Final

Range Environmental Assessment

Overland Air Operations
Eglin Air Force Base, Florida

Contract No. W91278-12-D-0026
Task Order 0011
RCS 13-320

Submitted to:

96 CEG/CEIEA
Environmental Planning Office
Eglin Air Force Base, Florida

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FINDING OF NO SIGNIFICANT IMPACT

For

OVERLAND AIR OPERATIONS, EGLIN AIR FORCE BASE, FLORIDA RANGE ENVIRONMENTAL ASSESSMENT

Contract No. W91278-12-D-0026
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This finding, and the analysis upon which it is based, was prepared pursuant to the President's Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA) and its implementing regulations as promulgated at 40 Code of Federal Regulations (CFR) Part 1500 (40 CFR 1500-1508) plus:

- U.S. Air Force *Environmental Impact Analysis Process* as promulgated at 32 CFR Part 989

The Department of the Air Force has conducted a Range Environmental Assessment (REA) of the potential environmental consequences of Eglin overland air operations. That July 2014 REA is hereby incorporated by reference into this finding.

Purpose and Need

The purpose of the Proposed Action is to allow quick and efficient processing of mission programs that request access to Eglin overland airspace during routine and crisis situations. The Proposed Action is needed to update/validate the current approval process for routine military users of Eglin overland airspace, and to provide a quick response to priority needs during war or other significant military involvement. Since the last NEPA analysis of Eglin overland air operations, which was conducted in 1998, Eglin overland air operations have changed as a result of engagement in wars, development of new technologies, and changes in associated Eglin AFB mission activities. By updating the environmental impact analysis for Eglin overland air operations to address mission and other changes that have occurred since the last analysis, the attached REA allows more streamlined and accurate environmental review/approval of overland air mission requests.

Proposed Action and Alternatives

The REA analyzed the following two alternatives:

- Alternative 1: (No Action Alternative) Maintain Eglin overland air operations at the baseline level

- Alternative 2: Implement Eglin overland air operations at a mission surge level

The baseline level under Alternative 1 is defined by current and projected near-term Eglin overland airspace sorties and associated expendables. Mission surge overland air operations under Alternative 2 are those anticipated to occur during wartime or other significant military involvement. The mission surge level under Alternative 2 is defined as unit-specific increases in the baseline sorties and a 200 percent increase in the baseline expendables analyzed under Alternative 1. Alternative 2 is the Air Force's Preferred Alternative.

Environmental Consequences

Based on the findings of the attached REA, Alternatives 1 and 2 would each have no effect or impacts that range from minor to moderate in magnitude on airspace, air quality, noise, health and safety, soils, water resources, biological resources, geology, topography, land use, cultural resources, hazardous materials/wastes, socioeconomics, utilities, solid waste, and transportation. The impacts that each alternative would have on these resources would not be significant. Each alternative would not have disproportionately high or adverse human health or environmental effects on minority or low-income populations, and would not result in environmental health or safety risks to children. When added to past, present, and reasonably foreseeable actions, each alternative would not have significantly adverse cumulative impacts on any resource. Compensatory mitigation is not required for any activity within the scope of the Proposed Action addressed in the REA. The REA identifies management actions that focus on avoidance and minimization of impacts to the resources analyzed in detail.

Permits, Mitigation, and Management Actions

Chapter 4 in the attached REA contains permits, mitigation, and management actions associated with this proposed action.

Public Review and Interagency Coordination

A public notice placed in the *Northwest Florida Daily News* of Fort Walton Beach, Florida, *Navarre Press* of Navarre, Florida, and *Bay Beacon* of Niceville, Florida announced the 30-day public review period. The draft REA was made available for public review on the Eglin AFB public website. The Air Force consulted directly with the U.S. Fish and Wildlife Service on the Proposed Action. The Florida State Clearinghouse coordinated state and local review of the draft REA and determination of federal consistency with the Florida Coastal Management Program. The final REA includes all documentation of public and agency consultation, and addresses all received comments.

Finding of No Significant Impact

Based on my review of the facts and analysis in the attached REA, I conclude that Alternative 1 would not have a significant impact on the natural or human environment either by itself or considering cumulative impacts. Furthermore, in event of a mission surge, Alternative 2 would not have a significant impact on the natural or human environment either by itself or considering cumulative impacts. Therefore, either of these alternatives may be considered for implementation. The requirements of the NEPA, the President's CEQ, and 32 CFR Part 989 have been fulfilled, and an Environmental Impact Statement is not required and will not be prepared.

SHAWN D. MOORE, Colonel, USAF
Commander, 96th Civil Engineer Group

12 Nov 2014
Date

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Acronyms and Abbreviations

6 RTB	6th Ranger Training Battalion
7 SFG	7th Special Forces Group (Airborne)
9 SOS	9th Special Operations Squadron
33 FW	33rd Fighter Wing
53 WG	53rd Wing
96 CEG/CEIEA	96th Civil Engineer Group/Environmental Planning Office
96 CEG/CEIEA	96th Civil Engineer Group/Natural Resources Office
96 CEG/CEIEC	96th Civil Engineer Group/Compliance
96 TW	96th Test Wing
325 FW	325th Fighter Wing
AETC	Air Education and Training Command
AFB	Air Force Base
AFI	Air Force Instruction
AFMC	Air Force Materiel Command
AFRL	Air Force Research Laboratory
AFSOC	Air Force Special Operations Command
AGL	Above Ground Level
AICUZ	Air Installation Compatible Use Zones
ALANG	Alabama Air National Guard
ALARNG	Alabama Army National Guard
ASC	Aeronautical Systems Center
ASEL	A-weighted sound exposure level
ATCAA	Air Traffic Control Assigned Airspace
AvFID	Aviation Foreign Internal Defense
BASH	Bird/Wildlife-Aircraft Strike Hazard
BRAC	Base Realignment and Closure
BRSF	Blackwater River State Forest
CAA	Clean Air Act
CATEX	Categorical Exclusion
CBA	closed box assessment
CDNL	C-weighted day-night average sound level
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHABA	Committee on Hearing, Bioacoustics, and Biomechanics
CO	carbon monoxide
CO_2	carbon dioxide nitrous oxide
CO_{2e}	carbon dioxide equivalent
CY	Calendar Year
CZMA	Coastal Zone Management Act
dB	decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
dBP	peak sound pressure level
DNL	day-night average sound level
DoD	Department of Defense
EA	Environmental Assessment
EAFBI	Eglin Air Force Base Instruction

EBD	Environmental Baseline Document
ECTRC	Emerald Coast Technology and Research Center
EGTTR	Eglin Gulf Test and Training Range
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
ESC	Electronic Systems Center
ETTC	Eglin Test and Training Complex
EWC	East-West Corridor
FAA	Federal Aviation Administration
F.A.C.	Florida Administrative Code
FCMP	Florida Coastal Management Program
FDEP	Florida Department of Environmental Protection
FEIS	Final Environmental Impact Statement
FJSIM	Fuel Jettisoning Simulation Model
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FNAI	Florida Natural Areas Inventory
ft	feet
FWC	Florida Fish and Wildlife Conservation Commission
FY	Fiscal Year
GHG	greenhouse gas
GRASI	Gulf Regional Airspace Strategic Initiative
HAP	hazardous air pollutant
Hwy	Highway
hz	hertz
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IJTS	Initial Joint Training Site
INRMP	Integrated Natural Resources Management Plan
JSF	Joint Strike Fighter
LCMC-EB	Life Cycle Management Center-Armament Directorate
L_{dnmr}	onset-rate adjusted monthly day-night average sound level
LTO	landing and takeoff
MHPI	Military Housing Privatization Initiative
mi^2	square miles
MILCON	Military Construction
MOA	Military Operating Area
MRTFB	Major Range Test Facilities Base
msl	Mean Sea Level
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NOA	Notice of Availability
NRCS	Natural Resources Conservation Service

NRHP	National Register of Historic Places
NSC	North-South Corridor
OAO	Overland Air Operations
OFW	Outstanding Florida Water
ONA	Outstanding Natural Area
PBO	Programmatic Biological Opinion
PEA	Programmatic Environmental Assessment
PM	particulate matter
RATO/JATO	Rocket/Jet Assisted Takeoff
RCW	red-cockaded woodpecker
REA	Range Environmental Assessment
ROD	Record of Decision
ROI	Region of Influence
RPV	remotely piloted vehicle
SBS	Significant Botanical Site
SEIS	Supplemental Environmental Impact Statement
SEL	sound exposure level
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SO_x	sulfur oxides
SSC	Species of Special Concern
SUA	Special Use Airspace
TA	Test Area
TGO	touch and go
THSF	Tate's Hell State Forest
UAS	Unmanned Aerial System
USACE	U.S. Army Corps of Engineers
USDA	U.S Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound

SECTION 1

Purpose of and Need for the Proposed Action

1.1 Introduction

Eglin Air Force Base (AFB), located in northwestern Florida, is home of the Eglin Test and Training Complex (ETTC) and is one of ten Air Force Materiel Command (AFMC) host bases. As a critical part of the Major Range Test Facilities Base (MRTFB), 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 air operations include overland and over water operations that involve aircraft (both fixed-wing and rotor-wing), drones, remotely piloted vehicles (RPVs), and balloons and their associated devices, as well as the powered portions (propellants) of missiles, bombs, flares, and Rocket/Jet Assisted Takeoff (RATO/JATO) bottles.

The Air Force proposes to authorize and implement a new level of activity for Eglin overland air operations and has prepared this Range Environmental Assessment (REA) for this Proposed Action. This REA analyzes the potential environmental impacts of all current and anticipated Eglin overland air operations as well as the potential impacts of a mission surge in overland air operations expected to occur during wartime or other significant military involvement.

This REA is an update of the 1998 Eglin Overland Air Operations (OAO) Programmatic Environmental Assessment (PEA) (U.S. Air Force, 1998). It has been prepared in accordance with the National Environmental Policy Act ([NEPA], Title 42, U.S. Code, Section 4321 et seq.), Air Force implementing regulations (32 Code of Federal Regulations [CFR] Part 989), and Department of Defense (DoD) directives.

1.2 Purpose and Need

The purpose of the Proposed Action is to allow quick and efficient processing of mission programs that request access to Eglin overland airspace during routine and crisis situations. The Proposed Action is needed to update/validate the current approval process for routine military users of Eglin overland airspace, and to provide a quick response to priority needs during war or other significant military involvement.

The potential environmental impacts of Eglin overland air operations were last analyzed in the 1998 Eglin OAO PEA (U.S. Air Force, 1998). Since then, changes have occurred at Eglin AFB that warrant updated environmental impact analysis of overland air operations, including the following:

- Overland air operations have increased and changed as a result of engagement in wars, development of new technologies, and changes in associated Eglin AFB mission activities
- The federal and/or state protection statuses of certain plant and animal species have changed
- New regulations have been imposed on Eglin regarding the management of protected species
- The populations of residential communities near Eglin AFB have increased
- Federal, State, and Air Force regulations have changed

Currently, when approval of a new mission action at Eglin AFB is requested, it may be categorically excluded from detailed environmental analysis if it is similar to a mission that has been previously assessed and if that assessment resulted in a Finding of No Significant Impact (FONSI). This Categorical Exclusion (CATEX) process is in accordance with NEPA and associated DoD and Air Force regulations. By updating the environmental impact analysis for Eglin overland air operations to address mission and other changes that have occurred since the last analysis, this REA will allow more streamlined and accurate environmental review/approval of overland air mission requests. Future new overland air operations may be categorically excluded from detailed environmental analyses if they are determined to be similar in scope and impact potential to those analyzed in this REA. By tiering the environmental analyses for such similar operations off this REA, the Air Force would save both time and money and would be able to respond more quickly and efficiently to high priority or crisis overland air mission requests.

1.3 Location of the Proposed Action

The Eglin Military Complex encompasses approximately 724 square miles (mi²) of land in the Florida panhandle and consists of the Eglin Reservation in Santa Rosa, Okaloosa, and Walton counties, and property on Santa Rosa Island and Cape San Blas (**Figure 1-1**). Eglin AFB includes land assets, cantonment areas, and the ETTC. The ETTC is composed of the following five components:

- Test areas/sites
- Interstitial areas (areas beyond and between the test areas)
- Eglin Gulf Test and Training Range (EGTTR)
- Airspace (over land and water)
- Estuarine and riverine areas

Eglin AFB controls approximately 127,868 mi² of airspace, of which 2.5 percent (3,226 mi²) is over land and the remaining 97.5 percent (124,642 mi²) is over water. The aerial coverage of the overland airspace addressed under the Proposed Action in this REA is defined as the Eglin OAO Region of Influence (ROI). The location and boundary of the Eglin OAO ROI are discussed in Section 1.6.

1.4 Applicable Regulatory Requirements

Regulations relevant to NEPA and the resources assessed in this REA include, but are not limited to, the following:

- Title 40, CFR, Parts 1500-1508
- Title 42, U.S. Code, Sections 4321-4370f
- Title 32 CFR Part 989, *Environmental Impact Analysis Process*
- Executive Order (EO) 11988, *Floodplain Management*, May 24, 1977
- EO 11990, *Protection of Wetlands*, May 24, 1977
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, February 11, 1994
- EO 13175, *Consultation and Coordination With Indian Tribal Governments*, November 6, 2000
- DoD Instruction 4715.9, *Environmental Planning and Analysis*, May 3, 1996
- Air Force Instruction (AFI) 32-7061, *The Environmental Impact Analysis Process*, March 12, 2003
- AFI 32-7064, *Integrated Natural Resources Management*, September 17, 2004
- AFI 32-7065, *Cultural Resources Management Program*, June 1, 2004
- AFI 13-212, *Range Planning and Operations*, November 16, 2007
- Eglin Air Force Base Instruction (EAFBI) 13-212, *Range Planning and Operations*
- Noise Control Act (Title 42, U.S. Code, Sections 4901 et seq.)
- Clean Air Act (Title 42, U.S. Code, Sections 7401 et seq.)
- Clean Water Act (Title 33, U.S. Code, Sections 1251 et seq.)
- Rivers and Harbors Act (Title 33, U.S. Code, Section 401)
- National Historic Preservation Act (Title 16, U.S. Code, Section 470)
- Archaeological Resources Protection Act (Title 16, U.S. Code, Section 470)
- Endangered Species Act (Title 16, U.S. Code, Section 1531 et seq.)
- Coastal Zone Management Act (Title 16, U.S. Code, Section 1451 et seq.)
- Resource Conservation and Recovery Act (Title 42, U.S. Code, Section 6901 et seq.)

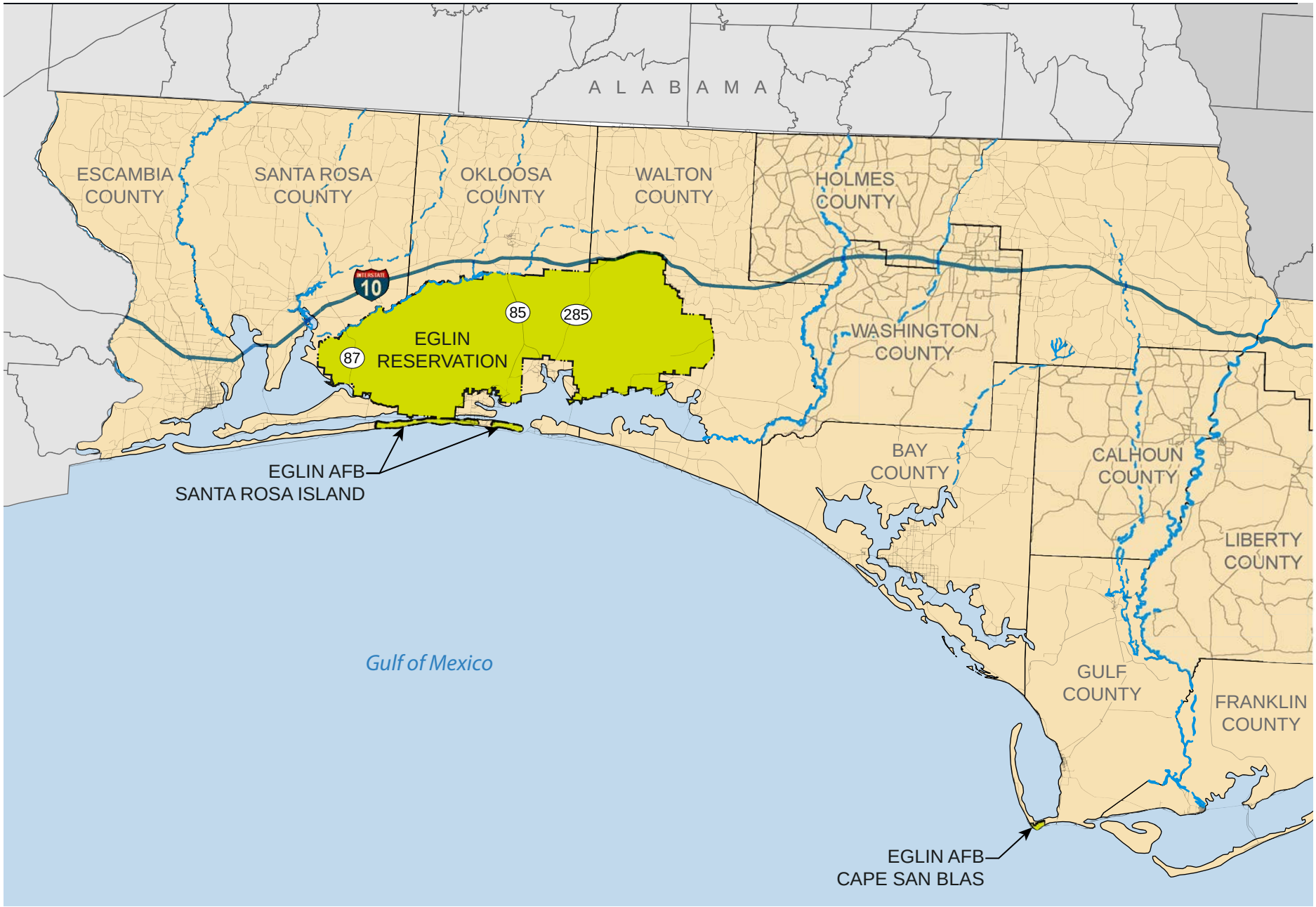

FIGURE 1-1
Eglin Vicinity Map
Eglin AFB Overland Air Operations REA

ES092713002216TPA F1-1 Eglin Vicinity Map-rev1.ai

This REA is required to accomplish the following objectives:

- Provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a FONSI.
- Aid in the Air Force's compliance with NEPA when an EIS is not necessary and facilitate preparation of an EIS when necessary.

AFI 32-7061 directs Air Force officials to follow 32 CFR 989, which specifies the procedural requirements for the implementation of NEPA and requires consideration of environmental consequences as part of the planning and decision-making process. 32 CFR 989.14(g) requires preparation of a Finding of No Practicable Alternative (FONPA), which must be submitted to the Major Command Environmental Planning Function when the alternative selected is located in jurisdictional wetlands/surface waters or floodplains.

1.5 Interagency Coordination and Public Involvement

The Air Force invites public participation in the evaluation of the Proposed Action through the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require federal agencies to cooperate with and consider state and local views in implementing a federal proposal. AFI 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning* (IICEP), requires the Air Force to implement the IICEP process, which is used for the purpose of facilitating agency coordination and implementing scoping requirements under NEPA.

All agencies, organizations, and members of the public having a potential interest in the Proposed Action will be given an opportunity to provide comments on the Environmental Assessment (EA) during a 30-day review period. At the end of the 30-day review period, the Air Force will evaluate all comments received and will modify the EA and/or Proposed Action based on the comments as appropriate. The Air Force may then execute a FONSI and proceed with the Proposed Action. If it is determined that implementation of the Proposed Action would result in significant impacts, the Air Force will either publish in the Federal Register a Notice of Intent to prepare an EIS, revise the Proposed Action to avoid significant impacts, incorporate mitigation to reduce impact to less than significant, or not take the action.

1.5.1 Coastal Zone Management Consistency

The federal Coastal Zone Management Act (CZMA) provides assistance to states, in cooperation with federal and local agencies, for developing land and water use programs in coastal zones. According to Section 307 of the CZMA, federal projects that affect land uses, water uses, or coastal resources in a state's coastal zone must be consistent, to the maximum extent practicable, with the enforceable policies of that state's federally approved coastal zone management plan.

The Florida Coastal Management Program (FCMP) is based on a network of agencies implementing 24 statutes that protect and enhance Florida's natural, cultural, and economic coastal resources. The Florida Department of Environmental Protection (FDEP) implements the FCMP through the Florida State Clearinghouse. The Clearinghouse routes applications for federal activities, such as EAs, to the appropriate state, regional, and local reviewers to determine federal agency consistency with the FCMP. Following their review of the EA, the FCMP state agencies provide comments and recommendations to the Clearinghouse based on their statutory authorities. Based on an evaluation of the comments and recommendations, FDEP makes the state's CZMA consistency determination for the proposed federal activity. Comments and recommendations regarding federal agency consistency are then forwarded to the applicant in the state clearance letter issued by the Clearinghouse.

A letter and copies of the draft EA and draft FONSI, along with the Air Force's federal CZMA consistency determination, which is provided as Appendix A, were sent to the Florida State Clearinghouse to obtain the state's CZMA consistency determination for the Proposed Action. The state's CZMA consistency determination for the Proposed Action is included in Appendix B.

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1.5.2 Regulatory Agency Consultation

The Air Force consulted directly with the U.S. Fish and Wildlife Service (USFWS) on the Proposed Action. Consultation with pertinent state agencies, including the Florida Fish and Wildlife Conservation Commission (FWC) and State Historic Preservation Office (SHPO), occurred through the Florida State Clearinghouse. Documentation of Florida State Clearinghouse consultation and USFWS consultation is included in Appendix B and F, respectively.

1.5.3 Public Involvement

A 30-day public review period was held August 22 – September 20, 2014 to solicit public comments on the draft EA and draft FONSI. The public review/comment period was announced in a public Notice of Availability (NOA) in the *Northwest Florida Daily News* of Fort Walton Beach, Florida, *Navarre Press* of Navarre, Florida, and *Bay Beacon* of Niceville, Florida (Appendix C). The draft EA and draft FONSI were made available for public review on the Eglin AFB public website. All comments received from the public and the Air Force's responses to the received comments are included in Appendix C.

1.6 Scope of the REA and Proposed Action

This REA assesses the potential environmental impacts associated with the Air Forces' Proposed Action to authorize and implement a new level of activity for Eglin overland air operations. More specifically, this REA assesses the potential environmental impacts of reasonable alternatives of the Proposed Action, including the No-Action Alternative of maintaining existing conditions, as described in Section 2.

This REA addresses only air operations that are conducted over land. Air operations conducted over water are addressed in the REA prepared for the EGTTR. Eglin overland air operations involve aircraft (both fixed-wing and rotor-wing), drones, RPVs, and balloons and their associated devices, as well as the powered portions (propellants) of missiles, bombs, flares, and RATO/JATO bottles. Eglin overland air operations do not involve bombs, missiles, ordnance, aircraft guns, chaff, smoke, lasers, or electromagnetic radiation; these operations are included under the test areas and are analyzed in separate REAs prepared for the test areas.

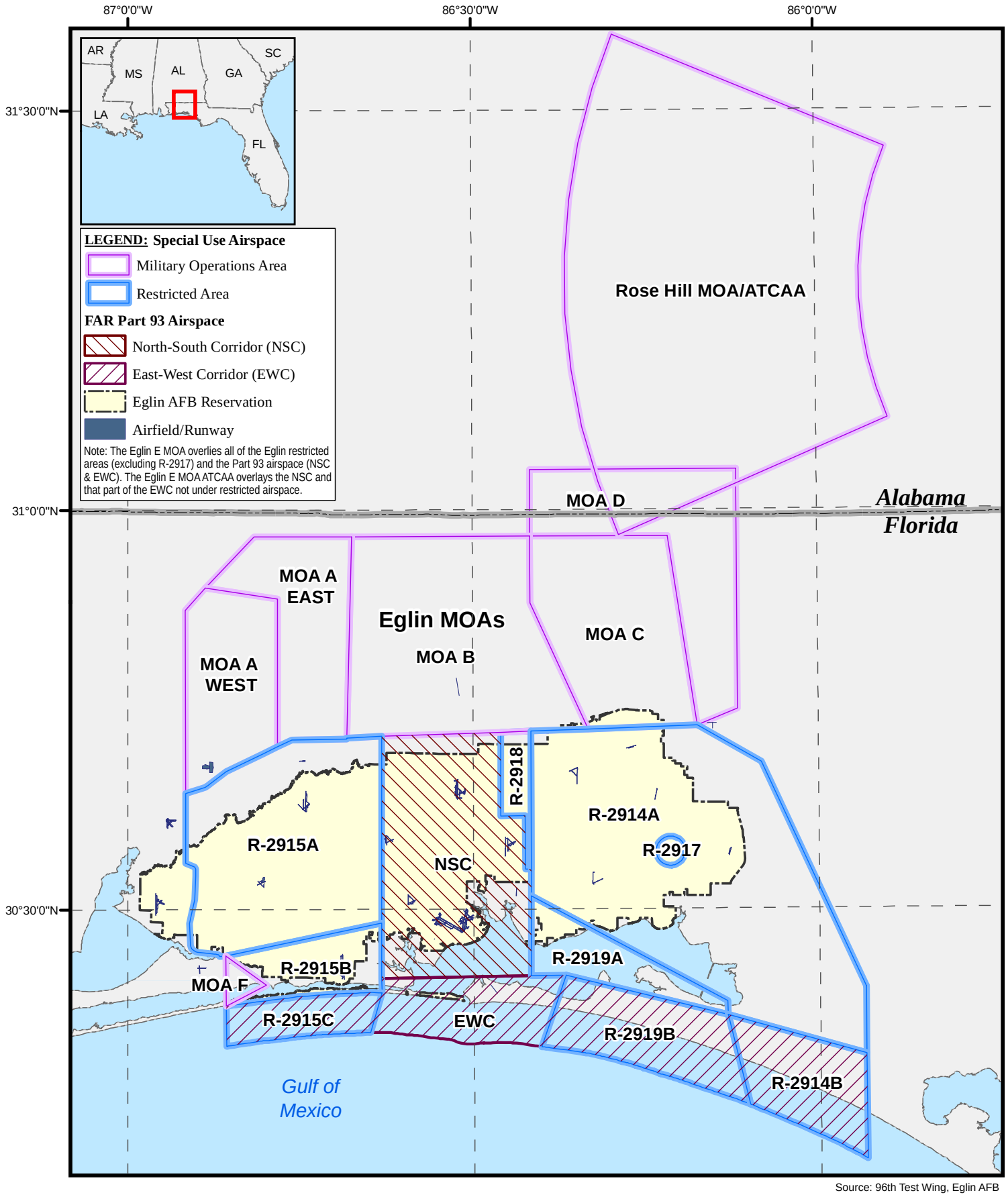
The aerial coverage of the overland airspace addressed under the Proposed Action in this REA is defined as the Eglin OAO ROI (**Figure 1-2**). The Eglin OAO ROI extends approximately three nautical miles offshore to the boundary of the EGTTR and is defined by the following Special Use Airspaces (SUAs):

- Restricted Area airspace: R-2914A and B, R-2915A, B, and C, R-2917 (within R-2914A), R-2918, and R-2919A and B;
- Eglin Military Operating Area (MOA) airspace: Eglin MOAs A East and West, B, C, D, E, and F;
- Rose Hill MOA and associate Air Traffic Control Assigned Airspace (ATCAA).

Restricted Area airspace is a block of airspace reserved for military operations that cannot be entered by private or commercial aircraft without permission from the controlling agency. Eglin AFB is the controlling agency for Restricted Area airspace within the Eglin OAO ROI. A MOA is a block of airspace that is jointly used by military, private, and commercial aircraft. **Table 1-1** presents the vertical limits of Eglin overland airspace from the floors to the ceilings of the SUAs. Further information on the airspace units within the Eglin OAO ROI is provided in Section 3.1.1.

The Air Force is currently analyzing the potential impacts of a proposal to use airspace above the Blackwater River State Forest (BRSF) and Tate's Hell State Forest (THSF) in the Gulf Regional Airspace Strategic Initiative (GRASI) Landscape Initiative EIS. The airspaces above the BRSF and THSF that are being addressed in the GRASI Landscape Initiative EIS are outside the Eglin overland airspace addressed in this REA.

In addition to air operations conducted within the SUAs shown on **Figure 1-2** and defined in **Table 1-1**, this REA also addresses the use of approved helicopter landing zones (HLZs) on Eglin AFB, where helicopters and tilt-rotor aircraft, such as the CV-22 Osprey, land to pickup or offload troops and cargo. The impact analysis in this REA addresses only landing and takeoff of aircraft at the HLZs; activities conducted by personnel on the ground at the HLZs are addressed in the REAs prepared for the test areas and interstitial areas on Eglin AFB.



Source: 96th Test Wing, Eglin AFB

FIGURE 1-2
Eglin Overland Air Operations Region of Influence
Eglin AFB Overland Air Operations REA

TABLE 1-1
Vertical Limits of Eglin Overland Airspace
Eglin AFB Overland Air Operations REA

SUA Category	SUA Name	Floor (feet AGL or above msl)	Ceiling (feet above msl)
Restricted Area	R-2914A	Surface	Unlimited
	R-2914B	8,500 msl	Unlimited
	R-2915A	Surface	Unlimited
	R-2915B	Surface	Unlimited
	R-2915C	8,500 msl	Unlimited
	R-2917	Surface	5,000
	R-2918	Surface	Unlimited
	R-2919A	Surface	Unlimited
	R-2919B	8,500 msl	Unlimited
Military Operating Area	Eglin A East/West	1,000 AGL	17,999
	Eglin B	1,000 AGL	17,999
	Eglin C	1,000 AGL	17,999
	Eglin D	1,000 AGL	3,000
	Eglin E	Surface	17,999
	Eglin E ATCAA	18,000 msl	60,000
	Eglin F	Surface	17,999
	Rose Hill	8,000 msl	17,999
	Rose Hill ATCAA	18,000 msl	23,000

SUA – Special Use Airspace
AGL - Above Ground Level
msl - mean sea level
ATCAA – Air Traffic Control Assigned Airspace

1.7 Impact Analysis

This REA provides a detailed analysis of the potential direct, indirect, and cumulative impacts that would result from implementation of the Proposed Action. Direct impacts are those that would result from the Proposed Action at the same time and in the same place the action is being implemented. Indirect impacts are those that would result from the Proposed Action at a later time or 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 Proposed Action 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. The following terms are used to describe the magnitude of impacts in this REA:

- No Effect: The action would not cause a detectable change.
- Negligible: The impact would be at the lowest level of detection; the impact would not be significant.
- Minor: The impact would be slight but detectable; the impact would not be significant.
- Moderate: The impact would be readily apparent; the impact would not be significant.
- Major: The impact would be clearly adverse or positive; the impact has the potential to be significant. The significance of adverse and positive 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.

1.7.1 Resources Identified for Detailed Analysis

The following resources are analyzed in detail in this REA:

Airspace

The analysis of airspace impacts in this REA focuses on the potential impacts of overland air operations on airspace congestion, restrictions on public use of airspace, and air traffic controller workload.

Air Quality

The analysis of air quality impacts in this REA focuses on potential degradation of air quality from hazardous materials released during overland air operations (aircraft exhaust emissions, flare combustion products, and fuel released in-flight).

Noise

The analysis of noise impacts in this REA focuses on the potential impacts of noise generated during overland air operations on human populations and land use beneath Eglin overland airspace. Potential noise impacts on biological receptors (biota, including sensitive species) are assessed as part of the biological resources impact analysis.

Health and Safety

The analysis of health and safety impacts in this REA focuses on the potential for aircraft mishaps and bird/wildlife-aircraft strikes during overland air operations.

Soils

The analysis of soil impacts in this REA focuses on potential degradation of soil quality from the introduction of released hazardous materials (aircraft exhaust, propellants, flare combustion products, and fuel released in-flight) into the soil matrix.

Water Resources

The analysis of water resources impacts in this REA focuses on potential degradation of water quality from the introduction of released hazardous materials (aircraft exhaust emissions, flare combustion products, and fuel released in-flight) directly into surface waters or indirectly into groundwater via soil leaching.

Biological Resources

The analysis of biological resources impacts in this REA focuses on the potential impacts that bird/wildlife-aircraft strikes, aircraft noise, and wildfires caused by aircraft would have on biota, including sensitive species on Eglin AFB.

Environmental Justice and Protection of Children

The analysis of Environmental Justice in this REA assesses whether overland air operations would have disproportionate environmental or human health impacts on minority or low-income populations. The analysis of Protection of Children assesses whether overland air operations would result in environmental health and safety risks that may disproportionately affect children.

1.7.2 Resources Eliminated from Detailed Analysis

The Proposed Action was determined to have no potential to affect several resources. Therefore, these resources were eliminated from detailed analysis in this REA. The resources that were eliminated from detailed analysis and the rationale for their elimination are presented below:

Geology

The Proposed Action would not involve any intrusive activity that would affect subsurface geological formations. Therefore, the Proposed Action would have no effect on geology.

Topography

The Proposed Action would not involve land contouring or any other activity that would affect site topography. Therefore, the Proposed Action would have no effect on topography.

Floodplains

The Proposed Action would not involve any activity that would be located within the 100-year floodplain, or any activity that would directly or indirectly affect floodplains. Therefore, the Proposed Action would have no effect on floodplains.

Land Use

The Proposed Action would not change the land use classification of any on-base or off-base area. Potential impacts on land use directly related to noise from overland air operations are assessed as part of the noise impact analysis.

Cultural Resources

The Proposed Action would not involve construction, demolition, or any other ground disturbing activity that would have the potential to impact archaeological artifacts or historic buildings or structures. The Proposed Action would involve over-flights of historic districts and individual buildings/structures on Eglin AFB that are listed or eligible to be listed in the National Register of Historic Places (NRHP). Based on the findings of the 2014 Joint Strike Fighter (JSF) Final Supplemental Environmental Impact Statement (SEIS) (U.S. Air Force, 2014), the noise generated by such over-flights is not expected to cause structural damage to these buildings/structures. An existing Programmatic Agreement between Eglin AFB and the Florida SHPO identifies the planning and mitigation actions that would be required to address potential impacts from aircraft noise, such as the potential abandonment of a listed or eligible historic building or structure (Appendix E).

Socioeconomics, Utilities, Solid Waste, and Transportation

The Proposed Action would not change the number of persons working at Eglin AFB or living in the local area, or have an impact on the local economy. Under Alternative 1, baseline air overland operations are defined as those subsequent to the upcoming beddown of F-35 aircraft at Eglin AFB. The socioeconomic (demographics, economy, housing, schools, and emergency services), utility (energy, potable water, and wastewater), solid waste, and transportation impacts associated with personnel increases and facility construction for the F-35 beddown have been analyzed in the 2014 JSF Final SEIS (U.S. Air Force, 2014). Under Alternative 2, a mission surge in overland air operations would not involve construction or increases in personnel or aircraft – only increases in the number of aircraft sorties and associated expendables. For these reasons, the Proposed Action would have little to no effect on the local demographics, local economy, number of persons living in on-base or off-base housing, number of children attending schools in the area, demand for emergency services (medical, police, and fire-fighting), energy consumption/distribution, potable water consumption/distribution, domestic wastewater distribution/treatment, solid waste generation/disposal, or ground traffic levels/flow.

Hazardous Materials and Wastes

This REA does not address hazardous materials and wastes associated with routine aircraft maintenance, which are managed in compliance with applicable environmental regulations and various Eglin AFB plans. The potential impacts that hazardous materials released during overland air operations (aircraft exhaust emissions, flare combustion products, and fuel released in-flight) have on air quality, soils, water resources, and biological resources are assessed in this REA as part of the impact analyses for those resources.

SECTION 2

Alternatives

2.1 Introduction

The Air Forces' Proposed Action is to authorize and implement a new level of activity for Eglin overland air operations. Under NEPA and 32 CFR Part 989, this REA is required to analyze the potential environmental impacts of "reasonable" alternatives of the Proposed Action, including the No Action Alternative of maintaining existing conditions. Reasonable alternatives are those that meet the underlying purpose of and need for the Proposed Action, are feasible from a technical and economic standpoint, and, if applicable, meet reasonable screening criteria (selection standards) that are suitable to a particular action. Alternatives that are determined to not be reasonable can be eliminated from detailed analysis in this REA.

2.2 Alternatives Carried Forward for Detailed Analysis

The alternatives carried forward for detailed analysis in this REA were developed during an interdisciplinary team meeting at Eglin AFB, which included, but was not limited to, representatives from the 96th Test Wing (96 TW), 96th Civil Engineer Group/Environmental Planning Office (96 CEG/CEIEA), and 96th Civil Engineer Group/Natural Resources Office (96 CEG/CEIEA). The 96 TW, the host unit at Eglin AFB, is responsible for the management of Eglin overland air operations.

The following alternatives are analyzed in detail in this REA:

- Alternative 1 (No Action Alternative): Maintain Eglin overland air operations at the baseline level
- Alternative 2: Implement Eglin overland air operations at a mission surge level

2.2.1 Alternative 1 (No Action Alternative)

Alternative 1 is the No Action Alternative of maintaining Eglin overland air operations at the baseline level. Baseline overland air operations under Alternative 1 are those currently conducted and those anticipated to be conducted in the near term. The baseline level under Alternative 1 is defined as follows:

- The number of aircraft sorties predicted in the 2012 SUA Noise Analysis Report (U.S. Air Force, 2012a) to be flown in Eglin overland airspace during Calendar Year (CY) 2014. This report addressed use of SUAs by the F-35 and all other aircraft. The 2014 aircraft sortie data and associated noise analysis in this report were used to analyze the No Action Alternative and all operational alternatives in the 2014 JSF Final SEIS (U.S. Air Force, 2014). The 2014 JSF SEIS addressed the beddown and operation of the 59 F-35 aircraft (JSF aircraft), which were authorized for delivery to Eglin AFB by the February 5, 2009 Record of Decision (ROD) issued for Implementation of Base Realignment and Closure (BRAC) 2005 Decisions for the JSF Initial Joint Training Site (IJTS), Eglin AFB, Florida (*Federal Register*, Volume 74, page 34, February 23, 2009).

- The quantities of expendables associated with baseline overland air operations – estimated by 96 TW personnel using FY 2010 – 2013 data (David Gould, Personal Communication, November 7, 2013). Only the powered portions (propellants) of the expendables are analyzed in this REA.

Table 2-1 presents the Alternative 1 (current baseline) aircraft sorties for Eglin overland airspace. The sorties for each aircraft type under Alternative 1 are provided in Appendix D, *Detailed Aircraft Sorties for Eglin Overland Airspace*. For comparison purposes, **Table 2-1** also includes the previous authorized aircraft sorties for Eglin overland airspace, which is the number of sorties of the Preferred Alternative analyzed in the 1998 Eglin OAO PEA (U.S. Air Force, 1998) – calculated as a net 20 percent mission surge increase in the baseline sorties at that time.

TABLE 2-1

Alternative 1 and Previous Authorized Aircraft Sorties for Eglin Overland Airspace

Eglin AFB Overland Air Operations REA

SUA Category	SUA Name	Alternative 1 Sorties[a] (Current Baseline)	Previous Authorized Sorties[b] (1998 Preferred Alternative)	Percent Change
Restricted Area	R-2914A	3,468	2,071	+67%
	R-2914B	1,563	415	+276%
	R-2915A	7,575	3,794	+100%
	R-2915B	4,677	1,406	+233%
	R-2915C	3,957	850	+366%
	R-2917 (no fly zone)	0	0	N/A
	R-2918	No Data	627	N/A
	R-2919A	3,575	710	+404%
	R-2919B	2,560	459	+458%
Military Operating Area	Eglin A East/West	3,219	696	+363%
	Eglin B	1,709	641	+167%
	Eglin C	2,307	640	+260%
	Eglin D	9	521	-98%
	Eglin E	2,545	688	+270%
	Eglin F	1,283	168	+664%
	Rose Hill	2,836	2,230	+27%

SUA - Special Use Airspace

a - Total number of sorties predicted in the 2012 Special Use Airspace Noise Analysis Report (U.S. Air Force, 2012a) for Calendar Year 2014.

b - Number of sorties of the Preferred Alternative analyzed in the 1998 Eglin Overland Air Operations Programmatic Environmental Assessment (U.S. Air Force, 1998) – calculated as a net 20 percent mission surge increase in the baseline sorties at that time.

Table 2-2 presents the Alternative 1 (current baseline) expendable quantities for Eglin overland airspace. Only the propellants of the expendables are analyzed in this REA. For comparison purposes, **Table 2-2** also includes the previous authorized `expendable quantities for Eglin overland airspace, which are the expendable quantities of the Preferred Alternative analyzed in the 1998 Eglin OAO PEA (U.S. Air Force, 1998) – calculated as a 100 percent mission surge increase in the baseline expendables at that time associated with testing air operations (a mission surge increase was not applied to expendables associated with training air operations).

TABLE 2-2

Alternative 1 and Previous Authorized Expendable Quantities for Eglin Overland Airspace

Eglin AFB Overland Air Operations REA

SUA Category	SUA Name	Expendable	Alternative 1 Quantity[a] (Current Baseline)	Previous Authorized Quantity[b] (1998 Preferred Alternative)	Percent Change
Restricted Area	R-2914A and B	BGM-109	10	0	N/A
		Hellfire/Longbow Missile	100	198	-49%
		AGM-65G	10	12	-17%
		Adv. Kinetic Msl	5	2	+150%
		LUU-2	10	9	+11%
		CBU-97	25	25	0
		M-206 Flare	3,500	3,317	+6%
		MJU-7 Flare	700	622	+13%
		MJU-10 Flare	800	795	+1%
		MJU-27 Flare	150	150	0
		Experimental Flare	200	406	-51%
		Mk-6 Signal	20	17	+18%
		7.62 mm propellant	50,000	241,012	-79%
		9 mm propellant	1,000	0	N/A
		20 mm propellant	50,000	38,913	+28%
		25 mm propellant	80,000	21,304	+276%
		30 mm propellant	10,000	0	N/A
		40 mm propellant	15,000	5,450	+175%
		105 mm propellant	5,000	1,053	+375%
		.50 Cal propellant	10,000	23,811	-58%
		MLRS	50	0	N/A
	R-2915A and B	BGM-109	10	12	-17%
		CBU-97	10	6	+67%
		MLRS	10	14	-29%
		AGM-65D, G, H	30	52	-42%
		Slap Flare	5	350	-99%
		Mk-50 Decoy Flare	10	11	-9%
		M-206 Flare	10,000	11,753	-15%
		Mk-6 Signal	100	111	-10%
		5.56 mm propellant	10,000	0	N/A
		7.62 mm propellant	50,000	1,361,970	-96%
		9 mm propellant	10,000	0	N/A
		20 mm propellant	50,000	272,424	-82%
		25 mm propellant	200,000	58,119	+244%
		30 mm propellant	10,000	0	N/A
		40 mm propellant	40,000	36,816	+9%
		105 mm propellant	15,000	6,092	+146%
		.50 Cal propellant	50,000	143,210	-65%
		MQM-107 RATO	5	2	+150%
	R-2915C	None	0	0	0
	R-2917 (no fly zone)	None	0	0	0
	R-2918	None	0	0	0
	R-2919A	BGM-109	10	0	N/A
	R-2919B	BGM-109	10	0	N/A
Military Operating Area	Eglin A East/West	None	0	0	0
	Eglin B	None	0	0	0
	Eglin C	None	0	0	0
	Eglin D	None	0	0	0
	Eglin E	BGM-109	10	0	N/A
		Slap Flares	5	100	-95%
		Distress Flares	5	100	-95%
	Eglin F	None	0	0	0
	Rose Hill	None	0	0	0

SUA - Special Use Airspace

a – Expendable quantities estimated by 96th Test Wing personnel using Fiscal Year 2010 – 2013 data.

b – Expendable quantities of the Preferred Alternative analyzed in the 1998 Eglin Overland Air Operations Programmatic Environmental Assessment (U.S. Air Force, 1998) - calculated as a 100 percent mission surge increase in the baseline expendables at that time associated with testing air operations (a mission surge increase was not applied to expendables associated with training air operations).

2.2.2 Alternative 2

Alternative 2 is the implementation of Eglin overland air operations at a mission surge level. Mission surge overland air operations under Alternative 2 are those anticipated to occur during wartime or other significant military involvement. The mission surge level under Alternative 2 is defined as follows:

- The baseline aircraft sorties under Alternative 1 plus the collective increase in sorties that result after applying the following multiplication factors determined by 96 TW personnel to represent the mission surge increase for each Unit (David Gould, Personal Communication, September 24, 2013):
  - Air Force Special Operations Command (AFSOC): x 2
  - 6th Ranger Training Battalion (6 RTB): x 2
  - 7th Special Forces Group (Airborne) (7 SFG): x 2
  - Alabama Air National Guard (ALANG): x 2
  - Other Units: x 2
  - 53rd Wing (53 WG): x 1.5
  - 325th Fighter Wing (325 FW): x 1.5
  - 33rd Fighter Wing (33 FW): x 1.2
  - 96 TW: x 1.2
  - Air Force Research Laboratory (AFRL): x 1.2
  - Life Cycle Management Center-Armament Directorate (LCMC-EB): x 1.2
  - Aeronautical Systems Center (ASC): x 1.2
  - Electronic Systems Center (ESC): x 1.2
- A 200 percent increase in the Alternative 1 baseline expendables.

Table 2-3 presents the Alternative 1 (current baseline) and Alternative 2 (mission surge) aircraft sorties for Eglin overland airspace. The sorties for each aircraft type under Alternatives 1 and 2 are provided in Appendix D, *Detailed Aircraft Sorties for Eglin Overland Airspace*.

TABLE 2-3
Alternative1 and Alternative 2 Aircraft Sorties for Eglin Overland Airspace
Eglin AFB Overland Air Operations REA

SUA Category	SUA Name	Alternative 1 Sorties (Current Baseline)	Alternative 2 Sorties[a] (Mission Surge)	Percent Change
Restricted Area	R-2914A	3,468	5,776	+67%
	R-2914B	1,563	2,412	+54%
	R-2915A	7,575	14,293	+89%
	R-2915B	4,677	8,527	+82%
	R-2915C	3,957	7,101	+79%
	R-2917 (no fly zone)	0	0	N/A
	R-2918	No Data	N/A	N/A
	R-2919A	3,575	6,466	+81%
	R-2919B	2,560	4,562	+78%
Military Operating Area	Eglin A East/West	3,219	5,940	+85%
	Eglin B	1,709	3,378	+98%
	Eglin C	2,307	4,184	+81%
	Eglin D	9	14	+56%
	Eglin E	2,545	4,564	+79%
	Eglin F	1,283	2,426	+89%
	Rose Hill	2,836	3,955	+39%

SUA - Special Use Airspace
a - The baseline aircraft sorties under Alternative 1 plus the collective increase in sorties that result after applying multiplication factors determined by 96 TW personnel to represent the mission surge increase for each Unit.

Table 2-4 presents the Alternative 1 (current baseline) and Alternative 2 (mission surge) expendable quantities for Eglin overland airspace.

TABLE 2-4

Alternative 1 and Alternative 2 Expendable Quantities for Eglin Overland Airspace

Eglin AFB Overland Air Operations REA

SUA Category	SUA Name	Expendable	Alternative 1 Quantity (Current Baseline)	Alternative 2 Quantity[a] (Mission Surge)	Percent Change
Restricted Area	R-2914A and B	BGM-109	10	30	+200%
		Hellfire/Longbow Missile	100	300	+200%
		AGM-65G	10	30	+200%
		Adv. Kinetic Msl	5	15	+200%
		LUU-2	10	30	+200%
		CBU-97	25	75	+200%
		M-206 Flare	3,500	10,500	+200%
		MJU-7 Flare	700	2,100	+200%
		MJU-10 Flare	800	2,400	+200%
		MJU-27 Flare	150	450	+200%
		Experimental Flare	200	600	+200%
		Mk-66	20	60	+200%
		7.62 mm propellant	50,000	150,000	+200%
		9 mm propellant	1,000	3,000	+200%
		20 mm propellant	50,000	150,000	+200%
		25 mm propellant	80,000	240,000	+200%
		30 mm propellant	10,000	30,000	+200%
		40 mm propellant	15,000	45,000	+200%
		105 mm propellant	5,000	15,000	+200%
		.50 Cal propellant	10,000	30,000	+200%
		MLRS	50	150	+200%
	R-2915A and B	BGM-109	10	30	+200%
		CBU-97	10	30	+200%
		MLRS	10	30	+200%
		AGM-65D, G, H	30	90	+200%
		Slap Flare	5	15	+200%
		Mk-50 Decoy Flare	10	30	+200%
		M-206 Flare	10,000	30,000	+200%
		Mk-66	100	300	+200%
		5.56 mm propellant	10,000	30,000	+200%
		7.62 mm propellant	50,000	150,000	+200%
		9 mm propellant	10,000	30,000	+200%
		20 mm propellant	50,000	150,000	+200%
		25 mm propellant	200,000	600,000	+200%
		30 mm propellant	10,000	30,000	+200%
		40 mm propellant	40,000	120,000	+200%
		105 mm propellant	15,000	45,000	+200%
		.50 Cal propellant	50,000	150,000	+200%
		MQM-107 RATO	5	15	+200%
	R-2915C	None	0	0	N/A
	R-2917 (no fly zone)	None	0	0	N/A
	R-2918	None	0	0	N/A
	R-2919A	BGM-109	10	30	+200%
	R-2919B	BGM-109	10	30	+200%
Military Operating Area	Eglin A East/West	None	0	0	N/A
	Eglin B	None	0	0	N/A
	Eglin C	None	0	0	N/A
	Eglin D	None	0	0	N/A
	Eglin E	BGM-109	10	30	+200%
		Slap Flares	5	15	+200%
		Distress Flares	5	15	+200%
	Eglin F	None	0	0	N/A
	Rose Hill	None	0	0	N/A

SUA - Special Use Airspace

[a] - A 200 percent mission surge increase in the Alternative 1 baseline expendables.

2.3 Alternatives Considered but Eliminated from Detailed Analysis

During the interdisciplinary team meeting conducted at Eglin AFB to develop alternatives of the Proposed Action (see Section 2.2), consideration was given to an alternative that would combine Alternative 1 (No Action

Alternative) with reasonably foreseeable overland air operations. The interdisciplinary team determined that such an alternative cannot be developed at this time as there are no reasonably foreseeable overland air operations other than those anticipated to be conducted in the near term, which are included as part of the baseline overland air operations analyzed under Alternative 1. Baseline overland air operations under Alternative 1 are those currently conducted and those anticipated to be conducted in the near term, which include the operations of the F-35. The beddowns of these aircraft at Eglin are imminent and, therefore, their associated overland air operations are included as part of the baseline analyzed under Alternative 1. For these reasons, an alternative that would combine Alternative 1 with reasonably foreseeable overland air operations was eliminated from detailed analysis in this REA.

2.4 Identification of the Preferred Alternative

The preferred alternative is Alternative 2 – implementation of Eglin overland air operations at a mission surge level, as described in Section 2.2.2. Eglin overland air operations would be implemented at a mission surge level only during wartime or other significant military involvement. During all other times, Eglin overland air operations are anticipated to be conducted at the baseline level analyzed under Alternative 1. To account for the potential future need to implement overland air operations at a mission surge level, Alternative 2 is identified as the preferred alternative in this REA.

SECTION 3

Affected Environment and Environmental Consequences

This section addresses the "Affected Environment" and "Environmental Consequences" of the Proposed Action. The Affected Environment is the existing condition of each resource for which the alternatives of the Proposed Action are assessed. The Environmental Consequences are the potential impacts of the alternatives on each resource. The approach used to conduct the impact analysis in this REA is explained in Section 1.7.

3.1 Airspace

3.1.1 Affected Environment

AFI 13-201, *Air Force Airspace Management*, provides guidance and procedures for developing and processing SUA, and covers the efficient planning, acquisition, use, and management of airspace required to support Air Force flight operations. EAFBI 11-201, *Air Operations*, implements aircraft rules and procedures that apply to all air operations at Eglin AFB. The Air Force also uses Federal Aviation Administration (FAA) Order 7110.65R, *Air Traffic Control*, and FAA Order 7610.4, *Memorandum of Agreement between Department of the Air Force and Federal Aviation Administration on Safety for Space Transportation and Range Activities*.

Eglin overland airspace consists of several airspace units, which combined, constitute the Eglin OAO ROI (see Figure 1-2). Efficient management of the airspace within and surrounding the Eglin OAO ROI is crucial to Eglin's mission as well as regional tourism and business, as portions of the airspace are also used by commercial and private aircraft. To maintain safety, various SUAs have been created in conjunction with FAA to separate military and civilian flights. The Eglin OAO ROI extends approximately three nautical miles offshore to the boundary of the EGTTR and is defined by the following SUAs (see Figure 1-2):

- Restricted Area airspaces R-2914A and B, R-2915A, B, and C, R-2917 (within R-2914A), R-2918, and R-2919A and B;
- Eglin MOAs A East and West, B, C, D, E, and F;
- Rose Hill MOA and associated ATCAA.

Restricted Area airspace is a block of airspace reserved for military operations that cannot be entered by private or commercial aircraft without permission from the controlling agency. Eglin AFB is the controlling agency for Restricted Area airspace within the Eglin OAO ROI. Restricted areas are located mostly over the land portion of the Eglin Reservation, and are used primarily for air-to-surface and surface-to-air testing and training operations.

A MOA is a block of airspace that is jointly used by military, private, and commercial aircraft. The Jacksonville Air Traffic Control Center controls Eglin MOAs A East and West, MOA B, and MOA C, above 11,000 feet (ft) above mean sea level (msl). Eglin AFB controls MOAs A East and West, MOA B, and MOA C, up to 10,000 ft above msl, and MOA D, MOA E, and MOA F. Rose Hill MOA/ATCAA is controlled by the Jacksonville Air Traffic Control Center; Eglin AFB schedules this airspace.

The North-South Corridor (NSC) and East-West Corridor (EWC) shown on Figure 1-2 are used by military as well as private and commercial aircraft to access airports within and near Eglin AFB; Eglin AFB or an appropriate Air Traffic Control Facility controls the use of these corridors. The vertical limits of Eglin overland airspace, from the floors to the ceilings of the SUAs, are presented in **Table 1-1**.

The Gulf Regional Airspace Strategic Initiative (GRASI) was initiated in 2008 to address increasing military and civilian use of airspace in the Gulf region. Based on the results of computer modeling and input by stakeholders, the GRASI working group determined that the projected increase in military use of regional airspace resulting from the JSF and planned expansion of other Eglin air operations would exceed the available capacity in some

SUAs (U.S. Air Force, 2011a). As a result, the GRASI working group developed strategies and recommendations on how to best integrate military and civilian requirements and accommodate the projected increase in regional airspace use. The GRASI recommendations, which were finalized in March 2011, were incorporated into the 2014 JSF Final SEIS (U.S. Air Force, 2014), as applicable for the JSF and overall projected near-term Eglin air operations. The Air Force is currently analyzing the potential impacts of a proposal to use airspace above the BRSF and THSF in the GRASI Landscape Initiative EIS. The airspaces above the BRSF and THSF that are being addressed in the GRASI Landscape Initiative EIS are outside the Eglin overland airspace addressed in this REA.

Eglin AFB has four active airfields (Eglin Main Base, Choctaw Field, Duke Field, and Camp Rudder). There are several assault landing zones (LZs) on Eglin AFB; however, only Landing Zone East and Rockhill Landing Zone are currently active. These assault LZs, which are also referred to as assault landing strips, are composed mostly of clay and are used intermittently for touchdown and takeoff exercises, primarily by fixed-wing aircraft. There are several parachute drop zones (DZs) on Eglin AFB, which are cleared areas used for paradropping troops and equipment. At present, there are a total of 37 approved HLZs on Eglin AFB where helicopters and tilt-rotor aircraft, such as the CV-22 Osprey, land to pickup or offload troops and cargo. Use of these HLZs varies from year to year, depending on the needs of testing and training missions. Most of the HLZs on Eglin AFB are unpaved, grassy areas, and all are generally flat. They are either rectangular, square-shaped, or circular, and range in size from less than an acre to several hundred acres.

3.1.2 Environmental Consequences

Alternative 1 (No Action Alternative)

Eglin overland air operations would require periodic restrictions on public (commercial and private aircraft) use of the regional airspace. The overall extent of the airspace restrictions in terms of frequency and duration, and the extent to which airspace congestion and air traffic controller workload would be impacted by baseline Eglin OAO activity are difficult to measure quantitatively. Current baseline activity under Alternative 1 is greater than the previous baseline activity analyzed with respect to total annual aircraft sorties; therefore, the overall potential for airspace impacts has increased since the previous baseline. As discussed in Section 3.1.1, the GRASI was initiated in 2008 to address increasing military and civilian use of airspace in the Gulf region. Recommendations of the GRASI working group have been incorporated into the 2014 JSF Final SEIS (U.S. Air Force, 2014) for the JSF and overall near-term Eglin air operations. These recommendations, which include utilization of additional non-Eglin controlled SUAs, methods for increasing scheduling efficiency, and others, are designed to minimize the airspace impacts associated with the projected increase in both military and civilian flights in the region. Incorporation of the GRASI recommendations into the 2014 JSF SEIS has consequently resulted in a lower number of sorties projected to be flown in the near term in Eglin overland airspace, which is represented by the baseline Eglin OAO activity under Alternative 1. Other GRASI recommendations would be incorporated into Eglin overland air operations to further minimize impacts on airspace congestion and air traffic controller workload as overland air operations ramp up to the baseline level analyzed under Alternative 1.

Based on the analysis conducted, Alternative 1 would have a moderate impact on airspace.

Alternative 2

The potential for airspace impacts under Alternative 2 would be higher than under Alternative 1 due to the greater number of aircraft sorties that would be flown annually in the Eglin OAO ROI. The increased Eglin OAO activity has the potential to increase airspace congestion, restrictions on public use of regional airspace, and air traffic controller workload. Additional strategies, including those which have been recommended by the GRASI working group but have yet to be implemented, are expected to be implemented during a mission surge in Eglin overland air operations to minimize airspace impacts. Some of these GRASI recommendations are currently being further evaluated and refined for future implementation (U.S. Air Force, 2014). It should be noted that Alternative 2 is not a proposed future baseline level of Eglin OAO activity. Eglin overland air operations would be implemented at a mission surge level only during wartime or other significant military involvement. During all other times, Eglin overland air operations are anticipated to be conducted at the baseline level analyzed under

Alternative 1. Given that mission-surge Eglin overland air operations would be conducted only during wartime or other significant military involvement, the associated increase in airspace impacts would not be permanent and the overall impact on airspace is not expected to be significantly adverse.

Based on the analysis conducted, Alternative 2 would have a moderate impact on airspace.

3.2 Air Quality

3.2.1 Affected Environment

The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. USEPA has established NAAQS for the following six principal pollutants, which are called criteria pollutants: carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone, particulate matter (PM), and sulfur dioxide (SO_2). Areas that meet the air quality standard for the criteria pollutants are designated as being "in attainment." Areas that do not meet the air quality standard for one of the criteria pollutants may be subject to the formal rule-making process and designated as being "in nonattainment" for that standard. Areas that currently meet the air quality standard but previously were classified as nonattainment are "in maintenance" for that standard. All counties in the Eglin OAO ROI are currently classified as being "in attainment" for all criteria pollutants stipulated under the NAAQS.

Eglin AFB is a major source of criteria pollutants under the federal Title V Operating Permit Program, and currently operates under Title V Operation Permit 0910031-017-AV. This permit regulates specific major stationary sources of air emissions at Eglin AFB and requires that the emissions from these sources do not exceed major source values regulated under the Title V program. Mobile sources of air emissions at Eglin AFB are not regulated under the Title V permit but they represent a substantial percentage of Eglin's total air emissions. Emissions from mobile sources at Eglin AFB are periodically inventoried as part of Eglin's air quality management program. Eglin AFB emits hazardous air pollutants (HAPs) during fuel storage, painting, and other activities. HAP emissions at Eglin AFB are estimated on an annual basis, however, Eglin is not a major source of HAPs.

Greenhouse gases (GHGs) are gases that trap heat in the Earth's atmosphere. They are emitted by both natural processes and human activities, and their accumulation in the atmosphere regulates temperature. GHGs include water vapor, carbon dioxide (CO_2), methane, nitrous oxide (N_2O), ozone, and several hydrocarbons and chlorofluorocarbons. To compare GHGs to each other, each GHG quantity is translated into a common unit called the "carbon dioxide equivalent" (CO_{2e}). There are no established thresholds or standards for greenhouse gases. However, on February 18, 2010, the Council on Environmental Quality (CEQ) released draft NEPA guidance on what may classify a proposed action's greenhouse gas emissions as meaningful (CEQ, 2010). According to this draft CEQ guidance, a quantitative and qualitative assessment may be meaningful if the proposed action's direct emissions are greater than 25,000 metric tons of CO_{2e}. This amount of greenhouse gas emissions is not a threshold of significance but a minimum level that would require consideration in NEPA documentation.

3.2.2 Environmental Consequences

Alternative 1 (No Action Alternative)

Eglin overland air operations have the potential to degrade air quality primarily via aircraft exhaust emissions, use of flares, and in-flight fuel releases.

Aircraft Emissions

The potential impacts that aircraft emissions released during Eglin overland air operations have on air quality were analyzed in the1998 Eglin OAO PEA (U.S. Air Force, 1998) and 2006 Eglin OAO Environmental Baseline

Document (EBD) (U.S. Air Force, 2006). Both studies used the "closed box assessment" (CBA) to estimate maximum short-term impacts from aircraft emissions for the respective annual baseline activity at that time.

The CBA provides an estimate of worst-case, short-term air emissions. Under the CBA, emissions are estimated within a specific volume of airspace (closed box), which in these studies was defined by the horizontal boundaries of each Eglin OAO SUA and vertically from ground level to an altitude of 3,000 ft AGL. The 3,000 ft ceiling was considered to be the maximum atmospheric mixing height, above which any pollutant generated would not contribute to increased pollutant concentrations at ground level. Emissions were assumed to be homogeneously mixed and contained within this defined volume of airspace. Air concentrations were estimated specifically for the following NAAQS criteria pollutants: CO, nitrogen oxides (NO_X), PM, and SO_2. The estimated concentrations of these pollutants in the defined volume of airspace were assumed to be representative of the maximum resulting ground-level concentrations. Under this assumption, the emission estimates are expected to indicate higher air quality impacts than estimates derived from a more structured air dispersion model; therefore, the CBA results provide a maximum impact scenario for comparison with NAAQS. To provide an estimate of worst-case, short-term air emissions, the number of aircraft sorties predicted to be flown in one day within each SUA were considered to instead be flown during the same 1-hour time period within the defined volume of airspace. The 1-hour pollutant emissions from all aircraft were then summed and compared to the respective NAAQS (**Table 3-1**).

TABLE 3-1
Closed Box Assessment Results Reported in 2006 and 1998 for Eglin Overland Air Operations
Eglin AFB Overland Air Operations REA

Criteria Pollutant	Averaging Time	NAAQS (ppm)	2006 Eglin OAO EBD[a] Concentration (ppm)	% of NAAQS	1998 Eglin OAO PEA[b] Concentration (ppm)	% of NAAQS
CO	1-Hour	35	3.16621E-06	<0.001	6.46E-05	<0.001
	8-Hour	9	8.61913E-06	<0.001	2.19E-05	<0.001
NO_X	Annual	0.053	6.75185E-05	0.127	4.95E-05	0.093
SO_2	3-Hour	0.5	3.6362E-06	<0.001	3.85E-06	<0.001
	24-Hour	0.14	5.77174E-06	0.004	1.92E-06	0.001
	Annual	0.03	5.38696E-06	0.018	7.50E-07	0.002
PM_{10}	24-Hour	150 $\mu g/m^3$	0.0002 $\mu g/m^3$	<0.001	0.00682 $\mu g/m^3$	0.004
	Annual	50 $\mu g/m^3$	0.00004 $\mu g/m^3$	<0.001	0.00273 $\mu g/m^3$	0.005

CO - carbon monoxide; NO_X - nitrogen oxides; SO_2 - sulfur dioxide; PM_{10} - particulate matter with a diameter less than or equal to 10 microns; NAAQS - National Ambient Air Quality Standards; ppm - parts per million; $\mu g/m^3$ - micrograms per cubic meter

[a] - 2006 Eglin Overland Air Operations (OAO) Environmental Baseline Document (U.S. Air Force, 2006)

[b] - 1998 Eglin OAO Programmatic Environmental Assessment (U.S. Air Force, 1998)

As indicated in **Table 3-1**, the worst-case air concentrations of all criteria pollutants were predicted by both studies to be well below the respective NAAQS. The total number of aircraft sorties analyzed for the annual baseline activity in the 1998 Eglin OAO PEA and 2006 Eglin OAO EBD are approximately 42 percent and 44 percent, respectively, of the total number of aircraft sorties for the current annual baseline activity under Alternative 1. Although there are some differences in the overall mix of aircraft types, such as the F-35, between the previous and current baselines, the worst-case criteria pollutant concentrations under Alternative 1 are expected to be well below NAAQS based on the CBA results presented above. This expectation is further supported by the criteria pollutant concentrations predicted for the "maximum capacity" alternative in the 1999 PEA, which was developed to include a minimum of 3,239,826 total annual sorties. Although this alternative would involve approximately 78 times more aircraft sorties than Alternative 1, the criteria pollutant concentrations predicted for this alternative were all well below the respective NAAQS.

In addition to assessing maximum short-term impacts from aircraft emissions, the 2006 Eglin OAO EBD also estimated the total annual aircraft emissions generated by the baseline activity at that time and compared them to the respective pollutant emissions reported by the National Emissions Inventory (NEI) for the Florida and Alabama counties located in the Eglin OAO ROI. For this analysis, aircraft emissions were estimated below the 3,000 ft AGL atmospheric mixing height for the landing and takeoff (LTO) cycle of each aircraft sortie, which is characterized by the following five modes of operation: approach, taxi in, taxi out, takeoff, and climb out. Emissions were also calculated for touch and go (TGO) operations, which do not involve taxi and idle times like LTOs. The pollutant emissions were calculated based on the time in each mode of operation, fuel flow rate, established aircraft engine emission factors, and aircraft activity level (number of sorties, LTOs, or TGOs). The resulting total annual aircraft emissions were then compared to the respective total annual pollutant emissions reported by the NEI for the counties in the Eglin OAO ROI (**Table 3-2**).

TABLE 3-2
Total Annual Aircraft Emissions Estimated in 2006 for Eglin Overland Air Operations
Eglin AFB Overland Air Operations REA

Pollutant	Eglin OAO Emissions[a] (tons/year)	Total ROI Emissions[a] (tons/year)	Percent of ROI Emissions
CO	384	561,001	0.07
SO_X	7	73,665	0.01
NO_X	155	51,574	0.30
PM	37	76,294	0.05
VOCs	139	63,469	0.22

CO - carbon monoxide; NO_X - nitrogen oxides; SOx - sulfur oxides; PM - particulate matter; VOCs – volatile organic compounds; OAO - overland air operations; ROI-– Region of Influence

[a] - Estimated in the 2006 Eglin OAO Environmental Baseline Document (U.S. Air Force, 2006)

As indicated in **Table 3-2**, all Eglin OAO emissions estimated in 2006 were less than 1 percent of the respective ROI emissions. Eglin OAO emissions were as low as 0.01 percent of ROI emissions for CO and as high as 0.30 percent of ROI emissions for NO_X. The total number of aircraft sorties analyzed for the annual baseline activity in the 2006 Eglin OAO EBD is approximately 44 percent of the total number of aircraft sorties for the current annual baseline activity under Alternative 1. Although there are some differences in the overall mix of aircraft types, such as the F-35, between the previous and current baselines, the total annual pollutant emissions under Alternative 1 are expected to not exceed 2 percent of current total annual ROI emissions based on the analysis presented above. Pollutant emissions that would be generated by the sorties of the F-35 aircraft that are included under Alternative 1 in this REA were estimated in the 2014 JSF Final SEIS (U.S. Air Force, 2014). Based on the air quality analysis conducted in the 2014 JSF SEIS, the total annual pollutant emissions generated by F-35 sorties under Alternative 1 would be less than 0.1 percent of total annual ROI emissions of CO, sulfur oxides (SO_x), PM, and volatile organic compounds (VOCs), and approximately 0.7 percent of total annual ROI emissions for NO_X. Based on the air quality analysis conducted for F-35 operations in the 2014 JSF SEIS, current baseline Eglin OAO activity under Alternative 1 is expected to generate emissions that are greater than 25,000 metric tons of CO_{2e}. As discussed in Section 3.2.1, this amount of greenhouse gas emissions is not a threshold of significance but a minimum level that would require consideration in NEPA documentation.

Flares

Two main types of flares are used during Eglin overland air operations: self-protection flares and illumination flares. These flare types are similar in composition but have different functions. Self protection flares generate heat to divert enemy heat-seeking (infrared) missiles away from the aircraft. Illumination flares are used for nighttime illumination; they have longer burn times than self protection flares and are designed to burn out before reaching the ground. **Table 3-3** presents the Alternative 1 and previous authorized flare types and quantities for Eglin overland air operations.

TABLE 3-3
Alternative 1 and Previous Authorized Flare Types and Quantities for Eglin Overland Air Operations
Eglin AFB Overland Air Operations REA

SUA	Flare Type	Alternative 1 Quantity[a] (Current Baseline)	Previous Authorized Quantity[b] (1998 Preferred Alternative)
R-2914A and B	LUU-2	10	9
	M-206	3,500	3,317
	MJU-7	700	622
	MJU-10	800	795
	MJU-27	150	150
	Experimental Flare	200	406
	Mk-6 Signal	20	17
R-2915A, B, and C	Slap Flare	5	350
	Mk-50 Decoy	10	11
	M-206	10,000	11,753
	Mk-6 Signal	100	111
Eglin MOA E	Slap Flares	5	100
	Distress Flares	5	100
TOTAL		15,505	17,741

SUA - Special Use Airspace
a – Flare quantities estimated by 96th Test Wing personnel using Fiscal Year 2010 – 2013 data.
b – Flare quantities of the Preferred Alternative analyzed in the 1998 Eglin Overland Air Operations Programmatic Environmental Assessment (U.S. Air Force, 1998) - calculated as a 100 percent mission surge increase in the baseline flares at that time associated with testing air operations (a mission surge increase was not applied to flares associated with training air operations).

As indicated in **Table 3-3**, an estimated total of 15,505 flares would be used annually during Eglin overland air operations under Alternative 1. Current baseline flare use is estimated to be less than the previous authorized flare use. Current procedures for flare use during Eglin overland air operations are outlined in EAFBI 11-201, *Air Operations*. Within the Eglin OAO ROI, flares may be released from aircraft at a minimum altitude of 200 ft AGL over test areas and at a minimum altitude of 500 ft AGL outside of test areas.

Flare use during Eglin overland air operations occurs over large airspaces. Magnesium is the primary combustion product of all flare types. Certain criteria pollutants are also emitted in very small quantities during flare use. Criteria pollutant emissions associated with flare use at Eglin AFB have been in compliance with NAAQS (U.S. Air Force, 1998; U.S. Air Force, 1996). The release of chromium and lead during use of impulse cartridges in association with flares represents the primary risk to human health. Human health risk assessments have estimated that more than one million flares could be used annually in a large airspace before a health risk threshold is reached (U.S. Air Force, 2006, U.S. Air Force, 1998). Current baseline flare use under Alternative 1 is well below this estimated health risk threshold.

Fuel Releases

Fuel releases during Eglin overland air operations my occur during air-to-air refueling operations or during in-flight emergencies in which fuel is jettisoned (dumped) from the aircraft. Air-to-air refueling operations are typically conducted at altitudes ranging from 16,000 to 26,000 ft for jet aircraft and 4,000 to 8,000 ft for helicopters. Three types of fuel dispensing aircraft are used by the Air Force: the KC-135, KC-10, and C-130. These aircraft are fitted with instantaneous, automatic closure devices (poppet valves) to minimize fuel loss during fuel transfers to receiving aircraft. Fuel losses during air-to-air refueling events are estimated to be approximately 1 quart during normal events and 1 to 2 gallons during events that involve emergency breakaways (U.S. Air Force, 2014). Under Alternative 1, a total of 24 air-to-air refueling events are estimated to be conducted annually during Eglin overland air operations. Based on the Air Force's Fuel Jettisoning Simulation Model (FJSIM), the small amounts of fuel that are released during air-to-air refueling operations completely evaporate in the air and do not reach the ground (U.S. Air Force, 2006; U.S. Air Force, 1998). Based on the small quantity of fuel that would be released during each air-to-air refueling event and the relatively low number of refueling events that would be conducted annually, air-to-air refueling operations under Alternative 1 would

have a negligible impact on air quality. Any impact on air quality would be temporary as the evaporated fuel would be readily dispersed by atmospheric circulation.

In-flight fuel jettisoning is done only during emergency situations. EAFBI 11-201, *Air Operation*s requires that fuel jettisoning be conducted, to the extent possible, over water or unpopulated land areas at an altitude of at least 5,000 ft above the highest obstacle. Fuel jettisoning during in-flight emergencies has the potential to release relatively large quantities of fuel into the atmosphere; however; in-flight fuel jettisoning events are very rare. No known in-flight fuel jettisoning events occurred during the previous baseline year analyzed for Eglin overland air operations (U.S Air Force, 1998). Based on FJSIM modeling, a significant portion of the fuel released during a typical fuel jettisoning event would evaporate in the air. Depending on the amount and altitude of the fuel release, some liquidized fuel could be deposited onto the ground or marine waters. Overall, in-flight fuel-jettisoning events are expected to have a negligible impact on air quality based on their low occurrence potential. Although localized air quality impacts could occur, the impact would be temporary as the evaporated fuel would be readily dispersed by atmospheric circulation.

Based on the analysis conducted, Alternative 1 would have a minor impact on air quality.

Alternative 2

Under Alternative 2, implementation of Eglin overland operations at a mission surge level would result in greater numbers of aircraft sorties flown in all Eglin overland SUAs. Aircraft sorties would increase by greater than 50 percent in all SUAs except in the Rose Hill SUA, where they would increase by 39 percent (see **Table 2-3**). Although aircraft emissions would increase under Alternative 2, the associated worst-case criteria pollutant concentrations are expected to be well below NAAQS based on the analysis conducted for Alternative 1. This expectation is further supported by the criteria pollutant concentrations predicted for the “maximum capacity” alternative in the 1999 Eglin OAO PEA, which was developed to include a minimum of 3,239,826 total annual sorties. Although this alternative would involve approximately 44 times more aircraft sorties than Alternative 2, the criteria pollutant concentrations predicted for this alternative were all well below the respective NAAQS. Based on the analysis conducted for Alternative 1, the total annual pollutant emissions under Alternative 2 are expected to not exceed 3 percent of current total annual ROI emissions.

An estimated total of 46,470 flares would be used annually during Eglin overland air operations under Alternative 2. Although flare use would increase under Alternative 2, flare use would still occur over large airspaces, which would allow atmospheric dispersion to prevent associated criteria pollutant concentrations from exceeding NAAQS. Mission surge flare use would still be well below the health risk threshold, which is estimated to be over one million flares used annually in a large airspace.

Under Alternative2, a total of 43 air-to-air refueling events are estimated to be conducted annually during Eglin overland air operations. Based on the small quantity of fuel that would be released during each air-to-air refueling event and the relatively low number of refueling events that would be conducted annually, air-to-air refueling operations under Alternative 2 would have a negligible impact on air quality. Any impact on air quality would be temporary as the evaporated fuel would be readily dispersed by atmospheric circulation.

The occurrence potential of in-flight fuel jettisoning events under Alternative 2 would be higher than under Alternative 1 due to the greater number of sorties that would be flown. However, the overall occurrence potential of such events under Alternative 2 would still be very low. An in-flight fuel-jettisoning event under Alternative 2 could result in localized air quality impacts; however, the impact would be temporary as the evaporated fuel would be readily dispersed by atmospheric circulation.

Based on the analysis conducted, Alternative 2 would have a minor impact on air quality.

3.3 Noise

3.3.1 Affected Environment

Noise can be simply defined as unwanted sound. The impact of noise is influenced by the characteristics of the noise, such as the sound level, frequency (pitch), and duration, as well as the characteristics of the receptor (e.g., a person or animal). Sound levels are measured on a logarithmic scale in decibels (dB). Sound measurement may be further refined through the use of frequency "weighting", which accounts for the sensitivity of human hearing to certain frequencies. Human hearing is most sensitive to sound frequencies within the range of 1,000 and 4,000 hertz (Hz). A-weighted measurements emphasize this frequency range and are expressed in terms of A-weighted decibels (dBA). In noise analyses, A-weighting is used when audible sound is the major concern, for example to assess noise generated by subsonic aircraft, construction, and traffic. C-weighted measurements do not attenuate lower frequencies and are expressed in terms of C-weighted decibels (dBC). C-weighting is used to assess low frequency, impulsive noise, such as the noise produced by explosions and sonic booms. Impulsive noise may be felt (overpressure) as well as heard. Low frequency, impulsive noise can also be measured in terms of peak sound pressure level (dBP), which is un-weighted and typically 22 to 25 dB higher than the C-weighting (dBC = dBP – 25).

The duration and frequency of noise events influence the overall impact of noise on receptors. Several metrics are used in noise assessments to account for these factors. For example, noise impacts on humans may be measured in terms of day-night average sound level (DNL), which is the noise level averaged over a 24-hour day-night period. This metric applies a 10-dB penalty to nighttime noise occurring between 10 pm and 7 am to account for the added intrusiveness of noise during these hours. C-weighted DNL (CDNL) is the 24-hour day-night average C-weighted sound level computed for areas subjected to low-frequency, impulsive noise. The yearly DNL is the yearly (365 days) day-night average sound level. The Air Force considers all land uses to be compatible with noise levels below 65 dB DNL, and noise-sensitive land uses such as residences to be conditionally compatible with noise levels between 65 and 70 dB DNL if the structure provides above-average noise attenuation.

Sound exposure level (SEL) accounts for both the maximum sound level and the length of time a sound lasts. SEL provides a measure of the total sound exposure for an entire event compressed into 1 second. A-weighted SEL (ASEL) is a good metric for assessing "single event" subsonic noise levels from overflying aircraft, both fast-moving craft such as jets and slow-moving craft such as helicopters. Subsonic noise levels from "multiple flights" are typically measured in various forms of DNL, for example for military airspace, typically in terms of onset-rate adjusted monthly day-night average sound level (L_{dnmr}).

The effects of noise on humans include annoyance, sleep disturbance, and health impacts. The effects of noise on wildlife are less well understood. Behavioral effects, such as startle response have been observed; however, direct physiological effects of noise on wildlife are difficult to measure In the field. The primary sources of ambient noise in the Eglin OAO ROI include military, commercial, and private aircraft, military munitions testing and training activities, vehicular traffic, and construction activities.

3.3.2 Environmental Consequences

Alternative 1 (No Action Alternative)

This REA focuses on the potential noise impacts that would occur beneath Eglin overland testing and training airspace, which is comprised of the SUAs identified in **Table 1-1**. Potential noise impacts associated with use of approved HLZs on Eglin AFB are also addressed in this REA. This REA does not address the potential noise impacts associated with airfield use (departures, arrivals, etc) at Eglin AFB. Potential noise impacts associated with near-term airfield use at Eglin AFB are assessed in the 2014 JSF Final SEIS (U.S. Air Force, 2014), and will also be assessed in the next Eglin Air Installation Compatible Use Zones (AICUZ) study, which will be conducted following the JSF beddown.

The noise impact analysis in this REA addresses only subsonic aircraft noise. Current Eglin supersonic flights occur only over water within the Warning Area airspaces of the EGTTR, which are not included within the Eglin OAO ROI. Eglin AFB has authorization to conduct supersonic flights over Test Area (TA) B-70; however, supersonic flights over TA B-70 have special restrictions and are rarely conducted. For these reasons, the impacts of supersonic aircraft noise are assessed in the REAs prepared for the EGTTR and TA B-70. The noise impact analysis in this REA does not address the noise generated by munitions used during overland air operations; such munitions noise is analyzed in the separate REAs prepared for the test areas.

The assessment of potential noise impacts under Alternative 1 is based largely on the airspace noise data and analyses presented in the 2014 JSF Final SEIS (U.S. Air Force, 2014). With respect to Eglin overland airspace, the aircraft types and number of aircraft sorties under Alternative 1 are the same as those under all the alternatives in the 2014 JSF SEIS. Subsonic noise levels beneath SUAs were estimated in the 2014 JSF SEIS using the MR_NMAP noise model computer program. This program incorporated the number of daytime aircraft sorties between 7 am and 10 pm and nighttime aircraft sorties between 10 pm and 7 am; specified horizontal distributions; volumes of the SUAs; and profiles of each aircraft type to calculate the subsonic noise levels in L_{dnmr} beneath the SUAs. The aircraft sorties for each SUA under Alternative 1 are presented in **Table 2-1** and the sorties for each aircraft type under Alternative 1 are presented in Appendix D, *Detailed Aircraft Sorties for Eglin Overland Airspace*. The vast majority of the aircraft types were modeled and for aircraft for which sufficient data were not available, appropriate representative aircraft were modeled instead (see Appendix D). The associated percentage of the population that would be highly annoyed by the noise levels was estimated using standard Air Force methodology, as described in Finegold et al., 1994. **Table 3-4** presents the estimated subsonic noise levels beneath Eglin overland airspace and the estimated percentage of the population that would be highly annoyed by the noise levels under Alternative 1.

TABLE 3-4
Subsonic Noise Levels Beneath Eglin Overland Airspace and Associated Percent Population Highly Annoyed under Alternative 1
Eglin AFB Overland Air Operations REA

SUA Category	SUA Name	Noise Level (dB L_{dnmr})	Percent Population Highly Annoyed[a]
Restricted Area	R-2914A	60	6
	R-2914B	<45	<1
	R-2915A	61	7
	R-2915B	66	14
	R-2915C	<45	<1
	R-2919A	56	4
	R-2919B	<45	<1
Military Operating Area (MOA)	Eglin A East	62	8
	Eglin A West	62	8
	Eglin B	<45	<1
	Eglin C	63	10
	Rose Hill	49	1

SUA - Special Use Airspace
dB - Decibel
L_{dnmr} - Onset-rate adjusted monthly day-night average sound level
< - Less than
N/A – Not applicable
a - Percentage of population highly annoyed was calculated using standard Air Force methodology, as described in Finegold et al., 1994.
Note: Subsonic noise levels beneath R-2918 and Eglin MOAs D, E, and F were not provided in the data source.
Data Source: U.S. Air Force, 2014

As indicated in **Table 3-4**, estimated subsonic noise levels beneath Eglin overland airspace under Alternative 1 range from less than 45 dB L_{dnmr} to 66 dB L_{dnmr}. The Air Force considers all land uses to be compatible with noise

levels below 65 dB DNL, and noise-sensitive land uses such as residences to be conditionally compatible with noise levels between 65 and 70 dB DNL if the structure provides above-average noise attenuation. Under Alternative 1, subsonic noise levels are estimated to be below 65 dB L_{dnmr} beneath all Eglin overland SUAs except R-2915B, beneath which the noise level is estimated to exceed 65 dB L_{dnmr} by 1 dB. The relatively low noise levels beneath R-2914B, R-2915C, R-2919B, and the Rose Hill MOA are suspected to be attributed in large part to the high floor elevations of these SUAs (see **Table 1-1**). The estimated percentage of the population that would be highly annoyed by the noise levels generated under Alternative 1 range from less than 1 percent to 14 percent. R-2915B is the only SUA where greater than 10 percent of the population is estimated to be annoyed by the noise levels.

HLZs on Eglin AFB are used by several types of helicopters and the CV-22 Osprey, which is a type of tilt-rotor aircraft. ASEL is considered to be a good metric for assessing "single event" subsonic noise impacts from slow-moving aircraft, such as helicopters and the CV-22 (see Section 3.3.1). An Eglin AFB noise study suggested a voluntary noise exposure limit of 95 ASEL for low-flying aircraft (U.S. Air Force, 2012b). Estimated ASELs for four types of helicopters and the CV-22 are presented in **Table 3-5**.

TABLE 3-5
Estimated ASELs for Four Types of Helicopters and the CV-22 Osprey
Eglin AFB Overland Air Operations REA

Altitude (feet AGL)	C-130H	MH-53	UH-1N	UH-60A	CV-22
200	102.7	104.7	101.8	95.8	105.2
500	96.5	100.3	96.0	89.8	100.7
1,000	91.4	96.7	91.4	85.0	96.9
2,000	85.8	92.5	86.6	79.6	92.5
3,150	81.7	89.4	83.1	75.7	89.1
5,000	77.3	85.7	79.4	71.2	85.2

ASEL – A-weighted sound exposure level expressed in A-weighted decibels (dBA)
AGL – Above Ground Level
Data Source: U.S. Air Force, 2008a

As indicated in **Table 3-5**, the noise levels generated by the four helicopter types and the CV-22 are estimated to be approximately 95 ASEL or lower at a distance of 1,000 ft. All currently used HLZs on Eglin AFB are located well beyond 1,000 ft from the nearest residential areas; therefore, use of HLZs on Eglin AFB under Alternative 1 is not expected to have adverse single-event noise impacts on the public. Given the low number of aircraft that use each HLZ and the distances of the HLZs from the nearest residential areas, the potential for associated continuous noise impacts on the public is considered to be very low.

In summary, subsonic noise levels generated by Eglin overland air operations under Alternative 1 are expected to be compatible with all land uses beneath the associated airspace and noise impacts on the public are expected to be relatively minor and limited to annoyance and speech/activity interference. To minimize noise impacts on surrounding communities, various noise abatement procedures are followed during Eglin air operations, including avoidance of specific noise-sensitive areas and maintenance of area-specific minimum flight altitudes.

Based on the analysis conducted, Alternative 1 would have a minor noise impact on the public.

Alternative 2

Under Alternative 2, implementation of Eglin overland operations at a mission surge level would result in greater numbers of aircraft sorties flown in all Eglin overland SUAs. Aircraft sorties would increase by greater than 50 percent in all SUAs except in the Rose Hill SUA, where they would increase by 39 percent (see **Table 2-3**). The degree to which mission surge Eglin OAO activity would increase subsonic noise levels in the SUAs would be

correlated in part to the associated increase in sorties in each SUA. Although the mix of aircraft types flown in each SUA would not change and the percent increase of each aircraft's sorties is known, the noise contribution of each aircraft type to the overall resulting noise level in each SUA under Alternative 2 cannot be accurately accounted for in the absence of noise modeling. In light of this limitation, it can be reasonably expected that noise levels beneath R-2914B, R-2915C, R-2919B, Eglin MOA B, and the Rose Hill MOA would remain well below 65 dB L_{dnmr} under Alternative 2. The estimated baseline noise levels beneath these SUAs are less than 45 dB L_{dnmr} for the Restricted Area airspaces and Eglin MOA B, and 49 dB L_{dnmr} for the Rose Hill MOA (see **Table 3-1**). The mission surge noise level beneath R-2919A is also expected to be below 65 db L_{dnmr}, given that the estimated baseline noise level for this SUA is only 56 dB L_{dnmr}. The noise levels beneath R-2914A and R-2915A, and Eglin MOAs A East, A West, and C could potentially exceed 65 dB L_{dnmr} under mission surge activity; the estimated baseline noise level beneath R-2915B (66 dB L_{dnmr}) is already slightly above 65 dB L_{dnmr}. Based on each SUA's total number of sorties, baseline noise levels, and mission surge percent increase in sorties, only the noise levels beneath R-2915B are expected to have the potential to exceed 70 L_{dnmr} under Alternative 2. Although the noise levels beneath R-2915B are expected to have the potential to exceed 70 dB $L_{dnmr,}$, any exceedance of this noise level is expected to be relatively slight.

The Air Force considers all land uses to be compatible with noise levels below 65 dB DNL, and noise-sensitive land uses such as residences to be conditionally compatible with noise levels between 65 and 70 dB DNL if the structure provides above-average noise attenuation. Therefore, mission surge Eglin OAO activity under Alternative 2 is expected to have the potential to generate noise levels beneath certain SUAs that would be at or slightly above levels considered by the Air Force to be compatible with noise-sensitive land uses. It should be noted that Alternative 2 is not a proposed future baseline level of Eglin OAO activity. Eglin overland air operations would be implemented at a mission surge level only during wartime or other significant military involvement. During all other times, Eglin overland air operations are anticipated to be conducted at the baseline level analyzed under Alternative 1. Based on the noise levels expected to result, noise impacts on the public under Alternative 2 are not expected to be significantly adverse. There is very little potential for hearing loss at noise levels below 75 dB DNL (Committee on Hearing, Bioacoustics, and Biomechanics [CHABA], 1977). Therefore, the noise levels beneath Eglin overland airspace under Alternative 2 are not expected to cause hearing loss. Additional impacts over Alternative 1 are expected to be limited to a greater level of public annoyance. Several measures have been incorporated into the 2014 JSF Final SEIS to reduce the noise levels generated by the JSF and overall near-term Eglin air operations. These measures resulted in a lower number of sorties projected to be flown in the near term in Eglin overland airspace, which is represented by the baseline Eglin OAO activity under Alternative 1. Additional measures would be developed through the adaptive management approach outlined in the 2014 JSF SEIS to minimize noise impacts during a mission surge in Eglin overland air operations.

Under Alternative 2, implementation of Eglin overland operations at a mission surge level can be expected to result in greater usage of the HLZs on Eglin AFB. Based on the analysis conducted for Alternative 1, use of HLZs under Alternative 2 is not expected to have adverse single-event noise impacts on the public. Although overall usage of the HLZs would be greater, the total number aircraft that would use each HLZ under Alternative 2 would still be relatively low. Based on the annual usage of each HLZ and the distances of the HLZs from the nearest residential areas, the potential for associated continuous noise impacts on the public under Alternative 2 is considered to be very low.

Based on the analysis conducted, Alternative 2 would have a moderate noise impact on the public.

3.4 Health and Safety

3.4.1 Affected Environment

Aircraft mishaps and Bird/Wildlife-Aircraft Strike Hazards (BASHs) are the primary health and safety considerations for Eglin overland air operations. Aircraft mishaps have the potential to result in loss of life,

injury, and/or property damage. Bird/wildlife-aircraft strikes also have the potential to pose a health and safety concern depending on the severity of aircraft damage caused by the strike. Air Force regulations and procedures pertaining to aircraft mishaps and BASHs are outlined in AFI 91-202, *U.S. Air Force Mishap Prevention Program* and Air Force Pamphlet 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques*, respectively.

The Air Force defines aircraft mishaps using the following four categories: Class A, Class B, Class C, and High Accident Potential. Class A mishaps result in loss of life, permanent total disability, a total cost in excess of $2 million, or the destruction of an aircraft. The Air Force calculates Class A mishap rates per 100,000 flying hours for each type of aircraft. Mishaps due to enemy action are excluded from these statistics. The vast majority of military aircraft mishaps occur immediately adjacent to the runway (U.S. Air Force, 2014).

The Air Force implements a BASH program at Eglin AFB to minimize the potential for bird/wildlife-aircraft strikes. Bird populations around Eglin AFB are monitored and controlled in accordance with Eglin's BASH Plan. The Air Force also works closely with the U.S Department of Agriculture (USDA) Wildlife Services to manage bird habitat and collect information on local bird populations. USDA also provides recommendations on how to minimize strikes and control birds and other wildlife. Various control measures are implemented in accordance with the BASH Plan, including bird dispersal techniques and physical removal of terrestrial species such as deer and coyote from the airfield. In the event that bird densities are considered to pose an elevated safety risk, flight operations may be modified as appropriate.

3.4.2 Environmental Consequences

Alternative 1 (No Action Alternative)

The time between Class A mishaps (in years) for the three F-35 variants that would be operated in the near term at Eglin AFB was estimated in the 2014 JSF Final SEIS (U.S. Air Force, 2014) based on the anticipated annual sorties/flying times for the aircraft. These estimates were made using the mishap rates of similar aircraft (F-16 for the F-35A and F-35C; AV-8B Harrier for the F-35B), as mishap rates have yet to be established for the F-35 aircraft. The time between Class A mishaps (in years) was predicted to be 1.65 for the F-35A and F-35C, and 1.10 for the F-35B. It should be noted that the actual mishap rates of the F-35 may differ from these statistical predictions.

The mishap rates of various aircraft types that would be flown in Eglin overland airspace under Alternative 1 are presented in Table 3-6.

TABLE 3-6
Mishap Rates of Aircraft Types under Alternative 1
Eglin AFB Overland Air Operations REA

Aircraft	Class A Mishap Rate[a]
A-10	2.03
B-52	1.30
B-1	4.28
C-17	1.06
C-130	0.83
F-15	2.36
F-16	3.56
T-38	1.45

a – Years between Class A mishaps; calculated per 100,000 flying hours and based on lifetime statistics for aircraft.
Data Source: Air Force Safety Center, 2014

The vast majority of mishaps associated with the F-35 and all other aircraft that would be flown under Alternative 1 are expected to occur in the immediate vicinity of the airfield runways; the potential for mishaps to

occur in the OAO SUAs is much lower (U.S. Air Force, 2014). Baseline Eglin OAO activity under Alternative 1 is higher than the previous baseline activity analyzed with respect to total annual aircraft sorties and flying hours. Therefore, the potential for mishap occurrence has increased since the previous baseline. However, the overall risk that aircraft mishaps under Alternative 1 would have on public health and safety is considered to be very low based on the mishap rates of the aircraft that would be flown. Moreover, the vast majority of mishaps would occur in the immediate vicinity of the airfield runways. Current safety policies and procedures at Eglin AFB ensure that the potential for aircraft mishaps is minimized to the extent possible; safety measures would be accordingly increased for the projected activity under Alternative 1.

A total of 294 bird/wildlife-aircraft strike incidents were reported to occur around Eglin AFB from 1998 to 2008; 150 strikes were associated with the F-15, F-16, and C-130 aircraft (U.S. Air Force, 2014). None of these bird/wildlife-aircraft strikes resulted in a Class A mishap, although some caused significant aircraft damage. The 1998 Eglin OAO PEA (U.S. Air Force, 1998) reported that a total of 169 bird-aircraft strikes occurred during FY 1995; however, only 20 were confirmed to have occurred within the Eglin OAO ROI. None of these bird-aircraft strikes resulted in a Class A mishap. If the more recent 1998-2008 data are considered, approximately 30 bird/wildlife-aircraft strikes typically occur on an annual basis as a result of Eglin air operations. The total number of aircraft sorties analyzed for the annual baseline activity in the 2006 Eglin OAO EBD (U.S. Air Force, 2006) is approximately 44 percent of the total number of aircraft sorties for the current annual baseline activity under Alternative 1. If the current potential for bird/wildlife-aircraft strikes is assumed to be the same as in recent years, current baseline Eglin OAO activity under Alternative 1 is estimated to result in an annual total of 69 bird/wildlife-aircraft strikes. Based on historic data, the overall potential for bird/wildlife-aircraft strikes under Alternative 1 to result in a Class A mishap is considered to be relatively low.

Based on the analysis conducted, Alternative 1 would have a negligible impact on health and safety.

Alternative 2

The potential for aircraft mishap occurrence under Alternative 2 would be higher than under Alternative 1 due to the greater number of aircraft sorties that would be flown annually. However, the overall risk that aircraft mishaps under Alternative 2 would have on public health and safety is considered to be very low based the mishap rates of the aircraft that would be flown. Moreover, the vast majority of mishaps would occur in the immediate vicinity of the airfield runways. Current safety policies and procedures at Eglin AFB ensure that the potential for aircraft mishaps is minimized to the extent possible; safety measures would be accordingly increased for the projected activity under Alternative 2.

Based on the analysis conducted for Alternative 1, mission surge Eglin OAO activity under Alternative 2 is expected to result in an annual total of 123 bird/wildlife-aircraft strikes. Based on historic data, the overall potential for bird/wildlife-aircraft strikes under Alternative 2 to result in a Class A mishap is considered to be relatively low.

Based on the analysis conducted, Alternative 2 would have a negligible impact on health and safety.

3.5 Soils

3.5.1 Affected Environment

Soil consists of varying amounts of mineral particles and organic matter. It serves as a medium for plant growth and water storage, and as habitat for certain types of organisms. Soils are formed by numerous physical, chemical, and biological processes, which include weathering of parent material, accumulation of organic matter, and biochemical leaching or reduction of minerals. Soil erosion is the process by which soil is removed from a given location by wind or water flow, and then transported to other locations.

The soil types that occur within the Florida and Alabama counties located in the Eglin OAO ROI are identified and described in the Natural Resources Conservation Service (NRCS) soil survey documents for those counties. The Eglin AFB Integrated Natural Resources Management Plan (INRMP) (U.S. Air Force, 2012c) provides information

on the primary soil types that occur on Eglin AFB. The soils on Eglin AFB originated from the Citronelle Formation as well as from alluvium deposition from low lying areas (U.S. Air Force, 2012c). The majority of soils on Eglin AFB belong to the Lakeland soil association. Lakeland soils are excessively drained and sandy to a depth of 80 inches or more. Dorovan-Pamlico mucks are the second most abundant soils on Eglin AFB. These soils are very poorly drained and composed of more than 20 percent organic matter. Further information on the soils that occur on Eglin AFB can be found in the Eglin AFB INRMP.

3.5.2 Environmental Consequences

Alternative 1 (No Action Alternative)

In-flight fuel releases during Eglin overland air operations have the potential to impact soil quality, depending on the amount of fuel that reaches the ground. As discussed in Section 3.2.2, FJSIM modeling indicates that the small amounts of fuel that are released during air-to-air refueling operations completely evaporate in the air and do not reach the ground (U.S. Air Force, 2006; U.S. Air Force, 1998). Therefore, soil impacts are not expected to result from the small amounts of fuel that are released during air-to-air refueling operations.

Fuel jettisoning during in-flight emergencies has the potential to release relatively large quantities of fuel into the atmosphere. In-flight fuel jettisoning is done only during emergency situations and such events are very rare. Based on FJSIM modeling, a significant portion of the fuel released during a typical fuel jettisoning event would evaporate in the air. Depending on the amount and altitude of the fuel release, some liquidized fuel could be deposited onto the ground and cause localized impacts on soil quality. Overall, in-flight fuel-jettisoning events are expected to have a negligible impact on soil quality based on their low occurrence potential. In the event that a large quantity of fuel is released during an in-flight fuel jettisoning event, the Air Force would use the FJSIM model to determine if a spill response is required.

The downdrafts of helicopters and the CV-22 Osprey have the potential to disturb surface soils at some HLZs on Eglin AFB. The CV-22 is considered to have the greatest potential to cause soil erosion as its double rotors generate stronger downdrafts than those of helicopters. Overall impacts on soils at the HLZs under Alternative 1 is not expected to be significant as most of the unpaved HLZs are covered by grasses and other herbaceous vegetation. Given that all the HLZs have flat topography, disturbance of non-vegetated portions of the HLZs by aircraft downdrafts are not expected to result in significant soil erosion and transport of soils to other areas via stormwater runoff. Several other NEPA analyses have also concluded that operation of the CV-22 at other military installations would not result in adverse soil erosion impacts (U.S. Air Force, 2011b; U.S. Air Force, 2008a; U.S. Air Force, 2001). Environmental conditions at the HLZs on Eglin AFB are monitored by the 96 CEG/CEIEA. In the unlikely event that soil impacts are identified, avoidance and minimization measures would be implemented. Such measures may include implementing a rotational schedule for HLZ use to prevent overuse of any one HLZ, particularly by the CV-22.

Based on the analysis conducted, Alternative 1 would have a negligible impact on soils.

Alternative 2

Although a greater number of air-to-air refueling events would be conducted during Eglin overland air operations under Alternative 2, the associated fuel releases during each event are still expected to completely evaporate in the air and, therefore, not impact soils.

The occurrence potential of in-flight fuel jettisoning events under Alternative 2 would be higher than under Alternative 1 due to the greater number of sorties that would be flown. However, the overall occurrence potential of such events under Alternative 2 would still be very low. In the event that a large quantity of fuel is released during an in-flight fuel jettisoning event, the Air Force would use the FJSIM model to determine if a spill response is required.

Under Alternative 2, implementation of Eglin overland operations at a mission surge level can be expected to result in greater usage of the HLZs on Eglin AFB. Although a higher number of aircraft would potentially use the HLZs, use of HLZs under Alternative 2 is not expected to have adverse impacts on soils based on the analysis

conducted for Alternative 1. In the unlikely event that soil impacts are identified, avoidance and minimization measures would be implemented. Such measures may include implementing a rotational schedule for HLZ use to prevent overuse of any one HLZ, particularly by the CV-22.

Based on the analysis conducted, Alternative 2 would have a negligible impact on soils.

3.6 Water Resources

3.6.1 Affected Environment

Water resources within the Eglin OAO ROI include wetlands, floodplains, surface water, and groundwater. The Proposed Action was determined to have no potential to affect floodplains; therefore, this resource has been eliminated from detailed analysis in this REA (see Section 1.7.2).

The U.S. Army Corps of Engineers (USACE) and USEPA jointly define wetlands as 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. There are approximately 65,350 acres of wetlands on Eglin AFB (U.S. Air Force, 2012c). The primary wetland types on the Base are baygall, seepage slope, dry prairie, flatwood lake, floodplain forest, floodplain swamp, bottomland forest, wet prairie, hydric hammock, blackwater stream, alluvial stream, spring run stream, seepage stream, marsh lake, slough, dome swamp, strand swamp, basin marsh, depression marsh, floodplain marsh, sandhill upland lake, bog, freshwater tidal swamp, and salt marsh (U.S. Air Force, 2003). Most of these wetland types also occur in the off-base areas encompassed by the Eglin OAO ROI.

Surface waters within the Eglin OAO ROI include Gulf of Mexico waters that extend approximately three nautical miles offshore; Choctawhatchee Bay; and numerous brackish and freshwater systems. The Eglin Reservation encompasses portions of three hydrologic basins: Choctawhatchee Bay, Yellow River Basin, and Pensacola Bay. Freshwater bodies on Eglin AFB include 32 lakes (over 300 acres of man-made ponds and natural lakes), 30 miles of rivers, and an extensive network of streams that encompass approximately 600 acres of the Base (U.S. Air Force, 2012c). Several water bodies on or adjacent to Eglin AFB are designated by the State as Outstanding Florida Waters (OFWs). OFWs are awarded special state regulatory protection to preserve their water quality and natural resources. The following OFWs are located on or adjacent to the Eglin Reservation: Fred Gannon Rocky Bayou State Recreational Area, Basin Bayou State Recreation Area, Gulf Islands National Seashore, Rocky Bayou State Aquatic Preserve, Yellow River Marsh Aquatic Preserve, and Shoal River.

Groundwater is water that occupies the pore spaces in subsurface rocks and sediments. Groundwater under Eglin AFB occurs in two major aquifer systems: the surficial aquifer (also known as the sand and gravel aquifer) and the Floridan Aquifer. The surficial aquifer consists primarily of fine to course sand and gravel. Water within this unit is generally unconfined, i.e., free to rise and fall. The surficial aquifer is not a primary water supply source at Eglin AFB; however, water is drawn from it by certain on-base wells (U.S. Air Force, 2012c). The surficial aquifer is separated from the underlying confined Floridan Aquifer by the low-permeability Pensacola Clay confining bed. The Floridan Aquifer consists of a thick sequence of inter-bedded limestone and dolomite. It is the primary water supply source at Eglin AFB. The top of the Floridan Aquifer ranges from approximately 50 ft below msl in the northeastern corner of Eglin AFB to approximately 700 ft below msl in the southwestern part of the Base (McKinnon and Pratt, 1998).

3.6.2 Environmental Consequences

Alternative 1 (No Action Alternative)

The Proposed Action does not involve construction or any other activity that would occur in wetlands, surface waters, or groundwater. In-flight fuel releases during Eglin overland air operations have the potential to impact water resources, depending on the amount of fuel that reaches ground level. As discussed in Section 3.2.2, FJSIM modeling indicates that the small amounts of fuel that are released during air-to-air refueling operations completely evaporate in the air and do not reach the ground (U.S. Air Force, 2006; U.S. Air Force, 1998).

Therefore, impacts to water resources are not expected to result from the small amounts of fuel that are released during air-to-air refueling operations.

Fuel jettisoning during in-flight emergencies has the potential to release relatively large quantities of fuel into the atmosphere. In-flight fuel jettisoning is done only during emergency situations and such events are very rare. Based on FJSIM modeling, a significant portion of the fuel released during a typical fuel jettisoning event would evaporate in the air. Depending on the amount and altitude of the fuel release, some liquidized fuel could be deposited directly onto wetlands or surface waters, or reach groundwater via seepage through the soil. Overall, in-flight fuel-jettisoning events are expected to have a negligible impact on water resources based on their low occurrence potential. In the event that a large quantity of fuel is released during an in-flight fuel jettisoning event, the Air Force would use the FJSIM model to determine if a spill response is required.

None of the HLZs currently used on Eglin AFB are located within wetlands or surface waters. Although the downdrafts of aircraft, particularly the CV-22 Osprey, have the potential to disturb surface soils at some HLZs, the potential for indirect impacts on wetlands and surface waters outside the HLZs is very low. As discussed in Section 3.5.2, overall impacts on soils at the HLZs under Alternative 1 is not expected to be significant as most of the unpaved HLZs are covered by grass and other herbaceous vegetation. Given that all the HLZs have flat topography, disturbance of non-vegetated portions of the HLZs by aircraft downdrafts are not expected to result in significant soil erosion and transport of soils to wetlands or surface waters via stormwater runoff. Environmental conditions at the HLZs on Eglin AFB are monitored by the 96 CEG/CEIEA. In the unlikely event that soil erosion is determined to have the potential to indirectly impact wetlands or surface waters outside the HLZs, avoidance and minimization measures would be implemented. Such measures may include implementing a rotational schedule for HLZ use to prevent overuse of any one HLZ, particularly by the CV-22.

Based on the analysis conducted, Alternative 1 would have a negligible impact on water resources.

Alternative 2

Although a greater number of air-to-air refueling events would be conducted during Eglin overland air operations under Alternative 2, the associated fuel releases during each event are still expected to completely evaporate in the air and, therefore, not impact water resources.

The occurrence potential of in-flight fuel jettisoning events under Alternative 2 would be higher than under Alternative 1 due to the greater number of sorties that would be flown. However, the overall occurrence potential of such events under Alternative 2 would still be very low. In the event that a large quantity of fuel is released during an in-flight fuel jettisoning event, the Air Force would use the FJSIM model to determine if a spill response is required.

Under Alternative 2, implementation of Eglin overland operations at a mission surge level can be expected to result in greater usage of the HLZs on Eglin AFB. Although a higher number of aircraft would potentially use the HLZs, use of HLZs under Alternative 2 is not expected to have adverse impacts on wetlands or surface waters outside the HLZs based on the analysis conducted for Alternative 1. In the unlikely event that soil erosion is determined to have the potential to indirectly impact wetlands or surface waters outside the HLZs, avoidance and minimization measures would be implemented. Such measures may include implementing a rotational schedule for HLZ use to prevent overuse of any one HLZ, particularly by the CV-22.

Based on the analysis conducted, Alternative 2 would have a negligible impact on water resources.

3.7 Biological Resources

3.7.1 Affected Environment

Vegetation

The Eglin OAO ROI is located within the East Gulf Coastal Plain eco-region, which has a high diversity of habitat types. Eglin AFB has 34 distinct natural vegetative communities; these communities fall into the following four broad ecological associations: sandhill matrix, flatwoods matrix, barrier island matrix, and wetland/riparian

matrix (U.S Air Force, 2012c). The sandhill matrix is by far the most extensive natural community type on Eglin AFB, accounting for approximately 80 percent of the total area of the Base. This upland community has a canopy dominated by longleaf pine, a sparse midstory of oaks 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. Further information on the vegetative communities that occur on Eglin AFB can be found in the Eglin AFB INRMP (U.S. Air Force, 2012c).

Vegetation in Gulf of Mexico waters within the Eglin OAO ROI primarily include marine phytoplankton (microscopic algae) and marine macroalgae (seaweed). The phytoplankton community in the Gulf of Mexico consists of numerous species of diatoms, dinoflagellates, and other classes of microaglae. Numerous macroalge species occur in the Gulf of Mexico, some being sessile (attached to substrate) and others free-floating. Sargassum, a free-floating brown algae, is a very common seaweed in Gulf waters.

Fish and Wildlife

A high diversity of fish and wildlife species occur in the Eglin OAO ROI. Habitats on Eglin AFB support a wide variety of mammal, bird, reptile, amphibian, and fish species. Common wildlife species that occur in Eglin's upland communities include the white-tailed deer, cottontail rabbit, gray fox, various rodents, opossum, fox squirrel, northern bobwhite, great-horned owl, various songbirds, six-lined race runner, eastern diamondback rattlesnake, five-lined skink, and green anole. Eglin's wetland and freshwater aquatic communities provide habitat for the raccoon, American beaver, American alligator, various frogs, various wading birds, largemouth bass, and sailfin shiner. Wildlife that occur on Eglin's barrier islands include the ghost crab and numerous species of shore birds, sea birds, and wading birds.

Gulf of Mexico waters within the Eglin OAO ROI are rich in marine animal life. These waters support numerous species of zooplankton (animal plankton), invertebrates, and fish, as well as a few species of sea turtles and marine mammals. Common fauna that occur in nearshore benthic communities in the Gulf of Mexico include polychaete worms (segmented worms), mole crabs, burrowing shrimp, portunid crabs, coquina clams, starfish, sand dollars, and sea urchins. Benthic communities further offshore are dominated by nematodes (small worms), copepod crustaceans, polychaete worms, mollusks (clams and snails), and large crustaceans (shrimp and crabs).

Sensitive Species

Plant and animal species that are federally listed as Endangered or Threatened are afforded legal protection under the Endangered Species Act (ESA). The ESA requires federal agencies to ensure that actions they authorize, fund, or carry out won't likely jeopardize the continued existence of federally listed species, or result in the destruction or adverse modification of designated critical habitat of such species. It also requires that federal agencies implement measures to conserve, protect, and, where possible, enhance any listed species and its habitat. The ESA is administered by 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, Florida Administrative Code (F.A.C.). 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 (SSC). 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 maintains the State's list of such plant species.

Sensitive species also include species not federally 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 96 CEG/CEIEA

has primary responsibility for the management of sensitive species and habitat, including evaluation of potential impacts to sensitive species and habitats by proposed actions, at Eglin AFB. The Eglin AFB INRMP includes guidance on the management and protection of sensitive species and habitat at Eglin AFB.

A total of 11 federally listed species have been documented to occur seasonally or year-round on Eglin AFB (**Table 3-7**). Other federally listed species such as the West Indian manatee (*Trichechus manatus*) and wood stork (*Mycteria americana*) have been documented to occur on or near Eglin AFB during their seasonal migrations. The American alligator (*Alligator mississippiensis*), which is common on Eglin AFB, is federally listed solely due to its resemblance to the federally listed American crocodile (*Crocodylus acutus*). The following four federally listed freshwater mussel species s have habitat ranges that border Eglin AFB: southern sandshell (*Hamiota australis*), Choctaw bean (*Villosa choctawensis*), fuzzy pigtoe (*Pleurobema strodeanum*), and narrow pigtoe (*Fusconaia escambia*).

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. Numerous whale and dolphin species have been documented to occur in the waters of the EGTTR; these and all other marine mammals that occur in U.S. territorial waters are protected under the Marine Mammal Protection Act. The rufa red knot (*Calidris canutus rufa*), which is known to winter on Eglin AFB, is currently proposed to be federally listed as Threatened.

There are several species known to occur on Eglin AFB that are state listed as Threatened or SSC. Species that occur on Eglin AFB that are state-listed but not federally listed include, but are not limited to, the snowy plover (*Charadrius nivosus*), Southeastern American kestrel (*Falco sparverius paulus*), least tern (*Sterna antillarum*), several wading bird species, gopher tortoise (*Gopherus polyphemus*), Florida pine snake (*Pituophis melanoleucus mugitus*), gopher frog (*Lithobates capito*), Florida bog frog *(Lithobates okaloosae*), and several plant species. The gopher tortoise is currently a candidate for federal listing.

TABLE 3-7
Federally Listed Species Documented to Occur Seasonally or Year-Round on Eglin AFB
Eglin AFB Overland Air Operations REA

Common Name	Scientific Name	Federal Status
Plants		
Florida perforate lichen	*Cladonia perforata*	E
Fish		
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T
Okaloosa darter	*Etheostoma okaloosae*	T
Amphibians		
Reticulated flatwoods salamander	*Ambystoma bishopi*	E
Reptiles		
Eastern indigo snake	*Drymarchon couperi*	T
Green sea turtle	*Chelonia mydas*	E
Kemp's ridley sea turtle	*Lepidochelys kempi*	E
Leatherback sea turtle	*Dermochelys coriacea*	E
Loggerhead sea turtle	*Caretta caretta*	T
Birds		
Piping plover	*Charadrius melodus*	T
Red-cockaded woodpecker	*Picoides borealis*	E

Data Source: U.S. Air Force, 2012c
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.

While much of Eglin AFB has high biodiversity, specific areas on the Base are considered unique due to the high-quality habitats they contain and/or rare species they support. Such areas have been identified by the Florida Natural Areas Inventory (FNAI) and they are known as High Quality Natural Communities, Significant Botanical Sites (SBSs), and Outstanding Natural Areas (ONAs). High Quality Natural Communities encompass approximately 75,266 acres or 16 percent of Eglin AFB, and combined, SBSs and ONAs encompass approximately 43,210 acres or 9 percent of the Base (U.S. Air Force, 2012c). **Figure 3-1** shows the locations of the High Quality Natural Communities, SBSs and ONAs on Eglin AFB and in relation to the Eglin OAO airspaces.

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. Areas within the Eglin OAO ROI have been designated as critical habitat for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), which is federally listed as Threatened, and for the piping plover (*Charadrius melodus*), which is also federally listed as Threatened. **Figures 3-2** and **3-3** show the locations of Gulf sturgeon critical habitat, piping plover critical habitat, and other sensitive species habitat on Eglin AFB and in relation to the Eglin OAO airspaces.

3.7.2 Environmental Consequences

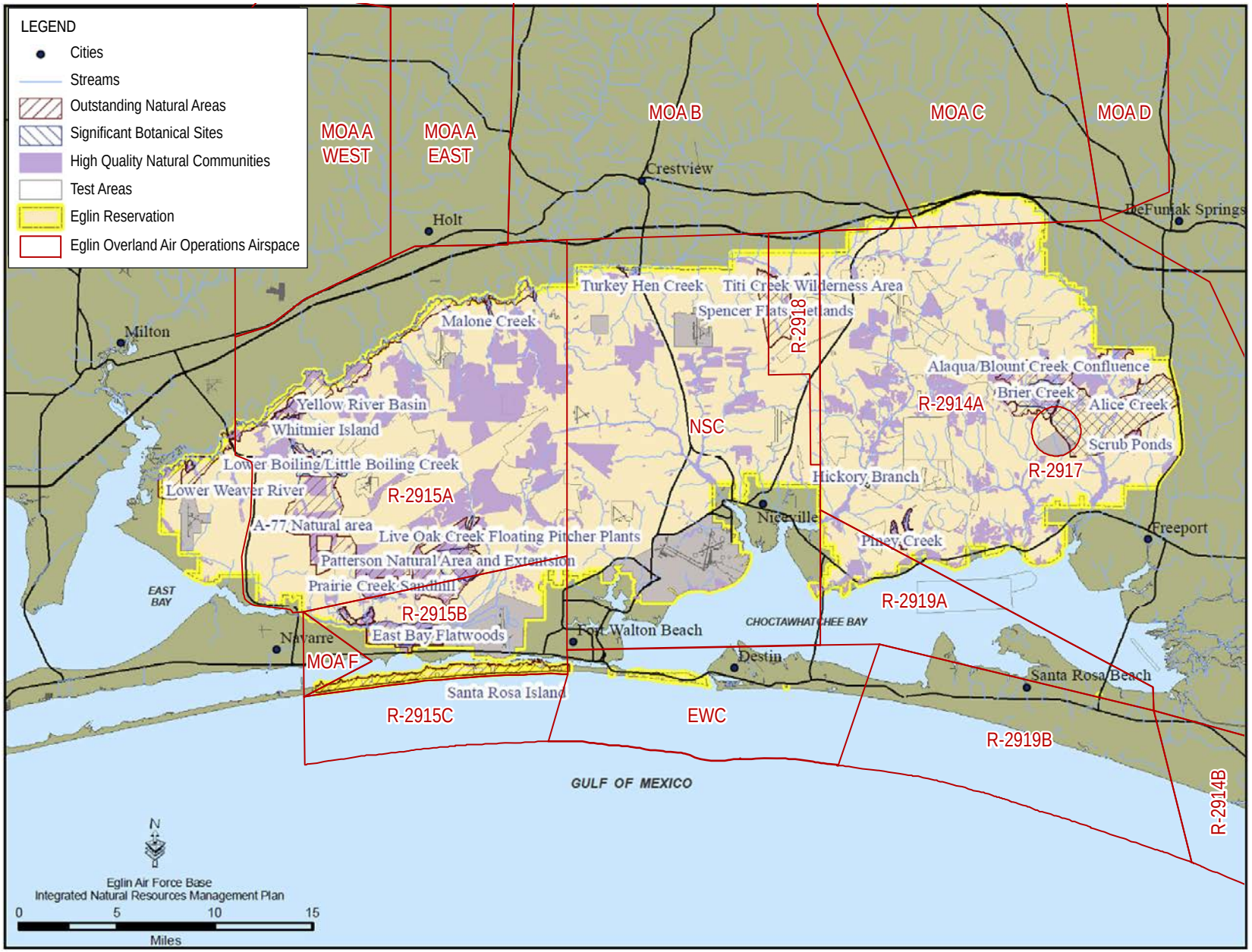
ESA Section 7 Consultation

The 96 CEG/CEIEA prepared a Biological Assessment (BA) to assess the potential effects of Alternative 2 (Preferred Alternative) on federally-listed and other sensitive species, and submitted it to USFWS as part of the ESA Section 7 consultation process for the Proposed Action (Appendix F). Federally-listed species analyzed in the BA (FWS Log No. 04EF3000-2014-I-0178) include the red-cockaded woodpecker (RCW) (*Picoides borealis*), reticulated flatwoods salamander (*Ambystoma bishopi*), eastern indigo snake (*Drymarchon couperi*), Okaloosa darter (*Etheostoma okaloosae*), Gulf sturgeon and its critical habitat, and four freshwater mussels and their critical habitat (Choctaw bean, narrow pigtoe, southern sandshell, and fuzzy pigtoe). The gopher tortoise and bald eagle are also analyzed in the BA. The BA addresses potential direct physical impacts, harassment (noise), and habitat impacts (wildfire starts), and identifies conservation measures that would be required to be implemented under the Proposed Action to avoid and minimize potential impacts to listed/sensitive species. The conservation measures identified in the BA are discussed generally in this section and also incorporated into the overall management actions presented in Section 4.

Based on analysis of potential direct physical impacts, harassment, and habitat impacts associated with Eglin overland air operations, the BA concluded that the reticulated flatwoods salamander, eastern indigo snake, Okaloosa darter, Gulf sturgeon and its critical habitat, and freshwater mussels (Choctaw bean, narrow pigtoe, southern sandshell, and fuzzy pigtoe) and their critical habitat may be affected, but are not likely to be adversely affected by the Proposed Action. USFWS concurred with these effect determinations (see Appendix F). With respect to the RCW, USFWS stated that Eglin overland air operations are covered under USFWS' 2013 RCW Programmatic Biological Opinion (PBO) for Eglin AFB mission activities (USFWS, 2013) (see Appendix F). To minimize potential impacts of Eglin overland air operations on listed/sensitive species, the Air Force will implement the conservation measures identified in the BA, and applicable terms and conditions from the RCW PBO.

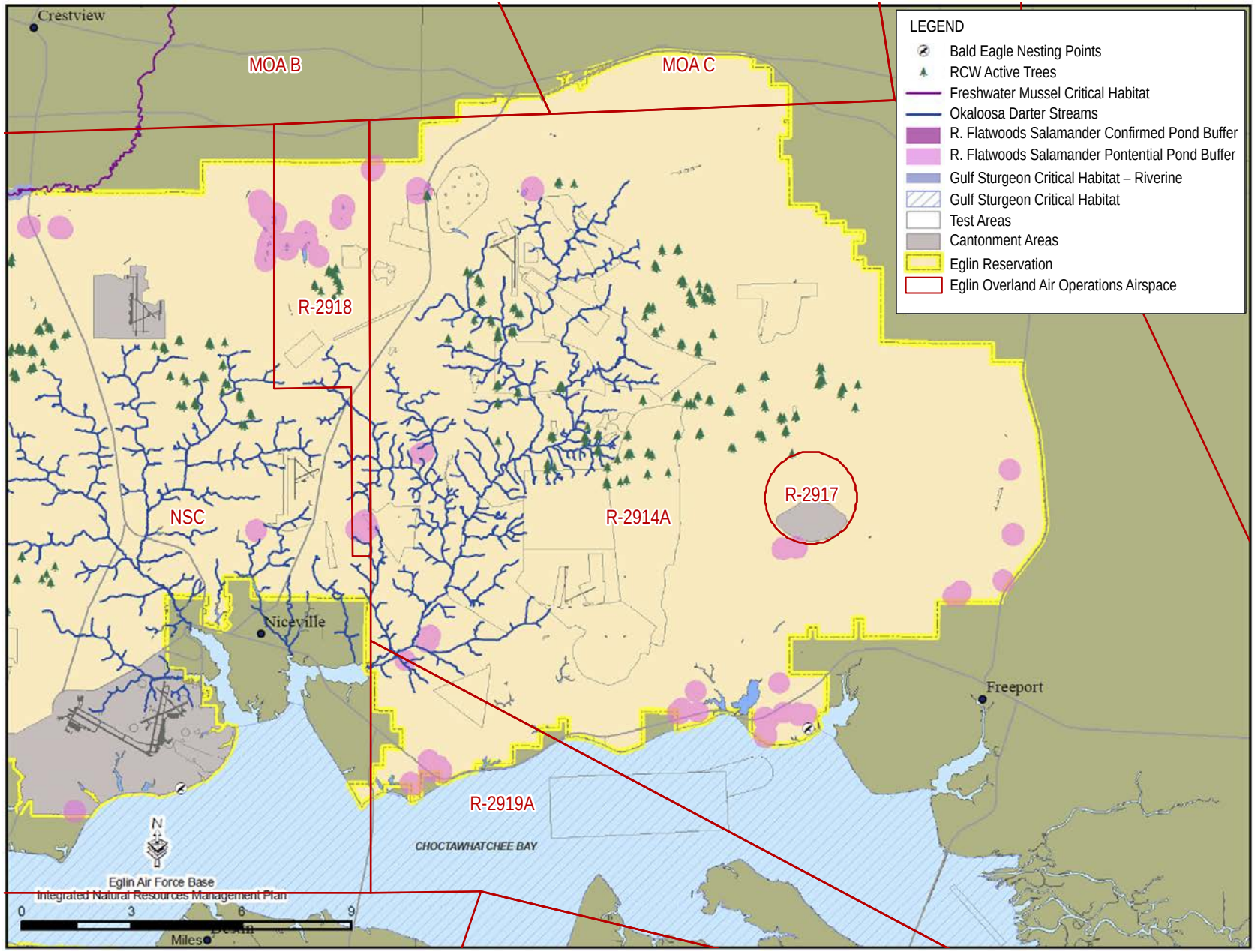
Alternative 1 (No Action Alternative)

The primary means by which Eglin overland air operations could potentially impact biological resources is via bird/wildlife-aircraft strikes, aircraft noise, and wildfires caused by the CV-22 aircraft at HLZs. Aircraft emissions and flare use during baseline Eglin overland air operations are not expected to have adverse impacts on air quality and the potential for terrestrial/ aquatic vegetation or wildlife to be impacted by in-flight fuel releases during baseline Eglin overland air operations is very low (see Sections 3.2.2, 3.5.2, and 3.6.2).



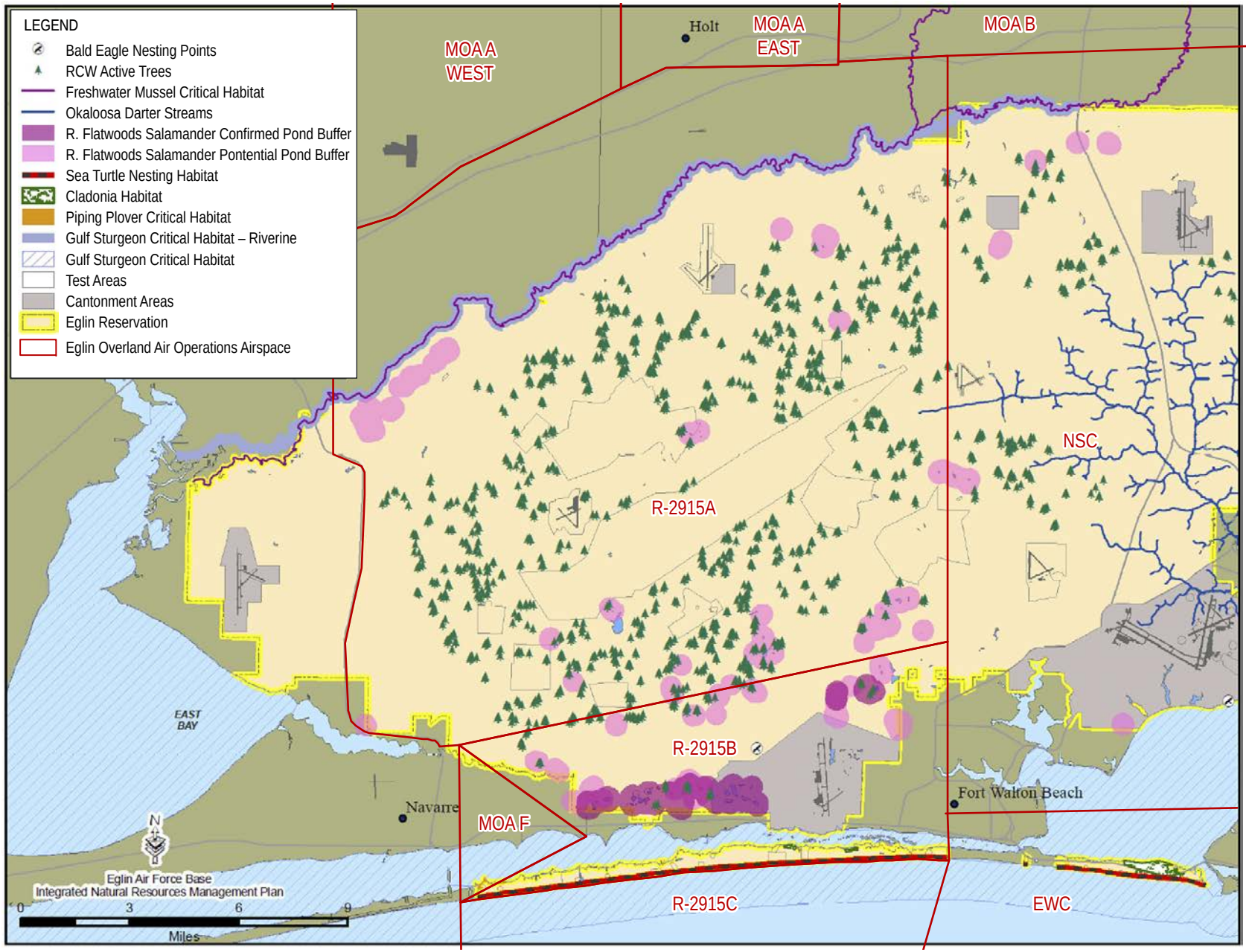
Source: Eglin AFB Integrated Natural Resources Management Plan (U.S. Air Force, 2012)

FIGURE 3-1
High Quality Natural Communities, Outstanding Natural Areas, and Significant Botanical Sites on Eglin AFB
Eglin AFB Overland Air Operations REA



Source: Eglin AFB Integrated Natural Resources Management Plan (U.S. Air Force, 2012)

FIGURE 3-2
Sensitive Species and Habitat on Eglin AFB (East)
Eglin AFB Overland Air Operations REA



Source: Eglin AFB Integrated Natural Resources Management Plan (U.S. Air Force, 2012)

FIGURE 3-3
Sensitive Species and Habitat on Eglin AFB (West)
Eglin AFB Overland Air Operations REA

Bird/Wildlife-Aircraft Strikes

As discussed in Section 3.4.2, current baseline Eglin OAO activity under Alternative 1 is estimated to result in an annual total of 69 bird/wildlife-aircraft strikes. Eglin's BASH program minimizes bird/wildlife-aircraft strikes to the extent possible; however, strike incidents are inevitable during air operations. Most bird/wildlife-aircraft strikes occur near airfields during aircraft takeoff/initial climb and approach/landing. Therefore, most strike incidents involve common bird species that occur near airfields. The overall potential for federally listed bird species such as the RCW or piping plover to be struck by aircraft during Eglin overland air operations is very low based on where these species occur, their behavior characteristics, and the altitudes at which aircraft are flown in Eglin overland airspaces. Certain state-listed wading bird species that may occur near Eglin's airfields may be more prone to being struck by aircraft; however, overall impacts on such species are also considered to be low based on the BASH measures that are implemented and the relatively sparse populations of such species. The overall potential for gopher tortoises or other land-based sensitive species to be struck by aircraft landing at HLZs or LZs on Eglin AFB is very low as the animals would most likely move away from the area once they sense a general disturbance in the vicinity. As indicated in the BA (see Appendix F) and Section 4, if a gopher tortoise burrow is found within a HLZ/LZ and landing operations could not avoid the burrow by 25 ft, the tortoise would be relocated in accordance with FWC protocols.

Aircraft Noise

The effects of noise on wildlife are not well understood and are mostly based on observations of behavioral responses. Animals rely on hearing for a variety of functions, including obtaining food, mating, and predator avoidance. Noise may mask or interfere with these functions. Animal response to noise has been shown to vary with species (Manci et al., 1988). A general behavioral reaction by some wildlife species when exposed to noise is the startle response. Startle responses in animals include flight, jumping, running, or movement of the head in the apparent direction of the noise source (Manci et al., 1988). Direct physiological effects of noise on wildlife are difficult to measure In the field, but may include some health effects, depending on the noise levels. Serious effects such as decreased reproductive success depends on the species, the characteristics of the noise, and many other factors. Laboratory tests of exposure of bird eggs to sonic booms and other impulsive noises have failed to show associated adverse effects on hatching of eggs (Bowles et al., 1991; Bowles et al., 1994; Cottereau, 1972; Cogger and Zegarra, 1980). A structural analysis by Ting et al. (2002) showed that even under extraordinary circumstances, sonic booms would not damage a bird egg.

The effects of aircraft noise on fish, reptiles, and amphibians have not been well studied. Although fish do startle in response to low-flying aircraft noise, the literature indicates that they habituate to the noise and shadows of aircraft. Amphibians do not exhibit a well-developed acoustic startle response and are generally considered to not be susceptible to noise impacts (Manci et al., 1988). The most common reaction of birds and mammals to aircraft noise, particularly when the aircraft is visible to the animal is some degree of the startle response; rotary aircraft typically cause a greater startle response than fixed-wing aircraft (Manci et al., 1988). In the event that a nesting bird is flushed from its nest, the nest may theoretically be exposed to a greater risk of predation, thereby affecting reproductive success (Larkin, 1996). Delaney et al. (2002) reported that RCWs were not flushed when exposed to noise levels up to 102 dB SEL generated by helicopters (> 30 meters) or noise levels up to 90 db SEL generated by fixed-wing aircraft (> 600 meters). A study by Black et al. (1984) on the effects of low-altitude (less than 500 ft AGL) F-16 training flights with sound levels from 55 to 100 dBA on wading bird colonies (great egret, snowy egret, tricolored heron, and little blue heron), concluded that the reproductive activity (including nest success, nestling survival, and nestling chronology) was independent of the overflights. Kushlan (1978) observed very low response in wading bird colonies to circling fixed-wing aircraft and helicopter overflights at altitudes of 195 to 390 ft. Burger (1986) reported that migrating shorebirds did not flush in response to aircraft overflights, but did flush in response to more localized disturbance (humans and dogs on the beach). The literature indicates that raptors (birds of prey) are less likely to startle or flush from noise than other types of birds and that most raptors do not exhibit a negative response to low-level overflights (Manci et al.,

1988). A study by Larkin (1996) concluded that bald eagle response was related more to the visual presence of the disturbance, such as the proximity of a person or aircraft, than to the particular noise. Nesting ospreys have been observed to show a low response to noise (Trimper et al., 1998) and red-tailed hawks have been observed to habituate to helicopter noise, even during the nesting period (Andersen et al., 1989). The majority of the literature suggests that domestic animals, such as cows, horses, and chickens exhibit some behavioral responses to repeated exposure to aircraft noise, but generally habituate to the noise over time. There is no evidence that aircraft overflights affect feed intake, growth, or production rates in domestic animals.

As indicated in **Table 3-1**, estimated subsonic noise levels beneath Eglin overland airspace under Alternative 1 range from less than 45 dB L_{dnmr} to 66 dB L_{dnmr}. The Air Force considers all land uses to be compatible with noise levels below 65 dB DNL, and noise-sensitive land uses such as residences to be conditionally compatible with noise levels between 65 and 70 dB DNL if the structure provides above-average noise attenuation. Although no noise thresholds have been established for wildlife, adverse noise impacts on wildlife are not expected under Alternative 1 based on the criteria used to determine noise impacts on humans. Based on the noise modeling conducted for the airfield alternatives in the 2014 JSF Final SEIS (U.S. Air Force, 2014), higher noise levels would be experienced on and in the vicinity of the airfields analyzed (Eglin Main Base, Duke Field, and Choctaw Field). Eglin Main Base and Duke Field are located within the Eglin OAO ROI; Choctaw Field is located outside the Eglin OAO ROI. These higher noise levels would be experienced by birds and other wildlife that occur near the airfields and not by the vast majority of sensitive species on Eglin AFB.

The use of HLZs under Alternative 1 is not expected to have significant noise impacts on wildlife or sensitive species. As indicated in **Table 3-5**, the noise levels generated by the four helicopter types and the CV-22 are estimated to be approximately 95 ASEL (voluntary noise exposure limit for the public) or lower at a distance of 1,000 ft. Most currently used HLZs on Eglin AFB are located well beyond 1,000 ft from active RCW trees and no HLZ is located closer than 500 ft of an active RCW tree. At a distance of 500 ft, noise levels from helicopters and the CV-22 are estimated to be approximately 100 ASEL or lower (see **Table 3-5**). Delaney et al. (2002) reported that RCWs were not flushed when exposed to noise levels up to 102 ASEL generated by helicopters. No currently used HLZs on Eglin AFB are located within 1,000 ft of a bald eagle nest. Some wildlife species, such as those that happen to be on or in the immediate vicinity of an HLZ, would experience relatively high noise levels during landing or takeoff of a helicopter or CV-22. However, based on the estimated noise levels of the aircraft that use the HLZs, single-event noise impacts on wildlife under Alternative 1 are not expected to be significantly adverse. Given the low number of aircraft that use each HLZ and the distances of the HLZs from active RCW trees, the potential for associated continuous noise impacts on wildlife and sensitive species is considered to be low.

Baseline Eglin OAO activity under Alternative 1 is not expected to have adverse noise impacts on wildlife, including any listed/sensitive species based on the associated noise levels estimated to occur beneath Eglin overland airspace and at the HLZs. Based on the expected noise levels and a review of the available literature on animal responses to noise, noise impacts on common and listed/sensitive animal species under Alternative 1 are expected to be minor and largely limited to temporary startle responses in some species. The associated startle responses are not expected to result in adverse effects on the health or reproduction of any species. Baseline Eglin OAO activity under Alternative 1 is higher than the previous baseline activity analyzed with respect to total annual aircraft sorties; however, the increase in sorties do not result in significant increases in overall noise levels in the Eglin OAO ROI. Animals in the ROI have experienced noise from military aircraft for decades and, therefore, are acclimated to such noise. The increase in noise levels within the ROI under Alternative 1 would occur gradually as the F-35 and associated aircraft operations ramp up to the baseline level analyzed in this REA, which represents this projected near-term activity. Therefore, it is expected that animals in the ROI will acclimate gradually over this period of gradual noise increase.

The above assessment is supported by the noise effect determinations made in the 2014 JSF Final SEIS and associated 2008 BRAC Final EIS (FEIS) (U.S. Air Force, 2008b). The 2008 BRAC FEIS concluded that JSF aircraft operations would have no adverse noise effects on any listed/sensitive species. The 96 CEG/CEIEA at Eglin

entered into formal ESA Section 7 consultation with USFWS on January 17, 2008 on the proposed BRAC actions. In its Biological Opinion (issued July 11, 2008), USFWS determined that the BRAC actions are not likely to jeopardize the continued existence of the RCW and concurred with Eglin's determination of "not likely to adversely affect" made for all other federally listed species (USFWS, 2008). The required avoidance and minimization measures specified in the Biological Opinion were incorporated into the *BRAC 2005 Decisions and Related Actions Final Mitigation and Monitoring Plan for JSF at Eglin AFB, FL* (U.S. Air Force, 2009). These measures will be implemented for the alternative selected in the 2014 JSF SEIS and, therefore, will also be implemented as applicable for the Eglin overland air operations addressed in this REA. In addition, several conservation measures identified in the BA (see Appendix F) and Section 4 that will be implemented under the Proposed Action will minimize potential noise impacts on listed/sensitive species.

Wildfires

During vertical takeoff and landing, the engines of the CV-22 aircraft have the potential to ignite vegetation on the HLZs at Eglin AFB, thereby, potentially causing wildfires. The overall potential for a wildfire to be caused by a CV-22 is dependent the type, amount, and dryness of the vegetation on the HLZ, and weather conditions such as relative humidity and wind speed and direction. Most of the HLZs on Eglin AFB are unpaved and covered by grasses and other types of herbaceous vegetation. They range in size from less than an acre to several hundred acres. Flare use during Eglin overland air operations also has the potential to start wildfires. Fire is beneficial to many of the natural communities on Eglin AFB. The sandhill community, which is by far the most extensive natural community type on Eglin, is highly adapted to, and dependent on fire, which maintains its vegetative structure and composition. However, wildfires also have the potential to adversely affect habitats and species on Eglin if they are uncontrolled and of high intensity.

Eglin AFB has an advanced wildfire management program that includes all aspects of fire prevention, detection, suppression, readiness, fire line rehabilitation, and training. Specific protection measures are implemented during wildfire suppression in biologically sensitive areas on Eglin. For example, plows are not used off range roads for fire suppression, except in extreme conditions, in or near streams, riparian buffers, wetlands, high-quality natural areas, or listed species habitats. Prescribed burning at Eglin AFB is prioritized and conducted on species-specific rotations in areas known to contain sensitive species such as the RCW and flatwoods salamander. Missions on Eglin AFB are required to be planned and conducted in accordance with the fire danger ratings and other wildfire minimization measures identified in EAFBI 13-212, *Range Planning and Operations*. Several conservation measures will be implemented by the Air Force during Eglin overland air operations to avoid and minimize potential wildfire starts. These measures are identified in the BA that has been prepared for the Proposed Action (see Appendix F), and in Section 4. Given that these measures will be strictly adhered to, the overall potential for adverse wildfire impacts on biological resources under Alternative 1 is considered to be low.

Based on the analysis conducted, Alternative 1 would have a minor impact on biological resources.

Alternative 2

Aircraft emissions and flare use during mission surge Eglin overland air operations are not expected to have adverse impacts on air quality and the potential for terrestrial/ aquatic vegetation or wildlife to be impacted by in-flight fuel releases during mission surge Eglin overland air operations is very low (see Sections 3.2.2, 3.5.2, and 3.6.2). Mission surge Eglin OAO activity under Alternative 2 is expected to result in an annual total of 123 bird/wildlife-aircraft strikes (see Section 3.4.2). Although more bird/wildlife-aircraft strikes are expected to occur under Alternative 2 than under Alternative 1, the overall number of annual strikes would still be relatively low based on the number of sorties that would be flown. Based on the analysis conducted for Alternative 1, the potential for sensitive species to be impacted by bird/wildlife-aircraft strikes under Alternative 2 is considered to be low.

Under Alternative 2, subsonic noise levels beneath Eglin overland airspace would be slightly greater than those estimated for Alternative 1. Mission surge Eglin OAO activity under Alternative 2 is not expected to have adverse noise impacts on wildlife, including any listed/sensitive species based on the associated noise levels expected to occur beneath Eglin overland airspace and at the HLZs. Based on the expected noise levels and a review of the available literature on animal responses to noise, noise impacts on common and listed/sensitive animal species under Alternative 2 are expected to be minor and largely limited to temporary startle responses in some species. The associated startle responses are not expected to result in adverse effects on the health or reproduction of any species.

The potential for wildfire starts under Alternative 2 would be higher than under Alternative 1, primarily due to the greater number of flares that would be used and the greater numbers of CV-22 vertical takeoffs and landings that would occur at the HLZs. As discussed for Alternative 1, several conservation measures will be implemented by the Air Force during Eglin overland air operations to avoid and minimize potential wildfire starts. These measures are identified in the BA that has been prepared for the Proposed Action (see Appendix F), and in Section 4. Given that these measures will be strictly adhered to, the overall potential for adverse wildfire impacts on biological resources under Alternative 2 is considered to be low.

Based on the analysis conducted, Alternative 2 would have a minor impact on biological resources.

3.8 Environmental Justice and Protection of Children

3.8.1 Affected Environment

On February 11, 1994, the President issued EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. This EO requires federal agencies to address disproportionate environmental and human health impacts from federal actions on minority populations and low-income populations. The President directed all federal agencies to analyze the environmental effects on minority and low-income communities, including human health, social, and economic effects.

The Air Force's *Guide for Environmental Justice Analysis with the Environmental Impact Analysis Process (EIAP)* provides guidance on how environmental justice should be analyzed in conjunction with EIAP in accordance with NEPA (Department of the Air Force, 1997). According to this guidance, if the Proposed Action would have no impact on human populations, or if the impact that it would have would not be adverse, the Proposed Action would not disproportionately impact minority or low-income populations and no environmental justice analysis would be required. If the Proposed Action is determined to have an adverse impact on human populations, then the environmental justice analysis should be conducted in accordance with the guidance to determine if it would disproportionately impact minority or low-income populations.

Guidelines for the protection of children are specified in EO 13045, *Protection of Children from Environmental Health Risks and Safety Risk* (FR: 23 April 1997, Volume 62, Number 78). This EO requires that federal agencies make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children, and ensure that policies, programs, and standards address disproportionate risks to children that result from environmental health or safety risks.

3.8.2 Environmental Consequences

Alternative 1 (No Action Alternative)

Baseline Eglin overland air operations under Alternative 1 would have no effect, or only minor impacts, on the resources most relevant for assessing impacts on human populations, which are air quality, noise, groundwater, surface water, and hazardous materials/wastes. The minor impacts that Alternative 1 would have on these resources would not adversely affect human populations. Therefore, Alternative 1 would not have disproportionately high or adverse human health or environmental effects on minority or low-income populations. No activity under Alternative 1 would result in environmental health or safety risks to children.

Alternative 2

Mission surge Eglin overland air operations under Alternative 2 would have no effect, or only minor impacts, on the resources most relevant for assessing impacts on human populations, which are air quality, noise, groundwater, surface water, and hazardous materials/wastes. The minor impacts that Alternative 2 would have on these resources would not adversely affect human populations. Therefore, Alternative 2 would not have disproportionately high or adverse human health or environmental effects on minority or low-income populations. No activity under Alternative 2 would result in environmental health or safety risks to children.

3.9 Cumulative Impacts

Cumulative impacts are defined in the CEQ regulations implementing provisions of NEPA (CEQ 1508.7) as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

Alternative 2 includes all baseline (current and near-term) and anticipated mission-surge Eglin OAO activity. Alternative 2 represents the entire scope of actions associated with Eglin overland air operations that would be implemented by the Air Force from the present through the foreseeable future in the Eglin OAO ROI. Based on the analysis conducted in Section 3, the magnitude of impact that the entire scope of Eglin overland air operations would have on each resource analyzed is expected to be moderate at most, and not adversely significant. This determination is made based on the types, durations, frequencies, and locations of the operations and the resources at potential risk.

Military operations have been conducted at Eglin AFB for over 60 years. Military operations within and beyond the Eglin OAO ROI have and continue to include a wide range of testing and training activities on/over Eglin's land and water ranges, which include approximately 130,000 mi^2 of airspace and over 50 specific test areas/sites. Public recreational activities, including hunting, fishing, hiking, and boating, occur on approximately 261,000 acres of Eglin AFB. The Eglin OAO ROI has experienced steady population and economic growth over the years; past and present major actions are primarily associated with residential and commercial development in the population centers and development of regional infrastructure such as roadways, airports, and utility systems. The primary reasonably foreseeable future actions within and near the Eglin OAO ROI include the following:

- **Relocation of the 7 SFG to Eglin AFB**: The 7 SFG relocated from Fort Bragg, North Carolina to Eglin AFB in 2011 as part of the 2005 Base Realignment and Closure (BRAC) Program. 7 SFG personnel relocations and range/facility construction at Eglin AFB have not yet reached final-state levels; the final state levels have been analyzed in the Eglin BRAC-2005 EIS (U.S. Air Force, 2008).
- **Destin-Fort Walton Beach Airport**: Projects over the next five years would include construction of a new Air Traffic Control tower, runway paving, apron expansion for additional aircraft parking, and construction of a noise wall, additional parking spaces, and an engine run-up pad.
- **DeFuniak Springs Airport**: Projects over the next five years would include upgrades to existing aircraft parking aprons, various utility and equipment upgrades/construction, and construction of a new aircraft apron, T-hangar aircraft storage building, taxiways, and access road.
- **Paving Rattlesnake Road from Hwy 85 to Camp James Rudder:** This project would involve the paving of Range Road 211 (River Road) from the intersection of Range Road 211 and Range Road 257 (Camp Road), to the intersection of Range Road 211 and Hwy 85.
- **Hwy 123 Widening:** This project would involve widening Hwy 123 from two lanes to four lanes, from Hwy 85 South to Hwy 85 North.

- **Hwy 87 Widening:** This project would involve widening Hwy 87 from two lanes to four lanes, from the southern boundary of Eglin AFB to the Yellow River Bridge.
- **Eglin Main Comprehensive Plan**. Based on the Eglin and Duke Field Comprehensive Plan, 32 Military Construction (MILCON) projects (facilities and runways) are planned beyond FY 2011 at Eglin Main Base.
- **Hurlburt Field General Plan:** Based on the Hurlburt Field General Plan, more than 50 transportation and capital improvement projects are planned over the next five years on Hurlburt Field.
- **Relocation of Aviation Foreign Internal Defense (AvFID) Mission to Eglin AFB**: The AvFID mission is in the process of relocating from Hurlburt Field to Duke Field on Eglin AFB.
- **Relocation of 9th Special Operations Squadron (9 SOS) to Hurlburt Field:** The 9 SOS is relocating from Eglin AFB to Hurlburt Field to consolidate all local C-130 operations.
- **Alabama Army National Guard (ALARNG):** In the next two to five years, the ALARNG proposes to relocate their support facilities from Test Area B-75 to the Duke Field area.
- **AFSOC Small Unmanned Aerial System (UAS) School at Choctaw Field:** The Air Force allowed AFSOC to stand-up a temporary UAS Schoolhouse at Choctaw Field in the summer of 2009. This temporary beddown would become permanent in the future if the Air Force determines the AFSOC UAS operations can be completed in conjunction with proposed F-35 operations at Choctaw Field. If the UAS operations conflict with F-35 operations, then AFSOC would relocate their UAS Schoolhouse.
- **Military Housing Privatization Initiative (MHPI):** The Air Force is currently privatizing all military family housing for both Eglin AFB and Hurlburt Field. This process involves the demolition and construction of more than 1,400 houses. These activities were analyzed in the *Final Environmental Impact Statement for the Military Housing Privatization Initiative (MHPI) at Eglin AFB and Hurlburt Field, Florida* (U.S. Air Force, 2011c). The associated ROD was signed on February 6, 2012.
- **Emerald Coast Resort**: The Emerald Coast Resort is being constructed by the Air Force at Eglin Test Site A-5 on Santa Rosa Island to be used by active service members and their families, retirees, DoD employees and families, and the general public as a recreation resort and commercial complex. Potential impacts have been analyzed in an EA and the associated FONSI was signed on September 11, 2009.
- **Emerald Coast Technology and Research Center (ECTRC) at the University of Florida Research and Engineering Education Facility:** The ECTRC will be developed by the Air Force as a campus to be jointly used by the military and private sector. The ECTRC campus will benefit current and future missions, research, and development at Eglin AFB and the surrounding communities. Potential impacts have been analyzed in an EA and the associated FONSI was signed on April 4, 2012.
- **F-18 Operations at Choctaw Field:** The Navy is currently repairing Oceana Fentress Naval Auxiliary Landing Field in Virginia, and during this period some of the flight training has been shifted to Choctaw Field. The associated operations at Choctaw Field would be temporary.

Expansion of Eglin overland air operations under the Proposed Action coupled with continued population growth in the region would result in cumulative impacts on regional airspace, such as increased airspace congestion, air traffic controller workload, and restrictions on public use of airspace. As discussed in Section 3.1.1, the GRASI was initiated in 2008 to address increasing military and civilian use of airspace in the Gulf region. Several GRASI recommendations for minimizing regional airspace impacts, including use of additional non-Eglin controlled SUAs and methods for increasing scheduling efficiency, were incorporated into the 2014 JSF Final SEIS (U.S. Air Force, 2014) and, therefore, are reflected in the baseline Eglin OAO activity under Alternative 1. Other GRASI recommendations for minimizing regional airspace impacts are currently being further evaluated and refined for future implementation (see Section 4). It is expected that implementation of these and other strategies would minimize the potential for significantly adverse cumulative impacts on regional airspace to occur through the foreseeable future. While planned development and upgrades at the Destin-Fort Walton

Beach Airport and Defuniak Springs Airport are intended to accommodate increased activity, they are also intended to improve air traffic control and overall functionality of the airports and, therefore, can be expected to have some positive impact on regional airspace use.

The Proposed Action is not expected to have adverse cumulative impacts on air quality. Although the Proposed Action would result in a permanent change in annual air emissions, the associated impacts on air quality from aircraft emissions, flare use, and in-flight fuel releases would be negligible with respect to regional criteria pollutant emissions and potential human health risk. Foreseeable future actions would primarily involve infrastructure development projects; the construction emissions from these projects would be temporary, intermittent, and minor.The Proposed Action would not result in cumulative impacts on soils, wetlands, surface waters, or groundwater as it does not involve construction or any other activity that would physically impact these resources. These resources could potentially be impacted by a large fuel release during an emergency fuel-jettisoning event; however, the occurrence potential for such events is very low.

When added to present and foreseeable future actions, the Proposed Action is not expected to result in adverse cumulative noise impacts. Most of the present and future actions involve construction and/or demolition noise, which is temporary and typically limited to normal working hours. Concurrent aircraft and construction noise may result in greater public annoyance and animal startle responses; however, such impacts are expected to be largely limited to areas in the vicinity of Eglin's airfields and are not expected to be significantly adverse. The Proposed Action coupled with increased civilian use of regional airspace could increase the overall potential for aircraft mishaps. The potential for cumulative impacts to public safety may require modifications to certain flight patterns to maintain safety in the region. Current safety policies and procedures at Eglin AFB and regional airports ensure that the potential for aircraft mishaps is minimized to the extent possible; safety measures would be accordingly increased by the Air Force for the projected activity under the Proposed Action and by regional airports for their projected activity. Although the potential for bird/wildlife-aircraft strikes would increase as a result of increased military and civilian use of airspace, the overall potential for associated aircraft mishaps is expected to remain relatively low.

Based on the analysis conducted, when added to past, present, and reasonably foreseeable actions, the Proposed Action is not expected to have significantly adverse cumulative impacts on any resource.

3.10 Summary of Environmental Consequences

The potential environmental consequences of Alternatives 1 and 2 are summarized in **Table 3-8**.

TABLE 3-8
Summary of Environmental Consequences
Eglin Overland Air Operations REA

Resource	Alternative 1	Alternative 2
Airspace	*Moderate Impact – Not Significant* Airspace impacts would include increased airspace congestion, air traffic controller workload, and restrictions on public use of airspace. Incorporation of GRASI recommendations into the 2014 JSF Final SEIS reduced the total annual sorties proposed under Alternative 1. Other GRASI recommendations would be incorporated to further minimize airspace impacts as overland air operations ramp up to the baseline level under Alternative 1.	*Moderate Impact – Not Significant* Airspace impacts would include increased airspace congestion, air traffic controller workload, and restrictions on public use of airspace. The potential for airspace impacts under Alternative 2 would be higher than under Alternative 1 due to the greater number of aircraft sorties that would be flown annually. Additional strategies, including those which have been developed by the GRASI working group but have yet to be implemented, are expected to be implemented during a mission surge in Eglin overland air operations to minimize airspace impacts. Given that mission-surge Eglin overland air operations would be conducted only during wartime or other significant military involvement, the associated increase in airspace impacts would not be permanent.

Resource	Alternative 1	Alternative 2
Air Quality	*Minor Impact – Not Significant* Worst-case criteria pollutant concentrations resulting from aircraft emissions are expected to be well below NAAQS. Total annual aircraft pollutant emissions are expected to not exceed 2 percent of current total annual ROI emissions. An estimated total of 15,505 flares would be used annually. Criteria pollutant emissions associated with flare use are expected to be in compliance with NAAQS. Flare use would be well below the estimated health risk threshold. A total of 24 air-to-air refueling events are estimated to be conducted annually. The small amounts of fuel that would be released are expected to completely evaporate in the air and not reach the ground. Any associated impact on air quality would be temporary and negligible. Emergency In-flight fuel-jettisoning events are expected to have a negligible impact on air quality based on their low occurrence potential. Any impact on air quality would be temporary as the evaporated fuel would be readily dispersed by atmospheric circulation.	*Minor Impact – Not Significant* Worst-case criteria pollutant concentrations resulting from aircraft emissions are expected to be well below NAAQS. Total annual aircraft pollutant emissions are expected to not exceed 3 percent of current total annual ROI emissions. An estimated total of 46,470 flares would be used annually. Criteria pollutant emissions associated with flare use are expected to be in compliance with NAAQS. Flare use would be well below the estimated health risk threshold. A total of 43 air-to-air refueling events are estimated to be conducted annually. The small amounts of fuel that would be released are expected to completely evaporate in the air and not reach the ground. Any associated impact on air quality would be temporary and negligible. Emergency In-flight fuel-jettisoning events are expected to have a negligible impact on air quality based on their low occurrence potential. Any impact on air quality would be temporary as the evaporated fuel would be readily dispersed by atmospheric circulation.
Noise	*Minor Impact – Not Significant* Estimated subsonic noise levels beneath Eglin overland airspace range from less than 45 dB L_{dnmr} to 66 dB L_{dnmr}. The estimated percentage of the population that would be highly annoyed by the noise levels range from less than 1 percent to 14 percent. Noise levels are expected to be compatible with all land uses beneath the SUAs and noise impacts on the public are expected to relatively minor and limited to annoyance and speech/activity interference. Use of HLZs on Eglin AFB is not expected to have adverse single-event or continuous noise impacts on the public.	*Moderate Impact – Not Significant* Noise levels beneath R-2914B, R-2915C, R-2919A, R-2919B, Eglin MOA B, and the Rose Hill MOA are expected to be below 65 dB L_{dnmr}. Noise levels beneath the other SUAs could potentially exceed 65 dB L_{dnmr} but only the noise levels beneath R-2915B are expected to have the potential to exceed 70 L_{dnmr} - any exceedance of this noise level in this SUA is expected to be relatively slight. Although noise levels beneath certain SUAs have the potential to be at or slightly above levels considered by the Air Force to be compatible with noise-sensitive land uses, noise impacts on the public are not expected to be significantly adverse. Noise levels beneath Eglin overland airspace are not expected to cause hearing loss. Additional impacts over Alternative 1 are expected to be limited to a greater level of public annoyance. Several measures have been incorporated into the 2014 JSF Final SEIS to reduce the noise levels generated by the JSF and overall near-term Eglin air operations. These measures resulted in a lower number of sorties projected to be flown in the near term in Eglin overland airspace, which is represented by the baseline Eglin OAO activity under Alternative 1. Additional measures would be developed through the adaptive management approach outlined in the 2014 JSF SEIS to minimize noise impacts during a mission surge in Eglin overland air operations. Use of HLZs on Eglin AFB is not expected to have adverse single-event or continuous noise impacts on the public.

Resource	Alternative 1	Alternative 2
Health and Safety	*Negligible Impact – Not Significant* The overall risk that aircraft mishaps would have on public health and safety is considered to be very low. The vast majority of mishaps would occur in the immediate vicinity of the airfield runways. Current safety policies and procedures at Eglin AFB ensure that the potential for aircraft mishaps is minimized to the extent possible; safety measures would be accordingly increased for the projected activity under Alternative 1. Eglin OAO activity under Alternative 1 is estimated to result in an annual total of 69 bird/wildlife-aircraft strikes. The overall potential for bird/wildlife-aircraft strikes under Alternative 1 to result in a Class A mishap is considered to be relatively low.	*Negligible Impact – Not Significant* The overall risk that aircraft mishaps would have on public health and safety is considered to be very low. The vast majority of mishaps would occur in the immediate vicinity of the airfield runways. Current safety policies and procedures at Eglin AFB ensure that the potential for aircraft mishaps is minimized to the extent possible; safety measures would be accordingly increased for the projected activity under Alternative 2. Eglin OAO activity under Alternative 2 is estimated to result in an annual total of 123 bird/wildlife-aircraft strikes. The overall potential for bird/wildlife-aircraft strikes under Alternative 2 to result in a Class A mishap is considered to be relatively low.
Soils	*Negligible Impact – Not Significant* Soil impacts are not expected to result from air-to-air refueling operations as the small amounts of fuel that would be released are expected to completely evaporate in the air and not reach the ground. Emergency in-flight fuel-jettisoning events are expected to have a negligible impact on soil quality based on their low occurrence potential. In the event that a large quantity of fuel is released during an in-flight fuel jettisoning event, the Air Force would use the FJSIM model to determine if a spill response is required. Overall impacts on soils at the HLZs is not expected to be significant as most of the unpaved HLZs are covered by grass and other herbaceous vegetation. Given that all the HLZs have flat topography, disturbance of non-vegetated portions of the HLZs by aircraft downdrafts are not expected to result in significant soil erosion and transport of soils to other areas via stormwater runoff. In the unlikely event that soil impacts are identified, avoidance and minimization measures would be implemented, which may include implementing a rotational schedule for HLZ use to prevent overuse of any one HLZ, particularly by the CV-22.	*Negligible Impact – Not Significant* Soil impacts are not expected to result from air-to-air refueling operations as the small amounts of fuel that would be released are expected to completely evaporate in the air and not reach the ground. Emergency in-flight fuel-jettisoning events are expected to have a negligible impact on soil quality based on their low occurrence potential. In the event that a large quantity of fuel is released during an in-flight fuel jettisoning event, the Air Force would use the FJSIM model to determine if a spill response is required. Overall impacts on soils at the HLZs is not expected to be significant as most of the unpaved HLZs are covered by grass and other herbaceous vegetation. Given that all the HLZs have flat topography, disturbance of non-vegetated portions of the HLZs by aircraft downdrafts are not expected to result in significant soil erosion and transport of soils to other areas via stormwater runoff. In the unlikely event that soil impacts are identified, avoidance and minimization measures would be implemented, which may include implementing a rotational schedule for HLZ use to prevent overuse of any one HLZ, particularly by the CV-22.

Resource	Alternative 1	Alternative 2
Water Resources	*Negligible Impact – Not Significant* Impacts to water resources are not expected to result from air-to-air refueling operations as the small amounts of fuel that would be released are expected to completely evaporate in the air and not reach the ground. Emergency in-flight fuel-jettisoning events are expected to have a negligible impact on water quality based on their low occurrence potential. In the event that a large quantity of fuel is released during an in-flight fuel jettisoning event, the Air Force would use the FJSIM model to determine if a spill response is required. The potential for indirect impacts on wetlands and surface waters outside the HLZs via soil erosion is very low. Overall impacts on soils at the HLZs is not expected to be significant as most of the unpaved HLZs are covered by grass and other herbaceous vegetation. Given that all the HLZs have flat topography, disturbance of non-vegetated portions of the HLZs by aircraft downdrafts are not expected to result in significant soil erosion and transport of soils to wetlands or surface waters via stormwater runoff. In the unlikely event that soil erosion is determined to have the potential to indirectly impact wetlands or surface waters outside the HLZs, avoidance and minimization measures would be implemented, which may include implementing a rotational schedule for HLZ use to prevent overuse of any one HLZ, particularly by the CV-22.	*Negligible Impact – Not Significant* Impacts to water resources are not expected to result from air-to-air refueling operations as the small amounts of fuel that would be released are expected to completely evaporate in the air and not reach the ground. Emergency in-flight fuel-jettisoning events are expected to have a negligible impact on water quality based on their low occurrence potential. In the event that a large quantity of fuel is released during an in-flight fuel jettisoning event, the Air Force would use the FJSIM model to determine if a spill response is required. The potential for indirect impacts on wetlands and surface waters outside the HLZs via soil erosion is very low. Overall impacts on soils at the HLZs is not expected to be significant as most of the unpaved HLZs are covered by grass and other herbaceous vegetation. Given that all the HLZs have flat topography, disturbance of non-vegetated portions of the HLZs by aircraft downdrafts are not expected to result in significant soil erosion and transport of soils to wetlands or surface waters via stormwater runoff. In the unlikely event that soil erosion is determined to have the potential to indirectly impact wetlands or surface waters outside the HLZs, avoidance and minimization measures would be implemented, which may include implementing a rotational schedule for HLZ use to prevent overuse of any one HLZ, particularly by the CV-22.

Resource	Alternative 1	Alternative 2
Biological Resources	*Minor Impact – Not Significant* The BA prepared as part of the ESA Section 7 consultation process for the Proposed Action concluded that the reticulated flatwoods salamander, eastern indigo snake, Okaloosa darter, Gulf sturgeon and its critical habitat, and freshwater mussels (Choctaw bean, narrow pigtoe, southern sandshell, and fuzzy pigtoe) and their critical habitat may be affected, but are not likely to be adversely affected by the Proposed Action. USFWS concurred with these effect determinations. With respect to the RCW, USFWS stated that Eglin overland air operations are covered under USFWS' 2013 RCW PBO. To minimize potential impacts of Eglin overland air operations on listed/sensitive species, the Air Force will implement the conservation measures identified in the BA, and applicable terms and conditions from the RCW PBO. Aircraft emissions and flare use are not expected to have adverse impacts on air quality and the potential for terrestrial/ aquatic vegetation or wildlife to be impacted by in-flight fuel releases is very low. Eglin OAO activity under Alternative 1 is estimated to result in an annual total of 69 bird/wildlife-aircraft strikes. Most strike incidents are expected to involve common bird species that occur near airfields. The overall potential for federally listed bird species such as the RCW or piping plover to be struck by aircraft is very low based on where these species occur, their behavior characteristics, and the altitudes at which aircraft are flown in Eglin overland airspaces. Certain state-listed wading bird species that may occur near Eglin's airfields may be more prone to being struck by aircraft; however, overall impacts on such species are also considered to be low based on the BASH measures that are implemented and the relatively sparse populations of such species. Eglin OAO activity under Alternative 1 is not expected to have adverse noise impacts on wildlife, including any listed/sensitive species based on the associated noise levels estimated to occur beneath Eglin overland airspace and at the HLZs. Noise impacts on common and listed/sensitive animal species are expected to be minor and largely limited to temporary startle responses in some species. The associated startle responses are not expected to result in adverse effects on the health or reproduction of any species. Flare use and vertical takeoff and landing by CV-22 aircraft at HLZs have the potential to start wildfires. Given that conservation measures identified in the BA and Section 4 will be implemented to avoid and minimize wildfire starts, the overall potential for adverse wildfire impacts on biological resources is considered to be low.	*Minor Impact – Not Significant* The BA prepared as part of the ESA Section 7 consultation process for the Proposed Action concluded that the reticulated flatwoods salamander, eastern indigo snake, Okaloosa darter, Gulf sturgeon and its critical habitat, and freshwater mussels (Choctaw bean, narrow pigtoe, southern sandshell, and fuzzy pigtoe) and their critical habitat may be affected, but are not likely to be adversely affected by the Proposed Action. USFWS concurred with these effect determinations. With respect to the RCW, USFWS stated that Eglin overland air operations are covered under USFWS' 2013 RCW PBO. To minimize potential impacts of Eglin overland air operations on listed/sensitive species, the Air Force will implement the conservation measures identified in the BA, and applicable terms and conditions from the RCW PBO. Aircraft emissions and flare use are not expected to have adverse impacts on air quality and the potential for terrestrial/ aquatic vegetation or wildlife to be impacted by in-flight fuel releases is very low. Eglin OAO activity under Alternative 2 is estimated to result in an annual total of 123 bird/wildlife-aircraft strikes. Most strike incidents are expected to involve common bird species that occur near airfields. The overall potential for federally listed bird species such as the RCW or piping plover to be struck by aircraft is very low based on where these species occur, their behavior characteristics, and the altitudes at which aircraft are flown in Eglin overland airspaces. Certain state-listed wading bird species that may occur near Eglin's airfields may be more prone to being struck by aircraft; however, overall impacts on such species are also considered to be low based on the BASH measures that are implemented and the relatively sparse populations of such species. Eglin OAO activity under Alternative 2 is not expected to have adverse noise impacts on wildlife, including any listed/sensitive species based on the associated noise levels estimated to occur beneath Eglin overland airspace and at the HLZs. Noise impacts on common and listed/sensitive animal species are expected to be minor and largely limited to temporary startle responses in some species. The associated startle responses are not expected to result in adverse effects on the health or reproduction of any species. Flare use and vertical takeoff and landing by CV-22 aircraft at HLZs have the potential to start wildfires. Given that conservation measures identified in the BA and Section 4 will be implemented to avoid and minimize wildfire starts, the overall potential for adverse wildfire impacts on biological resources is considered to be low.
EJ and Protection of Children	No disproportionately high or adverse human health or environmental effects on minority or low-income populations. No environmental health or safety risks to children.	No disproportionately high or adverse human health or environmental effects on minority or low-income populations. No environmental health or safety risks to children.
Cumulative Impacts	When added to past, present, and reasonably foreseeable actions, Alternative 1 would not have significantly adverse cumulative impacts on any resource.	When added to past, present, and reasonably foreseeable actions, Alternative 2 would not have significantly adverse cumulative impacts on any resource.

SECTION 4

Permits, Mitigation, and Management Actions

4.1 Permits

No permits are required for any activity within the scope of the Proposed Action addressed in this REA. Permits required for facility construction and other activities associated with the beddown of the F-35 aircraft are identified in the 2014 JSF Final SEIS (U.S. Air Force, 2014).

4.2 Mitigation

Compensatory mitigation is not required for any activity within the scope of the Proposed Action addressed in this REA. Impact avoidance and minimization measures are addressed below.

4.3 Management Actions

The management actions presented in this section focus on avoidance and minimization of impacts to the resources analyzed in detail in this REA. They do not address the standard procedures and measures required to be implemented for Eglin overland air operations, which include those specified in AFI 13-201, *Air Force Airspace Management*, EAFBI 11-201, *Air Operations*, and other applicable air operation regulations and guidance documents.

4.3.1 Airspace (Section 3.1)

Several GRASI recommendations for minimizing regional airspace impacts, including use of additional non-Eglin controlled SUAs and methods for increasing scheduling efficiency, were incorporated into the 2014 JSF Final SEIS (U.S. Air Force, 2014) and, therefore, are reflected in the baseline Eglin OAO activity under Alternative 1. Other GRASI recommendations for minimizing regional airspace impacts that may be implemented in the future include the following:

- Establishment of standard instrument departures and standard terminal arrival routes
- Locating remote emitters outside of restricted areas
- Establishing new partnerships for landscape-scale training
- Evaluating North Pensacola MOA reorganization
- Creating a new munitions impact area
- Creating a regional control facility

These recommendations are discussed in detail in the 2014 JSF Final SEIS (U.S. Air Force, 2014).

4.3.2 Air Quality (Section 3.2)

No measures have been identified to be necessary to minimize impacts to air quality. Flare use, air-to-air refueling, and emergency in-flight fuel jettisoning during Eglin overland air operations will be conducted in compliance with the applicable procedures specified in EAFBI 11-201, *Air Operations*. Flares will be released from aircraft at a minimum altitude of 200 ft AGL over test areas and at a minimum altitude of 500 ft AGL outside of test areas. In-flight fuel jettisoning will be conducted, to the extent possible, over water or unpopulated land areas at an altitude of at least 5,000 ft above the highest obstacle.

4.3.3 Noise (Section 3.3)

Several measures were incorporated into the 2014 JSF Final SEIS (U.S. Air Force, 2014) to reduce the noise levels generated by the JSF and overall near-term Eglin air operations. These measures resulted in a lower number of sorties projected to be flown in the near term in Eglin overland airspace, which is represented by the baseline Eglin OAO activity under Alternative 1. Additional measures would be developed through the adaptive management approach outlined in the 2014 JSF SEIS to minimize noise impacts during a mission surge in Eglin overland air operations.

4.3.4 Health and Safety (Section 3.4)

No measures have been identified to be necessary to minimize impacts to health and safety. Current safety policies and procedures at Eglin AFB ensure that the potential for aircraft mishaps is minimized to the extent possible; safety measures would be accordingly increased for the projected activity under Alternative 2. Bird/wildlife-aircraft strikes will be minimized through implementation of Eglin's BASH Plan. Existing protocols for communicating and managing BASHs during Eglin overland air operations will be followed.

4.3.5 Soils (Section 3.5) and Water Resources (Section 3.6)

No measures have been identified to be necessary to minimize impacts to soils or water resources. Air-to-air refueling and emergency in-flight fuel jettisoning during Eglin overland air operations will be conducted in compliance with the applicable procedures specified in EAFBI 11-201, *Air Operations*. In-flight fuel jettisoning will be conducted, to the extent possible, over water or unpopulated land areas at an altitude of at least 5,000 ft above the highest obstacle.

In the unlikely event that soil impacts are identified at any HLZ, avoidance and minimization measures would be implemented, which may include implementing a rotational schedule for HLZ use to prevent overuse of any one HLZ, particularly by the CV-22.

4.3.6 Biological Resources (Section 3.7)

Several measures were incorporated into the 2014 JSF Final SEIS (U.S. Air Force, 20143) to reduce the noise levels generated by the JSF and overall near-term Eglin air operations. These measures resulted in a lower number of sorties projected to be flown in the near term in Eglin overland airspace, which is represented by the baseline Eglin OAO activity under Alternative 1. Additional measures would be developed through the adaptive management approach outlined in the 2014 JSF SEIS to minimize noise impacts on animals during a mission surge in Eglin overland air operations. Bird/wildlife-aircraft strikes will be minimized through implementation of Eglin's BASH Plan. The following conservation measures are identified in the BA prepared as part of the ESA Section 7 consultation for the Proposed Action. These measures are required to be implemented during Eglin overland air operations.

- Use only the approved LZs, HLZs, and DZs listed in EAFBI 13-212, Range Planning and Operations, unless prior written approval has been granted by Eglin.
- Annually consider potential impacts to the RCW from overland air operations, as detailed in USFWS' 2013 RCW PBO.
- Do not establish new HLZs/LZs within the following areas without prior written authorization from the Chief of Eglin Natural Resources:
  - 500 ft of active RCW trees
  - 1,500 ft of known or potential reticulated flatwoods salamander ponds
  - 300 ft of Okaloosa darter streams, Gulf sturgeon critical habitat, and freshwater mussel critical habitat
  - 1,000 feet of known bald eagle nests
- Range users must check the fire danger rating daily, and follow the Eglin Wildfire Specific Action Guide restrictions for pyrotechnics use by class day (see Table 5 in BA).
- Range users must immediately notify the Joint Test and Training Operations Control Center and Eglin Fire Dispatch of any wildfire.
- Maintain HLZs/LZs in a manner that minimizes the fuel load (i.e., vegetation/debris).

- Minimize CV-22 usage of vegetated HLZs during Very High and Extreme fire danger periods as detailed in the Eglin Wildland Fire Specific Action Guidelines (see Table 5 in BA).
- Eglin will follow protocols detailed in the latest USFWS-approved INRMP regarding wildfire protection measures for sensitive species and habitats (see Suppression Consideration Map - Figure 6 in BA).
- Conduct periodic checks of HLZs/LZs for erosion issues and to ensure fuel loads (vegetation/debris) are maintained at safe levels.
- During fire suppression activities, equipment operators will be directed to avoid gopher tortoises, burrows, and indigo snakes.
- If a tortoise burrow is found within a HLZ/LZ, and landing operations could not avoid the burrow by 25 ft, the tortoise would be relocated in accordance with FWC protocols.
- During the nesting season (October 1 to May 15), no helicopter or fixed-wing aircraft operations will occur within 1,000 feet of known eagle nests per the National Bald Eagle Management Guidelines (USFWS, 2007), except in situations where the eagles have demonstrated tolerance for the activity (as determined by Eglin Natural Resources).
- Follow Eglin spill prevention and spill response procedures.

SECTION 5

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SECTION 6

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SECTION 7

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Appendix A
Federal Agency CZMA Consistency Determination

FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT (CZMA) CONSISTENCY DETERMINATION

This document provides the State of Florida with the U.S. Air Force's Consistency Determination under CZMA Section 307 and 15 C.F.R. Part 930 subpart C, for the Preferred Alternative (Alternative 2) of the draft 2014 Overland Air Operations Range Environmental Assessment (REA), Eglin AFB, Florida. Federal consistency with the statutes implemented under the Florida Coastal Zone Management Program is addressed in the table below. Pursuant to 15 C.F.R. § 930.41, the Florida State Clearinghouse has 60 days from receipt of this document to concur with, or object to, this Consistency Determination, or to request an extension, in writing, under 15 C.F.R. § 930.41(b). Florida's concurrence will be presumed if Eglin AFB does not receive its response within 60 days from receipt of this document.

Florida Coastal Management Program Review

Statute	Federal Consistency	Scope
Chapter 161 *Beach and Shore Preservation*	The Proposed Action does not involve any land-based activities. Air operations under the Proposed Action would have no potential to affect the state's management or preservation of beaches and shores.	This statute provides policy for the regulation of construction, reconstruction, and other physical activities related to the beaches and shores of the state. Additionally, this statute requires the restoration and maintenance of critically eroding beaches.
Chapter 163, Part II *Growth Policy; County and Municipal Planning; Land Development Regulation*	The Proposed Action would not affect local government comprehensive plans.	Requires local governments to prepare, adopt, and implement comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.
Chapter 186 *State and Regional Planning*	The Proposed Action would be consistent with the state's statutes and regulations regarding state plans for water use, land development, or transportation.	Details state-level planning efforts. Requires the development of special statewide plans governing water use, land development, and transportation.
Chapter 252 *Emergency Management*	The Proposed Action would not affect the state's vulnerability to natural disasters. The Proposed Action would not affect emergency response and evacuation procedures.	Provides for planning and implementation of the state's response to, efforts to recover from, and the mitigation of natural and manmade disasters.
Chapter 253 *State Lands*	The Proposed Action does not involve the use of state lands. All restrictions on public-use of airspace over state lands for the purposes of public safety would be coordinated with the Federal Aviation Administration and regional airports, and would be conducted in accordance with all applicable policies and regulations. Airspace restrictions under the Proposed Action would not restrict public access to state lands. Therefore, the Proposed Action would be consistent with the state's administration of public lands.	Addresses the state's administration of public lands and property of this state and provides direction regarding the acquisition, disposal, and management of all state lands.
Chapter 258 *State Parks and Preserves*	The Proposed Action would not affect state parks or preserves.	Addresses administration and management of state parks and preserves.
Chapter 259 *Land Acquisition for Conservation or Recreation*	The Proposed Action would not affect the state's acquisition of environmentally endangered lands or outdoor recreation lands.	Authorizes acquisition of environmentally endangered lands and outdoor recreation lands.
Chapter 260	The Proposed Action would not affect the Florida	Established in order to conserve, develop,

Statute	Federal Consistency	Scope
Florida Greenways and Trails Act	Greenways and Trails Program.	and use the natural resources of Florida for healthful and recreational purposes.
Chapter 267 *Historical Resources*	The Proposed Action would not involve construction, demolition, or any other ground disturbing activity that would have the potential to impact archaeological artifacts or historic buildings or structures. The Proposed Action would involve over-flights of historic districts and individual buildings/structures on Eglin AFB that are listed or eligible to be listed in the National Register of Historic Places. The noise generated by such over-flights is not expected to cause structural damage to these buildings/structures. An existing Programmatic Agreement between Eglin AFB and the Florida State Historic Preservation Officer identifies the planning and mitigation actions that would be required to address potential impacts from aircraft noise, such as the potential abandonment of a listed or eligible historic building or structure. This Programmatic Agreement is provided as Appendix E in the REA. Therefore, the Proposed Action would be consistent with the management and preservation of the state's archaeological and historical resources.	Addresses management and preservation of the state's archaeological and historical resources.
Chapter 288 *Commercial Development and Capital Improvements*	The Proposed Action would not affect current or future business, trade, or tourism in the region.	Promotes and develops general business, trade, and tourism components of the state economy.
Chapter 334 *Transportation Administration*	The Proposed Action would not affect transportation.	Addresses the state's policy concerning transportation administration.
Chapter 339 *Transportation Finance and Planning*	The Proposed Action would not affect the finance and planning needs of the state's transportation system.	Addresses the finance and planning needs of the state's transportation system.
Chapter 373 *Water Resources*	Potential impacts on water resources are analyzed in Section 3.6.2 of the REA. Based on the analysis conducted, the Proposed Action would not adversely impact groundwater, surface waters, floodplains, or wetlands. Therefore, the Proposed Action would be consistent with the state's statutes and regulations regarding the water resources of the state.	Addresses sustainable water management; the conservation of surface and groundwaters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians
Chapter 375 *Outdoor Recreation and Conservation Lands*	The Proposed Action would not affect recreational opportunities on state lands.	Develops comprehensive multipurpose outdoor recreation plan to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the identified needs.
Chapter 376 *Pollutant Discharge Prevention and Removal*	Potential impacts from aircraft emissions, flare use, and in-flight fuel releases during Eglin overland air operations are analyzed primarily in Sections 3.2.2, 3.5.2, and 3.6.2 of the REA. Based on the analysis conducted, potential releases during Eglin overland air operations would not adversely impact humans, air quality, soils, water resources, or biological resources. The Proposed Action does not address aircraft maintenance; however, the handling, storage, and disposal of hazardous materials/wastes associated with aircraft maintenance would be conducted in	Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.

Statute	Federal Consistency	Scope
	coordination with Eglin's Compliance Office (96 CEG/CEIEC) and in accordance with all applicable environmental compliance regulations and Eglin AFB environmental management plans. Therefore, the Proposed Action would be consistent with the state's statutes and regulations regarding the transfer, storage, or transportation of pollutants.	
Chapter 377 *Energy Resources*	The Proposed Action would not affect oil and gas resources of the state.	Addresses regulation, planning, and development of oil and gas resources of the state.
Chapter 379 *Fish and Wildlife Conservation*	Potential impacts on fish and wildlife, including sensitive species, are analyzed in Section 3.7.2 of the REA. Based on the analysis conducted, the Proposed Action would not adversely impact fish and wildlife, including sensitive species. Therefore, the Proposed Action would be consistent with the state's policies concerning the protection of fish and wildlife resources.	Addresses the management and protection of the state's wide diversity of fish and wildlife resources.
Chapter 380 *Land and Water Management*	The Proposed Action would not affect state management of land or water.	Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.
Chapter 381 *Public Health, General Provisions*	The Proposed Action would not affect the state's policy concerning the public health system.	Establishes public policy concerning the state's public health system.
Chapter 388 *Mosquito Control*	The Proposed Action would not affect mosquito control efforts.	Addresses mosquito control effort in the state.
Chapter 403 *Environmental Control*	Potential impacts on air quality and water quality are analyzed in Section 3.2.2 and Section 3.6.2, respectively, of the REA. Based on the analysis conducted, the Proposed Action would not result in degradation of air quality or water quality. The Proposed Action does not address aircraft maintenance; however, the handling, storage, and disposal of hazardous materials/wastes associated with aircraft maintenance would be conducted in coordination with Eglin's Compliance Office (96 CEG/CEIEC) and in accordance with all applicable environmental compliance regulations and Eglin AFB environmental management plans. Therefore, the Proposed Action would be consistent with the state's statutes and regulations regarding water quality, air quality, pollution control, solid waste management, or other environmental control efforts.	Establishes public policy concerning environmental control in the state.
Chapter 582 *Soil and Water Conservation*	Potential impacts on soils are analyzed in Section 3.5.2 of the REA. Based on the analysis conducted, the Proposed Action would not adversely impact soils or increase soil erosion potential. Therefore, the Proposed Action would be consistent with the state's statutes and regulations regarding soil and water conservation efforts.	Provides for the control and prevention of soil erosion.

Appendix B
IICEP Correspondence

CH2M HILL
4350 W. Cypress Street
Suite 600
Tampa, FL 33607
Tel 813.874.0777
Fax 813.874.3056

August 22, 2014

Lauren Milligan
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Mail Station 47
Tallahassee, Florida 32399-3000

Subject: Draft Environmental Assessment, Overland Air Operations, Eglin AFB, Florida

Dear Ms. Milligan:

The U.S. Air Force proposes to authorize and implement the projected level of activity for Eglin overland air operations. The draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) prepared for the Proposed Action are attached for your review and comment. The U.S. Air Force's Consistency Determination under CZMA Section 307 and 15 C.F.R. Part 930 subpart C, for the Preferred Alternative (Alternative 2) is provided as Appendix A of the draft EA.

Your comments are requested within 60 days of receipt of this letter. Please submit comments to Mike Spaits, 96th Test Wing Environmental Public Affairs, 101 W. D Ave., Rm. 238, Eglin AFB, Fla., 32542, or email: michael.spaits@us.af.mil. Tel: (850) 882-2836.

Sincerely,

CH2M HILL

Tunch Orsoy
Project Manager

Attachment:
Draft EA and FONSI (1 CDs)

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

MARJORY STONEMAN DOUGLAS BUILDING
3900 COMMONWEALTH BOULEVARD
TALLAHASSEE, FLORIDA 32399-3000

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

September 2, 2014

Mr. Tunch Orsoy, Project Manager
CH2M HILL
4350 W. Cypress Street, Suite 600
Tampa, FL 33607

RE: Department of the Air Force – Draft Range Environmental Assessment, Overland Air Operations, Eglin Air Force Base – Santa Rosa, Okaloosa and Walton Counties, Florida.
SAI # FL201408256998C

Dear Mr. Orsoy:

Florida State Clearinghouse staff has reviewed the subject Draft Range Environmental Assessment (REA) under the following authorities: Presidential Executive Order 12372; § 403.061(42), *Florida Statutes*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

Based on the information contained in the Draft REA and negligible project impacts, the state has determined that the proposed federal activities are consistent with the Florida Coastal Management Program.

Thank you for the opportunity to review the draft document. Should you have any questions regarding this letter, please don't hesitate to contact me at (850) 245-2170 or Lauren.Milligan@dep.state.fl.us.

Yours sincerely,

Lauren P. Milligan

Lauren P. Milligan, Coordinator
Florida State Clearinghouse
Office of Intergovernmental Programs

Appendix C
Public Involvement

NORTHWEST FLORIDA
Daily
News

210613

Published Daily
Fort Walton Beach, Florida
Distributed in Okaloosa, Santa Rosa & Walton Counties

State of Florida, County of Okaloosa

Before the undersigned authorized personally appeared Rebecca Barney

who on oath says that (s)he is Legal Advertising Clerk

of the Northwest Florida Daily News,

a daily newspaper published at Fort Walton Beach, in Okaloosa County, Florida;

that the attached copy of advertisement, being a 210613-Legal,

in the matter of Public Notification-
BCS 13-320

in the Okaloosa County Court, was published in said newspaper in the issues of

8-21-14

Affiant further says that the said Northwest Florida Daily News is a newspaper published at Fort Walton Beach, in said Okaloosa County, Florida, and that the said newspaper has heretofore been continuously published in said Okaloosa County, Florida, each day, and has been entered as second class mail matter at the post office in Fort Walton Beach, in said Okaloosa County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that (s)he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

STATE OF FLORIDA
COUNTY OF OKALOOSA

Subscribed and sworn to (or affirmed) before me this 8-21-14 (Date)

by [signature], who is/are personally known to me or

has/have produced _____ (Type of identification) as identification.

Eleanor Hypes (Signature) Notary Public, Commission No. _____

_____ (Name of Notary typed, printed or stamped)

ELEANOR HYPES
Notary Public - State of Florida
My Comm. Expires Jul 30, 2015
Commission # EE 116319
Bonded Through National Notary Assn.

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GOVERNMENT MEETINGS

These governmental boards and agencies will meet today:

- Okaloosa-Walton Transportation Planning Organization, 3 p.m., Fort Walton Beach Municipal Auditorium, 107 Miracle Strip Parkway S.W.
- Okaloosa County Code Enforcement Board, 4 p.m., Water and Sewer Administration Building, 1804 Lewis Turner Blvd., Fort Walton Beach.

- **Genealogy Research:** Library volunteers are available at the Navarre Library, 8484 James M. Harvell Road, 9 a.m.-noon, to give general genealogy research guidance. To ensure a volunteer is available, call before you visit. 981-7323.

PUBLIC NOTIFICATION

In compliance with the National Environmental Policy Act, Eglin Air Force Base announces the availability of a Draft Environmental Assessment and Finding of No Significant Impact for RCS 13-320, Overland Air Operations for public review and comment.

The Proposed Action of RCS 13-320, Overland Air Operations would be to authorize and implement an increased level of activity for Eglin overland air operations to update/validate the current approval process for routine military users of Eglin overland airspace and to provide a quick response to priority needs during war or other significant military involvement.

Your comments on this Draft EA are requested. Letters and other written or oral comments provided will be addressed and may be published in the Final EA. Any personal information provided, including private addresses, will be used only to identify your desire to make a statement during the public comment period or to compile a mailing list to fulfill requests for copies of the Final EA or associated documents. However, only the names and respective comments of respondent individuals will be disclosed; personal home addresses and phone numbers will not be published in the Final EA.

The Draft Environmental Assessment and Draft Finding of No Significant Impact are available on the web at www.eglin.af.mil/environmentalassessments.asp from August 22 until September 20, 2014. All area libraries have computers available to the general public and librarians who can provide assistance linking to the document. Hard copies of the document may be available for a limited time by contacting: Mike Spaits, 96th Test Wing Environmental Public Affairs, 101 W. D Ave., Rm. 238, Eglin AFB, Fla., 32542, or email: michael.spaits@us.af.mil. Tel: (850) 882-2836.

The documents will be available on the web from August 22 until September 20, 2014. For more information or to comment on the Proposed Action, contact Mike Spaits, at the contact listed above. Comments must be received by September 24, 2014.

2105613

PUBLIC NOTIFICATION

In compliance with the National Environmental Policy Act, Eglin Air Force Base announces the availability of a Draft Environmental Assessment and Finding of No Significant Impact for RCS 13-052, Test Area C-52 Complex for public review and comment.

NAVARRE PRESS

NEWS & INFORMATION
Published Weekly
7502 Harvest Village Court
Navarre, Florida 32566
Santa Rosa County
850-939-8040

STATE OF FLORIDA
COUNTY OF SANTA ROSA

Before the undersigned authority personally appeared
Gail Acosta

Who on oath says that she is Advertising Manager of the Navarre press, a weekly newspaper published at Navarre in Santa Rosa County, Florida; that the attached copy of advertisement, being a
Public Notice # 1933
Overland Air NOA

In the _____ Court
Was published in said newspaper in the issues of
August 21, 2014

Affiant further says that the said Navarre Press is a newspaper published at Navarre in said Santa Rosa County, Florida, and that the said newspaper has heretofore been continuously published in said Santa Rosa County, Florida, each week and has been entered as second class mail matter at the post office in Navarre, in Santa Rosa County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in said newspaper.

I(SWEAR) (AFFIRM) that the above information is true and correct to the best of my knowledge.

Gail Acosta
(Signature of Applicant)

Sworn to and subscribed before me this 21st Day of August A.D. 2014.

Laura M. Baldridge
(Signature of Notary Public – State of Florida)

LAURA M. BALDRIDGE
MY COMMISSION #FF118815
EXPIRES: MAY 04, 2018
Bonded through 1st State Insurance

Personally know X or produced identification _____.

Type of Identification produced: _____

PUBLIC NOTIFICATION

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The documents will be available on the web from August 22 until September 20, 2014. For more information or to comment on the Proposed Action, contact Mike Spaits, at the contact listed above. Comments must be received by September 24, 2014.

Public Notice #1933

Valparaiso voters consider amendments to charter

By Marcia Anne Sanders
Beacon Staff Writer

Voters in Valparaiso will be casting their ballots on whether to make changes to their city charter at the primary election on Aug. 26. Many changes are being considered and today The Bay Beacon will be publishing editorials from both sides of the issue by Mayor Bruce Arnold and Commissioner Joe Morgan.

The gist of charter changes is that there will be a stronger city administrator and city commissioners will lose power. Some of the changes proposed include the following:

-The minimum age for commissioners would be reduced from 25 to 21.

-The city would have three main departments: the Department of Financial Management, Department of Public Services and Department of Public Safety. Departments would be assigned to commissioners but they would only have oversight responsibility and they may no longer suspend employees.

-The City Clerk would be head of the Department of Financial Management and could employ and dismiss any employee of his/her office.

-The City Administrator would be the administrative head of the Department of Public Services and could employ and dismiss any employee of his/her department.

-The Police Chief would be over the Department of Public Safety which would include the supervision, staffing and budgetary responsibilities of the fire department as well as police.

-Commissioners would appoint a person to replace the Mayor or other commissioners if a seat becomes vacant until the next regular election rather than calling a special election.

-The offices of City Tax Assessor, Tax Collector, Treasurer and Municipal Judge would be deleted.

Additionally, several articles would be amended including articles VII on taxation and revenue, VIII on purchasing and running public utilities, XI on general laws of Florida and XIII on miscellaneous items.

Other articles would be deleted altogether including Articles IX on making improvements, X on annexation of territory and XII on elections.

Citizens may view the proposed changes in the document at the Announcements Quick Link on the City of Valparaiso website, which is valp.org.

PRO

Mayor
Bruce Arnold

Having over fifty years of experience in city government, I believe there is one basic question citizens need to ask themselves in deciding their vote on the proposed change from a commission system to a modified commission system.

How do we perceive the nature and purpose of city government? Is the overriding consideration: (1) the direct democratic election by the citizens of the city's commissioners or (2) the appointment of a professional city administrator by an elected commission to create an efficient operation of the city's government services?

Problematic is Option 1; the current system fails to meet the most basic concerns of citizens by not meeting the democratic and participatory civic values of an executive directly responsible to the people.

In our present form of government, all commissioners are legislators and equally executors. There is no separation of powers and no distinction between the legislative and administrative functions of local government. Administrative decisions become politicized and only the needs of certain groups within the community are met.

Option 2, the proposed change, stresses the value of efficiency and organizational operation as found in corporate management. This form of government serves as a platform for acknowledgement that basic public services are complex, professional processes and should not be vulnerable to political influences.

Government should never be compromised because of those traits that make a person electable but in no way guarantee that he or she will have the management skills to run a highly intricate, administrative apparatus. A bad manager can be replaced at the will of the commission. A bad commissioner gets to serve a full four years before facing the voters.

Those in favor of the modified commission form of government, as I am, understand that the neutrality and objectivity indicative of the city administrator's position eliminates the bottleneck of conflicting ideologies in getting things done.

The modified commission form of government from its beginning has been promoted as a model which separates policy and politics from administration. The administrator's job is to administer, not to govern; nor is it to seek to impress his or her values on the commission. Like a corporation, the commission, as the board of directors, directs the manager to implement commission policy, efficiently dispatching administrative duties and rendering services to the public.

There is a reason nearly 100 percent of the cities in Florida have moved away from the pure commission form of government. And no one disputes the fact that there will be a shift of power and authority, duties and obligations, under the proposed charter amendments. The city will restore the power of checks and balances, infuse in the citizens a degree of trust by limiting the power of individual commissioners and ensure accountability and transparency in achieving municipal goals. Please join me in voting yes for change.

By Mayor Bruce Arnold

CON

Commissioner
Joe Morgan

The proposed amended charter for the City of Valparaiso is not in the best interest of the City, the citizens its serves, or the staff that serves it.

The change to essentially a city manager form of government would potentially be more expensive, and lessen the strengths of the current 'commission' form of government and its benefits, which are founded in grass-roots democracy, true self-governance and home rule powers that results in a responsive local governing body.

It has been stated that our system of government is 'antiquated.' While it is true that fewer cities use a 'commission form' of government, it is patently false that we have not updated how we operate within our current charter to keep up with the times. We have changed.

Currently, each Department has a paid 'director' that has been given day to day authority to execute the duties of the departments as they currently operate. In some cases, directors have assistant directors - both paid and volunteer - that further carry-out said executive duties.

Valparaiso has hired an 'at-will' position - a full time city administrator that by appointment and designation of the commission can and does carry out further executive duties as prescribed.

When the commission examined the four separate forms of government, no specific advantages could be found, or more specifically, no perceived faults were discussed that could not be addressed within our current charter that would be 'solved' by a simple change in the 'form' of government.

The real effectiveness of government is not its form – but who you elect and hire to execute its functions. I have worked with many local governments the world over, from South America to Europe, to the Middle East where I worked for the Department of State as a governance and financial advisor, and I feel the current 'commission form' of government especially suits Valparaiso.

Yes, it is unique, but it works. It provides for a Responsive, Responsible Government that engenders: Citizen Involvement and Volunteerism; A 'small town', friendly feel – the citizens know they have real, elected, 'belly-buttons' to push for both general and specific issues; and a Low Cost managerial level/layer (elected volunteer citizens) that otherwise would have to be paid for.

Furthermore, without a clear mandate, or stated issue to fix, and with only negative citizen input during its development, this change transfers responsibilities to the Executive, and in-fact establishes more overhead and layers, while reducing the current Directors' ability to respond effectively.

Additionally, it reduces citizen input and elected officials oversight, and unnecessarily forces wholesale changes in the way we operate – including some that by referendum have not been approved in the past (residency requirements for example).

The current charter is flexible and works – Vote NO to change.

By Commissioner Joe Morgan

CITY

From page A-1

and there were close votes." At this time, Browning was not on the commission because Diane Kelley was commissioner.

The original vote to put the changes to the city charter on the ballot was a 3-2 vote with Hamilton, Mayor Arnold and former commissioner Kelley voting for it and Morgan and Strong voting against it.

Arnold said that if commissioners don't continue with items voted on by previous commissions, there would be gridlock and nothing would get done.

After the meeting, Strong said that his personal feeling was that more work needed to be done because the referendum change needed to be quantified. "You need to say why, what you got is not working, what you're going to change and what it's going to cost."

The changes to the charter would give additional duties to an administrative manager at the city and what that manager would be paid has not been decided.

After the meeting, Browning said, "I don't think the city is of the size or of the ability to pay for that position. The city doesn't have need for it."

After the meeting, Morgan said the referendum should be decided by the voters, but that the way it's being portrayed to them is inaccurate. He said the roll call vote was to let people know where the commission stands now.

In other news at the meeting, commissioners heard from James Butler, General Manager of the Valparaiso Broadband Communication System, regarding changes to cable programming and Internet speed. Butler warned the commission that prices will be going up this year and for the next seven years for cable television because of price increases being set by the big ten networks.

Butler said the Valparaiso

Please see MEETING, page A-8

Valparaiso commissioners and staff at the beginning of the Aug. 11 meeting of the city council.

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The documents will be available on the web from August 22 until September 20, 2014. For more information or to comment on the Proposed Action, contact Mike Spaits, at the contact listed above. Comments must be received by September 24, 2014.

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(850) 678-2586

COMMENTS TO RANGE ENVIRONMENTAL ASSESSMENT FOR OVERLAND AIR OPERATIONS FOR EGLIN AFB FLORIDA

1. The general relationship between the 2014 Final JSF SEIS and this document should be clarified in order for the public to understand the scope of this document. Many of the appendices in this document are drawn from the 2014 Final JSF SEIS and used as justification, the overlap and difference between the two documents should be explained in this document. The relationship between the 2014 JSF SEIS and this document should be explained in clear language given the level of public involvement in the 2014 JSF SEIS.

2. The period of time that Eglin can operate at the higher level of activity incorporated in Alternative 2 without additional analysis should be specified in order for the public to understand the potential impacts of Alternative 2.

3. Section 1.3 does not discuss Eglin missions that may use adjacent airspace. Specifically, how do Eglin mission aircraft transition to the Tyndal MOA. Section 1.3 should address this transit activity.

4. The components of flares dropped in areas other than the specific test areas over land should be addressed in the analysis of Alternative 1 and 2.

5. In Section 2.2.2 no justification for the multipliers is developed. (example AFSOC x 2) I

6. The noise effects of this action on the local real estate markets are not developed. A noise disclaimer has been required on all real estate transactions by Niceville City ordnance for all commercial and residential properties inside the City limits west of Palm Blvd for the past year. The effects on property values of this disclaimer are not analyzed in this document. This analysis would provide input into the economic effect of Alternative 2. The number of homes and their level of noise attenuation under the proposed flight routes is not developed in this document therefore no real estimate of the number of people highly irritated by low level flights cannot be estimated. The formula used to determine the number of people irritated by noise is not explained or justified for use in the surrounding community.

7. No analysis is performed to determine the impact of the noise levels in Alternative 1 and 2 on outdoor recreation activity. It only addresses noise levels inside homes.

8. No analysis of county property records has been performed for the residential areas under the areas covered in this document to determine the average age of the structures and consequent level of noise attenuation. Any homes with less than the preferred level of sound attenuation are not addressed nor does this document specify any methods or programs to provide these property owners with relief or compensation. This document is deficient in that no real analysis was presentented of the number of homes under each Special Use Airspace to determine the number of homes which are more susceptible to annoying noise. The number of people who will be highly annoyed is estimated by a formula which does not take into account the age of the homes.

9. According to Table 3-4, fourteen percent of the population under R-2914 B will be highly annoyed. No estimate is given of the number of personnel who would be only "annoyed." This document should add the two populations together and analyze where the threshold for a "Finding of No Significant Impact" determination lies. If only five percent of the population were "annoyed" the total would be 20 percent of the population and above the level generally considered to meet threshold for further analysis. This level of annoyance does not justify a finding of no significant impact.

10. This document does not justify why the population under R-2914 B will receive a statistically significant greater noise impact compared to other Special Use Airspaces. The number of the population that will be highly annoyed is more than twice as high as the R-2915A and almost four times as high as R2919A. This document is deficient in that it does not justify why certain areas have exposure out of proportion to other affected areas.

11. In 3.2.2 concerning fuel releases: what is the ultimate environmental fate of the MTBF in the fuel? Reference "AFCEA Final Methyl tert-Butyl Ether (MTBE), Its Movement and Fate in the Environment and Potential for Natural Attenuation, Slide Presentation."

12. On Page 3-11 the document states; "Several measures have been incorporated into the 2014 Final JSF SEIS to reduce the noise levels generated by the JSF and overall near-term Eglin air operations." In order for the public to evaluate the current operations the "noise abatement procedures" currently in use should be specified in this document. This document is deficient in that no discussion of the "adaptive management techniques" to limit noise currently in use is included nor are any projected changes. This document is deficient in that it does not describe the conditions under which the adaptive management approach described in this document would be implemented. Since this is presented as a method to reduce and mitigate noise input to the surrounding community this document should specify the "trigger" that will cause these adaptive management techniques to be developed and adopted.

13. This document is deficient in that it has omitted a Table for Alternative 2 similar to Table 3-4 for Alternative 1 to document the percentage of the public that will be highly annoyed under Alternative 2.

14. On Page 3-11 the document states: "Eglin overland air operations would be implemented at a mission surge level only during wartime or other significant military involvement. During all other times, Eglin overland air operations are anticipated to be conducted at the baseline level analyzed under Alternative 1. Based on noise levels expected to result, noise impacts on the public under Alternative 2 are not expected to be significantly adverse." There is no definition or quantitative analysis of "significantly adverse." This document is deficient in that it does not give a statistical definition of "significantly" given that the projected sorties flown under Alternative 2 would be approximately twice that of Alternative 1.

15. In 3.2.2 on page 3-10: There is no scientific validity to the statement "in light of this limitation, it can be reasonably expected that the noise levels beneath R2914B R-2115C, R2919B Eglin MOA B and the Rose Hill MOA would remain well below 65 dB

Ldnmr." due to the fact that in the previous sentence the noise levels under Alternative 2 cannot be accurately accounted for without modeling. This document is deficient in that the logic of these two statements taken together does not make sense.

16. This document is deficient due to the lack of description of the increased safety measures that will be adopted when the activity levels in Alternative 2 are in place as specified on page 3-13 in Section 3.4.2. Given that these measures are used as justification for a negligible increase in health and safety.

17. Make training available on the Eglin website on the topic of making substantive comments to documents of this type.

18. I request a paper copy of the final document.

H. H. Caldwell
1743 Eighteenth St
Niceville, Florida 32578

Range Environmental Assessment
Overland Air Operations
Eglin AFB, Florida

U.S. Air Force Responses to Comments on the Draft EA Received During Public Review

The U.S. Air Force's responses to comments on the draft Range Environmental Assessment (REA) for Eglin overland air operations, dated July 2014, received during the public review period are provided below.

Mr. H. H. Caldwell

Comments received: September 24, 2014 (Comments included in Appendix C of the final REA).

1) This document addresses air operations (sorties and propellants) in Eglin overland airspace. It is one of several Range Environmental Assessments (REAs) prepared by Eglin on a regular basis for range operations (land, sea, or air) (please see Sections 1.1 and 1.2 of the REA). The 2014 Final JSF SEIS addressed the beddown and operation of the 59 F-35 aircraft (JSF aircraft) which were authorized for Eglin AFB. That document focused on the F-35 aircraft; however, it included all other aircraft in Eglin's inventory in the noise analysis conducted for special use airspace (overland airspace and other airspaces). The Eglin Overland Air Operations REA used the noise analysis (and associated sorties) from the 2014 Final JSF SEIS only for overland airspace. This was the primary similarity between the two documents. The only appendix in the REA that was obtained from the JSF SEIS is Appendix D; however, it contains only the sorties for overland airspace (the JSF SEIS includes sorties and noise analyses for other airspaces used by Eglin).
2) Mission-surge Eglin overland air operations would be conducted only during wartime or other significant military involvement. Based on the analyses conducted in the REA, mission-surge operations would not have significantly adverse impacts on any resource. The Air Force acknowledges that the duration of mission-surge activity would influence the magnitude of impact on certain resources. As discussed in the REA, measures to minimize impacts during a mission surge would be implemented. Such measures, as well as the inherent variability in the level and duration of mission-surge activity, would dictate the need for, and timing of any additional analyses to be conducted by the Air Force.
3) Airspace outside Eglin overland airspace is beyond the scope of this document. Please refer to Section 1.6 for the scope of the REA and Proposed Action.
4) This REA addresses flares dropped only from Eglin overland airspaces. The types and quantities of flares, and the overland airspaces from which they are dropped are discussed in Section 3.2.2 of the REA. Flares that are dropped in airspaces over the waters of the Eglin Gulf Test and Training Range (EGTTR) are addressed in the REA prepared for the EGTTR.
5) The multipliers were determined by 96 TW personnel to be the best estimates of the expected sortie increases for each unit. These estimates were based on the professional judgment of 96 TW personnel who manage air operations at Eglin AFB, and they more accurately reflect expected mission surge activity than a single factor or percentage.

6) The potential effects of Eglin's air operations on property values (in all airspaces including overland airspace) are analyzed in the 2014 Final JSF SEIS. In addition to being duplicative, such an economic analysis is beyond the scope of this EA, which is a lower level NEPA analysis than an EIS. Due to the inherent variability in the duration of any mission-surge activity that may occur, it is not possible to accurately estimate the potential effects of mission-surge activity on property values. Mission-surge air operations would be conducted only during critical national security conditions; therefore, any associated effects would be temporary and not likely to have any effect on property values.

7) The REA presents information from the noise analysis conducted in the 2014 Final JSF SEIS for overland airspaces. The level of detail is intentionally kept to estimated noise levels and their potential impact on human populations in terms of how the noise levels compare to standards used for land-use compatibility. The scope of the information presented is commensurate with the level of NEPA analysis that is appropriate for an EA.

8) An analysis of the noise attenuation potential of homes under each special use airspace based on their age or other structural factors is beyond the scope of this EA.

9) Table 3-4 indicates that 14 percent of the population under R-2915B would be highly annoyed. The Air Force estimates the percentages of populations expected to be highly annoyed based on a noise study that was conducted as part of a long-term Air Force research program on the effects of subsonic aircraft noise on humans (Finegold et al., 1994). This study developed a noise-annoyance relationship metric for "highly annoyed" only. Levels of annoyance are dependent on many factors and vary based on the individual. The Air Force acknowledges that there will be an additional percentage of the population that may experience annoyance at a lower level than "highly annoyed" during overflights. The threshold for significance with respect to a Finding of No Significant Impact takes into consideration annoyance as well as potential hearing loss. Based on the noise analysis conducted in the Final 2014 JSF SEIS, the noise levels expected to be experienced by populations beneath Eglin overland air space would be well below the threshold for significance based on these factors.

10) The estimated noise level beneath each special use airspace is influenced by the floor elevation of the specific airspace, the number of aircraft sorties flown in the airspace, and the type of aircraft flown in the airspace. All of these data were quantitatively factored in the noise modeling conducted for the 2014 Final JSF SEIS to estimate the noise levels that would be experienced beneath each airspace. The airspaces that have higher noise levels have lower floor elevations, higher numbers of sorties, and aircraft types that generate higher noise levels. Further information on the noise modeling conducted can be found in the 2014 Final JSF SEIS.

11) The 1999 study that is referenced addresses the environmental transport and fate of MTBE. The REA has determined that fuel releases associated with Eglin overland air operations would have a negligible impact on air, soil, or water quality. In the event that a large quantity of fuel is released during an in-flight fuel jettisoning event, the Air Force would use the FJSIM model to determine if a spill response is required. Fuel constituents, including MTBE, would be monitored by the Air Force as part of any spill response.

12) The referenced measures are discussed in the 2014 Final JSF SEIS – the resulting lower number of sorties projected to be flown in the near term is the baseline under Alternative 1 in the REA. The adaptive management approach outlined in the 2014 Final JSF SEIS would be triggered by a mission surge in Eglin overland air operations, i.e., mission surge activity itself would be the "trigger" (please see pages 3-11, 3-30, and 4-1 of the REA).

13) The percentages of the population that would be highly annoyed cannot be accurately estimated in the absence of noise modeling, which is beyond the scope of this EA. However, the EA does discuss the level of increase in noise levels expected beneath each airspace and acknowledges that the increase would result in a greater level of public annoyance. The threshold for significance with respect to a Finding of No Significant Impact takes into consideration annoyance as well as potential hearing loss. Based on the noise analysis conducted, the noise levels expected to be experienced by populations beneath Eglin overland air space under Alternative 2 would be well below the threshold for significance based on these factors. Mission-surge air operations would be conducted only during critical national security conditions; therefore, any associated increase in public annoyance would be temporary.

14) The EA discusses the level of increase in noise levels expected beneath each airspace under mission-surge activity. The threshold for significance takes into consideration annoyance as well as potential hearing loss. The expected mission surge noise levels beneath all overland airspaces would not result in hearing loss and the resulting noise levels would not increase public annoyance significantly over baseline noise levels. The inherent variability in the duration of any mission-surge activity that may occur makes it difficult to assess the overall magnitude of increased public annoyance. Mission-surge air operations would be conducted only during critical national security conditions; therefore, any associated increase in public annoyance would be temporary.

15) The reasonable expectation for the noise levels beneath R-2914B, R-2915C, R-2919B, Eglin MOA B, and the Rose Hill MOA to remain well below 65 dB L_{dnmr} under Alternative 2 is based on their baseline noise levels, which are very low.

16) The level and type of safety measures that would be implemented in response to mission-surge air operations would be determined by Air Force personnel responsible for air operation safety, before and during the mission surge activity. It is beyond the scope of this EA to identify the specific safety measures that would be implemented; however, such measures would be evaluated and identified in the appropriate air operation planning and implementation documents in the event of a mission surge.

17) A link has been added to Eglin's website that directs interested readers to the Council on Environmental Quality's "Citizen's Guide to the NEPA."

18) A paper copy of the final document will be mailed to you at the following address:
H.H. Caldwell
1743 Eighteenth St
Niceville, FL 32578

Appendix D
Detailed Aircraft Sorties for Eglin Overland Airspace

APPENDIX D
Detailed Aircraft Sorties for Eglin Overland Airspace
Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
R-2914A	AFSOC	A10	A-10A	76	152
		C130	C-130H&N&P	394	788
		CV-22	CV-22	202	404
		F16	F-16(G100)	2	4
		F18	F-18E/F	74	148
		707	KC-135R	30	60
		B52	B-52H	16	32
		C17	C-17	30	60
		KC135	KC-135R	2	4
		CESSNA	C-21A	16	32
		DHC6	HS748	128	256
		PC12	JPATS	164	328
		RC26	HS748	4	8
		U28A	JPATS	178	356
		AH1	AH-1G	30	60
		CH46	CH-46E	30	60
		CH47	CH-47D	4	8
		H6	Other Helo (UH-1N)	30	60
		HH60	UH60A	68	136
		MH53	CH-53E	8	16
		MH60	UH60A	10	20
		MI8	Other Helo (UH-1N)	146	292
		UH1	UH-1N	154	308
		UH60	UH60A	6	12
		Shadow UAV[d]	Not modeled	300	600
	Other	A10	A-10A	1	2
		C130	C-130H&N&P	2	4
		F15	F-15A	29	58
		F16	F-16(G100)	13	26
		KC135	KC-135R	6	12
		C17	C-17	1	2
		BAC111	T-43A	5	10
		CV131B	C-131B	3	6
		CV580	C-131B	9	18
		C20	C-21A	2	4
		B206	Other Helo (UH-1N)	19	38
		ABC1	Not Modeled	4	8
	33 FW	F35A	F-35A	232	278
		F35B	F-35A	301	361
		F35C	F-35A	136	163
	96 TW	A10	A-10A	48	58
		C130	C-130H&N&P	21	25
		CV-22	CV-22	4	5
		F15	F-15A	63	76
		F16	F-16(G100)	125	150
		F18	F-18E/F	28	34
		AV8	AV-8B	2	2
		CF18	F-18E/F	34	41
		SABRE	T-39A	8	10
		T38	T-38A	2	2
		T39	T-39A	3	4
		C17	C-17	6	7
		KC135	KC-135R	15	18
		P3	P-3C	4	5
		AN2	JPATS	1	1
		BE18	HS748	5	6
		CESSNA	C-21A	5	6
		GA8	Not Modeled	4	5
		KING AIR	HS748	21	25

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Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
R-2914A	96 TW	BAC111	T-43A	5	6
		C27	HS748	1	1
		CV580	C-131B	4	5
		DHC8	HS748	3	4
		AH64	AH64	58	70
		CH47	CH-47D	11	13
		EH60	UH60A	4	5
		H6	Other Helo (UH-1N)	2	2
		HH60	UH60A	1	1
		OH58	Other Helo (UH-1N)	41	49
		UH1	UH-1N	29	35
		UH1N	UH-1N	14	17
		UH60	UH60A	1	1
		ABC1	Not Modeled	6	7
	53 WG	F15	F-15A	116	174
		F16	F-16(G100)	177	266
		F22	F-18E/F	5	8
		B1	B-1B	3	5
		KC135	KC-135R	21	32
		E9RSTM	HS748	2	3
Total for R-2914A				**3468**	**5776**
R-2914B	AFSOC	A10	A-10A	60	120
		C130	C-130H&N&P	96	192
		CV-22	CV-22	30	60
		F16	F-16(G100)	2	4
		F18	F-18E/F	60	120
		707	KC-135R	30	60
		B52	B-52H	16	32
		C17	C-17	30	60
		CESSNA	C-21A	16	32
		PC12	JPATS	2	4
		U28A	JPATS	32	64
		AH1	AH-1G	30	60
		CH46	CH-46E	30	60
		H6	Other Helo (UH-1N)	30	60
		HH60	UH60A	64	128
		MI8	Other Helo (UH-1N)	16	32
		UH60	UH60A	2	4
	Other	F15	F-15A	21	42
		F16	F-16(G100)	7	14
		KC135	KC-135R	6	12
		BAC111	T-43A	5	10
		ABC1	Not Modeled	4	8
	33 FW	F35A	F-35A	232	278
		F35B	F-35A	301	361
		F35C	F-35A	136	163
	96 TW	F15	F-15A	1	1
		F16	F-16(G100)	3	4
		F18	F-18E/F	32	38
		SABRE	T-39A	8	10
		E8C	KC-135R	1	1
		KC135	KC-135R	8	10
		P3	P-3C	4	5
		BE18	HS748	3	4
		GA8	Not Modeled	2	2
		KING AIR	HS748	9	11
		BAC111	T-43A	5	6
		CV580	C-131B	4	5

APPENDIX D
Detailed Aircraft Sorties for Eglin Overland Airspace
Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
R-2914B	96 TW	EH60	UH60A	4	5
		UH1	UH-1N	4	5
	53 WG	F15	F-15A	62	93
		F16	F-16(G100)	131	197
		F22	F-18E/F	5	8
		KC135	KC-135R	18	27
		E9RSTM	HS748	1	2
Total for R-2914B				**1563**	**2412**
R-2915A	AFSOC	A10	A-10A	190	380
		C130	C-130H&N&P	1,702	3404
		CV-22	CV-22	934	1868
		F-15	F-15A	2	4
		F16	F-16(G100)	10	20
		F18	F-18E/F	106	212
		707	KC-135R	30	60
		B52	B-52H	16	32
		C17	C-17	32	64
		KC135	KC-135R	2	4
		BE100	HS748	6	12
		C12	HS748	18	36
		C172	Not Modeled	8	16
		CESSNA	C-21A	20	40
		DHC6	HS748	224	448
		PC12	JPATS	650	1300
		RC26	HS748	12	24
		U28A	JPATS	696	1392
		CASA212	HS748	4	8
		AH1	AH-1G	40	80
		BELL412	Other Helo (UH-1N)	2	4
		CH46	CH-46E	30	60
		CH47	CH-47D	14	28
		H6	Other Helo (UH-1N)	34	68
		HH60	UH60A	62	124
		MH47	CH-47D	4	8
		MH53	CH-53E	14	28
		MH60	UH60A	30	60
		MI8	Other Helo (UH-1N)	48	96
		UH1	UH-1N	334	668
		UH1N	UH-1N	244	488
		UH60	UH60A	10	20
	Other	C130	C-130H&N&P	6	12
		F15	F-15A	59	118
		F16	F-16(G100)	61	122
		KC135	KC-135R	8	16
		C12	HS748	6	12
		BAC111	T-43A	5	10
		UH1N	UH-1N	2	4
		B206	Other Helo (UH-1N)	13	26
		ABC1	Not Modeled	4	8
	33 FW	F35A	F-35A	206	247
		F35B	F-35A	267	320
		F35C	F-35A	120	144
	96 TW	A10	A-10A	12	14
		C130	C-130H&N&P	21	25
		F15	F-15A	31	37
		F16	F-16(G100)	75	90
		F18	F-18E/F	34	41

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Detailed Aircraft Sorties for Eglin Overland Airspace

Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
R-2915A	96 TW	SABRE	T-39A	8	10
		T38	T-38A	1	1
		T39	T-39A	3	4
		B1	B-1B	1	1
		KC135	KC-135R	10	12
		P3	P-3C	2	2
		BE18	HS748	3	4
		C12	HS748	1	1
		CESSNA	C-21A	2	2
		KING AIR	HS748	7	8
		BAC111	T-43A	5	6
		CATB	T-43A	2	2
		CV580	C-131B	4	5
		EH60	UH60A	4	5
		MH47	CH-47D	5	6
		OH58	Other Helo (UH-1N)	6	7
		UH1	UH-1N	8	10
		UH1N	UH-1N	12	14
		E9RS	HS748	1	1
	53 WG	F15	F-15A	107	161
		F16	F-16(G100)	187	281
		B1	B-1B	16	24
		B52	B-52H	4	6
		KC135	KC-135R	29	44
		KING AIR	HS748	9	14
		E9RSTM	HS748	1	2
	6 RTB	C130	C-130H&N&P	78	156
		CH47	CH-47D	4	8
		OH58	Other Helo (UH-1N)	23	46
		UH1	UH-1N	345	690
		UH60	UH60A	216	432
	7 SFG	C130	C-130H&N&P	3	6
		CH47	CH-47D	2	4
		C23	HS748	1	2
		U28A	JPATS	2	4
		CASA212	HS748	1	2
	ALANG	UH60	UH60A	4	8
Total for R-2915A				**7575**	**14293**
R-2915B	AFSOC	A10	A-10A	186	372
		C130	C-130H&N&P	1,026	2052
		CV-22	CV-22	402	804
		F16	F-16(G100)	8	16
		F18	F-18E/F	104	208
		707	KC-135R	30	60
		B52	B-52H	16	32
		C17	C-17	30	60
		KC135	KC-135R	2	4
		CESSNA	C-21A	20	40
		DHC6	HS748	2	4
		PC12	JPATS	452	904
		RC26	HS748	10	20
		U28A	JPATS	498	996
		CASA212	HS748	4	8
		AH1	AH-1G	32	64
		CH46	CH-46E	30	60
		CH47	CH-47D	16	32
		H6	Other Helo (UH-1N)	36	72
		HH60	UH60A	76	152

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Detailed Aircraft Sorties for Eglin Overland Airspace
Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
R-2915B	AFSOC	MH47	CH-47D	6	12
		MH53	CH-53E	12	24
		MH60	UH60A	20	40
		MI8	Other Helo (UH-1N)	22	44
		UH1	UH-1N	28	56
		UH1N	UH-1N	238	476
		UH60	UH60A	24	48
	Other	C130	C-130H&N&P	3	6
		F15	F-15A	54	108
		F16	F-16(G100)	16	32
		KC135	KC-135R	6	12
		BAC111	T-43A	5	10
		B206	Other Helo (UH-1N)	3	6
		UH1N	UH-1N	1	2
		ABC1	Not Modeled	4	8
	33 FW	F35A	F-35A	206	247
		F35B	F-35A	267	320
		F35C	F-35A	120	144
	96 TW	A10	A-10A	6	7
		C130	C-130H&N&P	17	20
		F15	F-15A	25	30
		F16	F-16(G100)	73	88
		F18	F-18E/F	34	41
		SABRE	T-39A	8	10
		B1	B-1B	1	1
		KC135	KC-135R	10	12
		P3	P-3C	2	2
		BE18	HS748	3	4
		C12	HS748	1	1
		CESSNA	C-21A	2	2
		GA8	Not Modeled	1	1
		KING AIR	HS748	8	10
		BAC111	T-43A	5	6
		CATB	T-43A	2	2
		CV580	C-131B	4	5
		EH60	UH60A	4	5
		MH47	CH-47D	2	2
		UH1	UH-1N	10	12
		UH1N	UH-1N	12	14
		E9RS	HS748	1	1
	53 WG	F15	F-15A	102	153
		F16	F-16(G100)	183	275
		B1	B-1B	16	24
		B52	B-52H	4	6
		KC135	KC-135R	29	44
		E94STM	HS748	1	2
	6 RTB	C47	HS748	1	2
		CH47	CH-47D	4	8
		UH1	UH-1N	32	64
		UH60	UH60A	51	102
	7 SFG	C130	C-130H&N&P	1	2
		CH47	CH-47D	4	8
		U28A	JPATS	3	6
Total for R-2915B				**4677**	**8527**
R-2915C	AFSOC	A10	A-10A	186	372
		C130	C-130H&N&P	748	1496
		CV-22	CV-22	376	752
		F18	F-18E/F	104	208

APPENDIX D

Detailed Aircraft Sorties for Eglin Overland Airspace

Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
R-2915C	AFSOC	707	KC-135R	30	60
		B52	B-52H	16	32
		C17	C-17	30	60
		KC135	KC-135R	2	4
		CESSNA	C-21A	20	40
		DHC6	HS748	2	4
		PC12	JPATS	444	888
		RC26	HS748	10	20
		U28A	JPATS	482	964
		CASA212	HS748	4	8
		AH1	AH-1G	30	60
		CH46	CH-46E	30	60
		CH47	CH-47D	10	20
		H6	Other Helo (UH-1N)	36	72
		HH60	UH60A	76	152
		MH47	CH-47D	6	12
		MH60	UH60A	8	16
		MI8	Other Helo (UH-1N)	22	44
		UH1	UH-1N	22	44
		UH1N	UH-1N	2	4
		UH60	UH60A	24	48
	Other	F15	F-15A	54	108
		F16	F-16(G100)	16	32
		KC135	KC-135R	6	12
		BAC111	T-43A	5	10
		ABC1	Not Modeled	4	8
	33 FW	F35A	F-35A	206	247
		F35B	F-35A	267	320
		F35C	F-35A	120	144
	96 TW	A10	A-10A	6	7
		C130	C-130H&N&P	3	4
		CV-22	CV-22	2	2
		F15	F-15A	28	34
		F16	F-16(G100)	74	89
		F18	F-18E/F	34	41
		SABRE	T-39A	8	10
		B1	B-1B	1	1
		E8C	KC-135R	1	1
		KC135	KC-135R	11	13
		P3	P-3C	2	2
		BE18	HS748	4	5
		CESSNA	C-21A	2	2
		GA8	Not Modeled	1	1
		KING AIR	HS748	9	11
		BAC111	T-43A	5	6
		CATB	T-43A	2	2
		CV580	C-131B	4	5
		EH60	UH60A	4	5
		UH1	UH-1N	10	12
		UH1N	UH-1N	2	2
		E9RS	HS748	1	1
	53 WG	F15	F-15A	102	153
		F16	F-16(G100)	183	275
		B1	B-1B	16	24
		B52	B-52H	4	6
		KC135	KC-135R	29	44
		E9RSTM	HS748	1	2

APPENDIX D
Detailed Aircraft Sorties for Eglin Overland Airspace
Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
R-2915C	6 RTB	C47	HS748	1	2
		CH47	CH-47D	1	2
	7 SFG	C130	C-130H&N&P	1	2
		CH47	CH-47D	4	8
		U28A	JPATS	3	6
Total for R-2915C				**3957**	**7101**
R-2919A	AFSOC	A10	A-10A	64	128
		C130	C-130H&N&P	486	972
		CV-22	CV-22	324	648
		F16	F-16(G100)	2	4
		F18	F-18E/F	62	124
		707	KC-135R	30	60
		B52	B-52H	16	32
		C17	C-17	30	60
		KC135	KC-135R	2	4
		C12	HS748	12	24
		CESSNA	C-21A	16	32
		DHC6	HS748	106	212
		PC12	JPATS	480	960
		RC26	HS748	4	8
		U28A	JPATS	508	1016
		CASA212	HS748	2	4
		AH1	AH-1G	30	60
		CH46	CH-46E	30	60
		CH47	CH-47D	4	8
		H6	Other Helo (UH-1N)	30	60
		HH60	UH60A	68	136
		MH53	CH-53E	6	12
		MH60	UH60A	2	4
		MI8	Other Helo (UH-1N)	124	248
		UH1	UH-1N	106	212
		UH60	UH60A	6	12
	Other	C130	C-130H&N&P	1	2
		F15	F-15A	25	50
		F16	F-16(G100)	8	16
		C17	C-17	1	2
		KC135	KC-135R	6	12
		BAC111	T-43A	5	10
		CV580	C-131B	4	8
		C20	C-21A	2	4
		ABC1	Not Modeled	4	8
	33 FW	F35A	F-35A	128	154
		F35B	F-35A	166	199
		F35C	F-35A	75	90
	96 TW	A10	A-10A	15	18
		C130	C-130H&N&P	8	10
		CV-22	CV-22	4	5
		F15	F-15A	37	44
		F16	F-16(G100)	83	100
		F18	F-18E/F	34	41
		SABRE	T-39A	8	10
		T39	T-39A	3	4
		C17	C-17	6	7
		KC135	KC-135R	5	6
		P3	P-3C	4	5
		BE18	HS748	5	6
		CESSNA	C-21A	5	6
		GA8	Not Modeled	4	5

APPENDIX D

Detailed Aircraft Sorties for Eglin Overland Airspace

Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
R-2919A	96 TW	KING AIR	HS748	21	25
		BAC111	T-43A	5	6
		C27	HS748	1	1
		CATB	T-43A	2	2
		CV580	C-131B	4	5
		DHC8	HS748	3	4
		CH47	CH-47D	11	13
		EH60	UH60A	4	5
		UH1	UH-1N	11	13
		UH1N	UH-1N	12	14
	53 WG	F15	F-15A	106	159
		F16	F-16(G100)	168	252
		F22	F-18E/F	5	8
		B1	B-1B	3	5
		KC135	KC-135R	21	32
		E9RSTM	HS748	2	3
Total for R-2919A				**3575**	**6466**
R-2919B	AFSOC	A10	A-10A	64	128
		C130	C-130H&N&P	326	652
		CV-22	CV-22	210	420
		F18	F-18E/F	60	120
		707	KC-135R	30	60
		B52	B-52H	16	32
		C27	HS748	30	60
		C12	HS748	14	28
		CESSNA	C-21A	16	32
		PC12	JPATS	368	736
		U28A	JPATS	398	796
		CASA212	HS748	2	4
		AH1	AH-1G	30	60
		CH46	CH-46E	30	60
		H6	Other Helo (UH-1N)	30	60
		HH60	UH60A	62	124
		MI8	Other Helo (UH-1N)	16	32
		UH60	UH60A	2	4
	Other	F15	F-15A	24	48
		F16	F-16(G100)	7	14
		KC135	KC-135R	6	12
		BAC111	T-43A	5	10
		ABC1	Not Modeled	4	8
	33 FW	F35A	F-35A	128	154
		F35B	F-35A	166	199
		F35C	F-35A	75	90
	96 TW	A10	A-10A	4	5
		F15	F-15A	3	4
		F16	F-16(G100)	30	36
		F18	F-18E/F	34	41
		SABRE	T-39A	8	10
		T39	T-39A	3	4
		E8C	KC-135R	1	1
		KC135	KC-135R	6	7
		P3	P-3C	4	5
		BE18	HS748	4	5
		CESSNA	C-21A	4	5
		GA8	Not Modeled	4	5
		KING AIR	HS748	13	16
		BAC111	T-43A	5	6
		CATB	T-43A	2	2

APPENDIX D
Detailed Aircraft Sorties for Eglin Overland Airspace
Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
R-2919B	96 TW	CV580	C-131B	4	5
		EH60	UH60A	4	5
		UH1	UH-1N	5	6
		UH1N	UH-1N	2	2
	53 WG	F15	F-15A	106	159
		F16	F-16(G100)	164	246
		F22	F-18E/F	5	8
		B1	B-1B	3	5
		KC135	KC-135R	21	32
		E9RSTM	HS748	2	3
Total for R-2919B				**2560**	**4562**
Eglin A MOA – East/West	AFSOC	A10	A-10A	64	128
		C130	C-130H&N&P	518	1036
		CV-22	CV-22	278	556
		F15	F-15A	2	4
		F22	F-18E/F	64	128
		707	KC-135R	30	60
		B52	B-52H	16	32
		C17	C-17	32	64
		KC135	KC-135R	2	4
		CESSNA	C-21A	18	36
		DHC6	HS748	216	432
		PC12	JPATS	258	516
		RC26	HS748	4	8
		U28A	JPATS	274	548
		CASA212	HS748	18	36
		AH1	AH-1G	20	40
		CH46	CH-46E	20	40
		H6	Other Helo (UH-1N)	22	44
		HH60	UH60A	22	44
		MH47	CH-47D	24	48
		MH60	UH60A	24	48
		MI8	Other Helo (UH-1N)	26	52
		UH1	UH-1N	26	52
		UH1N	UH-1N	390	780
	Other	F15	F-15A	1	2
		BAC111	T-43A	5	10
	33 FW	F35A	F-35A	205	246
		F35B	F-35A	267	320
		F35C	F-35A	120	144
	96 TW	SABRE	T-39A	4	5
		BE18	HS748	3	4
		KING AIR	HS748	7	8
		BAC111	T-43A	5	6
		CV580	C-131B	4	5
		EH60	UH60A	4	5
		UH1	UH-1N	4	5
	6 RTB	C130	C-130H&N&P	78	156
		CH47	CH-47D	1	2
		UH1	UH-1N	79	158
		UH60	UH60A	58	116
	7 SFG	C130	C-130H&N&P	3	6
		C23	HS748	1	2
		CASA212	HS748	1	2
		U28A	JPATS	1	2
Total for Eglin A MOA - East/West				**3219**	**5940**

APPENDIX D

Detailed Aircraft Sorties for Eglin Overland Airspace

Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
Eglin B MOA	96 TW	ABC1	Not Modeled	6	7
		BAC111	T-43A	5	6
		BE18	HS748	3	4
		CV580	C-131B	4	5
		EH60	UH60A	4	5
		F16D	F-16(G100)	2	2
		GA8	Not Modeled	2	2
		KING AIR	HS748	9	11
		SABRE	T-39A	4	5
		UH1	UH-1N	4	5
	6 RTB	C130	C-130H&N&P	30	60
		UH1	UH-1N	20	40
		UH60	UH60A	27	54
	AFRL	BAC111	T-43A	5	6
		CV580	C-131B	2	2
	AFSOC	707	KC-135R	30	60
		A10	A-10A	60	120
		AC130	C-130H&N&P	52	104
		AH1	AH-1G	30	60
		B52	B-52H	16	32
		C130	C-130H&N&P	184	368
		C130H	C-130H&N&P	2	4
		C17	C-17	30	60
		CESSNA	C-21A	16	32
		CH46	CH-46E	30	60
		CV22	CV-22	178	356
		DHC6	HS748	128	256
		F18	F-18E/F	60	120
		H6	Other Helo (UH-1N)	30	60
		HH60	UH60A	60	120
		KC135	KC-135R	2	4
		MC130	C-130H&N&P	66	132
		MH53	CH-53E	8	16
		MH60	UH60A	2	4
		MI8	Other Helo (UH-1N)	144	288
		PC12	JPATS	152	304
		U28A	JPATS	178	356
		UH1	UH-1N	124	248
Total for Eglin B MOA				**1709**	**3378**
Eglin C MOA	AFSOC	A10	A-10A	60	120
		C130	C-130H&N&P	300	600
		CV-22	CV-22	176	352
		F18	F-18E/F	60	120
		707	KC-135R	30	60
		B52	B-52H	16	32
		C17	C-17	30	60
		KC135	KC-135R	2	4
		CESSNA	C-21A	16	32
		DHC6	HS748	128	256
		PC12	JPATS	150	300
		U28A	JPATS	176	352
		AH1	AH-1G	30	60
		CH46	CH-46E	30	60
		H6	Other Helo (UH-1N)	30	60
		HH60	UH60A	60	120
		MH53	CH-53E	6	12
		MH60	UH60A	2	4
		MI8	Other Helo (UH-1N)	144	288

APPENDIX D
Detailed Aircraft Sorties for Eglin Overland Airspace
Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
Eglin C MOA	AFSOC	UH1	UH-1N	124	248
	Other	BAC111	T-43A	5	10
		CV580	C-131B	2	4
		B206	Other Helo (UH-1N)	1	2
	33 FW	F35A	F-35A	231	277
		F35B	F-35A	301	361
		F35C	F-35A	135	162
	96 TW	F16	F-16(G100)	2	2
		SABRE	T-39A	4	5
		BE18	HS748	3	4
		GA8	Not Modeled	2	2
		KING AIR	HS748	9	11
		BAC111	T-43A	9	11
		CV580	C-131B	9	11
		EH60	UH60A	8	10
		UH1	UH-1N	8	10
		ABC1	Not Modeled	6	7
	ALANG	UH60	UH60A	2	4
Total for Eglin C MOA				**2307**	**4032**
Eglin D MOA	AFRL	BAC111	T-43A	5	6
	AFSOC	C130	C-130H&N&P	4	8
Total for Eglin D MOA				**9**	**14**
Eglin E MOA	LCMC-EB	ABC1	Not Modeled	4	5
		F15D	F-15A	3	4
		F15E	F-15A	21	25
		F16C	F-16(G100)	19	23
		F16D	F-16(G100)	30	36
		KC135	KC-135R	6	7
		MC130	C-130H&N&P	1	1
	96 TW	A10C	A-10A	6	7
		BAC111	T-43A	7	8
		BE18	HS748	8	10
		CF18	F-18E/F	9	11
		CV580	C-131B	10	12
		E9RS	HS748	11	13
		EH60	UH60A	12	14
		F15C	F-15A	13	16
		F15D	F-15A	14	17
		F15E	F-15A	15	18
		F16	F-16(G100)	16	19
		F16C	F-16(G100)	17	20
		F16D	F-16(G100)	18	22
		GA8	Not Modeled	19	23
		KC135	KC-135R	20	24
		KING AIR	HS748	21	25
		OH58	Other Helo (UH-1N)	22	26
		SABRE	T-39A	23	28
		T39	T-39A	24	29
		UH1	UH-1N	25	30
		UH1N	UH-1N	27	32
		B206	Other Helo (UH-1N)	6	7
	53 WG	B1	B-1B	6	9
		E9RSTM	HS748	2	3
		F15E	F-15A	131	197
		F16	F-16(G100)	90	135
		KC135	KC-135R	28	42
		F15C	F-15A	6	9
		F15D	F-15A	2	3
		F16C	F-16(G100)	58	87

APPENDIX D

Detailed Aircraft Sorties for Eglin Overland Airspace

Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
Eglin E MOA	53 WG	F16D	F-16(G100)	18	27
	6 RTB	C130	C-130H&N&P	38	76
		UH1	UH-1N	43	86
		UH60	UH60A	89	178
	AFRL	BAC111	T-43A	10	12
	AFSOC	A10	A-10A	6	12
		AC130	C-130H&N&P	8	16
		C130	C-130H&N&P	420	840
		CH47	CH-47D	2	4
		CV22	CV-22	292	584
		M18	JPATS	2	4
		PC12	JPATS	428	856
		RC26	HS748	2	4
		UH1	UH-1N	4	8
		U28A	JPATS	426	852
	ASC	F15E	F-15A	1	1
		KC135	KC-135R	1	1
	ESC	C12	HS748	2	2
		MC130	C-130H&N&P	3	4
Total for Eglin E MOA				**2545**	**4564**
Eglin F MOA	96 TW	BAC111	T-43A	5	6
		BE18	HS748	3	4
		CF18	F-18E/F	34	41
		CV580	C-131B	4	5
		E9RS	HS748	1	1
		EH60	UH60A	4	5
		F16	F-16(G100)	16	19
		F16D	F-16(G100)	3	4
		KC135	KC-135R	5	6
		KING AIR	HS748	7	8
		SABRE	T-39A	4	5
		UH1	UH-1N	8	10
	53 WG	B1	B-1B	3	5
		E9RSTM	HS748	1	2
		F15E	F-15A	62	93
		F16	F-16(G100)	45	68
		F16C	F-16(G100)	1	2
		F16D	F-16(G100)	1	2
		KC135	KC-135R	8	12
	6 RTB	CH47	CH-47D	3	6
		UH1	UH-1N	16	32
		UH60	UH60A	8	16
	7 SFG	C130	C-130H&N&P	1	2
		CH47	CH-47D	4	8
		U28A	JPATS	3	6
	AFRL	BAC111	T-43A	5	6
	AFSOC	A10	A-10A	4	8
		A10A	A-10A	14	28
		AC130	C-130H&N&P	10	20
		C130	C-130H&N&P	332	664
		C130H	C-130H&N&P	4	8
		CASA212	HS748	4	8
		CESSNA	C-21A	4	8
		CH47	CH-47D	6	12
		CV22	CV-22	148	296
		DHC6	HS748	2	4

APPENDIX D

Detailed Aircraft Sorties for Eglin Overland Airspace

Eglin AFB Overland Air Operations REA

SUA Name	Unit	Aircraft Type	Noise Modeled Aircraft Type[a]	Alternative 1 Sorties[b] (Current Baseline)	Alternative 2 Sorties[c] (Mission Surge)
Eglin F MOA	AFSOC	F18	F-18E/F	14	28
		H6	Other Helo (UH-1N)	6	12
		HH60	UH60A	16	32
		MC130	C-130H&N&P	12	24
		MH47	CH-47D	6	12
		MH60	UH60A	8	16
		MI8	Other Helo (UH-1N)	4	8
		PC12	JPATS	198	396
		RC26	HS748	4	8
		U28A	JPATS	196	392
		UH1	UH-1N	10	20
		UH1N	UH-1N	2	4
		UH60	UH60A	24	48
Total for Eglin F MOA				**1283**	**2426**
Rose Hill MOA	AFSOC	A10	A-10A	4	8
		C130	C-130H&N&P	8	16
		CV-22	CV-22	2	4
		F16	F-16(G100)	16	32
		PC12	JPATS	2	4
		U28A	JPATS	8	16
	Other	F15	F-15A	1	2
		BAC111	T-43A	5	10
	33 FW	F35A	F-35A	267	320
		F35B	F-35A	291	349
		F35C	F-35A	157	188
	96 TW	A10	A-10A	18	22
		F15	F-15A	84	101
		F16	F-16(G100)	166	199
		F18	F-18E/F	51	61
		SABRE	T-39A	4	5
		KC135	KC-135R	9	11
		BE18	HS748	3	4
		KING AIR	HS748	7	8
		BAC111	T-43A	5	6
		CV580	C-131B	4	5
		EH60	UH60A	4	5
		UH1	UH-1N	4	5
	53 WG	F15	F-15A	454	681
		F16	F-16(G100)	860	1290
		F18	F-18E/F	2	3
		F22	F-18E/F	1	2
		KC135	KC-135R	43	65
	325 FW	F15	F-15A	184	276
		F22	F-18E/F	172	258
Total for Rose Hill MOA				**2836**	**3955**

SUA - Special Use Airspace

MOA – Military Operating Area

a – Noise modeling in the 2012 Special Use Airspace Noise Analysis Report (U.S. Air Force, 2012a).

b - Total number of sorties predicted in the 2012 Special Use Airspace Noise Analysis Report (U.S. Air Force, 2012a) for Calendar Year 2014.

c - The baseline aircraft sorties under Alternative 1 plus the collective increase in sorties that result after applying the following multiplication factors determined by 96 TW personnel to represent the mission surge increase for each Unit:

- Air Force Special Operations Command (AFSOC): x 2
- 6th Ranger Training Battalion (6 RTB): x 2
- 7th Special Forces Group (Airborne) (7 SFG): x 2
- Alabama Air National Guard (ALANG): x 2
- Other Units: x 2
- 53rd Wing (53 WG): x 1.5
- 325th Fighter Wing (325 FW): x 1.5
- 33rd Fighter Wing (33 FW): x 1.2
- 96 TW: x 1.2
- Air Force Research Laboratory (AFRL): 1.2
- Aeronautical Systems Center (ASC): x 1.2
- Electronic Systems Center (ESC): x 1.2
- Life Cycle Management Center-Armament Directorate (LCMC-EB): x 1.2

d - Shadow UAV sorties added in response to a received comment and are not included in the scope of Alternative 1 or 2.

Appendix E
Section 106 Programmatic Agreement

2011 AMENDMENT TO THE PROGRAMMATIC AGREEMENT

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

APR 13 2011

Maria D. Rodriguez
96 CEG/CEVS
501 DeLeon Street, Suite 101
Eglin AFB FL 32542

Colonel James B. Linder
Chief of Staff, USASOC
2929 Desert Storm Drive
Fort Bragg NC 28310

Re: Amendment One to the Programmatic Agreement for the Base Realignment and Closure Undertaking

Dear Colonel Linder

Enclosed for your signature is Amendment One to the Programmatic Agreement (PA) for the Base Realignment and Closure (BRAC) undertaking at Eglin Air Force Base (Eglin AFB) in Okaloosa County, Florida. This amendment has been developed in accordance with Stipulation X (Ten) of the BRAC PA in response to the proposed development of new runways and ancillary structures required to meet expanded flight training for the Joint Strike Fighter program at Eglin AFB. As a signatory to the BRAC PA, your signature is required to implement the PA amendment.

Please sign the PA amendment, make a copy for your files, and return the signed original to Eglin AFB. Eglin AFB will submit the PA amendment to the Advisory Council on Historic Preservation (ACHP) for filing. Upon filing the PA amendment with the ACHP, the BRAC PA will be amended.

Sincerely

MARIA D. RODRIGUEZ, GS-14
Chief, Environmental Stewardship Branch

Enclosures:
BRAC PA Amendment Draft Final
Appendix J
Appendix K1
AppendixK2
Appendix K3

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY
SPECIAL OPERATIONS COMMAND
2929 DESERT STORM DRIVE
FORT BRAGG, NORTH CAROLINA 28310-9110

REPLY TO
ATTENTION OF:

AOCM-PIA 31 May 11

MEMORANDUM FOR 96th Air Base Wing, Environmental Stewardship, ATTN: Maria D. Rodriguez, 96 CEG/CEV, 501 DeLeon Street, Suite 101, Eglin Air Force Base, FL 32542

SUBJECT: Amendment One to the Programmatic Agreement (PA) for the Base Realignment and Closure Undertaking

1. The subject PA Amendment was provided to USASOC for review and signature. USASOC has concurred and is providing your command with original signed documents for your command to obtain other needed signatures. Once all signatures are obtained we ask that you provide USASOC with an original for our files.

2. We appreciate your cooperative efforts to complete this PA as expeditiously as possible. My point of contact for any issues or concerns is Ms. Nell Watson-Crosby, DSN 236-0546 or commercial (910) 396-0546.

Robbie Randolph

Encls ROBBIE RANDOLPH
Chief, Policy and Integration
Division

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AMENDMENT ONE
TO
THE PROGRAMMATIC AGREEMENT
FOR
THE BASE REALIGNMENT AND CLOSURE (BRAC) UNDERTAKING
AMONG
EGLIN AIR FORCE BASE
SEVENTH SPECIAL FORCES GROUP (AIRBORNE)
JOINT STRIKE FIGHTER PROGRAM
AND
THE FLORIDA STATE HISTORIC PRESERVATION OFFICER

I. Need for Amendment

In October, 2008, Eglin AFB, the 7SFG (A), JSF, and the SHPO executed a Programmatic Agreement (PA) for the BRAC undertaking. Following the execution of the BRAC PA, Eglin AFB determined that JSF requires new runways and ancillary structures to meet expanded flight training and is currently in the process of considering project alternatives, as further described below, pursuant to a supplemental Environmental Impact Statement required under the National Environmental Policy Act (42 USC 4321 et seq.). This amendment, entered into under the provisions of Stipulation X of the BRAC PA, resolves any adverse effects that may result from the proposed JSF runway construction.

II. Amending Stipulation IV. A - Area of Potential Effects (APE)

A. The JSF training program requires a primary operating base from which aircraft depart and terminate training activities. In addition, training aircraft will utilize auxiliary fields. The Air Force is considering two project anchor alternatives, with multiple sub-alternatives reflecting different scenarios involving primary bases and auxiliary fields. In Anchor Alternative 1, Eglin Main Base is the primary operating base; for Anchor Alternative 2, the primary operating base is Duke Field. In addition, Anchor Alternative 2 includes construction of up to three new hangars and installation of a new fuel line within an existing utility right-of-way.

B. For the purposes of this amendment, the APE under Stipulation IV. A is amended to include all JSF runaway alternatives (See Appendix J for a map of the revised APE). The project alternatives and construction requirements are as follows.

   1. Alternative 1A - No Runway changes at Eglin AFB plus the use of Duke Field and Choctaw Field as auxiliary training fields. No new construction would be required for Alternative 1A.

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2. Alternative 1I - One new runway at Eglin plus the use of Duke Field and Choctaw Field as auxiliary training fields. One new runway with a minimum length and width of 8,000 by 150 feet would be constructed. The APE for this alternative is 2,127.5 acres.

3. Alternative 2A - Duke Field Parallel Runways and Land Helicopter Amphibious (LHA) runway for short take off training plus the use of Choctaw Field. One runway with a minimal length and width of 8500 feet by 150 feet would be constructed parallel to the existing runway at Duke Field. In addition, a LHA strip and separate vertical landing pads would be constructed. Choctaw Field would be the auxiliary training field. The APE for this alternative is 3,750 acres.

4. Alternative 2B - Duke Field Parallel Runways and LHA Plus Eglin Runway 12. Same construction footprint as 2A. Eglin Field would be the auxiliary training field. The APE for this alternative would be the same as Alternative 2A.

5. Alternative 2C - Duke Field Parallel Runways and LHA Plus Eglin Runway 12 and Choctaw Field. Same construction footprint as 2A. Eglin Main and Choctaw Field would be the auxiliary training fields. The APE for this alternative would be the same as Alternative 2A.

6. Alternative 2D - Duke Field Single Runway and LHA Plus Eglin Runway 12 and Choctaw Field. Under this sub-alternative the current runway at Duke Field would be utilized, with Eglin Main and Choctaw Field serving as auxiliary training fields. A new LHA runway would be constructed. The APE for this alternative would 1,280 acres.

7. Alternative 2E- Duke Field Single Runway and LHA Plus Choctaw Field. Under 2E the current runway at Duke Field would be utilized, while Choctaw Field would serve as an auxiliary training field. A new LHA runway would be constructed. The APE for this alternative would be 715 acres.

III. Amending Stipulation IV.B - Identification and Eligibility

A. Eglin AFB has completed cultural resource inventories for all alternatives. Prehistoric and historic archaeological sites have been recorded in four project alternatives. Historic buildings and structures are present in or adjacent to two project alternatives. No historic properties of religious or cultural significance to the tribes are known or have been reported to Eglin AFB in the revised APE. In consultation with the SHPO, Eglin AFB has made, or is in the process of making, National Register eligibility determinations for newly recorded archaeological sites.

B. The results of the identification and eligibility are as follows.

1. Alternative 1A: No National Register eligible archaeological sites have been identified in the APE for this alternative. Two historic districts (Eglin Field and SAC Alert), composed of multiple historic buildings and structures, are located adjacent to the APE. Three additional historic districts (Warehouse, A-22 and Camp Pinchot) are within the

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Eglin Main complex but not adjacent to the APE. See map of historic districts in relation to the APE in Appendix K 1.

2. Alternative 1I: Eglin AFB's Site Probability Model indicates that one potential historic homestead area may be present within the APE and will require investigation. Two archaeological sites have been identified: site 8OK1838, a prehistoric Late Paleo-Indian/ Early Archaic site; and, site 8OK2417, a middle twentieth century historic military site. Both sites, pending final determinations, are not eligible for listing in the National Register. Fourteen historic buildings and structures, individually eligible for listing in the National Register, are within the APE for this alternative. See map of historic buildings in relation to the APE in Appendix K 2.

3. Alternatives 2A, 2B, 2C, 2D, and 2E: Two archaeological sites have been identified in the APE for alternatives 2A, 2B, and 2C. Site 8OK2485, a terminal Weeden Island Fort Walton component is pending an eligibility determination. Site 8OK333, a Late Paleo/Early Archaic site, is National Register eligible. No historic properties are located within Alternative 2D or 2E. See map of archaeological sites in relation to the APE in Appendix K 3.

C. Should the Air Force select Alternative 1I, Eglin AFB will ensure that any homestead site, if present in the homestead area, is recorded by a professional meeting the qualification standards in Stipulation V of the BRAC PA following the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. Eglin AFB, in consultation with the SHPO, will evaluate the homestead site for National Register eligibility in accordance with Stipulation III.C of the BRAC PA.

IV. Amending Stipulation IV. D - Resolution of Adverse Effects

A. Historic Properties in Alternatives 1A, 1I, 2A, 2B, 2C may be adversely affected should any of these alternatives be selected by the Air Force for the construction of new runways and ancillary facilities as further discussed below.

1. No archaeological sites or historic buildings/structures will be affected during construction if the Air Force selects Alternative 1A. Aircraft training operations are projected to increase noise levels in and around Eglin Main Base, however. Adverse effect to the two adjacent historic districts may occur if, because of increased noise levels, Eglin AFB decides to abandon any building that is a contributing property to the districts. Under this condition, Eglin AFB will follow the procedures established for Air Field operations under Stipulation IV.D.3 to treat any adverse effects to the districts resulting from increased noise levels.

2. Should Alternative 1I be selected, and should a historic homestead be recorded and determined to be National Register eligible, Eglin AFB will attempt to avoid the site in accordance with Stipulation III.E.1, as applicable. If avoidance is not possible, Eglin AFB shall coordinate with JSF and follow the procedures in Stipulation III.E.2 through III.E.4, as applicable, to resolve the adverse effects. Should increased noise levels lead

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Eglin AFB to abandon any one of the individually eligible historic buildings within the APE, then Eglin AFB will follow Stipulation IV.D. 3 to treat any adverse effects to the buildings and structures.

3. If any one of Alternatives 2A, 2B or 2C is selected, Eglin AFB will attempt to avoid sites 8OK2485 and 8OK333 in accordance with Stipulation III.E.1 of the BRAC PA, as applicable. If avoidance is not possible, Eglin AFB shall coordinate with JSF and follow the procedures in Stipulation III.E.2 through III.E.4, as applicable, to resolve the adverse effects.

V. Execution

Execution and implementation of Amendment One to the PA evidences that Eglin AFB, 7SFG (A) and JSF, have satisfied their responsibilities under Section 106 of the NHPA for BRAC related runway construction at Eglin AFB.

EGLIN AIR FORCE BASE

By: _____ Date: 4 APR 11
SAL M. NODJOMIAN, Colonel, USAF
Commander, 96th Air Base Wing

SEVENTH SPECIAL FORCES GROUP (AIRBORNE)

By: _____ Date: 26 MAY 2011
JAMES B. LINDER
Colonel, GS
Chief of Staff

JOINT STRIKE FIGHTER PROGRAM

By: _____ Date: 6 APR 11
ANDREW J. TOTH, Colonel, USAF
Commander, 33d Fighter Wing

FLORIDA STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 4/8/11
SCOTT M. STROH III
Florida State Historic Preservation Officer

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Eglin AFB to abandon any one of the individually eligible historic buildings within the APE, then Eglin AFB will follow Stipulation IV.D. 3 to treat any adverse effects to the buildings and structures.

3. If any one of Alternatives 2A, 2B or 2C is selected, Eglin AFB will attempt to avoid sites 8OK2485 and 8OK333 in accordance with Stipulation III.E.1 of the BRAC PA, as applicable. If avoidance is not possible, Eglin AFB shall coordinate with JSF and follow the procedures in Stipulation III.E.2 through III.E.4, as applicable, to resolve the adverse effects.

V. Execution

Execution and implementation of Amendment One to the PA evidences that Eglin AFB, 7SFG (A) and JSF, have satisfied their responsibilities under Section 106 of the NHPA for BRAC related runway construction at Eglin AFB.

EGLIN AIR FORCE BASE

By: _____ Date: 4 Apr 11
SALIM. NODJOMIAN, Colonel, USAF
Commander, 96th Air Base Wing

SEVENTH SPECIAL FORCES GROUP (AIRBORNE)

By: _____ Date: 26 MAY 2011
JAMES B. LINDER
Colonel, GS
Chief of Staff

JOINT STRIKE FIGHTER PROGRAM

By: _____ Date: 6 APR 11
ANDREW J. TOTH, Colonel, USAF
Commander, 33d Fighter Wing

FLORIDA STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 4/6/11
SCOTT M. STROH III
Florida State Historic Preservation Officer

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Eglin AFB to abandon any one of the individually eligible historic buildings within the APE, then Eglin AFB will follow Stipulation IV.D. 3 to treat any adverse effects to the buildings and structures.

3. If any one of Alternatives 2A, 2B or 2C is selected, Eglin AFB will attempt to avoid sites 8OK2485 and 8OK333 in accordance with Stipulation III.E.1 of the BRAC PA, as applicable. If avoidance is not possible, Eglin AFB shall coordinate with JSF and follow the procedures in Stipulation III.E.2 through III.E.4, as applicable, to resolve the adverse effects.

V. Execution

Execution and implementation of Amendment One to the PA evidences that Eglin AFB, 7SFG (A) and JSF, have satisfied their responsibilities under Section 106 of the NHPA for BRAC related runway construction at Eglin AFB.

EGLIN AIR FORCE BASE

By: _____ Date: 4 APR 11
SALVI. NODJOMIAN, Colonel, USAF
Commander, 96th Air Base Wing

SEVENTH SPECIAL FORCES GROUP (AIRBORNE)

By: _____ Date: 26 MAY 2011
JAMES B. LINDER
Colonel, GS
Chief of Staff

JOINT STRIKE FIGHTER PROGRAM

By: _____ Date: 6 APR 11
ANDREW J. TOTH, Colonel, USAF
Commander, 33d Fighter Wing

FLORIDA STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 4/8/11
SCOTT M. STROH III
Florida State Historic Preservation Officer

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Concurring Parties:

MICCOSUKEE TRIBE OF INDIANS OF FLORIDA

By:_____ Date:_____

THE SEMINOLE TRIBE OF FLORIDA

By:_____ Date:_____

POARCH BAND OF CREEK INDIANS OF ALABAMA

By:_____ Date:_____

MUSKOGEE (CREEK) NATION OF OKLAHOMA

By:_____Date:_____

THLOPTHLOCCO TRIBAL TOWN OF THE CREEK (MUSKOGEE) TRIBE

By:_____Date:_____

Appendices

J: Revised map of the APE showing the JSF runway alternatives.
K1:Map of historic districts in relation to revised APE for Alternative 1A.
K2:Map of individually eligible historic buildings in relation to revised APE for Alternative 1I.
K3: Map of archaeological sites in relation to revised APE for Alternatives 2A, 2B, and 2C.

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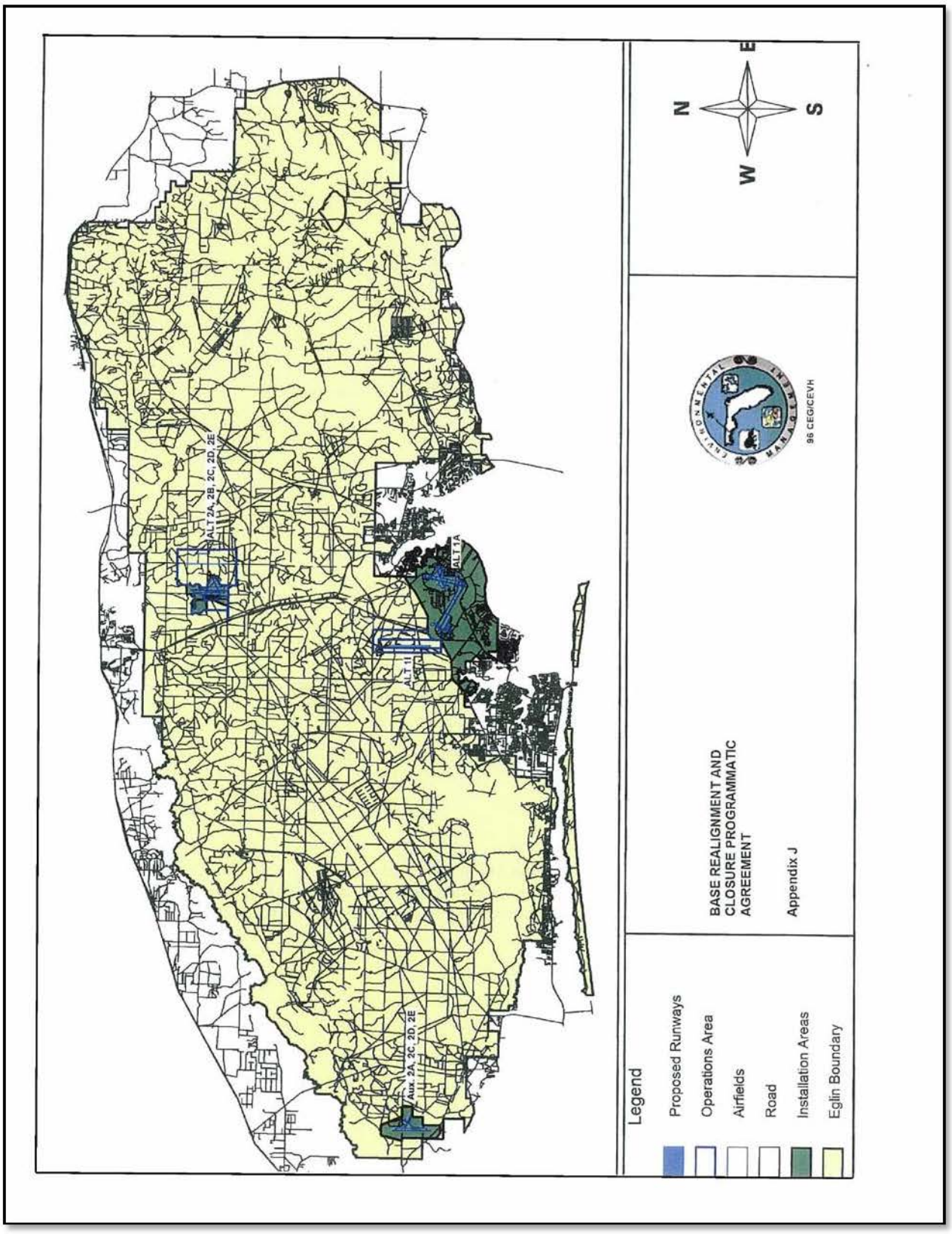
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ENVIRONMENTAL MANAGEMENT
96 CEG/CEVH
BASE REALIGNMENT AND CLOSURE PROGRAMMATIC AGREEMENT
Appendix J
Legend
Proposed Runways
Operations Area
Airfields
Road
Installation Areas
Eglin Boundary
ALT 2A, 2B, 2C, 2D, 2E
ALT 1A
ALT 1
Aux. 2A, 2C, 2D, 2E

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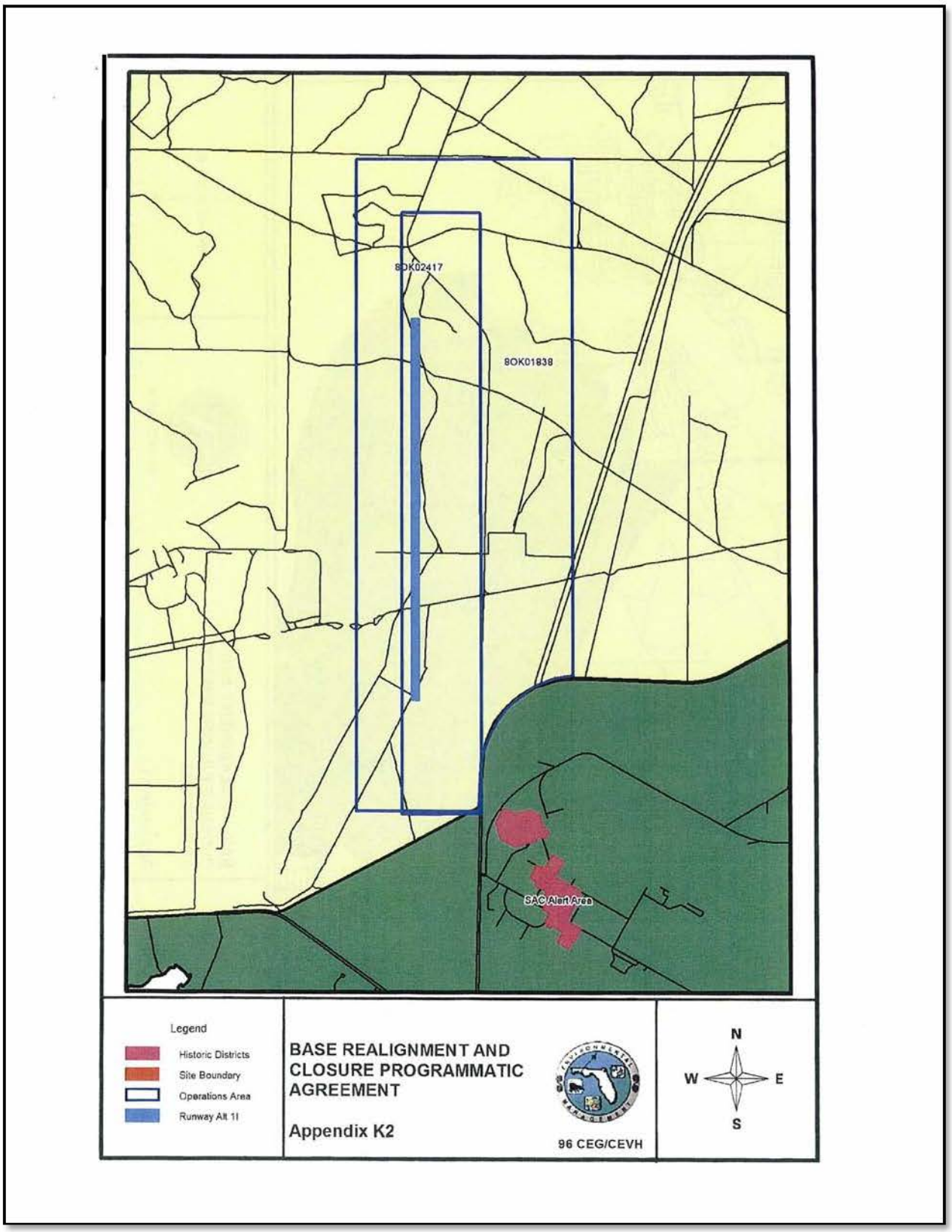
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8OK01838
SAC Alert Area
Legend
Historic Districts
Site Boundary
Operations Area
Runway Alt 11
BASE REALIGNMENT AND CLOSURE PROGRAMMATIC AGREEMENT
Appendix K2
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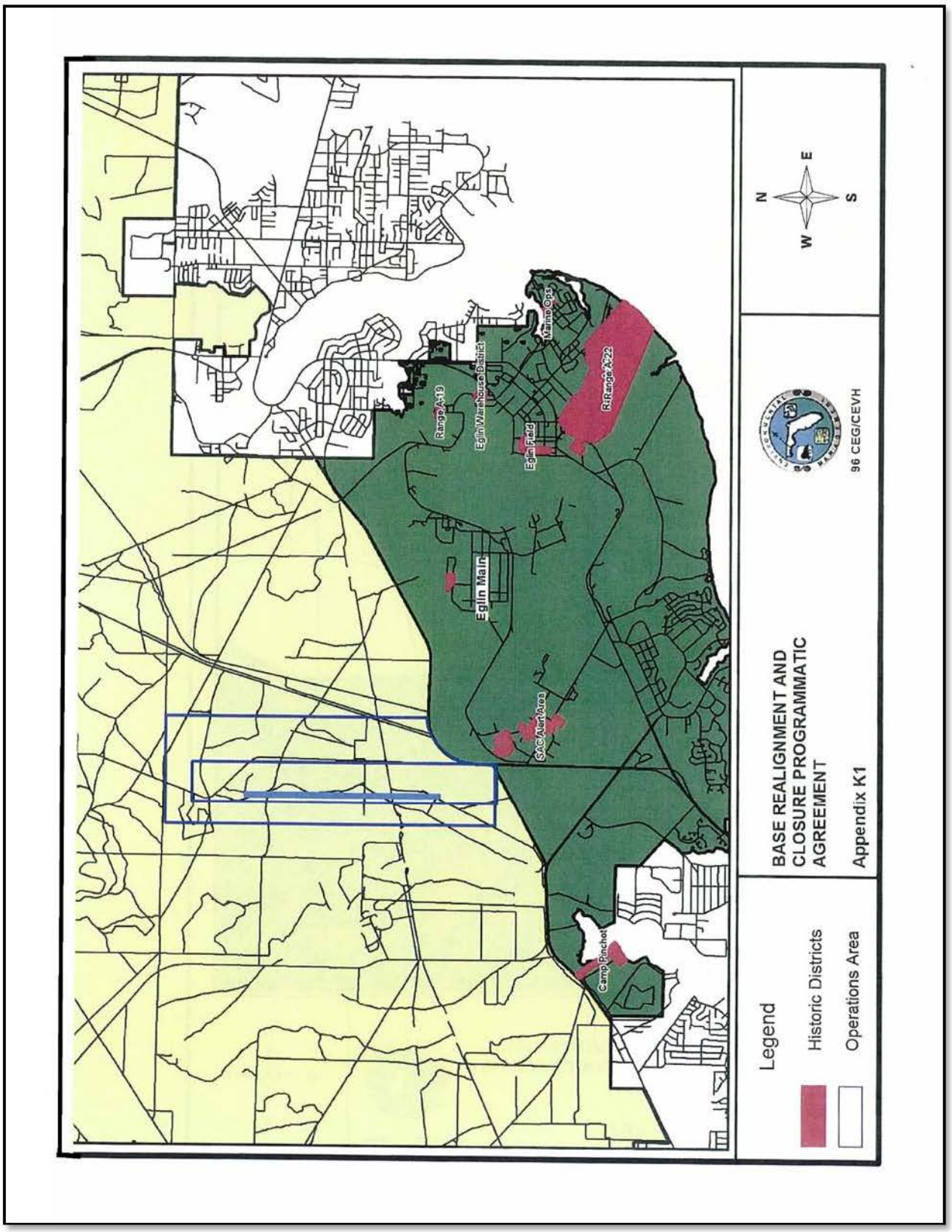
Legend
Historic Districts
Operations Area
BASE REALIGNMENT AND CLOSURE PROGRAMMATIC AGREEMENT
Appendix K1
96 CEG/CEVH
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Eglin Main
Eglin Field
Eglin Warehouse District
Range A-19
Range A-22
Marina Ops
SAC Alert Area
Camp Pinchot

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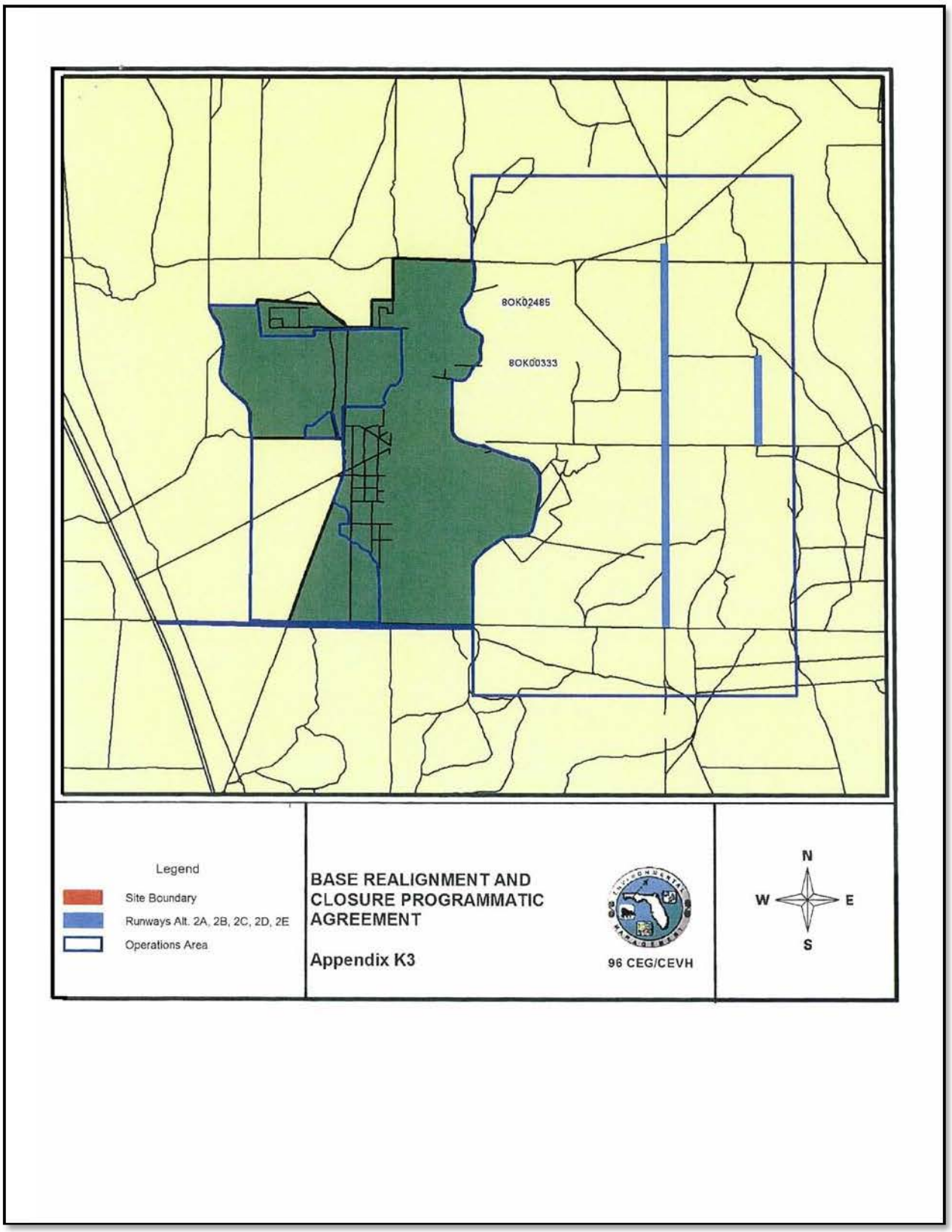
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8OK00333
Legend
Site Boundary
Runways Alt. 2A, 2B, 2C, 2D, 2E
Operations Area
BASE REALIGNMENT AND CLOSURE PROGRAMMATIC AGREEMENT
Appendix K3
96 CEG/CEVH
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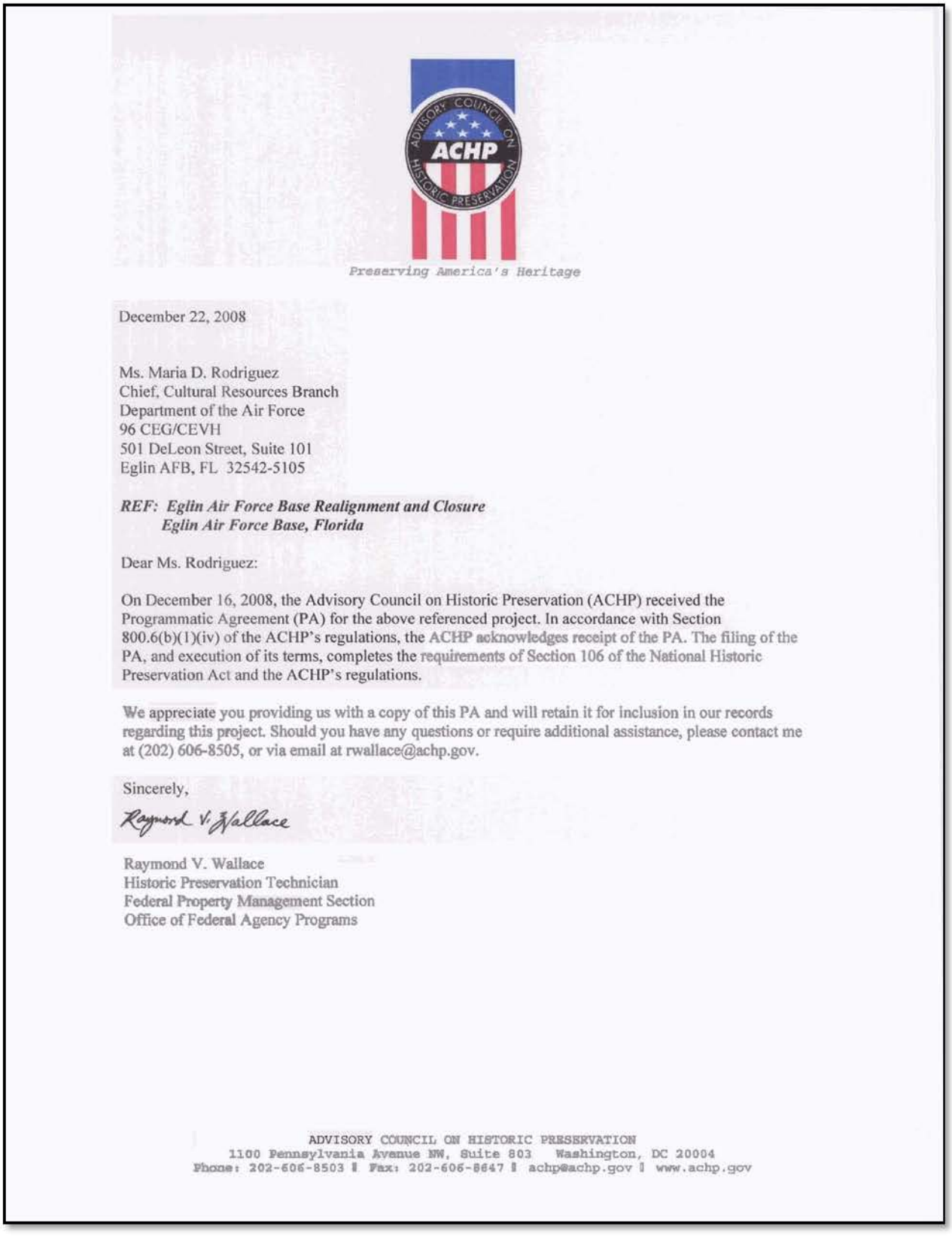
2008 PROGRAMMATIC AGREEMENT



Preserving America's Heritage

December 22, 2008

Ms. Maria D. Rodriguez
Chief, Cultural Resources Branch
Department of the Air Force
96 CEG/CEVH
501 DeLeon Street, Suite 101
Eglin AFB, FL 32542-5105

REF: Eglin Air Force Base Realignment and Closure
Eglin Air Force Base, Florida

Dear Ms. Rodriguez:

On December 16, 2008, the Advisory Council on Historic Preservation (ACHP) received the Programmatic Agreement (PA) for the above referenced project. In accordance with Section 800.6(b)(1)(iv) of the ACHP's regulations, the ACHP acknowledges receipt of the PA. The filing of the PA, and execution of its terms, completes the requirements of Section 106 of the National Historic Preservation Act and the ACHP's regulations.

We appreciate you providing us with a copy of this PA and will retain it for inclusion in our records regarding this project. Should you have any questions or require additional assistance, please contact me at (202) 606-8505, or via email at rwallace@achp.gov.

Sincerely,

Raymond V. Wallace

Raymond V. Wallace
Historic Preservation Technician
Federal Property Management Section
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 803 Washington, DC 20004
Phone: 202-606-8503 ▮ Fax: 202-606-8647 ▮ achp@achp.gov ▮ www.achp.gov

PROGRAMMATIC AGREEMENT
AMONG
EGLIN AIR FORCE BASE
SEVENTH SPECIAL FORCES GROUP (AIRBORNE)
JOINT STRIKE FIGHTER PROGRAM
AND
THE FLORIDA STATE HISTORIC PRESERVATION OFFICER
REGARDING
THE PROPOSED IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE (2005) DECISION AND RELATED ACTIONS,
EGLIN AIR FORCE BASE, FLORIDA

WHEREAS, in response to the 2005 Base Realignment and Closure (BRAC) decision approved by Congress, the U.S. Army's Seventh Special Forces Group (Airborne) [7SFG(A)] and the Joint Strike Fighter (JSF) pilot training program, consisting of elements from the U.S. Navy, Marines and Air Force, will relocate to Eglin Air Force Base (Eglin AFB), Florida (See vicinity maps, Appendix A); and

WHEREAS, the Air Force, Army, Navy and Marines, have identified four separate but interrelated needs that must be met to implement the BRAC recommendations: (1) a cantonment for the 7SFG(A); (2) range training areas for the 7SFG (A); (3) a cantonment for the JSF; and (4) flight training areas for JSF. Eglin AFB will be responsible for meeting these needs, which will require construction, demolition, renovation and operational use of lands and facilities throughout Eglin AFB (the "Undertaking"); and

WHEREAS, the Area of Potential Effects (APE) for the undertaking, as further described below, contains multiple historic buildings, structures and archaeological sites as well as five historic districts that are either listed in or eligible for listing in the National Register of Historic Places (NRHP); and

WHEREAS, Eglin AFB has consulted with Florida State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C 470f), has determined that the undertaking will have an adverse effect on historic properties; and

WHEREAS, Eglin AFB has provided the public with an opportunity to comment on this undertaking through coordinated compliance with Section 106 and the National Environmental Policy Act, as set forth in 36 CFR Part 800.8; and

WHEREAS, Eglin AFB has consulted with the 7SFG (A) Command and the JSF Command and invited them to be signatories to this Programmatic Agreement (PA); and

WHEREAS, Eglin AFB has consulted with SAC Memorial Project, a private veterans organization, concerning the adverse effects of the undertaking to the SAC Alert Historic District and has invited it to be a concurring party to this PA; and

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WHEREAS, Eglin AFB has also consulted with four federally recognized tribes, the Miccosukee Tribe of Indians of Florida, the Seminole Tribe of Florida, the Poarch Band of Creek Indians of Alabama, and the Muskogee (Creek) Nation of Oklahoma (the tribes), concerning places of religious and cultural significance to them that may be affected by the undertaking and has invited the tribes to participate as concurring parties to this agreement; and

WHEREAS, Eglin AFB, in developing this PA, has met the requirements of Section 8 (Demolition of Historic Properties) of the Programmatic Agreement between Eglin AFB, the SHPO and the ACHP regarding the preservation and protection of historical and archaeological resources located at Eglin AFB, which was implemented on February 14, 2003 (Eglin Air Force Base 2003);

NOW THEREFORE, the signatories to this PA agree that the proposed BRAC development within Eglin AFB will be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking.

Background

I. Description of the Undertaking

A. In compliance with the BRAC recommendations, Eglin AFB will accommodate the training needs of the 7SFG(A) and the JSF commands. For 7SFG(A), this means building a new cantonment; utilizing 13 training ranges (which will require either new range construction or modifying existing ranges as needed); conducting ground and water-to-shore maneuvers in existing closed training areas; and constructing two new drop zones for air-to-ground training. For JSF, the undertaking will entail modifying an existing portion of the Eglin Main airfield to construct a new cantonment; utilizing three existing air fields for flight training; and using multiple bombing ranges for target practice. The undertaking will involve renovation and demolition of existing buildings and structures, construction of new buildings and facilities, construction-related ground disturbance, ground disturbances associated with operational use of bombing ranges, and noise generated through aircraft operation.

B. Because the 7SFG(A) and JSF components of the undertaking are functionally and spatially distinct, this PA is organized to resolve the adverse effects of each component in succession. Specific stipulations relevant to both components are cited where applicable; general stipulations follow at the end of the document.

II. Site Probability Model

A. Eglin AFB has developed an installation-wide archaeological Site Probability Model. The model is based upon the environmental signature of known prehistoric archaeological sites. It correlates site location, landform and proximity to potable water to predict the expected location of sites in areas that have not yet been inventoried. Eglin AFB uses the Site Probability Model to characterize the landscape within the base as either high or low probability for prehistoric archaeological sites (Eglin Air Force Base Historic Preservation).

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B. Eglin AFB has also identified the probable locations of former historic homesteads that are now archaeological sites by researching archival records on homestead claims. These results, plus the predicted location of prehistoric archaeological sites, are used to define the probability areas. The Site Probability Model is used to guide identification efforts; high probability areas are surveyed whereas low probability areas are typically not surveyed.

C. The SHPO accepts the validity of the Site Probability Model and its use for identification in this manner. Eglin AFB has used, and will continue to use, the Site Probability Model to determine where to conduct additional archaeological survey needed for the 7SFG(A) and JSF components of the BRAC undertaking.

Stipulations

III. Seventh Special Forces Group (Airborne)

A. Area of Potential Effects

The APE for the 7SFG(A) component is shown on the map in Appendix B and consists of the following elements

1. The Cantonment Area
2. Group 1 Training Ranges
3. Group 2 Training Ranges
4. Closed Training Areas
5. Drop Zones
6. Shoreline Infiltration Training Areas

Note: Infiltration training at shoreline/riverine sites for the 7SFG(A) is intended within Eglin AFB. Planning, however, has not identified those areas and as a consequence they are not currently included in the APE for the BRAC undertaking. When 7SFG(A) can describe the shoreline infiltration training activities that will take place, and identifies the location and extent of the areas needed for training, then Eglin AFB, in consultation with 7SFG(A), shall prepare an amendment to this PA following Stipulation X. The amendment shall identify the training activities to be conducted, the location and extent of the training areas, a description of all recorded cultural resources within these areas and an assessment of whether or not additional survey is needed. The amendment will commit Eglin AFB to comply with the terms of this PA in resolving the adverse effects of shoreline/riverine training for the BRAC undertaking.

B. Identification

Eglin AFB, in consultation with the SHPO, has determined that historic properties are present within the 7SFG(A) component of the BRAC APE. The results of identification and NRHP determinations are presented in Appendix C and further summarized below.

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1. Cantonment

   Four cultural resources surveys, covering 69.5 acres, have been conducted in the 500-acre APE for the proposed 7SFG(A) Cantonment. All high probability areas have been surveyed and no cultural resources have been identified. Survey of the Cantonment area is complete.

2. Group 1 Training Ranges

   Three cultural resources surveys, covering 14.4 acres, have been conducted in the 27.7-acre APE for the Group 1 Training Ranges. All high probability areas have been surveyed and no cultural resources have been identified. Survey of the Group 1 Training Ranges is complete.

3. Group 2 Training Ranges

   (a) Thirty-eight cultural resources surveys, covering 5,311 acres, have been conducted within the 9,015-acre APE for the Group 2 Training Ranges. All high probability areas have been surveyed, except for 119 acres, which were excluded from survey due to the presence of unexploded ordinance. Survey of the Group 2 Training Ranges is complete.

   (b) The surveys identified 32 archaeological sites and seven buildings. Eglin AFB, in consultation with SHPO, has determined that 21 of the archaeological sites are not NRHP eligible; however, 11 sites may be eligible. Four of the seven buildings are NRHP eligible and three of the buildings may be eligible (See Appendix C).

4. Closed Training Areas

   (a) Two hundred two cultural resources surveys, covering 40,113 acres, have been conducted within the 62,222-acre APE for the Closed Training Areas. The surveys targeted only those areas that the Site Probability Model indicated have a high probability for historic archaeological sites. At Eglin AFB, historic archaeological sites have an above ground expression whereas prehistoric archaeological sites are typically found in subsurface contexts and are thus protected from training-related surface disturbances. Prehistoric archaeological sites have also been recorded during survey where the historic and prehistoric high probability areas have overlapped. The remaining high probability areas for prehistoric archaeological sites within the APE for the Closed Training Areas, however, will not be surveyed for the BRAC undertaking because training related disturbances will be limited to surface ground disturbance only, as further discussed in Stipulation III.D.4.(a)

   (b) The surveys have identified a total of 285 archaeological sites and two buildings. Eglin AFB, in consultation with the SHPO, has determined that 243 sites are not NRHP eligible; two sites are NRHP eligible and 40 sites may be eligible for NRHP listing. The two buildings are eligible for NRHP listing (See Appendix C). Eglin

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AFB has completed SHPO consultation on all surveys except for seven reports. Eglin AFB will complete SHPO consultation on the results of these surveys and make determinations of NRHP eligibility, as needed, following the procedures in Stipulation III.C below.

(c) Additional survey of the high probability areas for historic archaeological sites is required to complete identification for the Closed Training Areas. All surveys shall be conducted by a professional meeting the qualifications standards in Stipulation V. The surveys will be carried out following the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation included herein by reference. As new surveys are completed, Eglin AFB will submit survey reports to SHPO for review.

5. Drop Zones

Ten cultural resources surveys, covering 606 acres, have been conducted within the 764-acre APE for the Drop Zones. All high probability areas have been surveyed resulting in the identification of two archaeological sites. Survey of the Drop Zones is complete. Eglin AFB, in consultation with the SHPO, has determined that one of the archaeological sites is not NRHP eligible and one site may be NRHP eligible (See Appendix C). Eglin AFB, in consultation with SHPO, shall determine the NRHP eligibility of the site following Stipulation III.C.

6. Shoreline Infiltration Training Areas

See note in Stipulation III.A.

C. National Register Eligibility

1. At Eglin AFB, archaeological sites require subsurface testing to determine their NRHP eligibility status. Any archaeological site that will be adversely affected by the undertaking that has not been previously evaluated will be tested for NRHP eligibility. Only those sites that are determined to be NRHP eligible will be subject to data recovery, if, after further consultation, Eglin AFB determines data recovery is appropriate. Eglin AFB will not be required to consult with SHPO prior to eligibility testing. All testing of archaeological sites will be conducted by a professional who meets the qualification standards in Stipulation V. If an archaeological site can be avoided in accordance with Stipulation III.E.1, Eglin AFB may choose not to test the site for NRHP eligibility until a later time. Under these circumstances, the undertaking may take place provided that any measures necessary to ensure avoidance are put in place.

2. Eglin AFB, in consultation with SHPO, will make a determination of NRHP eligibility for any building or structure not previously evaluated that will be adversely affected by the undertaking. Additional recording may be required to update structural inventory forms, or similar documents, which Eglin AFB will submit to SHPO for consultation on NRHP eligibility. All recording of buildings or structures will be conducted by a

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professional who meets the qualification standards in Stipulation V. Only those historic buildings and structures that are determined NRHP eligible shall be subject to treatment. If, however, the building or structure will not be affected following Stipulation III.E.1, then Eglin AFB may choose not to consult on its eligibility status until a later time. Under these circumstances, the undertaking may take place provided that any measures necessary to ensure avoidance are put in place.

3. In those cases where Eglin AFB must make a determination of NRHP eligibility because an archaeological site or historic building or structure may be adversely affected, or it chooses to make an NRHP eligibility determination following avoidance, Eglin AFB will follow the procedures presented below.

   (a) Eglin AFB shall submit an archaeological testing report or an updated structural inventory form, as applicable, to SHPO for a 30-day review along with its eligibility recommendations. If a prehistoric archaeological site is tested, Eglin AFB shall also submit the testing report to the tribes. The tribal review will be concurrent with the SHPO review.

   (b) If the SHPO does not respond within the 30-day comment period, Eglin AFB will assume that SHPO has no objection to its eligibility determination. Eglin AFB shall take into consideration any comments and recommendations received by the tribes during the 30-day review period in making its eligibility determination.

   (c) Where there is agreement on eligibility between Eglin AFB and the SHPO, the eligibility determination will be accepted by both parties. Any disagreement between Eglin AFB and the SHPO over the eligibility determination shall be submitted by Eglin AFB to the Keeper of the National Register for determination pursuant to 36 CFR Part 63. The Keeper's determination shall be final.

D. Assessment of Effects

The 7SFG(A) component of the BRAC undertaking will involve construction-related ground disturbance, as well as ground disturbances associated with the operational use of firing ranges and training areas that contain NRHP eligible archaeological sites and buildings. As such, the characteristics that make these historic properties eligible for listing in the NRHP may be altered in ways that diminish their integrity of location, setting, materials or other aspects of integrity.

1. The Cantonment Area

   There are no historic properties within the Cantonment Area. The proposed construction of the Cantonment Area will have no effect to historic properties. Should archaeological deposits be discovered during construction, however, Eglin AFB will follow the provisions for unanticipated discoveries in Stipulation VI.

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2. Group 1 Training Ranges

   There are no historic properties within the Group I Training Ranges. The proposed construction of the Group I Training Ranges will have no effect to historic properties. Should archaeological deposits be discovered during construction, however, Eglin AFB will follow the provisions for unanticipated discoveries in Stipulation VI.

3. Group 2 Training Ranges

   (a) Ground disturbance relating to the construction of new ranges or modifications to existing ranges, plus the operational use of the ranges after construction, may adversely affect the 11 recorded archaeological sites that are potentially eligible to the NRHP as well as the four NRHP eligible buildings and the three buildings that are potentially eligible for NRHP listing.

   (b) Any NRHP eligible archaeological site or building that cannot be protected through avoidance in accordance with Stipulation III.E.1 will be adversely affected by the undertaking. Eglin AFB shall coordinate with 7SFG(A) and follow the procedures in Stipulation III.E.2 through III.E.4, as applicable, to resolve the adverse effects.

4. Closed Training Areas

   (a) Operational use of the Closed Training Areas will result in disturbances to ground surfaces only. These disturbances will occur through pedestrian use of the Training Areas by small units of trainees. All vehicle traffic will be confined to existing roads and trails. The trainees will use existing bivouac sites. There will be no digging or trenching or other subsurface disturbances during the training use of the Closed Training Areas by the 7SFG(A).

   (b) Surface ground disturbance relating to the operational use of the Closed Training Areas, may adversely affect the 44 recorded archaeological sites and buildings that are either NRHP eligible or potentially eligible for listing. Additional NRHP eligible archaeological sites and buildings may be identified during continued survey in the Closed Training Areas.

   (c) Any NRHP eligible archaeological site or building that cannot be protected through avoidance in accordance with Stipulation III.E.1 will be adversely affected by the undertaking. Eglin AFB shall coordinate with 7SFG(A) and follow the procedures in Stipulation III.E.2 through III.E.4, as applicable, to resolve the adverse effects.

   (d) Eglin AFB will exclude from all ground maneuvers those portions of the Closed Training Areas that have yet to be surveyed for cultural resources and will inform the 7SFG(A) where the exclusions apply. Eglin AFB will notify 7SFG(A) when the requirements of this PA have been met for these areas and when these areas can be used for training purposes.

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5. Drop Zones

(a) Construction related activities and/or operational use of the Drop Zones may adversely affect the one archaeological site that may be NRHP eligible. The site will either be avoided in accordance with the procedures in Stipulation III.E.1, or if avoidance is not possible or desirable, Eglin AFB will, as needed, make a determination of NRHP eligibility in accordance with Stipulation III.C.

(b) Should the site be determined to be NRHP eligible, and if it cannot be protected through avoidance, the site will be adversely affected by the undertaking. Eglin AFB shall coordinate with 7SFG(A) and conduct either archaeological data recovery in accordance with Stipulation III.E.2 or alternative mitigation pursuant to Stipulation III.E.4, to resolve the adverse effects.

6. Shoreline Infiltration Training Areas

See note in Stipulation III.A.

E. Resolution of Adverse Effects

All historic properties will be avoided whenever possible for the duration of this agreement. Where avoidance is not possible or desirable, Eglin AFB shall resolve the adverse effects of the BRAC undertaking. Avoidance, archaeological data recovery, architectural treatment and alternative mitigation will be achieved in the following manner.

1. Avoidance Measures

(a) Avoidance and preservation in place of archaeological or architectural resources will require use of highly visible avoidance measures installed on the ground around the recorded limits of the sites or buildings for the purpose of communicating "off limits" to trainees. The avoidance measures shall include one or more of the following as needed.

(1) Flagging: Installing temporary flagging around the limits of the site or building using colored flagging tape.

(2) Painting trees/vegetation: Applying highly visible paint to trees or other vegetation.

(3) Temporary fencing: Installing temporary fencing around the limits of the site or building using removable fencing, such as chain link fencing or wire and T posts.

(4) Other removable barriers: Installing removable barriers, such as earthen berms or portable concrete barriers.

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(5) Signage: Installing permanent or semi-permanent signage at eye level in proximity to the site or building. Eglin AFB shall employ a universally recognizable symbol printed on metal or other durable material that is mounted on metal stakes or posts and set on the ground around the limits of the site or building as needed.

(6) Gating and other permanent barriers: Constructing permanent barriers, such as gates, around the limits of sites or buildings.

(b) Eglin AFB will map the location of all archaeological sites and historic buildings to be avoided for the BRAC undertaking and describe in writing the avoidance measures used for each site.

(c) Eglin AFB shall install all avoidance measures and ensure that for the BRAC undertaking all avoidance measures are in place on the ground before a training range or training area can be used for training purposes. Eglin AFB will not be required to consult with the SHPO or other consulting parties when avoidance can be achieved, but may seek their advice, as needed.

(d) To ensure that avoidance is achieved in a consistent and coordinated manner, Eglin AFB shall

(1) Consult with 7SFG(A) to determine the color and type of marking such as flagging tape to be used for avoidance.

(2) Consult with 7SFG(A) and the SHPO to select an avoidance symbol to be used for signage.

(3) Consult with 7SFGA to select a suitable paint color to be used for avoidance.

(4) Consult with SHPO and 7SFG (A) to determine what permanent barriers can be used and how they should be installed so as to avoid affecting historic properties

(5) Provide 7SFG (A) with copies of the maps identifying all avoided sites and buildings, submitted in a form useful to 7SFG(A), and will periodically update these maps as needed. A copy of the maps and any updates will also be provided to the SHPO with a written description of the avoidance measures used for each historic property.

(6) Periodically brief appropriate 7SFG(A) staff on the importance of protecting cultural resources, the sensitivity of cultural resources data, and the need to limit access to this data.

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2. Archaeological Data Recovery

All archaeological data recovery shall be conducted by a professional meeting the qualification standards in Stipulation V. The data recovery will be carried out following the Secretary of the Interior's Standard and Guidelines for Archaeology and Historic Preservation included herein by reference. Eglin AFB will ensure that archaeological data recovery is conducted in the following manner.

(a) A data recovery plan shall be prepared. At a minimum, the data recovery plan shall include:

(1) A description of the proposed action that will adversely affect archaeological sites

(2) A description of each archaeological site and how each may be affected by the proposed action

(3) A set of research questions and objectives

(4) A description of methods to be used in collecting the data needed to address the research questions

(5) A description of analytical techniques to be used in addressing the research questions

(6) A description of the nature of materials and features expected to be revealed, materials expected to be collected, and all other materials to be generated including reports and associated media.

(b) Eglin AFB shall submit the data recovery plan to SHPO for 30 day review. If the archaeological site is prehistoric, Eglin AFB shall also submit the data recovery plan to the tribes for 30 day review. The tribal review will be concurrent with the SHPO review.

(c) If the SHPO or one or more of the tribes, as applicable, does not respond within 30 days of submittal, Eglin AFB shall assume that party has no objection to the proposed data recovery. Eglin AFB, in completing the data recovery plan, will take into account any comments it does receive from the SHPO or the tribes within the 30-day review period.

(d) Once Eglin AFB has completed the data recovery plan, it shall ensure that the data recovery is conducted in accordance with the plan.

(e) All archaeological data recovery shall be reported within 12 months of the end of field work. Eglin AFB shall ensure that a draft of the report is prepared and will submit the draft to SHPO and the tribes, as applicable, for 30 day review. Any comments received by Eglin AFB from SHPO or any of the tribes, as applicable,

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within the review period shall be considered in completing the report. Eglin AFB shall provide the SHPO and the tribes with two copies of any final report.

3. Architectural Treatment

All architectural treatment shall be conducted by a professional who meets the qualification standards in Stipulation V. The architectural treatment will be carried out following the Secretary of the Interior's Guidelines for Architectural and Engineering Documentation (HABS/HAER Level II) included herein by reference. Eglin AFB will ensure that architectural treatment is conducted in the following manner.

(a) A treatment plan, including a scope of work, will be prepared describing in detail the proposed treatment. The treatment plan shall at a minimum include

(1) A description of the proposed action that will adversely affect historic buildings or structures

(2) A description of each building or structure and how each may be affected by the proposed action

(3) A set of research questions and recording objectives

(4) A description of methods to be used in collecting data needed to achieve the research questions and recording objectives

(b) Eglin AFB shall submit the treatment plan to SHPO for 30 day review.

(c) If the SHPO does not respond within 30 days of submittal, Eglin AFB shall assume the SHPO has no objection to the proposed treatment plan. Eglin AFB, in completing the treatment plan, will take into account any comments it does receive from the SHPO within the 30-day review period.

(d) Once the treatment plan is completed, Eglin AFB shall ensure that the treatment is conducted in accordance with the plan.

(e) All architectural treatment shall be reported within 12 months of the end of field work. Eglin AFB shall ensure that a draft treatment report is prepared and will submit the draft to SHPO for 30 day review. Any comments received by Eglin AFB from SHPO within the review period shall be considered in completing the report. Eglin AFB shall provide the SHPO with two copies of any final report.

4. Alternative Mitigation

If Eglin AFB determines that resolution of adverse effects can best be achieved through means other than archaeological data recovery or architectural treatment, as presented in Stipulation III.E.2 and III.E.3 above, it may adopt an alternative mitigation strategy on a

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case-by-case basis as presented below. All alternative mitigation shall be conducted by a professional meeting the qualification standards in Stipulation V.

(a) If the alternative mitigation will apply to historic buildings and structures or historic archaeological sites, Eglin AFB will submit a mitigation plan to the SHPO for 30 day review. Eglin AFB shall take into consideration any comments it receives from the SHPO during the 30 day review period. If the SHPO does not respond within the 30-day review period, Eglin AFB shall assume the SHPO has no objection to the alternative mitigation.

(b) If the alternative mitigation will apply to prehistoric archaeological sites, or historic archaeological sites with a prehistoric component, Eglin AFB will submit a mitigation plan to the SHPO and the tribes for 30 day review. Tribal review will be concurrent with SHPO review. Eglin AFB shall take into consideration any comments it receives from the SHPO or any one of the tribes during the 30 day review period. If the SHPO, or one or more of the tribes, do not respond within the 30-day review period, Eglin AFB shall assume that party has no objection to the alternative mitigation.

(c) All alternative mitigation shall be reported within 12 months of the end of field work. Eglin AFB shall ensure that a draft of the report is prepared and will submit the draft to SHPO and the tribes, as applicable, for 30 day review. Any comments received by Eglin AFB from SHPO or any of the tribes, as applicable, within the review period shall be considered in completing the report. Eglin AFB shall provide the SHPO and the tribes each with two copies of any final report.

IV. Joint Strike Fighter

A. The APE for the JSF component is shown on the map in Appendix D and consists of the following elements

1. The Cantonment area
2. Air Fields: Eglin Field, Choctaw Field, Duke Field
3. Bombing ranges (B-75, B-82, C-52E, C-62)

B. Identification and Eligibility

Eglin AFB, in consultation with the SHPO, has determined that historic properties are present within the JSF portion of the APE. The results of identification and NRHP determinations are summarized below.

1. Cantonment

(a) One cultural resources survey has been conducted within the 230-acre APE for the JSF Cantonment. No archaeological sites have been recorded. Much of the Cantonment area is heavily disturbed due to intensive development. Eglin AFB, in

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consultation with the SHPO, has determined that no additional archaeological survey is warranted and no survey will be conducted within the JSF Cantonment area for the BRAC undertaking.

(b) The JSF Cantonment contains one NRHP eligible historic district. The Strategic Air Command (SAC) Historic District, as defined, contains three separate areas consisting of: (1) A "Christmas tree" alert apron; (2) an alert support area that housed squadron operations and intelligence; and, (3) a weapons storage area for the Hound Dog nuclear cruise missile and the Quail decoy missile. The SAC Alert Historic District consists of 20 buildings and structures and two small parking aprons (See map of historic district and a list of buildings and structures, Appendix E). Of these properties, 18 contribute to the NRHP eligibility of the district (contributing) and four do not contribute to its eligibility (noncontributing).

2. Aerial Bombing Ranges

(a) JSF fighter training will use four existing bombing ranges (Test Areas B-75, C-62, C52E and B-82). Inventory of all intact and safely accessible portions of Test Areas B-82, B-75 and C-62 are complete. Those areas of these ranges that are heavily disturbed or contain unexploded ordinance have not been surveyed for cultural resources. Test Area C-62 has nine archaeological sites, seven of which Eglin AFB has determined, in consultation with SHPO, are not NRHP eligible. Two archaeological sites are potentially eligible for NRHP listing. Test Area C-52E has 25 recorded archaeological sites within it. Eglin AFB has determined, in consultation with SHPO, that 21 of these sites are not NRHP eligible, three are potentially eligible for listing and one is NRHP eligible (List of NRHP eligible and potentially eligible archaeological sites by bombing range, Appendix F).

(b) Additional survey is needed to complete the identification phase for the JSF bombing ranges in Test Areas C-52E. Eglin AFB shall ensure that all surveys are conducted by a professional meeting the qualification standards in Stipulation V. The surveys will be carried out following the Secretary of the Interior's Standards and Guideline for Archaeology and Historic Preservation, included herein by reference.

(c) Eglin AFB shall submit survey reports to SHPO for review and shall determine NRHP eligibility of any reported archaeological sites or historic buildings or structures following the procedures for NRHP eligibility determinations in Stipulation III.C above.

3. Air Fields: Eglin Field, Choctaw Field, Duke Field.

(a) The Air Force will select one of two alternative plans for air field use involving three existing air fields at Eglin AFB: Eglin Field, Choctaw Field and Duke Field. The potential for adverse effect is the same for both alternatives. There are no historic buildings or structures at either Choctaw Field or Duke Field and no effects will occur at these air fields as part of the BRAC undertaking. In addition to the SAC Alert

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Historic District, there are three historic districts within Eglin Field. These are the Eglin Field Historic District with 20 contributing properties, the Warehouse Historic District with four contributing properties, and the Marine Operations Historic District with three contributing properties. A fifth historic district, Camp Pinchot Historic District, with 20 contributing properties, is located outside of and separate from Eglin Field (See map of historic districts in relation to Eglin Field Appendix G)

(b) There are 27 individually eligible historic buildings and structures within the Eglin Field area that are located within both JSF flight training alternatives (See map and list of individually eligible historic properties within Eglin Field Appendix H).

C. Assessment of Effects

The JSF component of the BRAC undertaking will involve demolition, renovation and construction within and adjacent to the SAC Alert Historic District; ground disturbance related to the operational use of the JSF bombing ranges containing NRHP eligible archaeological sites; and potential effects of aircraft noise on historic districts and individually eligible historic buildings and structures within Eglin Field. As such, the characteristics that make multiple historic properties eligible for listing on the NRHP will be altered in ways that diminish their integrity.

1. Cantonment

(a) Five historic buildings within the SAC Alert Historic District will be demolished: Buildings 1339, 1343, 1345, 1352, and 1353 in Area 2. Demolition of these buildings will adversely affect integrity of design, setting, materials, workmanship and possibly feeling and association.

(b) Buildings 1315, 1321, 1326, 1328, 1344, in Area 2 will be renovated as part of the proposed development; however, these renovations will be limited to the buildings' interiors and will not adversely affect their character defining features. Therefore, these buildings will not be subject to treatment.

(c) The undertaking will result in new construction on undeveloped land adjacent to Area 2 and on developed land within, Area 2 of the SAC Alert Historic District. There are no known archaeological sites within the Cantonment APE. Should archaeological deposits be discovered during construction, however, Eglin AFB will follow the provisions for unexpected discoveries in Stipulation VI.

2. Aerial Bombing Ranges

The use of air–to-ground ordinance will result in ground disturbance in areas that are known to contain NRHP eligible or potentially eligible archaeological sites. These actions will adversely affect the integrity of location and materials.

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3. Air Fields

(a) Flight training will result in over-flights of NRHP eligible historic districts and individually eligible buildings and structures in proximity to Eglin Field. Current noise levels at Eglin Field range from 65 to 85 decibels. Aircraft noise in excess of 85 decibels is expected as a result of the BRAC undertaking affecting a larger area within Eglin Field than at present (see map of historic districts and individually eligible buildings at Eglin Field in relation to the projected noise contour zones in Appendix I).

(b) If increased aircraft noise will result in the abandonment of a building or structure that is either a contributing property to a historic district or is individually eligible, and use of the building is no longer viable thereby threatening loss of its physical integrity, then the undertaking will have an adverse effect.

D. Resolution of Adverse Effects

Eglin AFB shall resolve the adverse effects of the BRAC undertaking on the JSF component following the procedures presented below.

1. Cantonment

(a) Eglin AFB will resolve the anticipated adverse effects of demolition on buildings 1339, 1343, 1345, 1352, and 1353 in the following manner.

(1) Update SHPO-approved site forms for each structure in all three areas of the SAC Alert Historic District.

(2) Complete a SHPO-approved Resource Group Form for the district as a whole.

(3) Digitally photograph in color all elevations of each building planned for demolition using a digital camera of 5 megapixels or greater resolution. All photographs will meet the Florida Master Site File photographic documentation requirements issued by the SHPO.

(4) Compile an electronic copy of the floor plans for each building planned for demolition to be stored on a CD or other suitable archival quality media.

(5) Prepare a technical report containing the results of tasks 1-4, as well as a comprehensive history of the SAC Alert program and Eglin's role in the SAC mission.

(6) Prepare an educational booklet designed for the general public summarizing the history of the SAC Alert program and Eglin's role in the SAC mission

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(b) As stipulated in Section 8.C. of the 2003 PA, Eglin AFB will, prior to the approval of demolition and in consultation with SHPO, identify and where appropriate salvage any character-defining historic interior or exterior features of the buildings to be demolished, when such salvage is reasonable, feasible and prudent.

(c) Once tasks (1) through (3), as described in Stipulation IV.D.1.(a) above, have been completed, Eglin AFB may proceed with the development, as needed. Tasks (4) through (6) shall be completed within 12 months of completing Tasks (1) through (3).

(d) All treatment shall be carried out by a professional meeting the qualification standards in Stipulation V.

(e) Draft copies of all reports and other documentation prepared pursuant to Stipulation IV.D.1 (a) above will be submitted to SHPO for a 30-day review. If the SHPO does not respond within 30 days, Eglin AFB will assume the SHPO has no objection to the documents as drafted. In completing the draft documents, Eglin AFB will take into account any comments it receives from the SHPO within the 30-day review period. Final copies of all materials will be submitted to the SHPO and the Florida State Archives. Eglin AFB will make available to the public copies of the final report and the educational booklet upon request

2. Bombing Ranges

(a) All archaeological sites that are either determined NRHP eligible or are potentially eligible to the NRHP shall, whenever possible, be avoided and preserved in place following the avoidance procedures in Stipulation III.E.1 (a) through (c).

(b) To ensure that avoidance is achieved in a consistent and coordinated manner, Eglin AFB shall consult with JSF to determine which of the avoidance measures identified in Stipulation III.E.1 are best utilized to achieve avoidance. If some other measure better achieves avoidance for the purpose of JSF use of the bombing ranges, then Eglin AFB, in consultation with SHPO, shall utilize that measure. Eglin AFB shall provide JSF with copies of the maps identifying all avoided sites and buildings, submitted in a form useful to JSF, and will periodically update these maps as needed. A copy of the maps and any updates will also be provided to the SHPO with a description of the avoidance measures used for each historic property. Periodically, Eglin AFB shall brief appropriate JSF staff on the importance of protecting cultural resources, the sensitivity of cultural resources data, and the need to limit access to this data.

(c) If avoidance is not possible or desirable, Eglin AFB will, as needed, make a determination of NRHP eligibility in accordance with Stipulation III.C. Any NRHP eligible archaeological site or historic building or structure identified within the bombing ranges that cannot be protected through avoidance will be adversely affected by the undertaking. Eglin AFB shall coordinate with JSF and follow the procedures in Stipulation III.E.2 through III.E.4, as applicable, to resolve the adverse effects

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3. Air Fields

   If, as a result of increased aircraft noise, Eglin AFB proposes to abandon buildings or structures that either contribute to the NRHP eligibility of the SAC Alert Historic District, the Eglin Field Historic District, the Warehouse Historic District, or the Marine Operations Historic District, or any one of the individually eligible historic buildings or structures, then prior to abandonment, Eglin AFB shall consult with SHPO regarding treatment of adverse effect and may enter into a Memorandum of Agreement for that purpose.

V. Qualifications

Eglin AFB shall ensure that all investigations performed in compliance with the terms of this PA shall be conducted by, or under the supervision of, a person who meets the Secretary of the Interior's Standards and Guidelines for professional qualifications in history, architecture, architectural history, historic architecture or archaeology, as applicable, described in the Federal Register: June 20, 1997 (Volume 62, Number 119, pages 33707-33723).

VI. Unanticipated Discoveries

A. If a previously unknown archaeological site is discovered during the undertaking, or an unanticipated effect to a known archaeological site, historic building or structure is discovered during the undertaking, then Eglin AFB shall resolve the discovery in the following manner.

1. All disturbance of buildings, structures or ground surfaces, as applicable, in the vicinity of the discovery shall cease and the discovery location will be secured from further harm.

2. A qualified professional, meeting the qualification standards of Stipulation V, shall record the discovery and evaluate its nature, extent, condition, and NRHP eligibility.

3. Eglin AFB shall consult with SHPO on the eligibility of the discovery and the potential effect of continued development within two working days of the discovery.

4. If, in consultation with SHPO, the Eglin AFB determines that the discovery is NRHP eligible and that treatment is warranted, Eglin AFB shall conduct treatment following the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. All treatment will be completed within seven working days of the discovery.

VII. Human Remains

A. If human remains and associated funerary objects are discovered during the undertaking, Eglin AFB shall resolve the discovery in the following manner.

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1. All ground disturbing activity in the vicinity of the discovery shall cease and the discovery location will be secured from further harm until resolved.

2. A professional, meeting the qualification standards of Stipulation V, records the discovery and evaluate its nature, extent, and condition.

3. If Eglin AFB determines the human remains are Native American, it shall consult with appropriate tribe or tribes in accordance with 43 CFR Part 10, the regulations implementing the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001 et seq.).

4. If Eglin AFB determines the human remains are not Native American, or the identity of the human remains is undetermined, Eglin AFB will consult with SHPO and the Florida State Archaeologist pursuant to either 36 CFR Part 800 or the Florida Unmarked Burial Law Chapter 872, Florida Statutes, as applicable, to resolve the discovery. If subsequently, the remains are identified as Native American, Eglin AFB will consult with the tribes pursuant to NAGPRA.

VIII. Emergencies

In the event of an emergency declared by the President of the United States or the Governor of the State of Florida, pursuant to 36 CFR Part 800.12, the following emergency actions are exempted from further consideration under this PA.

A. Protection of the human health and/or the environment from damage of harm by hydrocarbon or hazardous waste.

B. Prevention of imminent damage resulting from the threat of hurricane, tornado or other natural disasters.

C. Stabilization necessitated by the threat of imminent structural failure (e.g. repair of replacement of building footings)

D. Actions waived from the usual procedures of Section 106 compliance, pursuant to 36 CFR 800.12 (d).

IX. Dispute Resolution

Should any of the signatories object within 30 days to any action implementing this agreement, Eglin AFB will consult with the objecting party to resolve the objection. If Eglin AFB determines that the disagreement cannot be resolved, Eglin AFB will request further comment from the ACHP in accordance with the applicable provisions of 36 CFR Part 800.7. Eglin AFB will, in accordance with 36 CFR Part 800.7 (c) (4), take any ACHP comment into account with reference only to the subject of the dispute. Eglin AFB's responsibility to carry out all actions under this agreement that is not the subject of the dispute will remain unchanged.

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X. Amendments

Any signatory to this agreement may request that the agreement be amended, whereupon the other parties will consult to consider such amendment. Where there is no consensus among the signatories, the agreement will remain unchanged.

XI. Termination

Any signatory to this agreement may revoke it upon written notification to the other parties by providing thirty (30) days notice to the other parties, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, Eglin AFB will comply with 36 CFR Parts 800.3 through 800.6 with regard to individual aspects of the undertaking covered by this agreement.

XII. Biennial Review

Every two years following the execution of this PA, for as long as the PA is in effect, Eglin AFB will meet with the 7SFG(A), JSF, the SHPO and the tribes to evaluate the effectiveness of the PA. At that time, the parties will discuss whether or not the PA is functioning as intended and whether the PA needs to be amended in accordance with Stipulation X to correct and improve its effectiveness.

XIII. Renewal

Every 10 years following the execution of this PA, for as long as the PA is in effect, or unless and until this PA is superseded by another agreement, Eglin AFB will consult with the signatory parties to consider renewal of the PA for another ten year period. The PA will be renewed in its existing form as of the date of the renewal, renewed with amendments or terminated. Renewal shall be indicated by the signatures of all the signatory parties to a new set of signature pages, which Eglin AFB will add to the PA. The old signatures will be left in place. Eglin AFB shall distribute a new copy of the PA with the added signatures to all the signatory parties for their records.

XIV. Execution

Execution and implementation of this agreement evidences that Eglin AFB has satisfied its responsibilities under Section 106 of the NHPA for the Base Realignment and Closure undertaking at Eglin AFB.

EGLIN AIR FORCE BASE

By: _____ Date: 10 OCT 08

BRUCE H. MCCLINTOCK, Colonel, USAF
Commander, 96th Air Base Wing

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SEVENTH SPECIAL FORCES GROUP (AIRBORNE)

By:_____ Date: 6 Nov 2008
ANDREW N. MILANI II, Colonel
Chief of Staff, Headquarters, United States Army

JOINT STRIKE FIGHTER PROGRAM

By:_____ Date:_____
GEORGE ROSS, Colonel
Commander, AETC JSF Program Integration Office

FLORIDA STATE HISTORIC PRESERVATION OFFICER

By:_____ Date:_____
FREDERICK P. GASKE, Florida State Historic Preservation Officer

Concurring Parties:

MICCOSUKEE TRIBE OF INDIANS OF FLORIDA

By:_____ Date:_____

THE SEMINOLE TRIBE OF FLORIDA

By:_____ Date:_____

POARCH BAND OF CREEK INDIANS OF ALABAMA

By:_____ Date:_____

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1

SEVENTH SPECIAL FORCES GROUP (AIRBORNE)

By:_____ Date:_____
ANDREW N. MILANI II, Colonel
Chief of Staff, Headquarters, United States Army

JOINT STRIKE FIGHTER PROGRAM

By: George H Ross III Date: 28 Oct 08
GEORGE ROSS, Colonel
Commander, AETC JSF Program Integration Office

FLORIDA STATE HISTORIC PRESERVATION OFFICER

By:_____ Date:_____
FREDERICK P. GASKE, Florida State Historic Preservation Officer

Concurring Parties:

MICCOSUKEE TRIBE OF INDIANS OF FLORIDA

By:_____ Date:_____

THE SEMINOLE TRIBE OF FLORIDA

By:_____ Date:_____

POARCH BAND OF CREEK INDIANS OF ALABAMA

By:_____ Date:_____

20

1

SEVENTH SPECIAL FORCES GROUP (AIRBORNE)

By:_____ Date:_____
ANDREW N. MILANI II, Colonel
Chief of Staff, Headquarters, United States Army

JOINT STRIKE FIGHTER PROGRAM

By:_____ Date:_____
GEORGE ROSS, Colonel
Commander, AETC JSF Program Integration Office

FLORIDA STATE HISTORIC PRESERVATION OFFICER

By: Frederick P. Gaske Date: 10/30/08
FREDERICK P. GASKE, Florida State Historic Preservation Officer

Concurring Parties:

MICCOSUKEE TRIBE OF INDIANS OF FLORIDA

By:_____ Date:_____

THE SEMINOLE TRIBE OF FLORIDA

By:_____ Date:_____

POARCH BAND OF CREEK INDIANS OF ALABAMA

By:_____ Date:_____

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MUSKOGEE (CREEK) NATION OF OKLAHOMA

By:_____ Date:_____

SAC MEMORIAL PROJECT

By: Ron Resh Date: 10/27/08

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References

Eglin Air Force Base
2003 "Programmatic Agreement Between the Air Armament Center, Eglin Air Force Base, the Advisory Council on Historic Preservation and The Florida State Historic Preservation Officer Regarding the Preservation and Protection of Historic and Archaeological Resources Located at Eglin Air Force Base, Florida," executed February 14, 2003. Document on file at Eglin Air Force Base, Florida.

Eglin Air Force Base
2006 "Eglin Air Force Base Integrated Cultural Resources Management Plan Implementation, Eglin AFB, Okaloosa, Santa Rosa and Walton Counties, Florida." Manuscript on file at Eglin Air Force Base, Florida. Final, February, 2006.

Thomas, Prentice M. Jr., and L. Janice Campbell (editors)
1993 "Eglin Air Force Base Historic Preservation Plan: Technical Synthesis of Cultural Resources Investigations at Eglin, Santa Rosa, Okaloosa and Walton Counties, Florida," New World Research, Inc., Report of Investigations 192. Report on file at Eglin Air Force Base, Florida.

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Appendices

A: Map showing vicinity of Eglin AFB, Florida
B: Map showing the APE for the 7SFG(A) component of the BRAC undertaking
C: List of archaeological sites and buildings located within the 7SFG (A) APE that have been determined to be NRHP eligible or potentially eligible
D: Map showing the APE for the JSF component of the BRAC undertaking
E: Map of SAC Alert Historic District and list of contributing buildings and structures
F: List of archaeological sites located within the JSF bombing ranges that have been determined to be NRHP eligible or potentially eligible.
G: Map of historic districts in relation to Eglin Field
H: Map and list of historic properties within Eglin Field that are individually NRHP eligible
I: Map of historic districts and individually eligible historic properties at Eglin Field in relation to projected decibel contour zones

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Appendix F
Biological Assessment and USFWS Consultation

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

MAY 15 2014

Mr. Thomas L. Chavers
Chief, Environmental Assets
96th CEG/CEIEA
501 De Leon Street, Suite 101
Eglin AFB FL 32542-5133

Dr. Donald Imm
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City FL 32405

Dear Dr. Imm:

The following information is being submitted to fulfill requirements under Section 7 of the Endangered Species Act (ESA). This Biological Assessment (BA) addresses potential impacts from overland air operations (OAO) on Eglin Air Force Base (AFB) (Figures 1 and 2). Federally protected species analyzed in this BA include the red-cockaded woodpecker (RCW), reticulated flatwoods salamander, eastern indigo snake, Okaloosa darter, Gulf sturgeon and critical habitat, and four freshwater mussels and their critical habitat (Choctaw bean, narrow pigtoe, southern sandshell, and fuzzy pigtoe). This consultation also considers the gopher tortoise and bald eagle.

Proposed Action

The Proposed Action is the implementation of Eglin AFB overland air operations at a mission surge level during wartime or other significant military involvement. During all other times, Eglin overland air operations are anticipated to be conducted at the current baseline level. The Proposed Action levels of sorties and expendables are shown in Tables 1 and 2. This BA addresses operations involving aircraft (both fixed-wing and rotor-wing), drones, remotely piloted vehicles (RPVs), and balloons and their associated devices, as well as the powered portions (propellants) of missiles, bombs, flares, and rocket/jet assisted takeoff (RATO/JATO) bottles. The aerial coverage of the overland airspace addressed in this BA extends three nautical miles offshore to the boundary of the Eglin Gulf Test and Training Range (EGTTR) (Figure 1), with vertical limits described in Table 3[1]. This BA also addresses the landings and takeoffs at approved helicopter landing zones (HLZs) where helicopters and tilt-rotor aircraft, such as the CV-22 Osprey, pick up or offload troops and cargo[2].

[1] Gulf Regional Airspace Strategic Initiative (GRASI) Landscape Initiative proposed usage of airspace over Blackwater River State Forest and Tate's Hell State Forest is not addressed in this BA.
[2] This BA addresses landings and takeoffs only; activities conducted by personnel on the ground at the HLZs are addressed in BAs prepared for pertinent test areas and interstitial areas on Eglin AFB.

Table 1. Proposed Action Expendable Quantities

SUA* Category	SUA Name	Expendable	Current Baseline	Mission Surge Level
Restricted Area	R-2914A and B	BGM-109	10	30
		Hellfire/Longbow Missile	100	300
		AGM-65G	10	30
		Adv. Kinetic Msl	5	15
		LUU-2	10	30
		CBU-97	25	75
		M-206 Flare	3,500	10,500
		MJU-7 Flare	700	2,100
		MJU-10 Flare	800	2,400
		MJU-27 Flare	150	450
		Experimental Flare	200	600
		Mk-66	20	60
		7.62 mm propellant	50,000	150,000
		9 mm propellant	1,000	3,000
		20 mm propellant	50,000	150,000
		25 mm propellant	80,000	240,000
		30 mm propellant	10,000	30,000
		40 mm propellant	15,000	45,000
		105 mm propellant	5,000	15,000
		.50 Cal propellant	10,000	30,000
		MLRS	50	150
	R-2915A and B	BGM-109	10	30
		CBU-97	10	30
		MLRS	10	30
		AGM-65D, G, H	30	90
		Slap Flare	5	15
		Mk-50 Decoy Flare	10	30
		M-206 Flare	10,000	30,000
		Mk-66	100	300
		5.56 mm propellant	10,000	30,000
		7.62 mm propellant	50,000	150,000
		9 mm propellant	10,000	30,000
		20 mm propellant	50,000	150,000
		25 mm propellant	200,000	600,000
		30 mm propellant	10,000	30,000
		40 mm propellant	40,000	120,000
		105 mm propellant	15,000	45,000
		.50 Cal propellant	50,000	150,000
		MQM-107 RATO	5	15
	R-2915C	None	0	0
	R-2917 (no fly zone)	None	0	0
	R-2918	None	0	0
	R-2919A	BGM-109	10	30
	R-2919B	BGM-109	10	30
Military Operating Area	Eglin A East/West	None	0	0
	Eglin B	None	0	0
	Eglin C	None	0	0
	Eglin D	None	0	0
	Eglin E	BGM-109	10	30
		Slap Flares	5	15
		Distress Flares	5	15
	Eglin F	None	0	0
	Rose Hill	None	0	0

*Special Use Airspace

Table 2. Proposed Action Level of Aircraft Sorties

SUA* Category	SUA Name	Current Baseline	Mission Surge Level
Restricted Area	R-2914A	3,468	5,776
	R-2914B	1,563	2,412
	R-2915A	7,575	14,293
	R-2915B	4,677	8,527
	R-2915C	3,957	7,101
	R-2917 (no fly zone)	0	0
	R-2918	No Data	N/A
	R-2919A	3,575	6,466
	R-2919B	2,560	4,562
Military Operating Area	Eglin A East/West	3,219	5,940
	Eglin B	1,709	3,378
	Eglin C	2,307	4,184
	Eglin D	9	14
	Eglin E	2,545	4,564
	Eglin F	1,283	2,426
	Rose Hill	2,836	3,955

*Special Use Airspace

Table 3. Vertical Limits of Eglin Overland Airspace

SUA Category	SUA Name	Floor (ft AGL or above msl)	Ceiling (ft above msl)
Restricted Area*	R-2914A	Surface	Unlimited
	R-2914B	8,500 msl	Unlimited
	R-2915A	Surface	Unlimited
	R-2915B	Surface	Unlimited
	R-2915C	8,500 msl	Unlimited
	R-2917	Surface	5,000
	R-2918	Surface	Unlimited
	R-2919A	Surface	Unlimited
	R-2919B	8,500 msl	Unlimited
Military Operating Area*	Eglin A East/West	1,000 AGL	17,999
	Eglin B	1,000 AGL	17,999
	Eglin C	1,000 AGL	17,999
	Eglin D	1,000 AGL	3,000
	Eglin E Eglin E ATCAA	Surface 18,000 msl	17,999 60,000
	Eglin F	Surface	17,999
	Rose Hill Rose Hill ATCAA	8,000 msl 18,000 msl	17,999 23,000

*Restricted Area airspace is a block of airspace reserved for military operations that cannot be entered by private or commercial aircraft without permission from the controlling agency; Eglin AFB is the controlling agency for Restricted Area airspace within the Eglin Overland Air Operations Region of Influence. A Military Operating Area is a block of airspace that is jointly used by military, private, and commercial aircraft. AGL - Above Ground Level; ATCAA – Air Traffic Control Assigned Airspace; msl - mean sea level; SUA – Special Use Airspace.

Biological Information

Nine federally listed species (Table 4) occur within or adjacent to the OAO region of influence (Figures 3 and 4). The gopher tortoise and bald eagle were also considered.

Table 4. Federally Listed Species Within or Adjacent to the OAO Region of Influence

Common Name	Scientific Name	Federal Status
Red-cockaded woodpecker	*Picoides borealis*	Endangered
Reticulated flatwoods salamander	*Ambystoma bishopi*	Endangered
Eastern indigo snake	*Drymarchon couperi*	Threatened
Gulf sturgeon*	*Acipenser oxyrinchus desotoi*	Threatened
Okaloosa darter	*Etheostoma okaloosae*	Threatened
Choctaw bean*	*Villosa choctawensis*	Endangered
Narrow pigtoe*	*Fusconaia escambia*	Threatened
Southern sandshell*	*Hamiota australis*	Threatened
Fuzzy pigtoe*	*Pleurobema strodeanum*	Threatened

*Critical habitat for this species is also present on or adjacent to Eglin AFB.

Federally-Listed Species

Red-cockaded Woodpecker

The RCW (*Picoides borealis*) is listed as a state and federally endangered bird species. The RCW excavates cavities in live longleaf pine trees that are at least 85 years old. Due to the preservation of continuous longleaf pine forests on Eglin, the Eglin Range has one of the largest remaining populations of RCWs in the country. In 2003, the USFWS identified Eglin AFB as 1 of 13 primary core populations for the RCW (U.S. Air Force, 2013). In 2009, the RCW population on Eglin reached the designated recovery goal of 350 Potential Breeding Groups (PBGs) and re-consultation was completed for future management of the species. In addition to the goal of 350 PBGs, Natural Resources personnel have developed a long-term goal of 450 PBGs in order to allow for more mission flexibility. The Core Conservation Area includes the area required to reach the long-term population goal of 450 PBGs.

Eglin maintains GIS location information for active RCW cavities, which are defined as any tree containing one or more cavities that are utilized by the RCW, and RCW foraging habitat around active clusters of RCW cavities (Figures 3 and 4). The Eglin RCW population is divided into the eastern subpopulation, which comprises all clusters east of Highway 85, and the western subpopulation, which is comprised of all clusters west of Highway 85. The two populations are

demographically separate and each subpopulation is in a different state of health. The western subpopulation is large and increasing (342 PBGs in 2013); the eastern subpopulation is smaller, but appears to be increasing (90 PBGs in 2013) (Figure 5).

High-quality RCW forage habitat consists of open pine stands with tree diameter at breast height (dbh) averaging 10 inches (in) and larger. While 100 acres of mature pine is sufficient for some groups, birds commonly forage over several hundred acres where habitat conditions are not ideal. Depending on site productivity, different amounts of foraging habitat are required. Natural Resources has determined that Eglin RCW groups utilize large areas for foraging habitat, thus Eglin generally manages for 300 acres per cluster with the allowance of 30 percent overlap with surrounding clusters.

General population recommendations for good quality foraging habitat include 18 or more stems per acre that are greater than 60 years in age and greater than 14 in dbh. Site conditions at Eglin are generally poor; the result is that longleaf pine tends to have smaller dbhs and lower densities than much of the rest of the RCW's range. Good quality foraging habitat on Eglin is defined as habitat that contains between 19 and 33 stems per acre of pines that are greater than 10 in dbh. Another requirement for good quality habitat is that it contains forbs and bunchgrasses in the understory, and has sparse or no hardwood midstory.

Eglin has developed an independent Oracle-based GIS tool (model) that creates foraging habitat assessments, allowing Eglin to consistently and accurately estimate the available foraging resources without sampling the entire Reservation (U.S. Air Force, 2013). The USFWS completed ESA Section 7 consultation on the model in June 2003, and concurred with Eglin Natural Resources findings of "not likely to adversely affect." Research has demonstrated that foraging analyses such as Eglin's model accurately portray the actual territories of RCW groups (Convery and Walters, 2004).

Reticulated Flatwoods Salamander

The reticulated flatwoods salamander (*Ambystoma bishopi*) is state and federally listed as endangered. Optimal habitat for this small mole salamander is open, mesic (moderately wet) woodlands of longleaf or slash pine flatwoods maintained by frequent fires and that contain shallow, ephemeral wetland ponds. Males and females migrate to these ephemeral ponds during the cool, rainy months of October through December. The females lay their eggs in vegetation at the edges of the ponds. Flatwoods salamanders may disperse long distances from breeding sites to upland sites where they live as adults. The primary threat to the flatwoods salamander is loss of mesic habitat through the filling in of wetlands and other alterations to the landscape hydrology. Flatwoods salamander habitat is also threatened by the introduction of invasive, non-native species. The USFWS guidelines in the Federal Register, dated 1 April 1999, establish a 450-meter (1,476-foot) buffer area from the wetland edge of confirmed breeding ponds. Within the buffer area, the guidelines restrict ground-disturbing activities in order to minimize the potential for direct impacts to salamanders, the introduction and spread of invasive non-native plant species, and alterations to hydrology and water quality.

There are 25 known breeding ponds for the reticulated flatwoods salamander on the Eglin Range. Additionally, the Eglin Range supports approximately 17,000 acres of potential

salamander habitat in mesic flatwoods. Flatwoods salamanders and the number of active breeding wetlands both appear to have declined in number since the original Eglin surveys in 1993 and 1994, due in part to several years of prolonged drought in the late 1990s and early 2000s. Eglin has documented larvae in 25 ponds since sampling began in 1993; however larvae or adults have been documented in only 17 of these wetlands since 2002. Breeding wetlands may not have remained inundated long enough for larvae to complete metamorphosis if rainfall amounts were not sufficient, resulting in little population recruitment. In 2013-14, winter precipitation was sufficient to keep the majority of the breeding sites inundated for the entire breeding season; it has yet to be determined if this will translate to successful recruitment.

Eastern Indigo Snake

The eastern indigo snake (*Drymarchon couperi*) is listed as a federal and state threatened species, and is the largest nonvenomous snake in North America. The primary reason for its listing is population decline resulting from habitat loss and fragmentation. Movement along travel corridors between seasonal habitats exposes the snake to danger from increased contact with humans. Indigo snakes frequently utilize gopher tortoise burrows and the burrows of others species for over-wintering. The snake frequents flatwoods, hammocks, stream bottoms, riparian thickets, and high ground with well-drained, sandy soils. The indigo snake could occur anywhere on the Eglin Range because it uses such a wide variety of habitats (U.S. Air Force, 2006). The species is extremely uncommon on the Eglin Range with the sighting of only 29 indigo snakes throughout the Eglin Range from 1956 to 1999, and no reported sightings since 1999. Most of these snakes were seen crossing roads or after being killed by vehicles. It is difficult to determine a precise number or even estimate of the number of these snakes due to the secretive nature of this species.

Okaloosa Darter

The Okaloosa darter (*Etheostoma okaloosae*) is a small state and federally threatened fish. Spawning occurs from March to October, with the greatest amount of activity taking place during April. The entire global population of this species is found in the tributaries and main channels of Toms, Turkey, Mill, Swift, East Turkey, and Rocky Creeks, which drain into two bayous of Choctawhatchee Bay (Figures 3 and 4). These seepage streams have persistent discharge of clear, sand-filtered water through sandy channels, woody debris, and vegetation beds. The Eglin Range contains 90 percent of the 457-square kilometer (176 square mile) drainage area.

Eglin AFB is protecting in-stream flows and historical habitat through management plans, conservation agreements, easements, and/or acquisitions; is implementing an effective habitat restoration program to control erosion from roads, clay pits, and open ranges; is demonstrating that the Okaloosa darter population is stable or increasing and that the range of the Okaloosa darter has not decreased at all historical monitoring sites; and is seeing that no foreseeable threats exist that would impact the survival of the species.

Gulf Sturgeon and Critical Habitat

Data from Eglin/USFWS (unpublished at this time) indicate that Gulf sturgeon begin moving to the Gulf in late October/early November. The fish are detected off Eglin's SRI property until approximately mid-December, when they generally migrate east and west out of the area, possibly to aggregation sites that have been detected near Perdido Key, Alabama, and near Panama City, Florida. Sturgeon activity off of Eglin's property surges in mid-December when they first enter the Gulf and mid-March when sturgeon begin their return to the riverine environment to spawn in the summer. Initial data show that 82 percent of the detections occurred within approximately 500 meters of the shoreline, in water depth less than 40 feet. Further, 99 percent of detections occurred within approximately 1,000 meters of the shore, in water depths less than 60 feet (only 1 percent of detections occurred in water depths of 60 feet or greater). These data support the hypothesis that Gulf sturgeon offshore migrations typically occur in water depths of 40 feet or less.

Critical habitat for the Gulf sturgeon is comprised of 14 geographic areas, or units. The units collectively encompass almost 2,800 river kilometers and over 6,000 square kilometers of estuarine and marine habitat. As pertains to Eglin, critical habitat is delineated for the Yellow River, East Bay, Santa Rosa Sound, and Choctawhatchee Bay, and extends from the mean high-water line to 1 nautical mile offshore in the GOM at SRI and CSB (Figure 3, Figure 4).

Freshwater Mussels and Critical Habitat

Four species of mussels, the southern sandshell (*Hamiota australis*), fuzzy pigtoe (*Pleurobema strodeanum*), narrow pigtoe (*Fusconaia escambia*), and Choctaw bean (*Villosa choctawensis*), have critical habitat that borders Eglin AFB and are listed as threatened or endangered. Preferred habitats are creeks and rivers with slow to moderate currents and sandy substrates. These freshwater mussels are found only in the Yellow, Escambia, and Choctawhatchee River drainages in Florida and Alabama. From the 1990s to 2004, surveys have documented declines in the numbers of these candidate mussel species (Blalock-Herod et al., 2002; Pilarczyk et al., 2006). Furthermore, these surveys have been unable to capture many of these mussel species at sites where they were previously known to occur. These local extirpations and reductions in numbers are attributed to habitat alteration from various sources.

Presently, insufficient information is available to reliably estimate populations of the listed freshwater mussel species. To provide occurrence and population data, the USFWS personnel stationed at Jackson Guard survey and monitor freshwater mussels on Eglin in the critical habitat segments of the Yellow and Shoal Rivers. These assessments include snorkel surveys, scuba surveys, and benthic habitat characterization.

Other Species Considered

Gopher Tortoise

The gopher tortoise (*Gopherus polyphemus*) is a state threatened species, and a federal candidate species (in Florida). A 2011 Federal Register notice documented the 12-month finding on a petition to list the gopher tortoise as threatened in the eastern portion of its range (east of the

Mobile and Tombigbee Rivers). The review found that the listing of the gopher tortoise is warranted; however, listing is currently precluded by higher priority actions, and a proposed rule to list the gopher tortoise will be developed as priorities allow. In December 2008, all Department of Defense entities, as well as state agencies and other non-governmental organizations, signed a Candidate Conservation Agreement with the USFWS. This agreement defines what each agency will voluntarily do to conserve the gopher tortoise and its habitat.

The gopher tortoise is found primarily within the sandhills and open grassland ecological associations on the Eglin Range, where it excavates a tunnel-like burrow for shelter from climatic extremes and refuge from predators. The primary features of good tortoise habitat are well-drained sandy soils, open canopy with plenty of sunlight, and abundant food plants (forbs and grasses). Prescribed fire is often employed to maintain these conditions. Nesting occurs during May and June and hatching occurs from August through September. Gopher tortoise burrows serve as important habitat for many species, including the federally listed eastern indigo snake.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is protected by the Bald and Golden Eagle Protection Act. Eagles are territorial and exhibit a strong affinity for a nest site once a nest has been established. It is common for a breeding pair to rebuild damaged or lost nests in the same tree or in an adjacent tree. Individual pairs return to the same territory year after year and territories are often inherited by subsequent generations. The nesting period in the southeast United States extends from 1 October to 15 May with most nests being completed by the end of November. In northwest Florida, most successful nests are laid by mid-February. The quality and amount of forage resources, mainly fish and carrion, heavily influence fledgling survival.

On the Eglin Mainland, there are three active bald eagle nests. At Cobb's Overrun, the nest is located directly under the flight path of Eglin's main runway; eagles have nested in this area since 1998. Another nest is located a few miles from the Main Base runways at Poquito Bayou; the nest is fairly new (2-3 years old). The age of the third nest at Basin Bayou is unknown as it was just discovered in 2013.

Determination of Impacts

This section analyzes potential impacts from overland air operations, and identifies methods to reduce impacts to protected species. Impact assessments were made with the understanding that Conservation Measures in this BA would be implemented as part of the Proposed Action.

Federally Listed Species

Red-cockaded Woodpecker

RCWs may be affected by aircraft operations and HLZ usage due to noise harassment, direct impacts, and habitat modification (due to wildfires started by aircraft). The *Red-cockaded Woodpecker Programmatic Biological Opinion* (PBO) (USFWS, 2013) established a process to evaluate potential impacts to RCWs and determine restrictions for Eglin mission activities.

Potential impacts from Eglin air operations will be covered under the *RCW PBO.* Air operations will be conducted in accordance with Conservation Measures and Terms and Conditions from the *RCW PBO*. Pertinent requirements that will apply to OAO include:

- Do not establish new HLZs/LZs within 500 feet of active RCW trees without prior written authorization from the Chief of Eglin Natural Resources.
- Range users must check the fire danger rating daily, and follow the Eglin Wildfire Specific Action Guide restrictions for pyrotechnics use by class day (Table 5).
- Range users must immediately notify the Joint Test & Training Operations Control Center (JTTOCC) and Eglin Fire Dispatch of any wildfire observed.

Additionally, the following conservation measures will further minimize the potential for wildfire starts from aircraft operations:

- Maintain HLZs/LZs in a manner that minimizes the fuel load (i.e., vegetation/debris).
- Minimize CV-22 usage of vegetated HLZs during Very High and Extreme fire danger periods.

Table 5. Eglin AFB Wildfire Specific Action Guide Restrictions Applicable to OAO

Fire Danger Rating	Restrictions
Low	No restrictions on missions.
Moderate	No restrictions on pyrotechnics. Post a fire watch for at least 20 minutes after completing use of pyrotechnics.
High	Use caution with pyrotechnics. Post a fire watch for at least 30 minutes after completing use of pyrotechnics.
Very High	NO FLARES below 1000 Above Ground Level.
Extreme	NO PYROTECHNICS allowed without prior approval from Wildland Fire Program Manager or designee.

Reticulated Flatwoods Salamander

Aircraft operations may impact flatwoods salamanders and their habitat, primarily through wildfires potentially ignited during aircraft takeoffs/landings. The potential for direct impacts and water quality impacts from landings/takeoffs is minimized by the restriction on new HLZ/LZ establishment within 1500 feet of reticulated flatwoods salamander ponds, thus is not analyzed any further. The three existing HLZs that occur within the buffer of a known or potential pond have been evaluated and were deemed poor quality habitat. Fire is typically beneficial to salamander habitat through the prevention of mid-story encroachment; however, fires can cause damage if they burn too hot, smolder, or if fire suppression activities are necessary. Wildfires and wildfire suppression activities in salamander habitat may negatively affect the flatwoods salamander through modification of hydrology, vegetative damage, sedimentation, and direct mortality. Salamanders may be killed by heavy equipment used during suppression or by the wildfire itself; however, this is unlikely given that salamanders spend the majority of their time underground when not in the breeding pond itself.

Additionally, per the Eglin INRMP, prescribed fire will continue to be a priority in flatwoods salamander habitat where Natural Resources strives to maintain a three-year rotation to reduce

catastrophic wildfires. Fire crews are briefed on protection of flatwoods salamander habitat prior to and during the fire season. Flatwoods salamander ponds and buffers are included as part of the biologically sensitive areas shown on the Suppression Considerations map (Figure 6). Within these sensitive areas, plows are not used off range roads for fire suppression except in extreme conditions. For any damage caused during emergency situations, Natural Resources would conduct an assessment and write an incident report for the USFWS with a detailed description of actions taken to extinguish the fire and rehabilitate the impacted areas.

With the implementation of conservation measures, overland air operations may affect, but are **not likely to adversely affect** the reticulated flatwoods salamander.

Eastern Indigo Snake

Wildfires caused by air operations may affect the indigo snake due to the use of heavy equipment during suppression. However, this occurrence is unlikely, as the snake would most likely move away from the area if it sensed a general disturbance in its vicinity. Equipment operators would be directed to avoid any snakes they spot.

With the implementation of conservation measures, overland air operations may affect, but are **not likely to adversely affect** the eastern indigo snake.

Okaloosa Darter, Gulf Sturgeon, Freshwater Mussels and Critical Habitat

Wildfires caused by air operations may impact Okaloosa darters, Gulf sturgeon, and freshwater mussels if heavy equipment is used during suppression in or near streams or rivers where they are found. To minimize the potential for hydrologic modification and vegetative damage from wildfire control efforts, buffer areas around streams and rivers are included as part of the biologically sensitive areas shown on the Suppression Considerations map (Figure 6). Within these sensitive areas, plows are not used off range roads for fire suppression except in extreme conditions. For any damage caused during emergency situations, Eglin Natural Resources would submit an incident report detailing suppression and rehabilitation activities to the USFWS. The restriction on HLZ/LZ establishment within 300 feet of Okaloosa darter streams, Gulf sturgeon critical habitat, and freshwater mussel critical habitat minimizes the potential for runoff to reach these waterways, thus impacts on these aquatic species from exposed soils at HLZs/LZs is unlikely.

With the implementation of conservation measures, overland air operations may affect, but are **not likely to adversely affect** the Okaloosa darter, Gulf sturgeon, freshwater mussels and are **not likely to adversely modify** Gulf sturgeon or freshwater mussel critical habitat.

Other Species Considered

Gopher Tortoise

Aircraft landings and wildfires caused by aircraft operations may impact the gopher tortoise and its burrow. The gopher tortoise may be directly impacted by helicopters or by heavy equipment used during fire suppression. However, this occurrence is unlikely, as the tortoise

would most likely move away from the area if it sensed a general disturbance in its vicinity. Equipment operators would be directed to avoid burrows and gopher tortoises. If a tortoise burrow is found within a HLZ/LZ and landing operations could not avoid the burrow by 25 ft, the tortoise would be relocated in accordance with Florida Fish and Wildlife Conservation Commission (FWC) protocols.

With the implementation of conservation measures, impacts from overland air operations would not be significant to the gopher tortoise.

Bald Eagle

No HLZs/LZs currently occur within 1,000 feet of a known bald eagle nest, and no new HLZs/LZs will be established within 1,000 feet of a known nest. During the nesting season (October 1 to May 15), no helicopter or fixed-wing aircraft operations would occur within 1,000 feet of the nest per the *National Bald Eagle Management Guidelines* (USFWS, 2007), except in situations where the eagles have demonstrated tolerance for the activity. This exception includes any nests established near airfields where the birds have chosen to build in areas of intensive air operations, such as the nest on Eglin Main Base. Eglin Natural Resources will install markers next to any eagle nest trees for avoidance as deemed necessary.

With the implementation of conservation measures, impacts from overland air operations would not be significant to the bald eagle.

Conservation Measures

The Conservation Measures of this Overland Air Operations Section 7 Consultation are commitments made by Eglin AFB as part of the Proposed Action. Proponents are responsible for ensuring these Conservation Measures are implemented. If Eglin AFB (1) fails to assume and assure implementation of the Conservation Measures or (2) fails to require the participants in overland air operations to adhere to the Conservation Measures through enforceable terms, the protective coverage of section 7(o)(2) of the ESA may lapse, and may result in penalties, fines, and immediate operational shut-down of overland air operations.

The proponent will implement the following Conservation Measures as part of the Proposed Action to minimize or offset potential adverse impacts.

- Use only the approved LZs, HLZs, and DZs listed in EAFBI 13-212 unless prior written approval has been granted by Eglin.
- Annually consider potential impacts to RCW from OAO, as detailed in the *Red-cockaded Woodpecker Programmatic Biological Opinion*.
- Do not establish new HLZs/LZs within the following areas without prior written authorization from the Chief of Eglin Natural Resources:
    - 500 feet of active RCW trees
    - 1500 feet of known or potential reticulated flatwoods salamander ponds

  - 300 feet of Okaloosa darter streams, Gulf sturgeon critical habitat, and freshwater mussel critical habitat
  - 1,000 feet of known bald eagle nests
- Range users must check the fire danger rating daily, and follow the Eglin Wildfire Specific Action Guide restrictions for pyrotechnics use by class day (Table 5).
- Range users must immediately notify JTTOCC and Eglin Fire Dispatch of any wildfire.
- Maintain HLZs/LZs in a manner that minimizes the fuel load (i.e., vegetation/debris).
- Minimize CV-22 usage of vegetated HLZs during Very High and Extreme fire danger periods as detailed in the Eglin Wildland Fire Specific Action Guidelines (Table 5).
- Eglin will follow protocols detailed in the latest USFWS-approved INRMP regarding wildfire protection measures for sensitive species and habitats (see Suppression Consideration Map—Figure 6).
- Conduct periodic checks of HLZs/LZs for erosion issues and to ensure fuel loads (vegetation/debris) are maintained at safe levels.
- During fire suppression activities, equipment operators will be directed to avoid gopher tortoises, burrows, and indigo snakes.
- If a tortoise burrow is found within a HLZ/LZ, and landing operations could not avoid the burrow by 25 ft, the tortoise would be relocated in accordance with FWC protocols.
- During the nesting season (October 1 to May 15), no helicopter or fixed-wing aircraft operations will occur within 1,000 feet of known eagle nests per the *National Bald Eagle Management Guidelines* (USFWS, 2007), except in situations where the eagles have demonstrated tolerance for the activity (as determined by Eglin Natural Resources).
- Follow Eglin spill prevention and spill response procedures.

Conclusion

Based on analysis of potential direct physical impacts, harassment, and habitat impacts associated with the overland air operations, the reticulated flatwoods salamander, eastern indigo snake, Okaloosa darter, Gulf sturgeon and critical habitat, and freshwater mussels (Choctaw bean, narrow pigtoe, southern sandshell, and fuzzy pigtoe) and critical habitat may be affected, but are not likely to be adversely affected by the Proposed Action. Potential impacts to the RCW will be evaluated through the *RCW PBO*. To minimize potential negative effects of overland air operations, Eglin will implement the Conservation Measures listed in this BA, and applicable Terms and Conditions from the *RCW PBO*.

Eglin Natural Resources will notify the USFWS immediately if any actions considered in this BA are modified or if additional information on listed species becomes available, as a re-initiation of consultation may be required. If impacts to listed species occur beyond what has been considered in this assessment, all operations will cease, and the USFWS will be notified. Any modifications or conditions resulting from consultation with the USFWS will be

implemented prior to commencement of activities. Eglin Natural Resources believes this fulfills all requirements of the Endangered Species Act, and no further action is necessary.

If you have any questions regarding this letter or any of the proposed activities, please do not hesitate to contact Mr. Jeremy Preston (850) 883-1153, or myself at (850) 882-0143.

Sincerely,

THOMAS L. CHAVERS, GS-13

Attachments: Figures 1-6

INFORMAL CONSULTATION REGARDING

IMPACTS TO FEDERALLY LISTED SPECIES
RESULTING FROM EGLIN AFB OVERLAND AIR OPERATIONS

Reviewed by:

Bruce Hagedorn — 5-13-14
Bruce Hagedorn
Supervisory Biologist,
Eglin Natural Resources
Date

Larry Chavers — 5-15-14
Larry Chavers
Chief, Eglin Environmental Assets
Date

USFWS CONCURRENCE:

Cole J. H — 6-12-14
Project Leader
U.S. Fish and Wildlife Service
Panama City, FL
Date

04EF3000-2014-I-0178
FWS Log No.

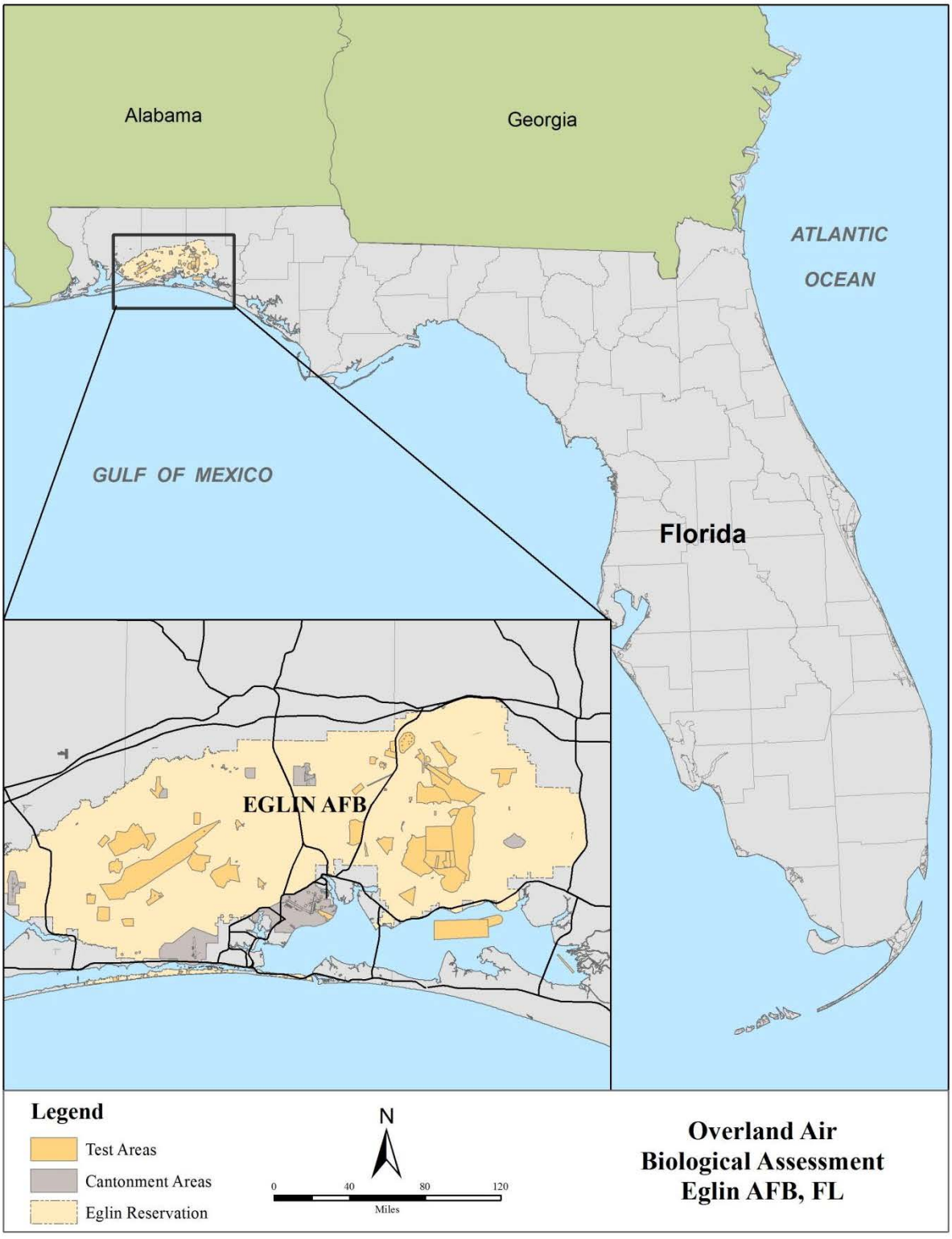

Figure 1. Location of Eglin AFB, FL

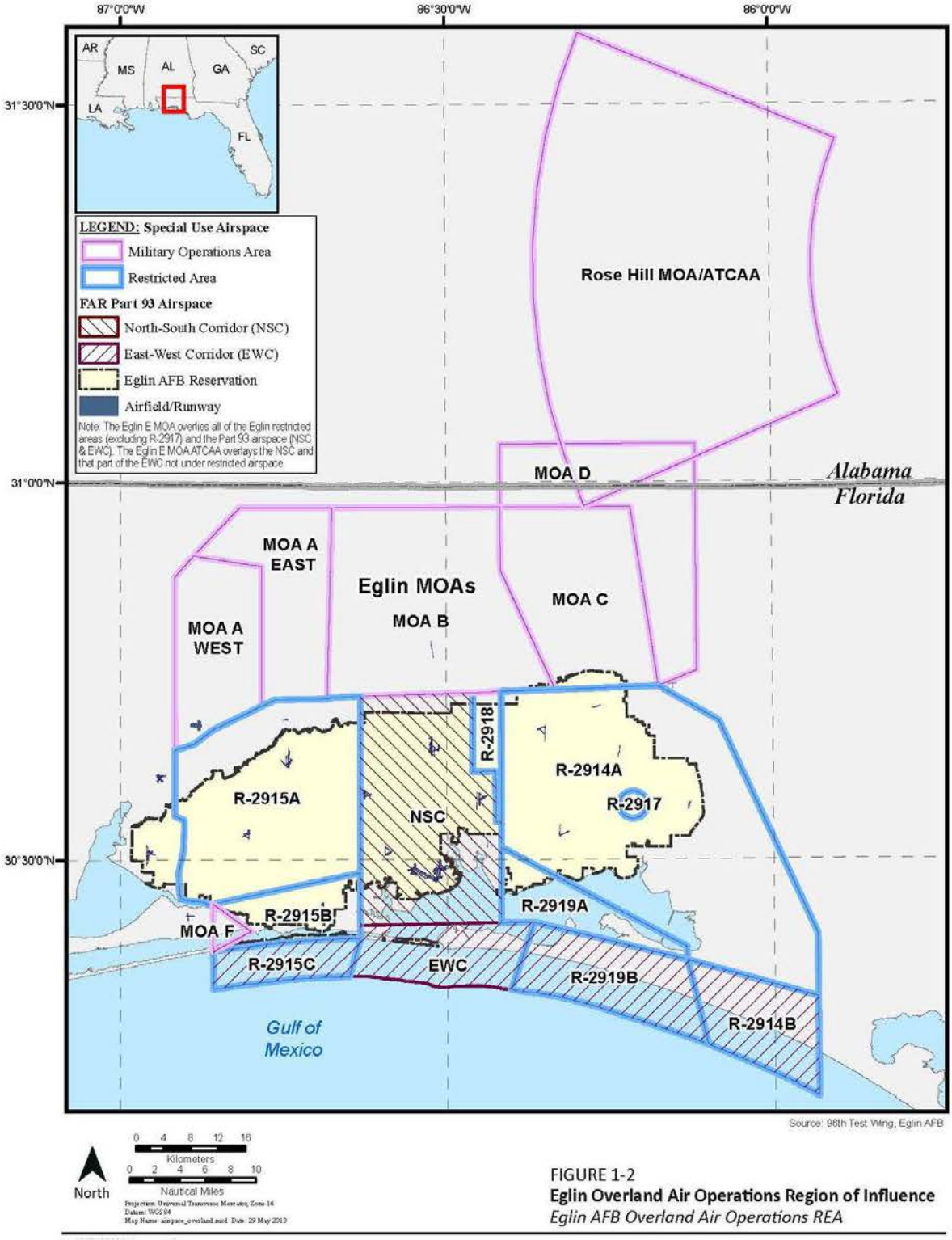

Figure 2. Location of Eglin AFB Overland Air Operations

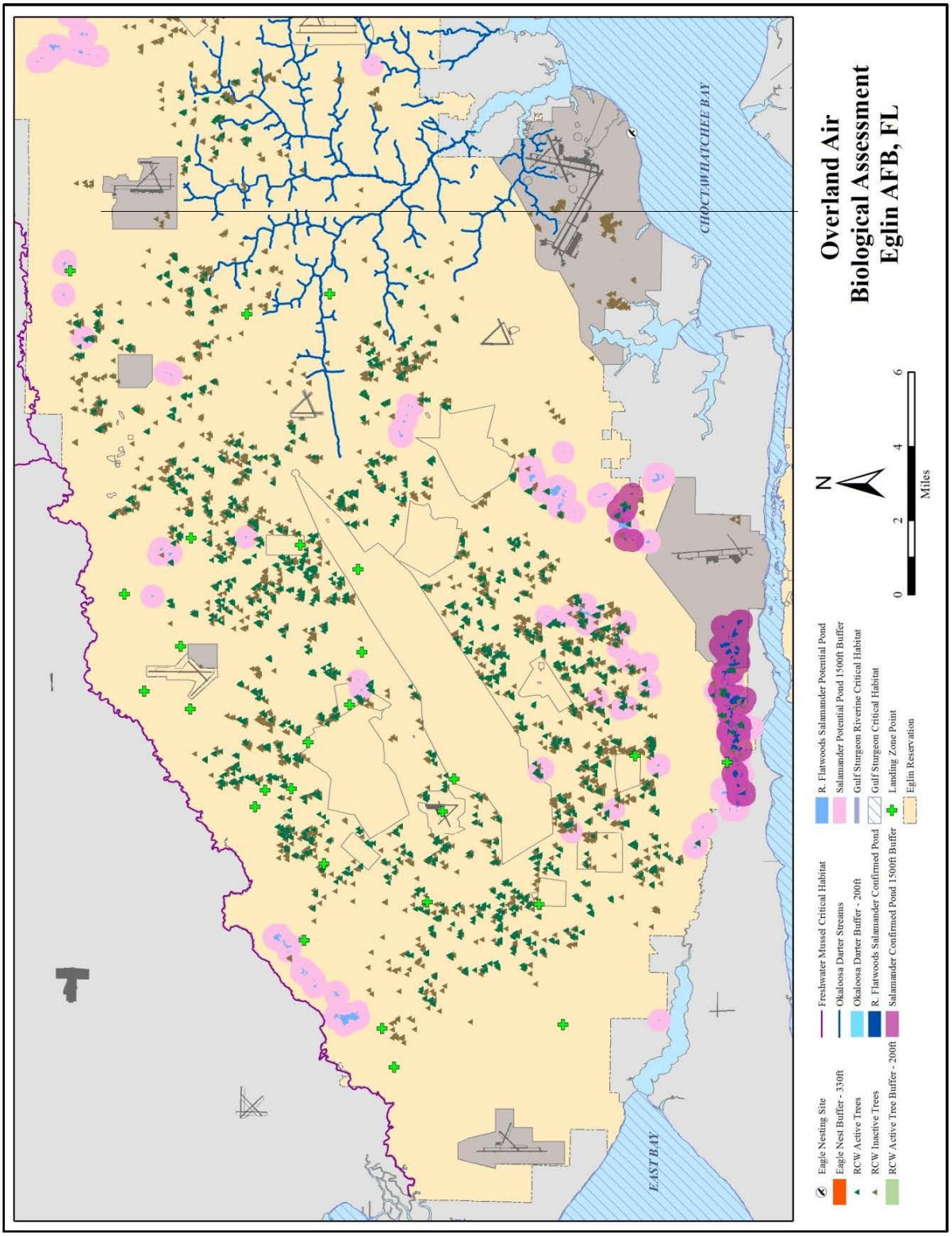

Figure 3. Federally Listed Species Within or Adjacent to the OAO ROI (West Side)

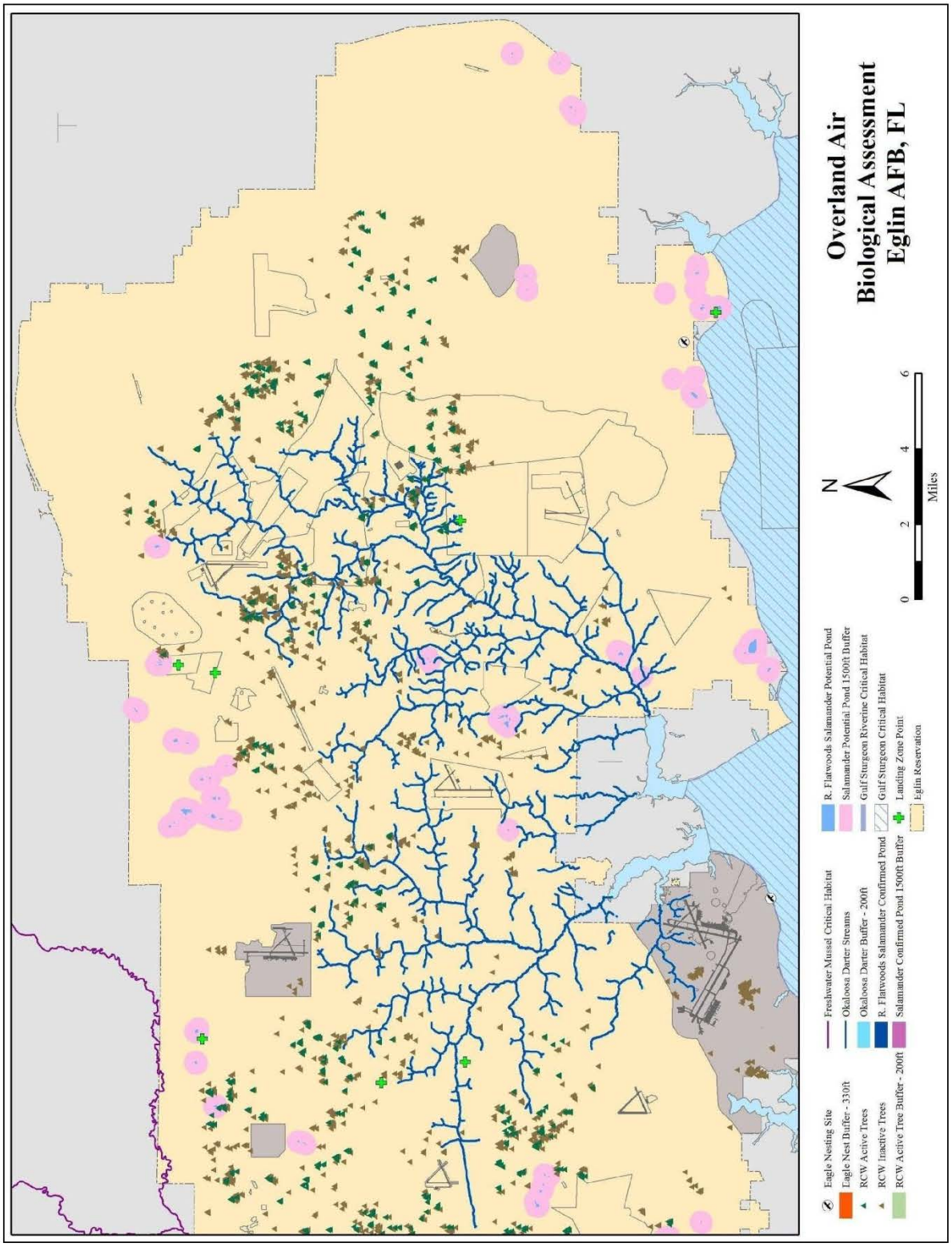

Figure 4. Federally Listed Species Within or Adjacent to the OAO ROI (East Side)

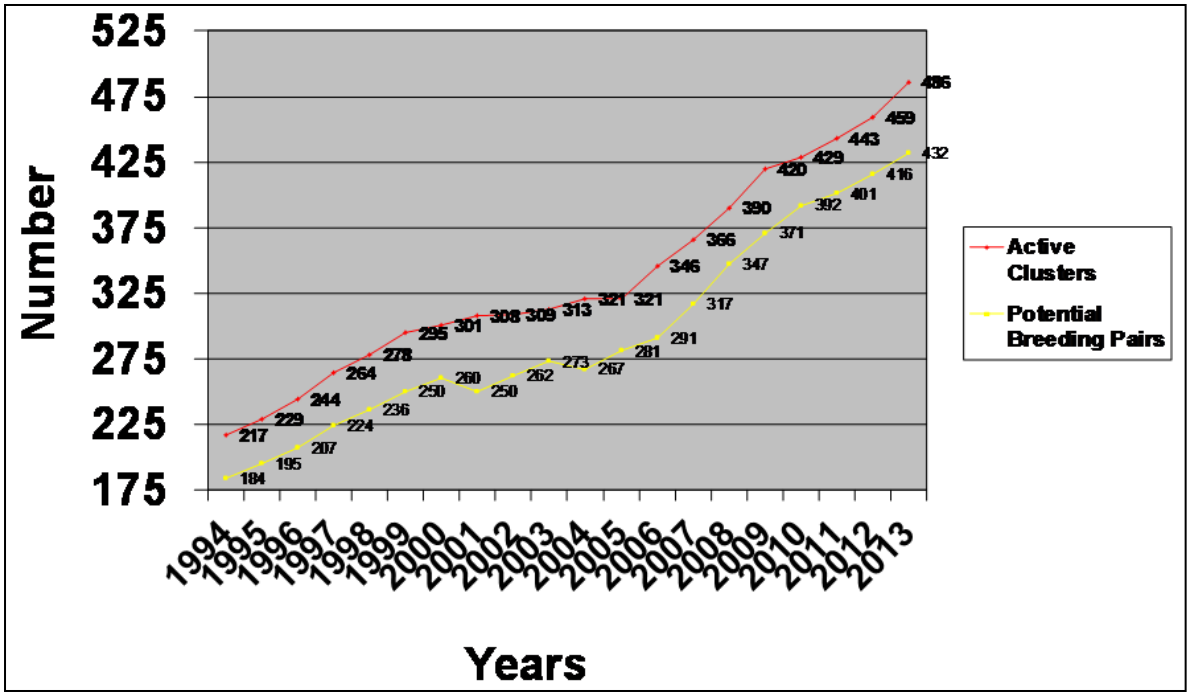

Figure 5. Eglin RCW Population Trends and Goals (1994-2013)

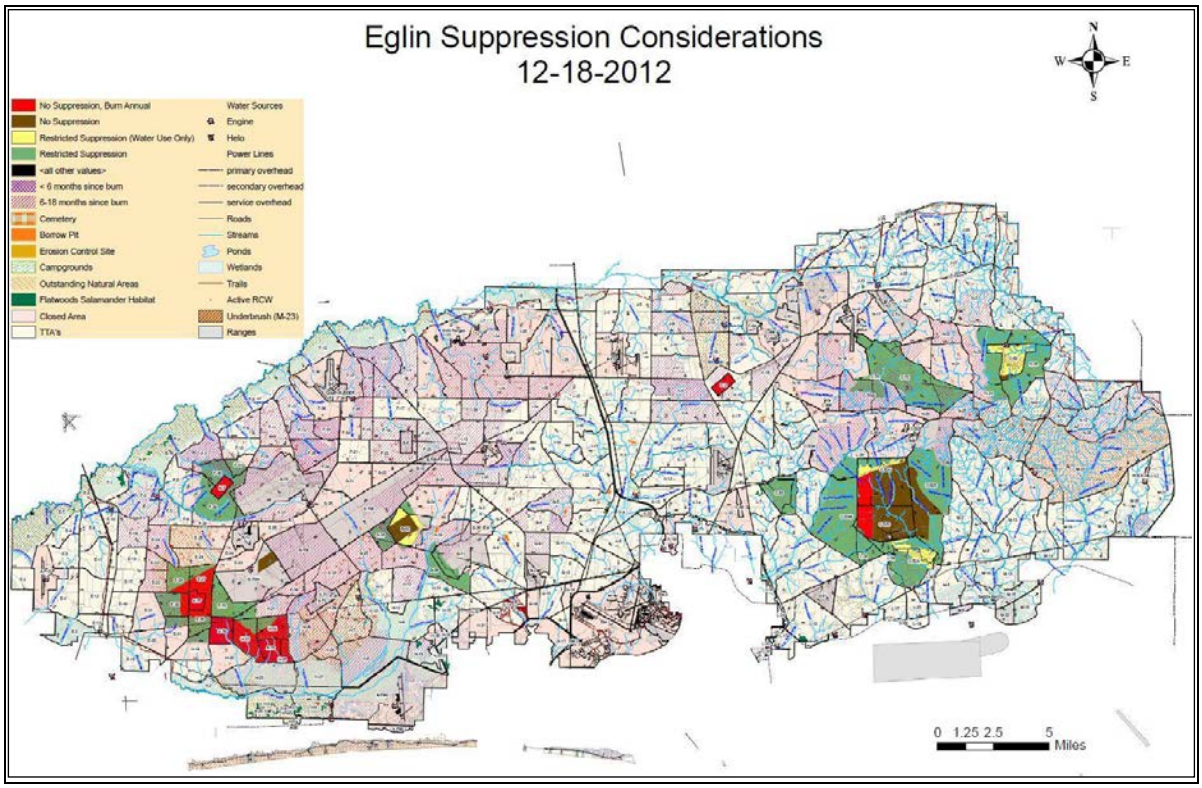

Figure 6. Suppression Consideration Areas for Eglin AFB (NOTE: This is a data snapshot)

References

Blalock-Herod, H. N., J. J. Herod, and J. D. Williams, 2002. Evaluation of conservation status, distribution, and reproductive characteristics of an endemic Gulf Coast freshwater mussel, *Lampsilis australis* (Bivalvia: Unionidae). Biodiversity and Conservation, 11: 1877-1887.

Convery, K. M., and J. R. Walters, 2004. Red-cockaded woodpecker home range and foraging partitions. Pages 526-535 *in* R. Costa, and S. J. Daniels, editors. Red-cockaded woodpecker: road to recovery.

Pilarczyk, M. M., P. M. Stewart, D. N. Shelton, H. N. Blalock-Herod, and J. D. Williams, 2006. Current and Recent historical freshwater mussel assemblages in the Gulf Coastal Plains. Southeastern Naturalist, 5(2): 205-226.

U.S. Air Force, 2013. Threatened and Endangered Species Component Plan to the Integrated Natural Resources Management Plan 2013 Annual Update. Eglin AFB, Florida.

U.S. Fish and Wildlife Service (USFWS), 2007. National Bald Eagle Management Guidelines. May.

USFWS, 2013. Red-cockaded Woodpecker Programmatic Biological Opinion, Eglin AFB, FL. August.

-----Original Message-----
From: Lehnhoff, Lisa [mailto:lisa_lehnhoff@fws.gov]
Sent: Tuesday, July 22, 2014 3:18 PM
To: PRESTON, JEREMY R GS-12 USAF AFMC 96 CEG/CEIEA
Cc: KNIGHT, KELLY E CTR USAF AFMC 96 CEG/CEIEA; Kelly, Patricia; HIERS, STEPHANIE D CTR USAF AFMC 96 TW/96 CEG/CEIEA; Catherine Phillips; Grant Webber
Subject: Re: RCW BO

Hey Jeremy,

I spoke with Catherine on Monday about this issue. The Service recognizes that two (2) consultations, C-52 and Overland Air Operations, were completed with the caveat that they would be covered under an Amended RCW Programmatic BO (2013-F-0143) for the NLAA actions.

Due to additional work loads because of staff reductions, the RCW programmatic BO amendment will take a little longer than expected to be completed.

In the event Eglin wished to proceed with either of the two previously mentioned consultations, please be advised that Eglin is covered under the RCW programmatic if all terms and conditions listed in the programmatic are followed.

Please feel free to contact me if you have any questions or comments.
Thanks,

Lisa Lehnhoff
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Panama City, FL 32405
850-769-0552 x.225