s coastal zone. The Florida Coastal Management Plan (FCMP) was approved by NOAA in 1981 and is codified in Chapter 380, Part II, Florida Statutes. FCMP consists of a network of 24 Florida statutes administered by eight state agencies and five water management districts. Coordination of the program is managed by FDEP.

FDEP is given the authority by Congress to review certain Federal activities that have reasonably foreseeable effects on any land use, water use, or natural resources in its coastal zone to make sure that the Federal actions are consistent with the enforceable policies of Florida’s Federally approved FCMP. This authority is referred to as “Federal consistency.” Some examples of “coastal land or water uses” include such activities as public access, recreation, fishing, historic or cultural preservation, development, energy infrastructure and use, hazards management, marinas, floodplain management, scenic and aesthetic enjoyment, and resource creation or restoration.

A CZMA review of Federal agency activities is conducted and proceeds with a submittal of either a Consistency Determination or a Negative Determination. As detailed in 15 CFR 930, state agencies, such as the FCMP, have 60 days from receipt of this document in which to concur with or object to a Consistency Determination, or to request an extension in writing. The Federal agency may presume state agency concurrence if the state agency’s response is not received within 60 days from receipt of the Federal agency’s Consistency Determination and supporting information.

## 3.13.2 Affected Environment

### 3.13.2.1 Floodplains

Duke Field is located entirely outside of the designated 100- and 500-year floodplains associated with the Shoal River to the north (FEMA, 2002).

### 3.13.2.2 Wetlands and Waters of the United States

**Wetlands.** Eglin AFB lies in the East Gulf Coastal Plain physiographic region, which is characterized by a high percent of land area in wetlands, a diversity of river and stream systems, and ecologically important estuarine and tidal systems (LandScope, 2012). More specifically, Eglin AFB is located within the Pensacola Bay Watershed, which includes the Shoal River. The Shoal River, located immediately adjacent to the north of Eglin AFB, drains an area of 474 square miles and has an average annual discharge of approximately 1,100 cubic feet per second (United States Geological Society [USGS], 2019).

The Eglin AFB complex supports approximately 65,000 acres of wetlands, which are influenced by seasonal fluctuations in precipitation, overland or near surface flow, shallow groundwater, or some combination of these hydrologic processes. Duke Field does have several unconnected wetland strips to the north, south, and east of the airstrip outside of the property boundary. Wetland habitat occurring on Duke Field is limited to a small area on the western property boundary approximately a half mile from the developed region of the base, just east of Florida State Highway 85 (Figure 3-16). This wetland marks the beginning of Pearl Creek, which drains into the Shoal River. Although it is primarily surrounded by longleaf pine forest, this wetland is also surrounded by a sparse road network with a

culvert at its western terminus. Consequently, this wetland habitat is likely marginal with regard to other wetland areas on Eglin AFB (United States Air Force [USAF] 2017c).

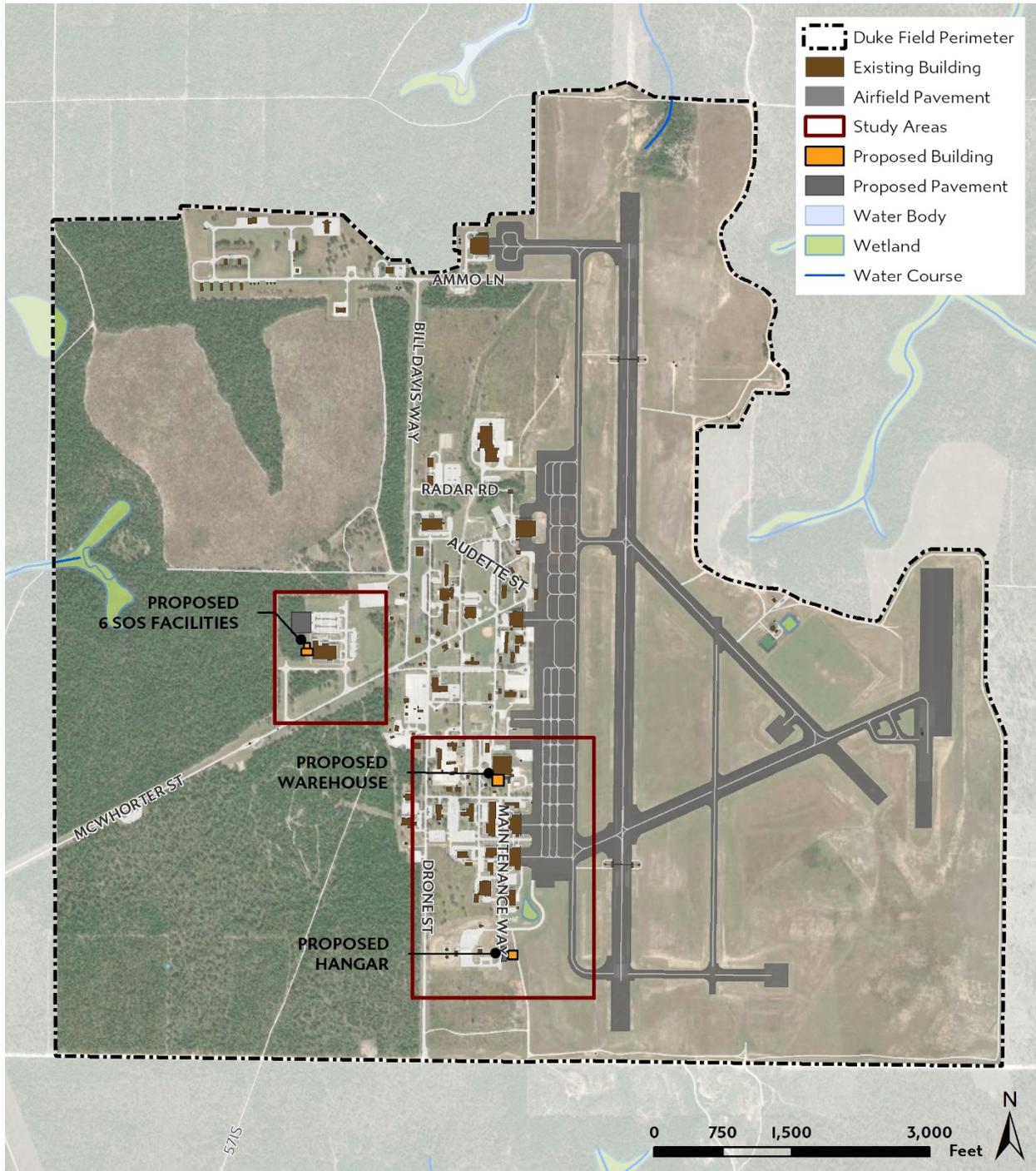


Figure 3-16: Water Resources in Proximity of Duke Field

**Surface Waters.** Pearl Creek and Silver Creek, which are the nearest surface water bodies to Duke Field, are classified as *Class III - Fish Consumption, Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife*. Pearl Creek reaches to the west side of the property and is a cultural restricted area

Silver Creek and the unnamed tributary of Juniper Creek are at least 1,000 feet (0.2 mile) away from the Duke Field boundary. Pearl Creek and Silver Creek are not listed as impaired on the most current 303(d) list (EPA, 2010a; EPA, 2010b).

**Stormwater.** The 96th Civil Engineer Group/Compliance (96 CEG/CEIEC) has primary responsibility for the management of water quality at Eglin AFB. Per the Clean Water Act, the State of Florida classifies surface water bodies according to their designated uses. Duke Field obtains stormwater construction permits and implements associated Stormwater Pollution Prevention Plans (SWPPPs) as needed for construction and other land disturbance activities that require such permits. Duke Field has facilities and activities subject to industrial classification under the NPDES Florida Multi-Sector Generic Permit (MSGP), and is reported as an individual watershed, separate from Eglin Main but included in the same SWPPP. The stormwater collection system from industrial activities includes a system of drop inlets, underground storm sewers, and open ditches. Stormwater can run off as sheet flow from some areas of Duke Field toward a nearby unnamed tributary of Juniper Creek (south of airfield) and Silver Creek (to the northeast near an actively monitored ERP site) (USAF, 2012a). The SWPPP does not cover new construction activities.

The 96 CEG/CEIEC understands that stormwater runoff in urban and developing areas is one of the leading sources of water pollution in the U.S. As such, Eglin AFB is committed to reducing stormwater runoff from Proposed Action facility development projects to protect water resources. Eglin can comply with Section 438 by considering a variety of stormwater management practices often referred to as "green infrastructure" or "low impact development" practices, including, but not limited to reducing impervious surfaces, using vegetative practices, porous pavements, cisterns, and green roofs, etc. In addition, Eglin recognizes that Section 438 requires projects with footprints "that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow." For example, if prior to development, twenty five (25) percent of the annual rainfall runs directly into the stream and the remainder infiltrates into the ground or is evapotranspired into the air, then the post-development goal should be to limit runoff to twenty five (25) percent of the annual precipitation while maintaining the correct aquifer recharge rate (EPA, 2009).

### 3.13.2.3 Groundwater

The two aquifers located under Eglin AFB, and therefore the five cantonment areas, are the sand and gravel aquifer and the Floridan aquifer. The Floridan aquifer is located below the sand and gravel aquifer and extends beneath peninsular Florida. The sand and gravel aquifer is not a primary source of domestic or public supply water on Eglin AFB because of the large quantities of higher quality water available from the underlying upper limestone of the Floridan aquifer (Northwest Florida Water Management District [NFWFMD], 2018). The top of the Floridan aquifer is about 50 feet below MSL in the northeast corner of the base and increases to about 700 feet below MSL in the southwestern area of the base. The top of the aquifer is about 400 to 450 feet below MSL in the Eglin Main Base area.

Increasing concerns about the existing and anticipated water supply from the Floridan aquifer have resulted in the designation of the coastal areas of Region II, south of Eglin AFB in Santa Rosa, Okaloosa, and Walton Counties, as a Water Resource Caution Area (WRCA). The WRCA designation by the NFWFMD requires withdrawal permittees to implement water conservation measures and maximize their water use efficiency. In addition, permittees in the WRCA are subject to increased water use reporting requirements. The WRCA designation also prohibits the use of the Floridan aquifer for non-potable purposes (NFWFMD, 2018). All cantonment areas have wells and are displayed on water resource maps.

### 3.13.2.4 Coastal Zone Management

Based upon the geography of Florida and the legal basis for the state program, the entire state of Florida is included within the coastal zone. Geographically, Florida has low land elevation, a generally high water table, and an extensive coastline with many rivers emptying into coastal waters. Few places in Florida are more than 70 miles from either the Atlantic Ocean or the Gulf of Mexico. The result is an interrelationship between the land and coastal waters, which makes it difficult to establish a boundary that would exclude inland areas. Because of this interrelationship, the state boundaries include the entire area encompassed by the state's 67 counties and its territorial seas. All of Duke Field is within Florida's Coastal Zone, as defined by the FCMP. While Federal lands such as Duke Field are statutorily excluded from Florida's coastal zone, Federal approval of the FCMP elicits Section 307 of the CZMA and mandates that activities on Federal lands that have the potential to affect coastal resources or uses on non-Federal lands comply to the maximum extent practicable with the enforceable policies of the FCMP. Florida's CZMP includes the 24 enforceable policies (statutory authorities) incorporated into the Federally approved FCMP.

As appropriate, the Air Force (i.e., Eglin's NRO) would submit either an analysis of the CZMA Consistency Determination or prepare a CZMA Negative Determination under 15 CFR 930, and request a Concurrence of these determinations from the Florida State Clearinghouse for the construction actions. The determination and request for Concurrence would state that this activity would not have an effect on the Florida coastal zone concerning water resources. Eglin AFB management policies provide for the sustainable water management and the conservation of surface water and groundwater for full beneficial use.

## 3.13.3 Environmental Consequences

### 3.13.3.1 Analysis Approach

In addition to the significance criteria established at the beginning of this section, the following thresholds were used to determine if an impact on water resources would be significant:

- USACE has authority for delineating jurisdictional wetlands and evaluating wetland impacts not avoidable under Section 404 of the CWA. Impacts would be significant if they violate Federal or state surface water protection laws;
- Impacts constitute a substantial risk to aquatic animals and/or humans or contamination poses secondary health risks during the project life;
- Impacts would eliminate or sharply curtail existing aquatic life or human uses dependent on in-stream flows or water withdrawals during the project life;

- Impacts would place structures within a 100-year flood hazard area which violate Federal, state, or local floodplain regulations; or
- Impacts would expose people or structures to a substantial risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

### 3.13.3.2 Proposed Action

**Floodplains.** Implementation of the Proposed Action would have no effect on floodplains. The facilities construction would not be located within the 100-year floodplain. The beddown of the five single-engine aircraft, along with the new aircraft training activities, would not be located within the 100-year floodplain.

**Wetlands.** Implementation of the Proposed Action would have no effect on wetlands. No portions of this previously disturbed land area are designated as FDEP or USACE jurisdictional wetlands, therefore, construction of the facilities would not displace any wetlands. Consequently, no ERPs would be required from NFWFMD and no Section 404 Permits would be required from USACE. The beddown of the five single-engine aircraft, along with the new aircraft training activities would not be located in any wetlands.

**Groundwater.** Implementation of the Proposed Action would have no effect on groundwater. The ground disturbances for the construction activities are at the surface and, at most, a couple feet below the subsurface, but are not expected to impact groundwater in any way. The Air Force would coordinate with the ERP for Land Use Controls to locate and comply with restrictions near monitoring or water wells in the Duke Field Study Area. Since only preliminary construction designs have been described, irrigation requirements for new construction landscaping have not been defined. It is estimated, however, that no appreciable increases in groundwater demand would be associated with landscaping irrigation of the new construction. The beddown of the five single-engine aircraft, along with the new aircraft training activities, would not result in any impacts on groundwater.

**Coastal Zone.** No direct, long-term, adverse impacts on the coastal zone would be expected from the implementation of the Proposed Action. Temporary, indirect, negligible adverse impacts from soil disturbance could create nonpoint source water pollution; however, Duke Field would utilize BMPs to reduce the chance of impacts. No visual impacts on the coastal zone are anticipated. The beddown of the five single-engine aircraft, along with the new aircraft training activities, would not result in any impacts on the coastal zone. Eglin currently has Concurrence on their Consistency Determination from the Florida State Clearinghouse covering facility construction and demolition activities in cantonment areas, including Duke Field. The only activity potentially not considered in this determination would be the potential impacts on the noise environment resulting from the beddown of the five single-engine aircraft.

On Thursday, September 12, 2019, Eglin sent an email request for Concurrence to the Florida State Clearinghouse stating “Eglin AFB believes this proposed action will either not affect or will be consistent with the twenty-four Florida Statutes that comprise the FCMP, and through consultation with the Florida State Clearinghouse shall be compliant with the Coastal Zone Management Act of 1972 (as amended).” On Friday, September 13, 2019, Eglin received a statement of Concurrence stating “While it is covered by EO 12372, the Florida State Clearinghouse does not select the project for review. You may proceed with your project.” Implementation of the Proposed Action would have no effect on floodplains, wetlands, or groundwater. Implementation of the Proposed Action would result in

temporary, indirect, negligible, adverse impacts on the coastal zone. Overall, there would be no significant impacts on water resources as a result of implementing the Proposed Action.

### 3.13.3.3 No Action Alternative

Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur. Therefore, the No Action Alternative would have no effect on floodplains, wetlands, groundwater, or the coastal zone and there would be no significant impacts on water resources as a result of implementing the No Action Alternative.

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## SECTION 3

## 3.14 Cumulative Effects

### 3.14.1 Introduction

This section of the EA addresses the potential cumulative impacts associated with the implementation of the alternatives and other projects/programs that are planned for the region. The CEQ defines cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). This CEQ section continues: “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” by various agencies (Federal, state, and local) or individuals. Informed decision making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

By Memorandum dated June 24, 2005, from the Chairman of the CEQ to the Heads of Federal agencies, entitled “Guidance on the Consideration of Past Actions in Cumulative Effects Analysis”, CEQ made clear its interpretation that “...generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions...” and that the “...CEQ regulations do not require agencies to catalogue or exhaustively list and analyze all individual past actions.”

This cumulative impact analysis summarizes expected environmental effects from the combined impacts of past, current, and reasonably foreseeable future projects within the Study Area. The Air Force reviewed available environmental documentation regarding known current and past Federal and non-Federal actions associated with the resources analyzed in Chapter 3. In addition, projects in the planning phase were also reviewed if they had the potential to interact with the proposed Duke Field actions of this EA and if the projects were considered reasonably foreseeable (not speculative). The level of information available for the different projects varies but the best available science is used in the cumulative impact analysis.

The USEPA suggests that analysis of cumulative impacts should focus on specific resources and ecological components that can be affected by the incremental effects of the proposed actions and other actions in the same geographic area. This can be determined by considering:

- Whether the resource is especially vulnerable to incremental effects;
- Whether the Proposed Action is one of many similar actions in the same geographic area;
- Whether other activities in the area have similar effects on the resource;
- Whether these effects have been historically significant for this resource; and
- Whether other analyses in the area have identified cumulative effects.

Additionally, the analysis should consider whether geographic and time boundaries large enough to include all potentially significant effects on the resources of concern have been identified. Geographic boundaries should be delineated and include natural ecological boundaries and the time period of the project’s effects. The adequacy of the cumulative impact analysis depends upon how well the analysis

considers impacts that are due to past, present, and reasonably foreseeable actions. This can be best evaluated by considering whether the environment has been degraded (and to what extent), whether ongoing activities in the area are causing impacts, and the trend for activities and impacts in the area.

The Proposed Action analyzed in this EA would not make radical changes to the environment in and around the Duke Field cantonment area. Rather, the Proposed Action would result in temporary impacts on the environment. As such, there is limited potential for the affected resources of the Proposed Action to interact with the affected resources of past, present, or reasonably foreseeable actions. The environmental impacts resulting from the facility construction projects captured in this EA would not result in impacts on, or cause permanent changes to, the 100-year floodplain or wetlands. The facility construction projects and increased air operations would result in negligible-to-minor impacts on, yet only temporary changes to, the noise environment and air quality. Potential interactions with other past, present, or reasonably foreseeable actions would generally be those actions that may also have temporary effects on the noise environment and air quality within the Duke Field cantonment. Specific projects that have occurred, those currently taking place, and those projected for the future are identified in subsequent subsections.

### 3.14.2 Past, Present, and Foreseeable Future Projects

Various types of past, present, and reasonably foreseeable actions not related to the Proposed Action have the potential to affect the resources identified in Chapter 3 of the EA. The overview of these actions in this section emphasizes components of the activities that are relevant to the impact analysis also identified in Chapter 3. Geographic distribution, intensity, duration, and historical effects of similar activities are considered when determining whether a particular activity may contribute cumulatively and significantly to the impacts of the Proposed Action on the resource areas identified in the EA.

Based on a review of past, present, and reasonably foreseeable actions at Duke Field and the region (Okaloosa County), it was determined that several actions would be considered when analyzing the potential cumulative impacts of the actions. The projects listed in this section are those that have the potential to cumulatively impact the resources assessed in this EA. These projects are described below and the impacts of these projects, in combination with the impacts of the Proposed Action, are described in this section.

### 3.14.3 Past Actions at Duke Field

The Air Force has not identified any specific, individual, past actions that are relevant to the current Proposed Action at Duke Field. Past actions are those actions, and their associated impacts, that occurred within the geographical extent of cumulative effects that have shaped the current environmental conditions of the Project areas. CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions. As such, the effects of past actions are now part of the existing environment and are included in the affected environment described in Section 3.0. Recent past actions with ongoing effects germane to cumulative impacts are, however, discussed with present and reasonably foreseeable future actions.

The addition of 59 F-35 aircraft to the Base's aircraft inventory constitutes one of the primary actions associated with Eglin AFB's mission over the last five years. As such, a number of facilities have been recently constructed at the Installation to support the beddown of the F-35 aircraft. Various projects involving improvements to existing on-base facilities, roads, and utility systems, and construction of new

infrastructure have been conducted over the years as needed to support Eglin AFB’s mission. Other examples of recently completed infrastructure projects at Eglin AFB include the 2017 on-base solar array farm, as well as the completed construction of new military housing at Eglin AFB and Hurlburt Field as part of the Air Force’s military housing privatization initiative (MHPI). Infrastructure improvements will continue to be needed to support Eglin AFB’s mission, and they constitute the primary foreseeable future mission-support actions at the Installation.

Another recent mission-related action at Eglin AFB has been the addition of Black Dart testing events. The annual two-week Black Dart testing event involves the use of munitions, lasers, and high-power microwaves to counter and defeat UASs. A number of Eglin AFB test areas and water ranges are used for Black Dart testing. During the events, TA B-71 may be used for launch and recovery of UASs, and TA B-82 may be used to house radar systems and other sensors; negation of UASs may also occur over TA B-82. The potential environmental impacts of Black Dart testing have been analyzed in the EA prepared for Black Dart events at Eglin AFB.

### 3.14.4 Present and Reasonably Foreseeable Future Actions at Duke Field

The ongoing development of Eglin AFB’s cantonment areas, establishment of the Joint Strike Fighter (JSF) Initial Joint Training Site (IJTS) at Eglin AFB, and any additional, yet-unscheduled construction and renovation projects that will be needed to support Eglin AFB’s (including Duke Field) continued growth were also considered as present and reasonably foreseeable future actions to occur at Eglin AFB (Figure 3-17 and Figure 3-18). Continuing construction activities associated with Hurlburt’s MHPI would also be anticipated.

Additionally, the USAF recently (2016) proposed to establish a C-146A aircraft squadron at Duke Field on Eglin AFB. The 524 SOS would relocate to Duke Field and operate the C-146A aircraft under the Air Force Special Operations Air Warfare Center, in a USAF Non-Standard Aviation (NSAv) classic association with the 919 SOW under the Air Force Reserve Command (AFRC) (AFSOC and AFRC, 2015). This ongoing action includes the relocation and beddown of an additional 18 C-146A aircraft and approximately 169 personnel from Cannon AFB to Duke Field beginning in FY16, which would result in a total of 23 C-146A aircraft at Duke Field. This action also required the construction of a C-146A one-bay hangar and collocated aircraft maintenance unit (AMU) facility; a squadron operations facility for the 524 and 859 SOS; and a temporary (and ultimately a permanent) WST facility for C-146A aircraft.

In order to respond to a pilot manning crisis exacerbated by Hurricane Michael, the USAF has temporarily beddown F-22 aircraft and associated T-38 Talon aircraft at Eglin AFB in Okaloosa County, Florida, from Tyndall AFB in nearby Bay County, Florida. This interim beddown has temporarily restored training of replacement pilots for the F-22 FTU at Eglin AFB until the USAF completes an Environmental Impact Statement for the F-22 FTU’s permanent beddown. On April 25, 2019, the USAF signed a Record of Decision for the Emergency Beddown of the F-22 FTU and Associated T-38 Aircraft from Tyndall AFB to Eglin AFB.

A temporary increase of up to 933 additional active duty military, civilian, and contractor personnel has occurred at Eglin AFB, equating to up to 2,985 new persons temporarily added to the area surrounding Eglin AFB. However, this would only result in a net increase of about 751 persons compared to the no action alternative analyzed in the 2014 *SEIS for F-35 Beddown at Eglin AFB, Florida* (the “2014 SEIS”).

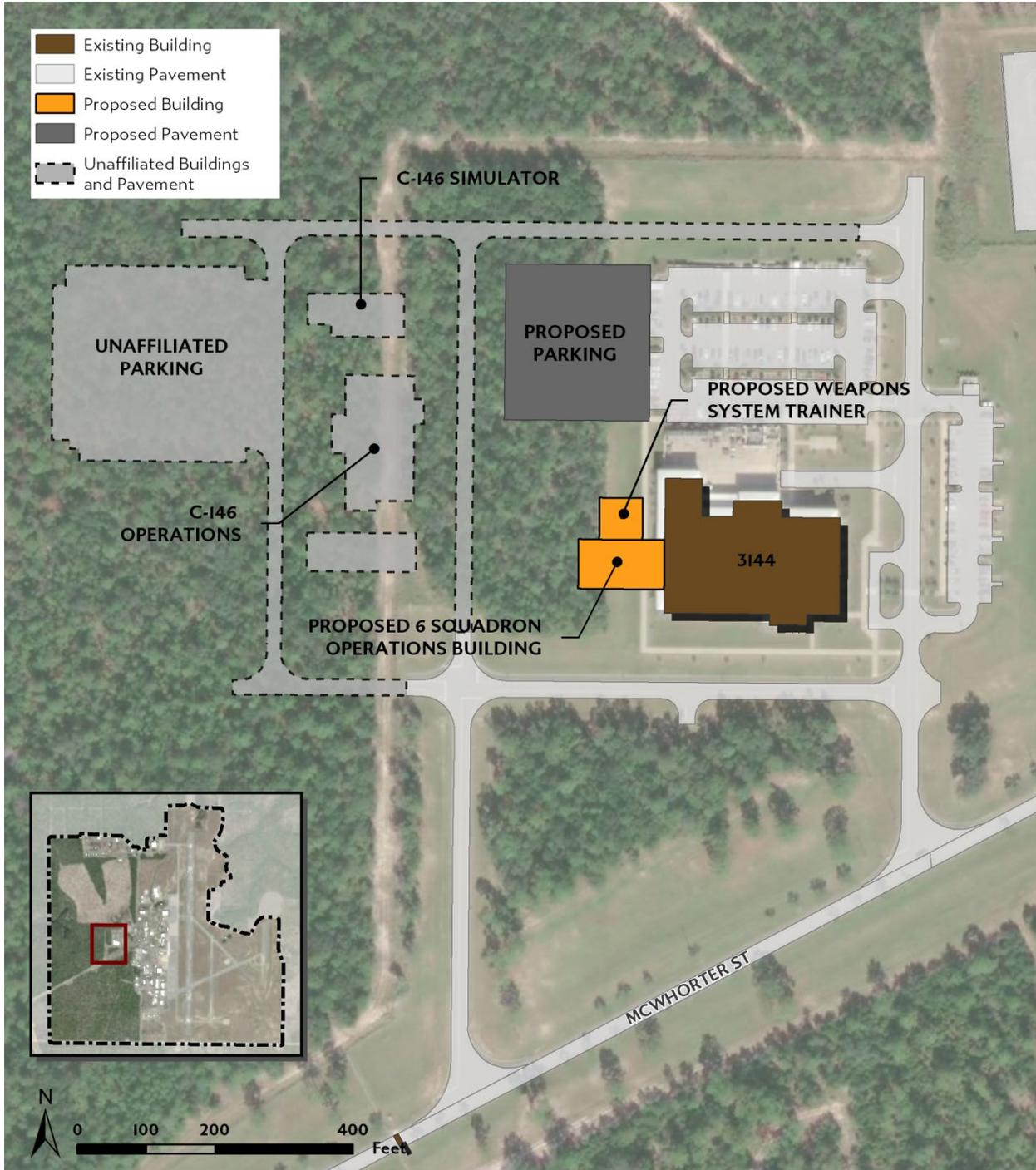


Figure 3-17: Duke Field Site EA Site 1 Planned Future Construction Projects

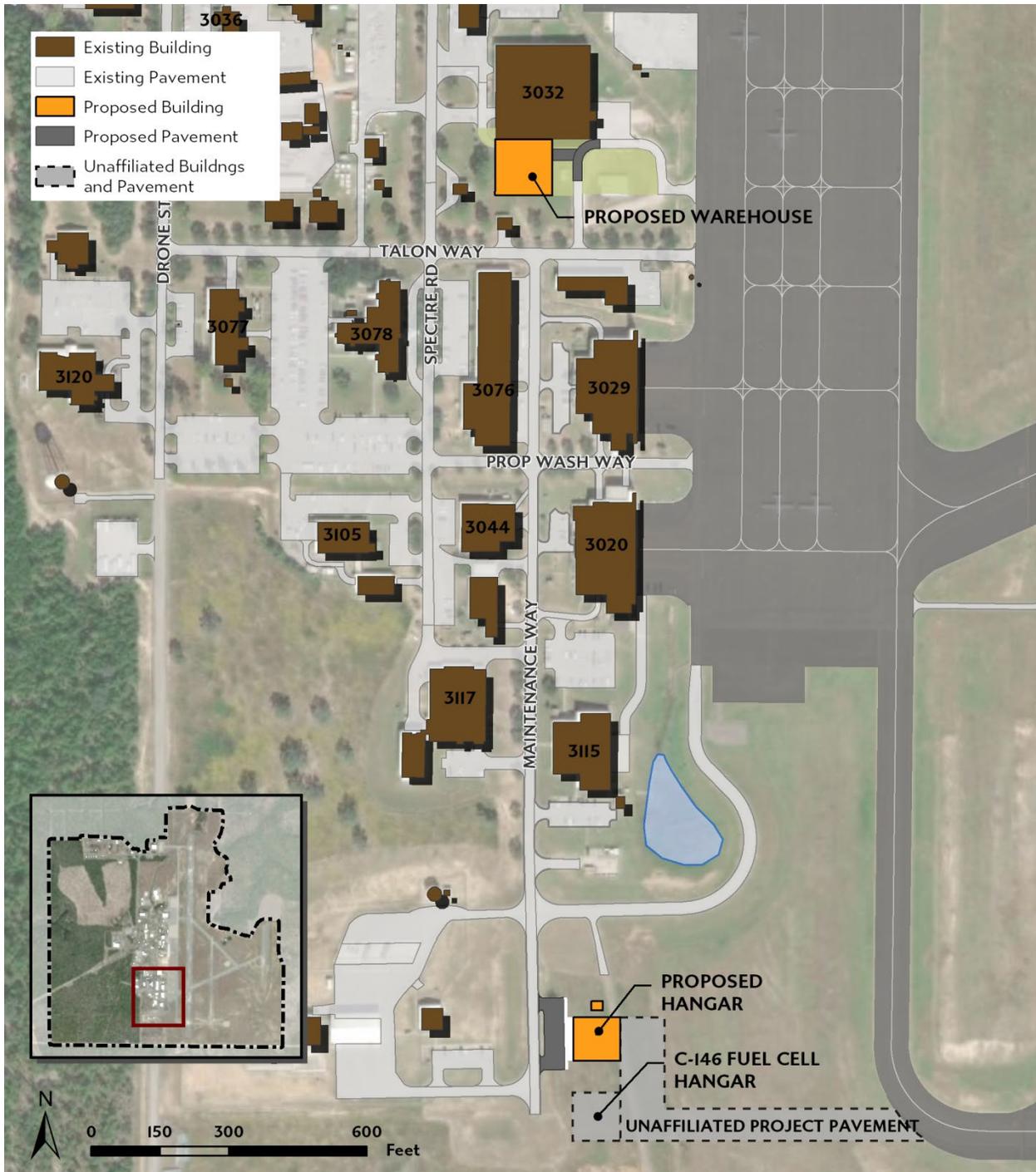


Figure 3-18: Duke Field Site EA Site 2 Planned Future Construction Projects

In response to the devastating impacts from Hurricane Michael to Tyndall AFB, FL, the Air Force consulted with the CEQ and requested emergency alternative arrangements for compliance with NEPA, in accordance with CEQ Regulation 40 CFR 1506.11. The USAF proposes to permanently beddown 5th generation FTU fighter aircraft at Langley AFB, Virginia and/or Eglin AFB, Florida. The alternative arrangements also required the Air Force to undertake an EIS for the permanent beddown of the F-22 FTU as soon as possible and to issue a NOI to prepare an EIS by no later than April 1, 2019. In addition to the permanent beddown of the F-22 FTU, this proposed action also includes optimization of the 5<sup>th</sup> generation fighter FTU operations to ensure adequate training ranges, facilities, and airspace necessary to effectively produce qualified combat pilots. The AF issued the NOI in the Federal Register (FR) on March 26, 2019.

Eglin AFB is also proposing to provide dedicated contract adversary air (ADAIR) flying missions (30,000 annual sorties) to improve the quality of training and readiness of pilots of the 33 FW at Eglin AFB, Florida. As a shared resource, other units assigned to Eglin AFB such as the 96 TW and 53d Wing may use contract ADAIR to support activities provided they are legitimate training requirements (e.g., a large force exercise undertaken to allow aircrews to train alongside other aircraft, providing realistic training scenarios involving multi-aircraft operation. The contract ADAIR support would employ adversary tactics across the training spectrum from basic fighter maneuvers to higher-end, advanced, simulated, combat training missions. The objective is to increase the quality of training for 5th generation F-35 fighter pilots by filling the “near peer” capacity and capability gap currently present in the 5th generation training enterprise. Additionally, other AF (4th generation) units that may have been tasked to provide ADAIR training support at Eglin AFB may now recapitalize valuable flying hours to focus on increasing their own levels of proficiency and readiness.

A non-Federal project is proposed to elevate at the Crestview junction of three major highways: United States Highway 90 (US 90), SR 85, and Interstate 10 (I-10). The project area is for a new interchange to be located along I-10 near Antioch Road/PJ Adams Parkway; 8.6 miles east of Log Lake Road and 2.6 miles west of SR 85. This is a much needed second interchange for Crestview that will open approximately 300 acres within the City of Crestview for commercial economic development as well as 1,800 acres for residential development. Additionally, it will provide acceleration of critically needed transportation improvements and drastically improve safety on both SR 85 and I-10.

Table 3.21 provides a summary of list of the past, present, and foreseeable future projects.

<b>Table 3.21: Past, Present, and Foreseeable Future Projects</b>
<b>Past Projects</b>
Beddown of 59 F-35 Aircraft at Eglin AFB
Installation Support for the Beddown of the F-35 Aircraft
On-base Solar Array Farm at Eglin AFB
Military Housing at Eglin AFB and Hurlburt Field
Black Dart Testing at Eglin AFB and Tyndall AFB
<b>Present and Future Projects</b>
AvFID Growth at Duke Field
Installation Support for the AvFID Growth at Duke Field
Beddown of C-146A Aircraft Squadron (18 aircraft and 169 personnel) at Duke Field
Installation Support for the C-146A Aircraft Squadron at Duke Field
Temporarily Beddown of F-22 Aircraft and Associated T-38 Talon Aircraft at Eglin AFB

**Table 3.21: Past, Present, and Foreseeable Future Projects**

5th Generation FTU Optimization at Eglin AFB
New Interchange Along I-10 near Antioch Road/PJ Adams Parkway

### 3.14.5 Cumulative Effects Analysis

Other military and agency actions in the region may overlap in space or time with the EA Proposed Action, but with the absence of specificity in knowledge of their timing and location, cumulative effects analysis is a challenge. Overlaps of other military actions, however, have historically been handled through intense, coordinated scheduling. This scheduling would not result in significant cumulative impacts. There is potential interaction with some ongoing and recent projects, described above, to have the potential to either increase or offset possible environmental consequences.

The following analysis examines the impact on the environment that would result from the incremental impact of the Proposed Action in addition to other past, present, and reasonably foreseeable future actions. This analysis assesses the potential for an overlap of impacts with respect to project schedules or affected areas. Specific information on all the projects considered in this analysis is not available, so the cumulative impacts of these actions cannot yet be quantified. Therefore, this section presents a qualitative analysis of the cumulative impacts, based on significant activities anticipated for each project.

To determine the significance of each of the cumulative impacts of the Proposed Action and other actions, significance was determined according to Section 1508.27 of the Environmental Quality Improvement Act of 1970, as amended [43 CFR 56003, Nov. 29, 1978]. The primary factors considered for each resource area in determining significance as used in NEPA requires considerations of both context and intensity.

**Context.** This means that the significance of an action must be analyzed in several contexts such as society as a whole, the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

**Intensity.** This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

- Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that the effect would be beneficial.
- The degree to which the Proposed Action affects public health or safety.
- Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- The degree to which the effects on the quality of the human environment are likely to be highly controversial.
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

- The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
- The degree to which the action may adversely affect districts, sites, buildings, structures, or objects listed in or eligible for listing in the NRHP or may cause loss or destruction of significant scientific, cultural, or historical resources.
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the ESA of 1973.
- Whether the action threatens a violation of Federal, state, or local law or requirements imposed for the protection of the environment.

Based on the assessment of ongoing and reasonably foreseeable actions at Duke Field, the 6 SOS Proposed Action would result in some cumulative impacts as a result of the various projects, as described below.

#### 3.14.5.1 Airspace Management

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on airspace management of all past, present, and reasonably foreseeable actions. Short- and long-term, minor, adverse cumulative impacts would be expected following implementation of the Proposed Action and the other identified cumulative projects on airfield and airspace management at Eglin AFB. The proposed growth in AvFID aircraft operations would result in an increase in annual operations of AFSOC's 492 SOW at Duke Field. There are concerns regarding airspace availability and scheduling for the Proposed Action due to AFSOC operations. The concerns have been identified as: (1) the need to remain within the existing AFSOC allocation for use of Eglin's ranges and airspace. This needs to be addressed through prioritization and the sub-allocation of range and airspace usage for the 492 SOW and (2) addressing the scheduling capacity of the SOW 1 for the increase in 492 SOW air operations. These concerns are expected to be worked out by AFSOC/A3. To address these concerns, AFSOC/A3 is working towards the effective sub-allocation of AFSOC-allocated airspace within the approved operating hours for Duke Field. They are also looking at possibly extending the operating hours for Duke Field or obtaining uncontrolled field operations approval (AFSOC Site Survey Report AvFID Growth (6 SOS) at Duke Field, FL, Dec 2018). Aware of AFSOC's allocation and capacity concerns, Eglin AFB's 96 Operations Support Squadron (96 OSS) finds the air operations of the Proposed Action from an airspace perspective as negligible and compatible with current operations (Chase, personnel communication, 2019).

There are no anticipated changes to the configuration (i.e., size, shape, or location) of airspace required to support implementation of the Proposed Action. Relative to regional aircraft activity, the net increases in flight activity over current operations at HRT and CEW are expected to be minor. There is no indication of impacts associated with the existing LZs and DZs to be used for the Proposed Action.

Future Duke Field and non-Federal actions would also result in an increase in annual operations. The proposed beddown of the C-146A aircraft squadron at Duke Field would cause temporary increases in air operations at Duke Field. Other actions include the continued IJTS and the Black Dart testing events at Eglin AFB, as well as the proposed 5th Generation FTU Optimization at Eglin AFB. The actual timing of

these proposed future projects is essential in estimating any future permanent increases in annual operations. Cumulatively, the additional C-146A aircraft, JSF aircraft and the aircraft that could operate as a result of the 5th Generation FTU Optimization at Eglin AFB would increase air traffic controller workload and may cumulatively contribute to increased congestion of other airspaces and nearby airfields within the region. It would be expected that the total aircraft operations local to Duke Field and Eglin AFB would still be less than in recent years and would not cause the total operations for the Installation to meet or exceed the ATC or runway capacity of Eglin AFB's airfields.

Annual operations occurring outside of the Eglin AFB Restricted Airspace would be distributed over a large area and would not be expected to exceed the established capacities of their respective airspaces. Relative to regional aircraft activity, net increases in flight activity under the Proposed Action and other cumulative projects at Eglin AFB, other nearby airfields, and remote LZs would be minor because the operations would be distributed over space and time in accordance with Gulf Regional Airspace Strategic Initiative (GRASI) recommendations. As a result, any impacts on airspace management at Eglin AFB or within the southeast region would be less than significant. Additionally, because the Proposed Action and other cumulative projects would not require alterations of the existing airspace, runway, or airfield configurations, no additional cumulative impacts on these resources would be expected.

The addition of approximately 43,000 total operations (F-22 and T-38) associated with relocating aircraft from Tyndall AFB would not exceed the total level of operations identified under the 2014 SEIS Record of Decision.

Proposed contract ADAIR sorties would generally consist of the following five steps: depart from Eglin AFB runway, transit from Eglin AFB airfield to airspace, perform ADAIR training, transit back to Eglin AFB, and land at Eglin AFB. Time spent within the airspace (W-151, Rose Hill Military Operating Area/ Air Traffic Control Assigned Airspace [MOA/ATCAA], and Eglin MOA E) would depend upon the specific training mission performed. Supersonic operations are currently allowed in the MOAs above 30,000 feet above mean sea level. Contractor operations would occur in these MOAs and W-151 concurrent to the 33 FW or other supported Air Force units. No airspace modifications would be required for contract ADAIR.

Construction activities associated with the new interchange along I-10 are not anticipated to have any associated airspace management impacts on Duke Field.

Overall, no significant adverse cumulative effects on airspace management would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to airspace management.

### 3.14.5.2 Safety

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on safety of all past, present, and reasonably foreseeable actions. The Proposed Action would result in a slight increase in the current number of annual aircraft operating hours and sorties at Duke Field. Future Duke Field and non-Federal actions would also generate noise. The proposed beddown projects supporting the C-146A would increase air operations at Duke Field. Other actions include the continued IJTS and the Black Dart testing events at Eglin AFB, as well as the proposed 5th Generation FTU Optimization at Eglin AFB. The actual timing of these proposed future projects is essential in estimating

any future permanent increases in safety concerns. Aircraft operations would continue to adhere to all established flight safety guidelines and protocol, including those identified in the SOPs and the BASH Plan for Eglin AFB and Duke Field. The operational altitudes for the growth in operations also minimize the risk of BASH. Conflicts with the BASH plan or an increase in BASH-related incidences are not anticipated under the implementation of the Proposed Action, therefore, there would be negligible impacts related to safety.

New facilities supporting the Proposed Action would be constructed west of Building 3144, near the southwest corner of the airfield, and south of Building 3032. None of these facilities would be constructed within a CZ or APZ. Other actions include the MHPI on Hurlburt Field; however, the timing of the implementation of the MHPI on Hurlburt Field is uncertain. The beddown construction projects supporting the C-146A would also be similar in size and scope of many of the EA Proposed Actions. These facilities would be underneath the imaginary surface and transitional plans for the airfield but would present no hazard to aircraft operations or human safety per requirements in AFI 32-7063 and UFC 3-260-01; therefore, there would be no safety hazard effect from implementation of the Proposed Action. Similarly, none of these facilities would be constructed within the ESQD arcs established for Duke Field. None of the activities under the Proposed Action would result in a change or reconfiguration of the ESQD arcs or impact the movement of munitions; therefore, there would be no safety hazard effect from the location and construction of these facilities.

All training operations on Duke Field and the Eglin Range are conducted in coordination with the Eglin Safety Office and in strict compliance with established range safety procedures. Based on the restrictions on public access and the safety procedures that are implemented, the combination of the Proposed Action and other military operations at Eglin AFB would not result in adverse cumulative safety impacts on military personnel, Eglin AFB employees, or the general public.

Any potential safety concerns related to construction activities associated with the new interchange along I-10 are anticipated to be appropriately managed and mitigated by Florida Department of Transportation (FDOT). The project is anticipated to have a net benefit to easing traffic congestion for military and civilian staff entering or transiting past Duke Field highway 85 entrances, and thus improve overall highway safety. Overall, no significant adverse cumulative effects on safety would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to safety.

### 3.14.5.3 Air Quality

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on air quality of all past, present, and reasonably foreseeable actions. The ROI for evaluating cumulative impacts on air quality is Okaloosa County, which is in attainment for all NAAQS. The emissions generated during the implementation the Proposed Action would be additive to other emissions generated coincidentally within the region. Compliance with the Florida State Implementation Plan would ensure that implementation of the EA Proposed Action, in combination with past, present, and future actions, would not result in a permanent increase in existing NAAQS; would not contribute to an increase in the frequency or severity of violations of existing NAAQS; and would not delay the timely attainment of any NAAQS, interim milestones, or other milestones to achieve attainment.

Future Duke Field and non-Federal actions would also generate emissions. The proposed beddown projects supporting the C-146A aircraft squadron at Duke Field would cause temporary increases in pollutant emissions from temporary construction of facilities and increased air operations at Duke Field. Other actions include the continued IJTS and the Black Dart testing events at Eglin AFB, as well as the proposed 5th Generation FTU Optimization at Eglin AFB. The actual timing of these proposed future projects is essential in estimating any future permanent increases pollutant emissions. The MHPI on Hurlburt Field would include the construction of 484 units and amenities; however, the timing of the implementation of the MHPI on Hurlburt Field is uncertain. Each of the beddown construction projects supporting the C-146A aircraft would also be similar in size and scope of the EA Proposed Action.

Emissions from the Proposed Action are not expected to significantly add to the cumulative impacts on existing air quality of all past, present, and reasonably foreseeable actions. This is because existing levels of criteria pollutants and GHG emissions are low, and emissions from the Proposed Action would cause localized, temporary, minor adverse impacts on ambient air quality. Future point sources would be required to control emissions and the level and the type of development that would occur in the reasonably foreseeable future would not produce substantial emissions and occur over a 5-year period. Similarly, no mitigation measures or development of adaptive measures for sea-level rise are necessary in order to mitigate for potential climate change (revoked by EO 13783) impacts for years 2046 to 2065 due to the Proposed Action or any of the other past, present, and reasonably foreseeable actions. As with the EA Proposed Action, pollutant and GHG emissions associated with these other present and future demolition and construction activities would result in short-term, minor, adverse impacts on air quality and would cease upon completion of the projects.

Impacts from the addition of the ADIAR, F-22, and T-38 aircraft operations would not be anticipated to exceed 250 tons per year. GHG emissions would be minimal in terms of annual national GHG emissions and well below 75,000 metric tons (82,673 tons).

Any potential air quality impacts resulting from construction activities associated with the new interchange along I-10 are anticipated to be consistent with regional air quality standards and anticipated to be appropriately managed and mitigated by FDOT. Overall, no significant adverse cumulative effects on air quality would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to air quality.

#### 3.14.5.4 Noise Environment

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on the noise environment of all past, present, and reasonably foreseeable actions. Most past, present, and future actions have generated, are generating, or would generate some type of noise, either from a facility itself, from vehicles traveling to and from a site, or from humans. Noise is typically a nuisance factor for sensitive receptors such as residences, hospitals, or parks—where quiet conditions are important—and may also affect acoustically dependent non-human species. Proximity to high sound levels can result in physiological problems or hearing damage. Over time, the trend has been for noise levels to increase as development has occurred, particularly during daytime hours when activity levels are highest.

Past actions resulting in temporary noise increases in and around Duke Field have included other building demolitions and new construction within the cantonment. The noise contributions from these actions were temporary, minor, adverse impacts on the noise environment and ceased upon completion of the relevant projects. Past, present, and future actions at and around Duke Field are not anticipated to cumulatively affect the noise environment. Permanent increases in airborne noise from past actions have resulted from increases in aircraft and vehicle traffic, and noise from these sources dominates the current daytime ambient noise environment. Current actions which may affect ambient noise in the Study Area include existing aircraft, vehicle, and traffic from commercial, recreational, and military activities, day-to-day airfield activities, routine cantonment maintenance activities, and training operations.

Future Duke Field and non-Federal actions would also generate noise. The proposed beddown projects supporting the C-146A would increase airborne noise from temporary construction of facilities and increased traffic at Duke Field. Other actions include the continued IJTS and the Black Dart testing events at Eglin AFB, as well as the proposed 5th Generation FTU Optimization at Eglin AFB. The actual timing of these proposed future projects is essential in estimating any future permanent increases in airborne noise. The MHPI on Hurlburt Field would include the construction of 484 units and amenities; however, the timing of the implementation of the MHPI on Hurlburt Field is uncertain. Each of the beddown construction projects supporting the C-146A would also be similar in size and scope of the Proposed Action.

Noise impacts associated with ADAIR training and the relocating aircraft (F-22 and T-38) from Tyndall AFB could include annoyance, activity interruption, hearing loss, and potentially non-auditory health effects.

The type of noise and noise levels produced by these actions would be dependent on the specific project, and the impact of these noise sources would depend on their location relative to sensitive receptors. It is likely that some of these future actions would produce nuisance noise. There are requirements to limit the level of noise produced by residential, commercial, or industrial land uses. Thus, some future development would have requirements to provide soundproofing measures. As with the Proposed Action, noise associated with these other present and future demolition and construction activities would result in short-term, minor, adverse impacts on the noise environment and would cease upon completion of the projects.

Any potential noise impacts resulting from the construction activities associated with the new Interchange along I-10 are anticipated to be appropriately managed and mitigated by FDOT.

Overall, no significant adverse cumulative effects on the noise environment would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to the noise environment.

### 3.14.5.5 Land Use

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on existing land use of all past, present, and reasonably foreseeable actions. This is because these construction projects would not conflict with applicable ordinances and/or permit requirements and would not cause nonconformance with the current general plans and land use plans or preclude

adjacent or nearby properties from being used for existing activities. The Proposed Action considered in this document would be consistent with USAF planning policies and guidelines and would be compatible with land use guidelines established in the Duke Field ADP. The construction of the 6 SOS Squadron Operations Facility is consistent with ADP future land use recommendations. The proposed personal vehicle parking lot associated with the squadron operations facility and WST are not identified in the future land use plan or form-based code section of the ADP; however, growth in this area will require an additional parking lot. The proposed permanent single-engine aircraft WST, which would be an addition to the 6 SOS squadron operations facility, is designated as an industrial function, but this function is compatible with administrative functions. The industrial function and parking lot are not recommended for this area, but are compatible with administrative functions, so the 6 SOS compound could result in negligible, indirect, long-term adverse impacts to land use and would require revisions to the land use and form-based code maps, as well as the report narrative of the Duke Field ADP when it is updated. Construction of the aircraft maintenance hangar/AMU at the south end of the flightline and the warehouse addition to Building 3025 would increase the development density of the flightline but, again, this is consistent with Duke Field ADP land use recommendations and would result in a minor, direct, long-term positive effect to flightline land use.

The Duke Field and non-Federal actions proposed for functionally compatible areas are anticipated to increase the overall operational capability of the Installation. The MHPI on Hurlburt Field projects and the beddown construction projects supporting the C-146A aircraft squadron and the proposed 5th Generation FTU Optimization at Eglin AFB would be sited in land use areas that are compatible with future area development plans of the Installation. All activities would occur on the Installation and would not impact off-Installation land. The amount of land made available by demolition projects would allow for construction of some of the new facilities and, therefore, limit the increase in impervious surface. Duke Field seeks to avoid operational and environmental constraints that would result in land use conflicts and plans to correct existing land use conflicts through the demolition and modernization of facilities, where possible. Periodic variances from the proposed land use may occur, but would be considered relatively minor, as they would be consistent with the future plans for the Installation by employing the goal of “Mix of Land Uses”, which utilizes a mixed-use development scenario that promotes the most efficient use of the land in that specific area. The Proposed Action alternative projects, MHPI on Hurlburt Field projects, and the beddown construction projects supporting the C-146A aircraft squadron would have beneficial impacts on the Installation’s organizational functions.

Eglin Main Base land use impacts from ADAIR training and the relocating aircraft from Tyndall AFB noise levels would only slightly increase above those authorized in the 2014 SEIS. Each of these new operations assumes baseline conditions will include current operations associated with in the 2018 AICUZ.

Any potential land use impacts resulting from the construction activities associated with the new interchange along I-10 are anticipated to be appropriately managed and mitigated by FDOT.

Overall, no significant adverse cumulative effects on land use would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to land use.

### 3.14.5.6 Geology and Soils

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on geology and soils of all past, present, and reasonably foreseeable actions. The grading and excavating of soils and removal of geotechnically incompatible soils for construction site preparation would have no impacts on geology, but would have long-term, moderate, adverse impacts on less than 1 acre (0.895) of soils, as these soils would be removed from biological activity. Tables 5.3 and 5.4 provide the cumulative estimate of soil impacts for all Proposed Action projects over the projected CY schedule for implementation.

The beddown construction projects supporting the C-146A aircraft would have no impacts on geology, but would have long-term, moderate, adverse impacts on approximately 1.4 acres. The cumulative ground disturbance of soils would be approximately 2.3 acres. These cumulative impacts on soils would not be readily apparent and would not result in a change to the character of the resource over a relatively wide area. Further, no mitigation measures would be necessary to offset adverse impacts on soils. Much of this acreage has been previously developed. Some projects would occur simultaneously, but likely in different areas of the Installation; these projects would also be spread out over at least 5 years. Duke Field would ensure that BMPs are employed during these activities to minimize effects on soil and prevent erosion and sediment runoff. All activities would comply with the Installation's SWPPP and would employ erosion-control techniques, such as silt fencing, sediment traps, and application of water sprays. In addition, Duke Field would revegetate, according to the current landscape management plan, which helps with erosion control and soil stability. Grading, excavation, and recontouring of soil materials would adhere to all Federal, state, and local regulations.

Any potential impacts on geology and soils due to the construction activities associated with the new interchange along I-10 are anticipated to be appropriately managed and mitigated by FDOT.

Overall, no significant adverse cumulative impacts on geology and soils are anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to geology and soils.

### 3.14.5.7 Water Resources

**Proposed Action** - EA Proposed Actions are not expected to significantly add to the cumulative effects on water resources of all past, present, and reasonably foreseeable actions. Completed facilities have added to the impervious surface at Duke Field which could change the permeability of the drainage basin and increase the flow of water and potentially change flow characteristics.

The collective acreage (2.3) affected by the Proposed Action and the beddown construction projects supporting the C-146A would be minimal when compared to the available acreage in the drainage basin. No significant adverse cumulative impacts on the drainage basin would be anticipated.

No floodplain acreage is anticipated to be affected by the Proposed Action or the beddown construction projects supporting the C-146A or the proposed 5th Generation FTU Optimization at Eglin AFB. Specific locations for each of the MHPI on Hurlburt Field projects and thus whether floodplains would be affected cannot be determined at this time. If there is no practicable alternative to constructing these projects within floodplains, then the construction would conform to applicable floodplain protection

standards and accepted flood-proofing and protection measures in accordance with EO 11988 (as amended) and the National Flood Insurance Program. No significant adverse cumulative impacts on floodplains would be anticipated.

No wetland acreage is anticipated to be affected by the Proposed Action or the beddown construction projects supporting the C-146A or the proposed 5th Generation FTU Optimization at Eglin AFB. As such, no wetland areas would be affected that are designated as FDEP and USACE jurisdictional wetlands. Specific locations for each of the MHPI on Hurlburt Field projects and thus whether wetlands would be affected cannot be determined at this time. If there is no practicable alternative to constructing these projects within wetlands, then the agency must comply with procedures and practices outlined in EO 11988, 44 CFR 9.6, AFI 32-7064 and 32 CFR 989 as detailed in Section 3.5. No significant adverse cumulative impacts on wetlands would be anticipated.

The collective groundwater usage and increase for landscape irrigation affected by the Proposed Action, and the beddown construction projects supporting the C-146A or the proposed 5th Generation FTU Optimization at Eglin AFB, would be minimal compared to Duke Field's maximum permitted daily withdraw. The number of new housing and thus new groundwater requirements associated with the Hurlburt Field MHPI projects cannot be determined at this time. No significant adverse cumulative impacts on groundwater would be anticipated.

Eglin currently has Concurrence on their Consistency Determination from the Florida State Clearinghouse covering facility construction, demolition activities in cantonment areas, including Duke Field, and other proposed actions identified in this Cumulative Effects Section.

Implementation of the MHPI on Hurlburt Field projects and the beddown construction projects supporting the C-146A are not anticipated to result in adverse impacts on the coastal zone. Short-term, indirect, adverse impacts from soil disturbance could create nonpoint source water pollution; however, Duke Field and FDEP would utilize BMPs to reduce the chance of impacts. With coordination, utilization of BMPs, and proper permitting, the implementation of these projects would be consistent with the FCMP and CZMA. No significant adverse cumulative impacts on the coastal zone would be anticipated.

Any potential water resources impacts resulting from the construction activities associated with the new interchange along I-10 are anticipated to be appropriately managed and mitigated by FDOT.

Overall, no significant adverse cumulative impacts on water resources would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to water resources.

### 3.14.5.8 Biological Resources

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on biological resources of all past, present, and reasonably foreseeable actions. Implementation of some of the EA Proposed Actions, the MHPI on Hurlburt Field projects, the Black Dart testing events at Eglin AFB, and the beddown construction projects supporting the C-146A are anticipated to occur and result in short-term, minor, adverse cumulative impacts on natural communities.

The quality of wildlife habitat in the immediate vicinity of each of the locations for the new facility construction at Duke Field is low due to land disturbance and human activity; wildlife habitat quality improves with distance from the sites. Wildlife that currently utilize nearby habitat within these areas would be able to move to other similar areas on and off the Installation. This loss of habitat utilization would not affect the viability of any native species. While wildlife that occurs on Duke Field are accustomed to human activity such as aircraft noise, vehicular traffic, and human presence, construction noise does not occur regularly and, therefore, has a possibility to impact wildlife. The animals would likely vacate the areas during construction events; however, once construction has ceased, they would return to the general area. As construction activity would be temporary, no decrease in population levels would occur based on disturbance. The new construction is anticipated to have short-term, minor, adverse cumulative impacts on wildlife.

New construction on Duke Field is not anticipated to disturb or displace any protected species. The WST facility, aircraft parts, MRSP, and medical storage warehouse are located in the general vicinity of an RCW cluster (although populated with inactive cavity trees) with suitable foraging habitat for the RCW (see Figure 3-3); however, would be entirely avoided during construction. The gopher tortoise, eastern indigo snake, Florida pine snake, and Florida burrowing owl occur on the Study Area and, therefore, have the potential to occur near sites proposed for facility construction. Although coordination with Eglin Natural Resources Office has occurred as part of this EA process, prior to actual ground disturbance additional consultation may be required should circumstance change. If a gopher tortoise burrow is located within the project area and cannot be avoided, the tortoise would be relocated in accordance with Florida FWC Commission guidelines. If an RCW cavity tree is found and anticipated to be negatively impacted within the project area, Terms and Conditions from the completed ESA Section 7 consultation from 2013, 'Red-cockaded Woodpecker Programmatic Biological Opinion [for] Eglin Air Force Base, NE Gulf of Mexico [,] Walton, Okaloosa, and Santa Rosa Counties, Florida' will be followed. Although aircraft operations would continue to adhere to all established flight safety guidelines and protocol, the bird-aircraft strikes likely may be expected to increase; however, this increase would not result in long-term (i.e., population-level) impacts on birds.

Transient listed species could occasionally occur on the Installation. All native birds are protected by the Migratory Bird Treaty Act (MBTA) and project disturbance would be minimized through BMPs. If any protected species were documented, coordination with the appropriate Federal and state agencies would occur. Indirect impacts on protected species could include loss or decline in foraging/hunting habitat for transient species such as birds; however, this potential loss or decline in habitat would be minor compared to similar existing habitat located within and outside the Installation. Although consultations with the USFWS has occurred in accordance with Section 7 of the ESA as part of this EA process, should circumstance change prior to ground disturbance additional consultation would occur with the USFWS in accordance with Section 7 of the ESA. The new construction is not anticipated to have adverse cumulative impacts on protected species.

Any potential biological resources impacts resulting from the construction activities associated with the new interchange along I-10 are anticipated to be appropriately managed and mitigated by FDOT.

Overall, no significant adverse cumulative impacts on biological resources would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to biological resources.

### 3.14.5.9 Cultural Resources

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on cultural resources of all past, present, and reasonably foreseeable actions. The single significant archaeological resource, 8OK148, does not extend into the construction footprint for the of the one-bay hangar and AMU facility, WST facility, storage warehouse, or squadron operations facility. The proposed project will be reviewed by the Cultural Resource Manager of Eglin AFB in accordance with the SOPs contained in the 2013 ICRMP. If supplemental archaeological surveys are determined to be needed, then they would be conducted within the construction footprint of the new facilities construction to identify any unrecorded archaeological sites. As a result, no archaeological resources would be impacted from the implementation of the Proposed Action.

Further, no NRHP-eligible or listed above-ground or architectural resources have been identified at Duke Field. No previously identified cemeteries are located within the proposed construction footprint for the new facilities. No previously identified sacred sites or TCPs are located within the proposed construction footprint for the new facilities.

No previously recorded archaeological resources, identified cemeteries, sacred sites, or TCPs are located within the proposed construction footprints of the MHPI on Hurlburt Field projects and the beddown construction projects supporting the C-146A or the proposed 5th Generation FTU Optimization at Eglin AFB. Supplemental archaeological surveys may be conducted within the construction footprints of the new facility construction to identify any unrecorded archaeological sites, as determined through consultation between the Eglin AFB Cultural Resource Management (CRM), the Florida SHPO, appropriate Native American Tribes, and other interested parties. If any cultural resources are discovered during the archaeological surveys or during the implementation of these projects, work would cease, and the Eglin AFB CRM would avoid or mitigate any potential impacts through consultation with the Florida SHPO, appropriate Native American Tribes, and other interested parties. The new construction and renovation projects are not anticipated to have adverse cumulative impacts on archaeological resources.

Pursuant to Section 106 of the NHPA, Duke Field will make a reasonable and good faith effort to carry out appropriate efforts to identify historic properties in consultation with the Florida SHPO and the tribes consistent with 36 CFR 800.4(b)(1). Consultation with the SHPO in accordance with Section 106 of the NHPA has been completed as part of this EA process. Should circumstances change prior to project construction, additional consultation will be conducted with the SHPO. Additionally, information gathered in this process will be shared with the tribes prior to beginning any construction to facilitate a productive ongoing consultation process and allow for a timely and thorough review of the project sites to determine whether any archaeological or cultural resources are present.

Any potential cultural resources impacts resulting from the construction activities associated with the new interchange along I-10 are anticipated to be appropriately managed and mitigated by FDOT.

Overall, no significant adverse cumulative impacts on cultural resources would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to cultural resources.

### 3.14.5.10 Socioeconomics, Environmental Justice, and Protection of Children

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on socioeconomics, environmental justice, and protection of children of all past, present, and reasonably foreseeable actions. Adverse impacts related to construction activity could include exposure to noise, safety hazards, pollutants and other hazardous materials, and excessive traffic. Socioeconomic impacts resulting from the Proposed Action and the beddown construction projects supporting the C-146A would be temporary and minor. Noise impacts resulting from the implementation of the Proposed Action would be minor and only during daylight hours, by temporarily extending to residential or other areas near noise-sensitive receptors. For the MHPI on Hurlburt Field, noise impacts could temporally extend to residential or other areas near noise-sensitive receptors.

There would be no permanent jobs associated with these projects, and construction employment associated with this alternative would likely be accommodated by labor resources already in the region. With the additional personnel moving into the region as a result, there would be small additional demand on housing, schools, or other social services, however, no permanent socioeconomic impacts would be anticipated. Minor beneficial temporary impacts in the form of jobs and income for area residents, revenues to local businesses, and sales taxes to Okaloosa County and the State of Florida could be realized if construction materials are purchased locally or local construction workers are hired for repairs and maintenance.

There are no low-income or minority populations located in proximity to Duke Field. All construction for the EA Proposed Action, the MHPI on Hurlburt Field projects, and the beddown construction projects supporting the C-146A and the proposed 5th Generation FTU Optimization at Eglin AFB. (with the beddown, base personnel are anticipated to increase) would be on the Installation, with substantial buffer zones between the construction sites and residences in local census tracts. As a result, there are no adverse impacts expected off the Installation for these projects. With no adverse impacts, there would be no disproportionately high adverse human health, economic, or social effects on minority or low-income populations or children.

The number of personnel associated with the relocating aircraft from Tyndall AFB would increase by 1.00 to 1.47 percent. It is estimated that the housing market in the ROI would be able to support the demand. In addition, direct jobs, demand for public services, and student enrollment would increase under both scenarios. Noise impacts associated with aircraft could potentially have adverse impacts on property values. There would be no additional disproportionate impacts to minority and low-income populations. Children and elderly populations would be affected by noise from the addition of ADAIR, F-22, and T-38 missions.

Any potential socioeconomics, environmental justice, and protection of children concerns with the construction activities associated with the new interchange along I-10 are anticipated to be appropriately managed and mitigated by FDOT.

Overall, no significant adverse cumulative impacts on socioeconomics, environmental justice, and protection of children would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to socioeconomics, environmental justice, and protection of children.

### 3.14.5.11 Infrastructure

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on infrastructure of all past, present, and reasonably foreseeable actions. No effect on utilities would be anticipated. It is estimated that no net increases in the demand for utilities would be associated with new facility construction. In addition, the new, more efficient systems that would be incorporated into new construction may be more efficient than the systems currently in use in the surrounding buildings, leading to a potential reduction in utilities use. As such, long-term, minor, adverse cumulative impacts on utilities would be anticipated for the Proposed Action, the MHPI on Hurlburt Field projects, and the beddown construction projects supporting the C-146A.

Implementation of the Proposed Action, the MHPI on Hurlburt Field projects, and the beddown construction projects supporting the C-146A and the proposed 5th Generation FTU Optimization at Eglin AFB would have short-term, minor, adverse cumulative impacts on transportation and traffic. During construction, there would be temporary, minor increases in construction-related traffic as construction workers access the site and construction materials and equipment are delivered. There may be long-term changes in traffic patterns on the Installation with implementation of these projects and, with the increases in personnel, there may be minimal increases in traffic on the Installation.

Any potential impacts on infrastructure and utilities with the construction activities associated with the new interchange along I-10 are anticipated to be appropriately managed and mitigated by FDOT.

Overall, no significant adverse cumulative impacts on infrastructure and utilities would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to infrastructure.

### 3.14.5.12 Hazardous Materials and Waste

**Proposed Action** - The Proposed Action is not expected to significantly add to the cumulative effects on hazardous materials and waste of all past, present, and reasonably foreseeable actions. Construction from the EA Proposed Action, the MHPI on Hurlburt Field projects, and the beddown construction projects supporting the C-146A would increase the amount of hazardous materials used and wastes generated, but the use and disposal of these materials would be governed by existing management plans. Management of disturbed soils would follow the *State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities* (2003), including an NOI filed prior to commencing construction activities. The use of hazardous materials (HAZMAT) during construction (equipment fuel, paints and thinners, and other construction liquids) would be coordinated with the HAZMAT and Eglin AFB to prevent any release to the environment. All hazardous waste generated would be handled and disposed of in accordance with the USAF Integrated Solid Waste Management Plan such that no release of hazardous materials or waste to the environment would occur (USAF 2018e).

Some of the EA Proposed Action projects and the beddown construction projects supporting the C-146A and the proposed 5th Generation FTU Optimization at Eglin AFB would have long-term, moderate, adverse impacts as a result of hazardous materials and waste. Several projects are located near Environmental Restoration Program sites, which are designated as No Further Action (NFA) but have LUCs in place to control ground disturbance that would spread existing surface and subsurface

contamination to surrounding properties and compromise worker safety. Prior to any construction that would disturb the ground surface, notification and approval of FDEP would be required and work plans must be submitted to Eglin AFB. The work plans need to address worker safety, groundwater, industrial wastewater disposal, soil disposal, stormwater, and erosion control.

Construction waiver request letters would also need to be sent to Eglin AFB. All soil excavated from these sites would require testing and disposal, if necessary, at a hazardous waste landfill off-base. If the methods described above are followed, then these and other potential projects associated with ERP sites would have long-term, moderate, adverse cumulative impacts on hazardous materials and waste.

Any potential hazardous materials generation and disposal resulting from the construction activities associated with the new interchange along I-10 are anticipated to be appropriately managed and mitigated by FDOT.

Overall, no significant adverse cumulative impacts on hazardous materials and waste would be anticipated.

**No Action Alternative** - Under the No-Action Alternative, the proposed 6 SOS growth at Duke Field, including associated facilities construction and new personnel, would not occur, and there would be no associated contribution to cumulative impacts relative to hazardous materials and waste.

## SECTION 4

# Management Actions

## 4.1 Introduction

The following is a list of regulations, plans, permits, and management actions associated with the growth of the 6 SOS at Duke Field. The EIAP for this EA identified the need for these requirements, and the Proponent of the Proposed Action is responsible for implementation of these management actions.

Completion and adherence to the following regulations, plans, and permits would be required for the Proposed Action:

- Eglin AFB Erosion and Sediment Control Plan
- Incorporation of a SWPPP into the final design plans as required
- ESA Section 7 consultation with USFWS as appropriate for all proposed activities
- Consultation with the SHPO as appropriate for all proposed actions
- FDEP NPDES permit
- CZMA Consistency Determination

### 4.1.1 Air Quality

Construction activities shall comply with all the applicable requirements in the Eglin AFB Title V permit:

- Construction/access roads would be routinely watered to reduce fugitive dust emissions during the construction phases of the Proposed Action. All construction equipment would be maintained in proper working condition according to the manufacturer's specifications; vehicles would be maintained and inspected on a weekly basis in order to ensure good operating conditions.
- During construction activities, vehicles will not idle for long periods of time and equipment will be shut down when not in use.

### 4.1.2 Biological Resources

- Prior to construction activities, coordination with the Eglin AFB Natural Resources Office shall be conducted.
- Based on coordination with Eglin AFB Natural Resources Office, a qualified biologist may be required to conduct surveys for sensitive species including gopher tortoise, red-cockaded woodpecker, and the eastern indigo snake.
- A qualified biologist shall monitor all construction activities.
- If a sensitive species is located during a field survey or during construction activities within a project area, a qualified biologist shall remove the species in accordance with accepted protocols, or it moves out of the project area on its own.
- Terms and Conditions in the RCW PBO and Indigo snake PBO will be followed.

- To minimize the introduction of invasive non-native species, prior to first-time use on Eglin, clean vehicles and equipment in accordance with Armed Forces Pest Management Board Technical Guide No. 31 (<http://www.acq.osd.mil/eie/afpmb/docs/techguides/tg31.pdf>).
- Tree clearing of any species shall be coordinated with the Eglin AFB Natural Resources Office.
- All activities will be conducted in accordance with the requirements of the INRMP.

### 4.1.3 Cultural Resources

- Prior to construction activities, coordination with the Eglin AFB Cultural Resources Manager shall be conducted.
- If, through coordination with the Eglin AFB Cultural Resources Manager, it is determined that supplemental archeological resource surveys of the project areas are required, they shall be conducted in adherence to the Eglin AFB ICRMP, which implements all AF policies and federal laws and regulations.
- Any contractors and subcontractors, utilized for construction projects would be instructed on procedures to follow in case previously unknown archeological resources are uncovered during construction. If previously unknown and significant archeological resources are unearthed during construction, work would be stopped in the area of discovery and the Eglin AFB Cultural Resources Manager would consult with the SHPO and appropriate parties. If impacts to significant resources could not be avoided by redesign, mitigating measures would be developed in consultation.

### 4.1.4 Hazardous Materials and Wastes

- Hazardous wastes and materials shall be managed per AF policies, state and federal regulations.
- Refueling of machinery would be completed following accepted guidelines, and all vehicles would have drip pans beneath them during storage to contain minor spills and drips.
- No refueling or storage of heavy equipment would take place within 100 feet of any drainage.

### 4.1.5 Infrastructure, Utilities and Transportation

- Coordination with all utility providers shall be required prior to any ground-disturbing activities in an effort to minimize potential conflicts between utility systems during construction and to ensure adequate capacity of each infrastructure systems shall be provided.

### 4.1.6 Noise

- Construction would primarily occur during normal weekday business hours.
- Heavy equipment mufflers would be properly maintained and in good working order.
- Construction personnel, and particularly equipment operators, shall wear adequate personal hearing protection to limit exposure to high levels of noise associated with construction activities and airfield operations as needed.
- Construction equipment would not be permitted to idle for long periods of time.

### 4.1.7 Water Resources

- To minimize the amount of ground disturbance, staging and stockpiling areas would be located in previously disturbed sites to the extent possible. All staging and stockpiling areas would be returned to pre-construction conditions following construction.
- All equipment used on the project would be maintained in a clean and well-functioning state to avoid or minimize contamination from mechanical fluids. All equipment would be checked daily.
- Regular site inspections shall be conducted during implementation of the Proposed Action to ensure erosion-control measures were properly installed and are functioning effectively.
- Appropriate storm water management measures that could include silt fences, temporary earthen berms, temporary water bars, sediment traps, or other equivalent measures (including installing erosion-control measures around the perimeter of construction staging area) shall be installed prior to implementation of the Proposed Action.
- Low-impact design should be incorporated into site design.
- Upon completion of the Proposed Action, all disturbed areas not supporting new facilities or pavements would be revegetated with appropriate native vegetation.
- The construction contractor would implement stormwater and erosion control BMPs as appropriate and perform the following activities:
  - Install and maintain silt fences and hay bales or other appropriate BMPs in effective operating condition prior to, during, and throughout the entire construction process to avoid soil runoff.
  - Include site-specific management requirements for erosion and sediment control in permits and site plan designs.
  - Maintain at least a 100-foot vegetated buffer between construction sites and surface waters.
  - Reduce erosion using rough grade or terrace slopes.
  - Identify areas of existing vegetation that would be retained and not disturbed through construction.
  - Designate a “staging area” for repairs, maintenance, and use of construction equipment (e.g., cement mixers) to contain any chemicals, solvents, or toxic materials and prevent them from entering surface waters.
  - Stabilize construction site entrances using stone and geotextile (filter fabric) approved by the Florida Department of Transportation.
  - Inspect BMPs on a weekly basis and after rain events.
- Incorporate Okaloosa County Land Development Code BMPs shall be followed to the extent feasible.

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## SECTION 5

# Preparers

## List of Preparers

<b>Name</b>	<b>Agency / Organization</b>	<b>Discipline / Expertise</b>	<b>Experience</b>	<b>Role in Preparing EA</b>
David Helter	Woolpert, Inc.	Master Planning	28 years of Engineering and Master Planning	Project Manager, EA section preparation
Dennis Peters	Gulf South Research Corporation	NEPA Compliance	36 years of Environmental Planning and EA/EIS studies	EA section preparation
Will Ballard	Woolpert, Inc.	NEPA Compliance	34 years of experience NEPA Compliance, Military Master Planning	EA section preparation
Dan Wheeler	Woolpert, Inc.	GIS	5 years of Master Planning and Geospatial	Mapping, Graphic and Spatial Analyses
Courtney King	Woolpert, Inc.	Technical Editor	6 years of Technical Editing	Technical Editing
Will Breeden	MSE Group, Inc.	Air Quality Compliance	17 years of air quality modeling and experience	Section preparation: Air Quality
John Lindemuth	Gulf South Research Corporation	Cultural Resources Management	23 years of Cultural Resources and NEPA studies	Section preparation: Cultural Resources

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# GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AADT	Annual Average Daily Traffic
AAFES	Army Air Force Exchange Service
AAS	Aquifer Air Sparge
ACM	Asbestos-containing material
ACS	American Community Survey
ADAIR	Adversary air
ADP	Area Development Plan
AF	Air Force
AFB	Air Force Base
AFE	Aircrew Flight Equipment
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AFRC	Air Force Reserve Command
AFSAS	Air Force Safety Automated Systems
AFSOC	Air Force Special Operations Command
AGE	Aerospace Ground Equipment
AGL	Above Ground Level
AICUZ	Air Installation Compatible Use Zone
AIRFA	American Indian Religious Freedom Act
AISR	Armed Intelligence, Surveillance and Reconnaissance
AL	Alabama
ALZ	Assault landing zone
AMU	Aircraft Maintenance Unit
APE	Area of Potential Effects
APZ	Accident Potential Zone
ARPA	Archaeological Resources Protection Act
AST	Aboveground Storage Tank
ATCAA	Air Traffic Control Assigned Airspace
AvFID	Aviation Foreign Internal Defense
BAM/AHAS	Bird Avoidance Model/Avian Hazard Advisory System
BASH	Bird/Wildlife Aircraft Strike Hazard
BMP	Best Management Practice
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
BWC	Bird Watch Condition
C&D	Construction and Demolition
CAA	Combat Aviation Advisor
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act

CEQ	Council on Environmental Quality
CEW	Bob Sikes Airport
CH	Critical Habitat
CH <sub>4</sub>	methane
CHELCO	Choctawhatchee Electric Cooperative
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalency
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CPD	Combat Plans Division
CRM	Cultural Resource Management
CWA	Clean Water Act
CZ	Clear Zone
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Plan
dB	Decibels
dba	A-weighted decibels
DNL	day-night average A-weighted sound level
DoD	Department of Defense
DOPAA	Description of Proposed Action and Alternatives
DPS	Distinct Population Segment
DZ	Drop Zone
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EMP	Environmental Management Plan
EO	Executive Order
ER	Eglin Reservation
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESQD	Explosives Safety Quantity Distance
FAA	Federal Aviation Administration
F.A.C	Florida Administrative Code
FAR	Federal Aviation Regulation
FCMP	Florida Coastal Management Plan
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FE	Federally listed as Endangered
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration

FL	Florida
FNAI	Florida Natural Areas of Inventory
FONSI	Finding of No Significant Impact
FR	Federal Register
F.S.	Florida Statutes
FT	Federally listed as Threatened
FTU	Formal Training Unit
FW	Fixed-wing
FWC	Fish and Wildlife Conservation
FY	Fiscal Year
GHG	Greenhouse Gas
gpd	gallons per day
GRAZI	Gulf Regional Airspace Strategic Initiative
GSRC	Gulf South Research Corporation
HAP	Hazardous Air Pollutant
HAZMART	Hazardous Materials Mart
HAZMAT	Hazardous Material
HCFC	hydrochlorofluorocarbon
HFC	hydrofluorocarbon
HMMS	Hazardous Material Management System
HMP	Hazardous Materials Program
HRT	Hurlburt Field Airport
HUD	Housing and Urban Development
HW	Hazardous Waste
HWMP	Hazardous Waste Management Plan
IAW	In Accordance With
ICRMP	Integrated Cultural Resources Management Plan
IDP	Installation Development Plan
IFR	Instrument Flight Rule
IJTS	Initial Joint Training Site
INDOT	Indiana Department of Transportation
INRMP	Integrated Natural Resources Management Plan
IR	Instrument Route
ISR	Intelligence, Surveillance and Reconnaissance
ISWM	Integrated Solid Waste Management
JO	Joint Order
JP	Jet Propellant
JSF	Joint Strike Fighter
LBP	lead-based paint
Leq	Equivalent Sound Level
LHA	Landing helicopter assault
LID	Low-impact development

LOS	Level of Service
LTO	Landing and Takeoff
LZ	Landing Zone
m <sup>3</sup>	cubic meter
MBTA	Migratory Bird Treaty Act
mg	milligram
MHPI	Military Housing Privatization Initiative
MNA	Monitored Natural Attenuation
MOA	Military Operating Area
MSGP	Multi-Sector Generic Permit
µg/m <sup>3</sup>	Microgram per cubic meter
MOA	Military Operating Area
MOU	Memorandum of Understanding
MRSP	Mobility Readiness Spare Parts
MSL	mean sea level
MTR	Military Training Route
N <sub>2</sub> O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves and Repatriation Act
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
No.	Number
NO <sub>2</sub>	nitrogen dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NO <sub>x</sub>	Nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS, ND	Natural Resources Conservation Service, North Dakota
NRO	Natural Resource Office
NSAv	Non-Standard Aviation
NWFWMD	Northwest Florida Water Management District
O <sub>3</sub>	ozone
ONA	Outstanding Natural Area
OSHA	Occupational Safety and Health Administration
OSS	Operations Support Squadron
Pb	lead
PBO	Programmatic Biological Opinion
PCE	Perchloroethylene
PM	Particulate Matter
Ppb	parts per billion

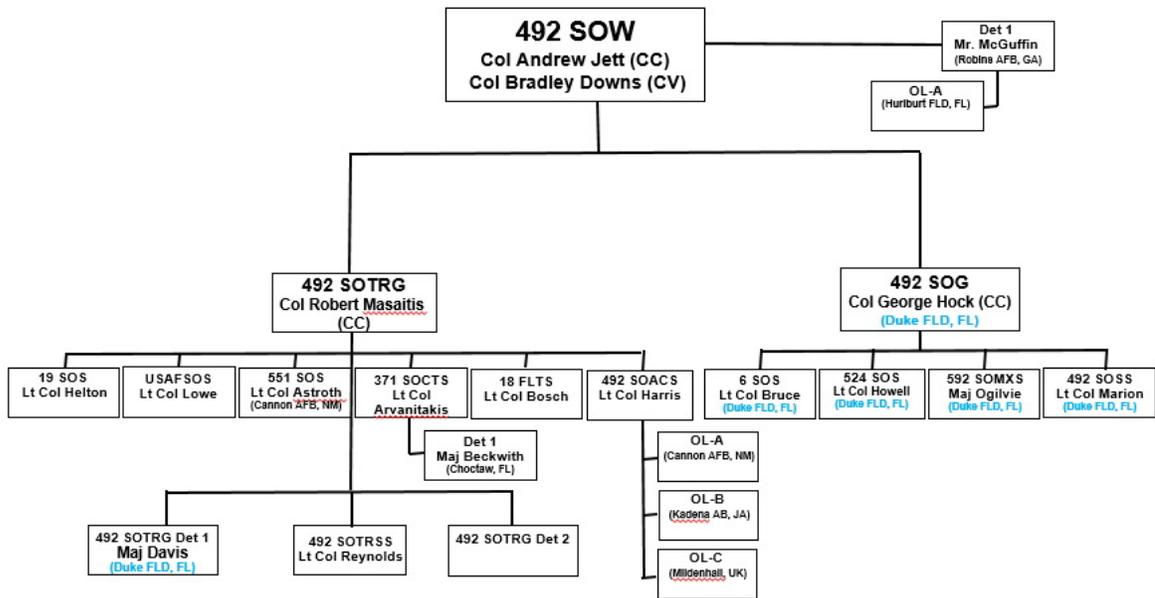
ppm	parts per million
POV	Personally Owned Vehicle
PREIAP	Planning Requirements in the Environmental Impact Analysis Process
Q	Quarter
RCRA	Resource Conservation and Recovery Act
RCW	Red-cockaded woodpecker
ROI	Region of influence
SBS	Significant Botanical Site
SEA	Special Environmental Assessment
SEIS	Supplemental Environmental Impact Statement
SF	Square Foot (or Feet)
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SO <sub>2</sub>	Sulfur Dioxide
SOCES	Special Operations Civil Engineer Squadron
SOF	Squadron Operations Facility
SOS	Special Operations Squadron
SOW	Special Operations Wing
SR	State Route
SS	Spill Site
ST	Storage Tank
STOVL	Short take-off vertical landing
SUA	Special Use Airspace
SVE	Soil Vapor Extraction
SW	Solid Waste
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional Cultural Property
TC-PED	Task, collect, process, exploit and disseminate
TFI	Total Force Integration
TW/SEF	Test Wing Flight Safety Office
URBEMIS	Urban Emissions
USACE	United States Army Corp of Engineers
USAF	United States Air Force
U.S.C	United States Code
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Society
USSOCOM	United States Special Operations Command
VFR	Visual Flight Rule
VOC	Volatile Organic Compound
VPS	Destin - Fort Walton Beach Airport

VR	Visual Route
WRCA	Water Resource Caution Area
WRF	Water Reclamation Facility
WS	Wildlife Services
WST	Weapons System Trainer
WWTP	Wastewater Treatment Plant

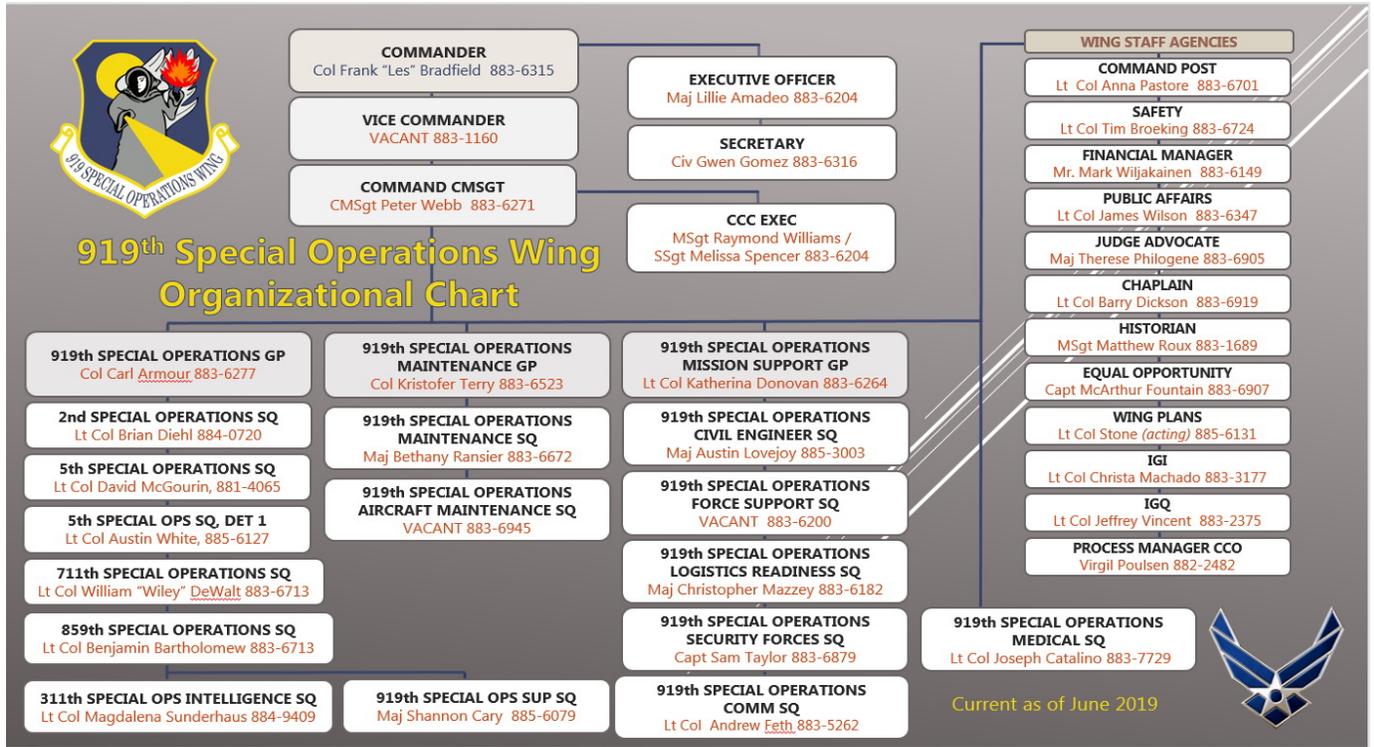
# Appendix A



## 492d Special Operations Wing



SHAPE – EXECUTE – EVOLVE



# Appendix B



**DEPARTMENT OF THE AIR  
FORCE HEADQUARTERS 96TH  
TEST WING (AFMC) EGLIN AIR  
FORCE BASE FLORIDA**

## MEMORANDUM FOR RECORD

SUBJECT: Traditional Cultural Properties (TCPs) and Sacred Sites at Eglin Air Force Base (AFB)

Eglin AFB has a well-established relationship with various Federally-recognized tribes that have an historic affiliation to the area in and around Eglin AFB. While tribal consultations had been occurring for years, the formal government-to-government relationship was established between Eglin AFB and the following four tribes in 2008: the Miccosukee Tribe of Indians of Florida, the Muscogee (Creek) Nation, the Poarch Band of Creek Indians, and the Seminole Tribe of Florida. A fifth Federally recognized tribe, Thlopthlocco Tribal Town, began consulting with Eglin AFB beginning in 2012.

Meetings with all of the tribes at that time led to the development of a Memoranda of Understanding (MOU) related to Section 106 of the National Historic Preservation Act and the Native American Graves Repatriation Act. The Muscogee (Creek) Nation and Thlopthlocco Tribal Town ultimately signed MOUs with Eglin AFB. Although indicating an intent to sign, the Poarch Band of Creek Indians never actually signed an MOU. The Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida did not wish to sign MOUs, but verbally agreed with all of the principles laid out in the documents signed by the other tribes.

Eglin AFB has already surveyed approximately 75% of the roughly 387,000 acres that can currently be evaluated (or about 288,000 acres). In addition, nearly 100 percent of all high-probability areas have been surveyed and thousands of specific archaeological sites have been evaluated. Through several decades of archaeological investigations and tribal consultations, no Traditional Cultural Properties (TCPs) or Sacred Sites have ever been identified by the tribes.

Eglin AFB has continued to maintain an excellent relationship with these affiliated Federally-recognized tribes and has recently begun consulting with yet another tribe, the Seminole Nation of Oklahoma. Just in 2019 alone, we have conducted one government-to-government and several staff level face-to-face meetings with the tribes. Moreover, three of the six tribes plan on signing a landmark comprehensive Section 106 Programmatic Agreement (PA) with Eglin AFB, the Florida State Historic Preservation Officer and the Advisory Council on Historic Preservation by the end of this year. A fourth tribe has agreed to some of the stipulations and principles, despite not wishing to sign the PA.

The topic of TCPs have routinely been discussed with the tribes beginning in 2008 when a formal government-to-government relationship was first established. TCPs were also discussed at our most recent face-to-face meeting with the tribes on 10 September 2019. Eglin AFB and

the tribes recognize that previously unknown TCPs could be identified in the future with the accumulation of more information. However, each tribe has stated that they are unaware of any TCPs or Sacred Sites currently located on Eglin AFB lands and prefer not to be consulted regarding each specific project whose impacts have been previously assessed and/or proposed for construction in areas already surveyed and determined low-risk for TCPs or Sacred Sites.

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MARIA D. RODRIGUEZ, NH-04  
 Installation Tribal Liaison Officer

**From:** [State Clearinghouse](#)  
**To:** [FELIX, RODNEY K JR CIV USAF AFMC 96 CEG/CEIEA](#); [State Clearinghouse](#)  
**Subject:** [Non-DoD Source] RE: Eglin AFB proposed action for FCMP concurrence  
**Date:** Friday, September 13, 2019 11:24:21 AM

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While it is covered by EO 12372, the Florida State Clearinghouse does not select the project for review. You may proceed with your project.

Please send future electronic requests separately and directly to the State Clearinghouse email address, [State.Clearinghouse@dep.state.fl.us](mailto:State.Clearinghouse@dep.state.fl.us)

Good Luck.

*Chris Stahl*

Chris Stahl, Coordinator  
 Florida State Clearinghouse  
 Florida Department of Environmental Protection  
 3800 Commonwealth Blvd., M.S. 47  
 Tallahassee, FL 32399-2400  
 ph. (850) 717-9076  
[State.Clearinghouse@floridadep.gov](mailto:State.Clearinghouse@floridadep.gov)

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**From:** FELIX, RODNEY K JR CIV USAF AFMC 96 CEG/CEIEA <rodney.felix.1@us.af.mil>  
**Sent:** Thursday, September 12, 2019 11:08 AM  
**To:** State\_Clearinghouse <State.Clearinghouse@dep.state.fl.us>  
**Subject:** Eglin AFB proposed action for FCMP concurrence

To whom it may concern,

The state should first know that per Air Force Instruction, because this proposed action is a bed-down, regardless of its relatively minimal environmental impacts, it is undergoing analyses via an Environmental Assessment, titled "Aviation Foreign Internal Defense and Fixed Wing Aircraft Growth."

Eglin Air Force Base proposes to bed-down five (5) Cessna 208 Caravan-type aircraft (single-engine, turboprop aircraft) over the next three years at Duke Field, and construct 40,700 ft<sup>2</sup> of supporting buildings and parking within the Duke Field cantonment in support of that bed-down. The construction will include a 12,100 ft<sup>2</sup> hangar and aircraft maintenance unit facility (square footage includes parking), a 9,700 ft<sup>2</sup> weapons system trainer facility, a 10,900 ft<sup>2</sup> squadron operations facility (square footage includes parking), and an 8,000 ft<sup>2</sup> storage warehouse. Please see the attached figures for location and additional context (taken from the draft Environmental Assessment). Any necessary Environmental Resource Permits and National Pollutant Discharge Elimination System permits will be obtained prior to construction, as warranted (or not) by the 0.93 acre total construction footprint. This proposed action will have insignificant impacts on state or federal protected species.

Eglin AFB believes this proposed action will either not affect or will be consistent with the twenty-four Florida Statutes that comprise the Florida Coastal Management Program, and through consultation with the Florida State Clearinghouse shall be compliant with the Coastal Zone Management Act of 1972 (as amended). Should the State require a more thorough description of the proposed action or further justification for Eglin's determination of consistency under the Florida Coastal Management Program, please let us know and we will be happy to provide it.

--Rodney

Rodney K Felix Jr  
Endangered Species Biologist  
Eglin AFB Natural Resources Office - Wildlife Section  
850 883-1153 Desk | 850 951-3713 Cell | 875-1153 DSN

