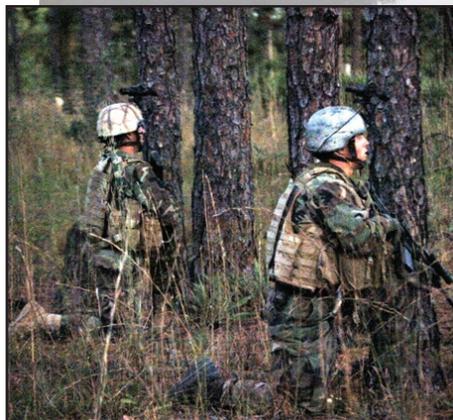




# Eglin BRAC Program 2005



## PROPOSED IMPLEMENTATION OF THE BASE REALIGNMENT AND CLOSURE (BRAC) 2005 DECISIONS AND RELATED ACTIONS AT EGLIN AFB, FL



**OCTOBER 2008**

**FINAL  
ENVIRONMENTAL  
IMPACT STATEMENT  
EXECUTIVE SUMMARY**

This volume contains the printed Executive Summary of the Proposed Implementation of the Base Realignment and Closure (BRAC) 2005 Decisions and Related Actions at Eglin AFB Final Environmental Impact Statement (EIS) and the entire Final EIS on the CD in the pocket below. For your convenience, a list of acronyms is on the last page of this document.

To view the Final EIS on CD, you will need Adobe Acrobat® Reader. If you do not already have Adobe Acrobat® Reader, you can download it at [www.adobe.com](http://www.adobe.com).

- Insert the CD in your computer's CD drive and double-click on the file in the CD directory.
- Either scroll through the document or click on a heading in the Table of Contents and it will take you to that section of the Final EIS.

The CD files are read-only, which means you may view and/or print them. A printed copy of the Eglin BRAC EIS is available at each of the public libraries in Crestview, Fort Walton Beach, Niceville, Okaloosa-Walton College, and Valparaiso (Florida) and Monroeville and Andalusia (Alabama). The EIS is also available online at [www.eglin.af.mil/](http://www.eglin.af.mil/).

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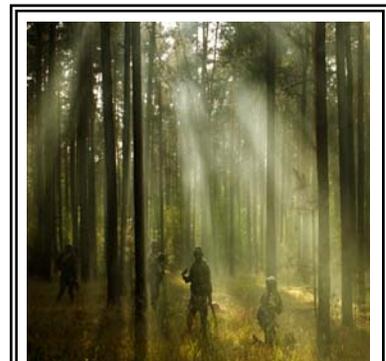
## EXECUTIVE SUMMARY

### 1. INTRODUCTION

On 8 September 2005, the 2005 Defense Base Closure and Realignment Commission (DBCRC) completed its review of the base realignment and closure (BRAC) recommendations made by the Secretary of Defense and forwarded a Final Report to the President (DBCRC, 2005). The President approved the Commission's recommendations, forwarded them to Congress, and Congress did not disapprove the recommendations. Therefore, those 2005 BRAC recommendations associated with Eglin Air Force Base (AFB) must be implemented as stated in the Final Report without any deviation or consideration of alternate locations. As such, Eglin AFB is the only installation under consideration for the Proposed Action and alternatives described in this Environmental Impact Statement (EIS).

The recommendations that the Commission identified for Eglin AFB and addressed in this EIS are:

1. **Army 7<sup>th</sup> Special Forces Group (7SFG) Airborne (A) (DBCRC, 2005, p. 9):** Relocate the Army 7SFG(A) to Eglin AFB, Florida, from Fort Bragg, North Carolina.
2. **Joint Strike Fighter (JSF) Initial Joint Training Site (IJTS) (DBCRC, 2005, p. 184):** Locate sufficient numbers of Air Force and Marine pilots and Naval aviators and operations support personnel to establish the JSF IJTS at Eglin AFB.



*The Army 7th Special Forces Group, Airborne, has a history that dates back to commando raids during World War II and has supported similar efforts in nearly every action since then. Today, they conduct reconnaissance and direct action missions when and where needed.*



*The Joint Strike Fighter is designed to replace and supplement a variety of Air Force, Navy, and Marine aircraft.*

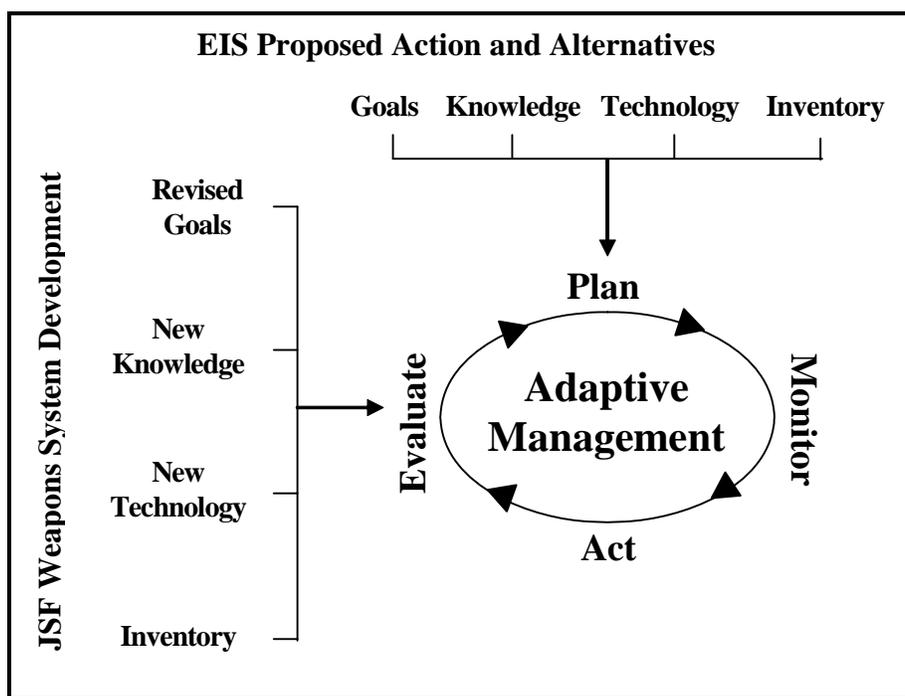
The 7SFG(A) is an existing organization with established cantonment and training requirements. The F-35 is a new weapons system for which operational scenarios, such as how pilots will train, the number of training operations, and activities within the airspace, will be refined as the system matures. This Final EIS recognizes that a large number of operational scenarios are possible. The JSF IJTS and JSF training are presented in a programmatic approach with a range of alternatives

to bracket the facilities and training activities expected to occur. The final decision could be a selection of one of the alternatives in its entirety or a selection of parts of each alternative from within the range of alternatives for each decision.

**Cantonment Area:**  
*Permanent buildings and facilities at a main location to support a military mission.*

The Air Force recognizes that even after the EIS and ROD are complete, the JSF IJTS and the 7SFG(A) would need to be managed as a program. Adaptive management principles and tiering of National Environmental Policy Act (NEPA) information will be needed as the DoD services learn more about the aircraft and its capabilities, and subsequently what types of pilot and maintenance training are needed. This is a process of learning; as we learn, we will adapt our training program.

Figure ES-1 describes the adaptive management process applied in this EIS. The process consists of providing the best information available to the public and agencies, conducting environmental planning based on that information, continually monitoring the plan as the F-35 weapon system develops, taking steps to identify and reduce potential environmental consequences, evaluate the results in light of new information on the weapons system and/or environmental resources, and informing the public of substantial changes. That information could include tiered environmental analyses for changes which could constitute a major Federal action.



Source: Interagency Ecosystem Management Task Force, The Ecosystem Approach: Healthy Ecosystems and Sustainable Economies, Volume I – Overview. 1995

**Figure ES-1. Adaptive Management Process**

This Executive Summary presents information derived from the Final EIS for the Proposed Implementation of the BRAC 2005 Decisions and Related Actions at Eglin AFB, Florida (referred to in this document as the Eglin BRAC Implementation). This Executive Summary is not meant to replace the EIS. This summary refers the reader to the EIS and its sections for complete review of information.

This Final EIS incorporates the most up-to-date details for the 7SFG(A) and the JSF IJTS beddown and training. The Air Force has sought, through scoping and associated community meetings, to involve affected communities and their government officials by providing as much information as available to the communities. The EIS has been prepared in accordance with NEPA and its implementing regulations. This EIS, including the Executive Summary, is issued for a 30-day waiting period. Comments received on the Draft EIS have been incorporated into the Final EIS as required by the regulations implementing NEPA. These comments, in addition to the EIS analysis and other factors, will be considered in decision-making regarding the BRAC actions.

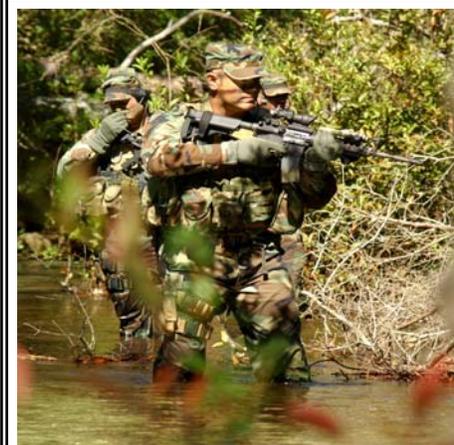
*As you review this Executive Summary, you will find boxes such as this one summarizing public comments. Text near the box addresses the comment raised. For example, one scoping commentor expressed concern with the adequacy of the involvement of affected communities and their government officials. Please see the EIS Section 1.4.*

## 2. PURPOSE OF AND NEED FOR THE ACTION

The purpose is to implement the BRAC 2005 decisions, as required by law, to relocate the 7SFG(A) from Ft. Bragg to Eglin AFB, and establishing the JSF IJTS at Eglin AFB.

To implement the Eglin BRAC 2005 decisions, the Air Force, Army, Navy, and Marine Corps identified the following four required actions at the Eglin Reservation:

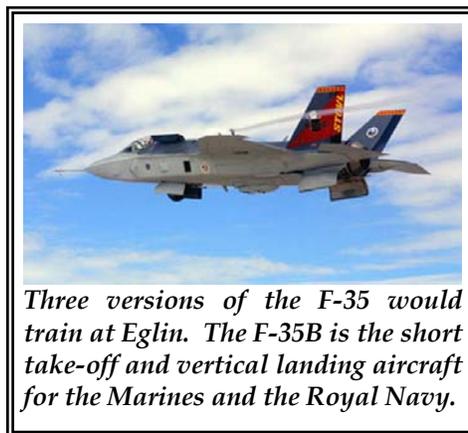
- Requirement 1: Establish 7SFG(A) cantonment area on Eglin AFB. The cantonment area for the 7SFG(A) includes operations and maintenance facilities; housing; dining facilities; munitions storage and loading facilities, and all supporting construction and operations. The decision to be made is where to locate the cantonment area.
- Requirement 2: Accommodate 7SFG(A) training requirements. The decision to be made is where to provide, on Eglin, the range space, airspace, ground support, and scheduling needed for training missions.
- Requirement 3: Establish the JSF IJTS cantonment area on Eglin Main Base with its two existing runways in accordance with the BRAC Commission's direction. The decision to be made is where to locate the IJTS, which includes required training and maintenance facilities; hangars, dormitories; munitions storage and loading facilities; and all supporting construction and operations.



*7SFG(A) training requires exclusive use ranges which permit maneuvers and bivouacking. Air Force Special Operations Command and Army personnel currently train together and would continue to do so on Eglin AFB.*

- Requirement 4: Accommodate JSF IJTS flight training requirements within Eglin-managed airspace by providing airfields, airspace, ground support, and scheduling for training missions. The decision to be made is what airfields, airspace, and supporting areas would accommodate the JSF IJTS flight training requirements. Each of the alternatives considers Eglin as the Main Operating Base (MOB) from which aircraft depart for and terminate their training activities consistent with BRAC requirements.

These four requirements form the basis for alternative development addressed in this EIS. Each requirement is addressed in a separate chapter of the EIS. The Air Force will consider the potential environmental impacts described in the Final EIS and public and agency comments as inputs for how to implement the BRAC decisions. Because the BRAC decisions by law must be implemented, the Air Force cannot select the No Action Alternative. The No Action Alternative is used for comparisons to the action alternatives in the Final EIS. The Air Force is the military department exercising real property accountability for Eglin AFB. Consequently, the EIS has been developed in compliance with the promulgated Air Force NEPA-implementing regulations (32 Code of Federal Regulations [CFR] 989), as directed by 32 CFR 174.17, *Revitalizing Base Closure Communities and Addressing Impacts of Realignment*.



*Three versions of the F-35 would train at Eglin. The F-35B is the short take-off and vertical landing aircraft for the Marines and the Royal Navy.*

### 3. PROPOSED ACTION AND ALTERNATIVES

The Proposed Action is to implement the 2005 BRAC decisions by locating and training the 7SFG(A) at Eglin AFB, Florida, and locating and conducting joint initial graduate-level pilot and maintenance training in the JSF for the Navy, Marines, Air Force, and the United Kingdom at Eglin AFB. This section summarizes the alternatives for locating and training the missions.

Figure ES-2 presents Eglin AFB and airspace used by Eglin aircraft in the southeastern United States. Figure ES-3 conceptually describes the different types of airspace that would be used for F-35 training. JSF training would primarily occur within Eglin AFB-controlled Special Use Airspace. Training on MTRs and in MOAs in the Eglin AFB vicinity would increase low level flights from a very few to an average of two per weekday at an altitude as low as 500 feet AGL. Figure ES-4 shows the Restricted Airspace, MOAs, and MTRs that overlay Florida and Alabama. The F-35 is capable of supersonic flight and would conduct supersonic training in overwater warning areas in accordance with established Eglin procedures.

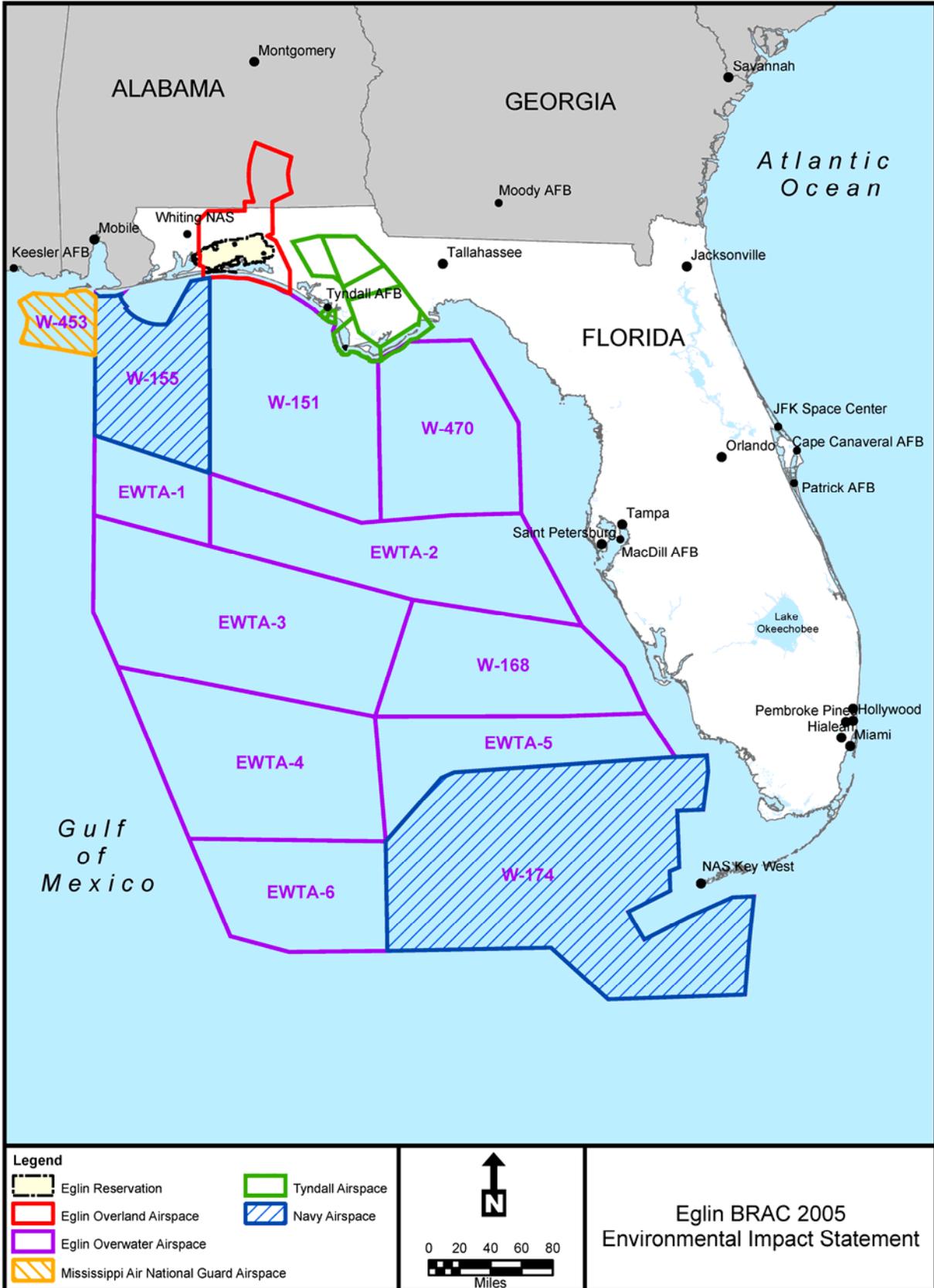


Figure ES-2. Airspace Used by Eglin AFB Aircraft

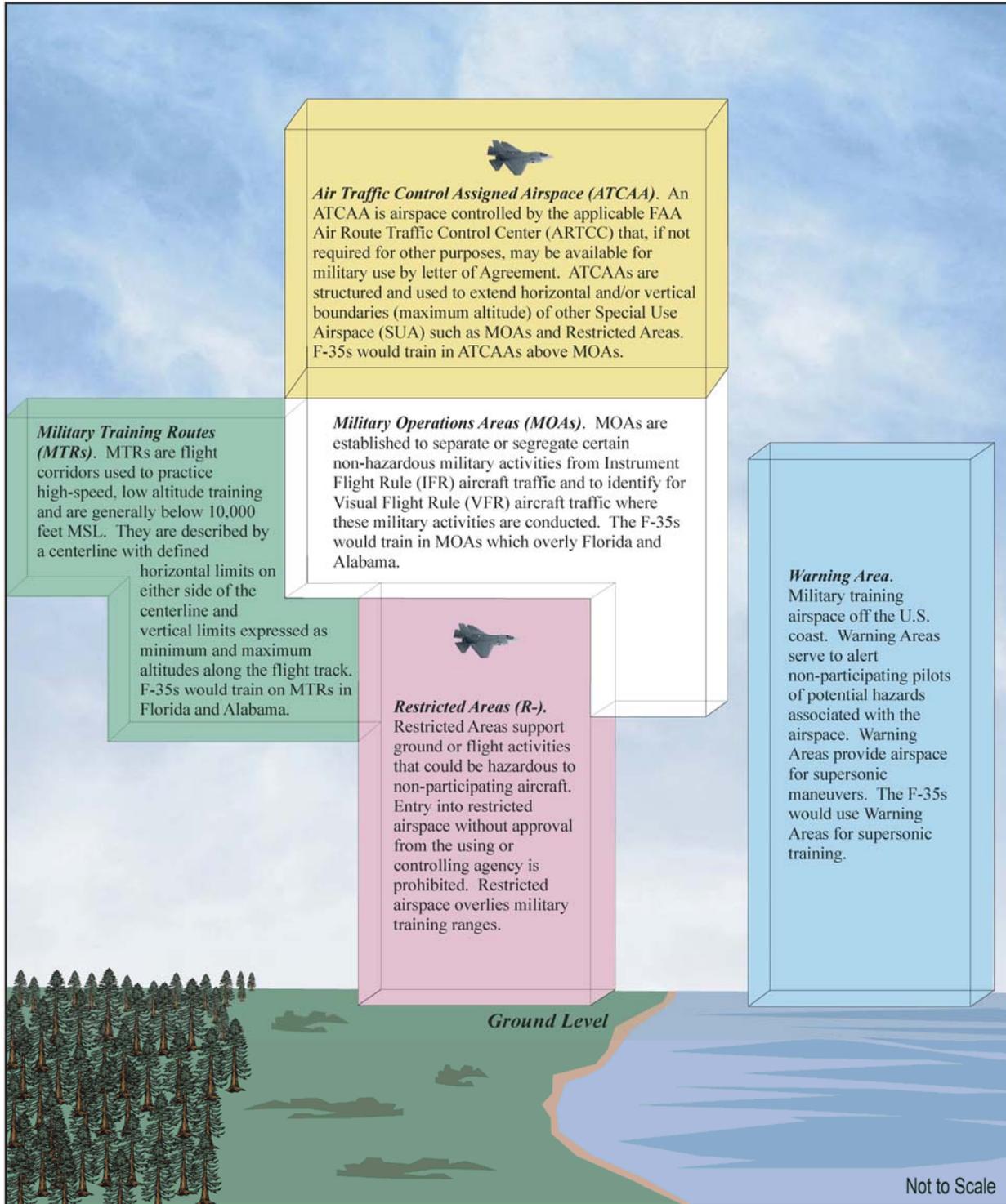


Figure ES-3. Types of Airspace

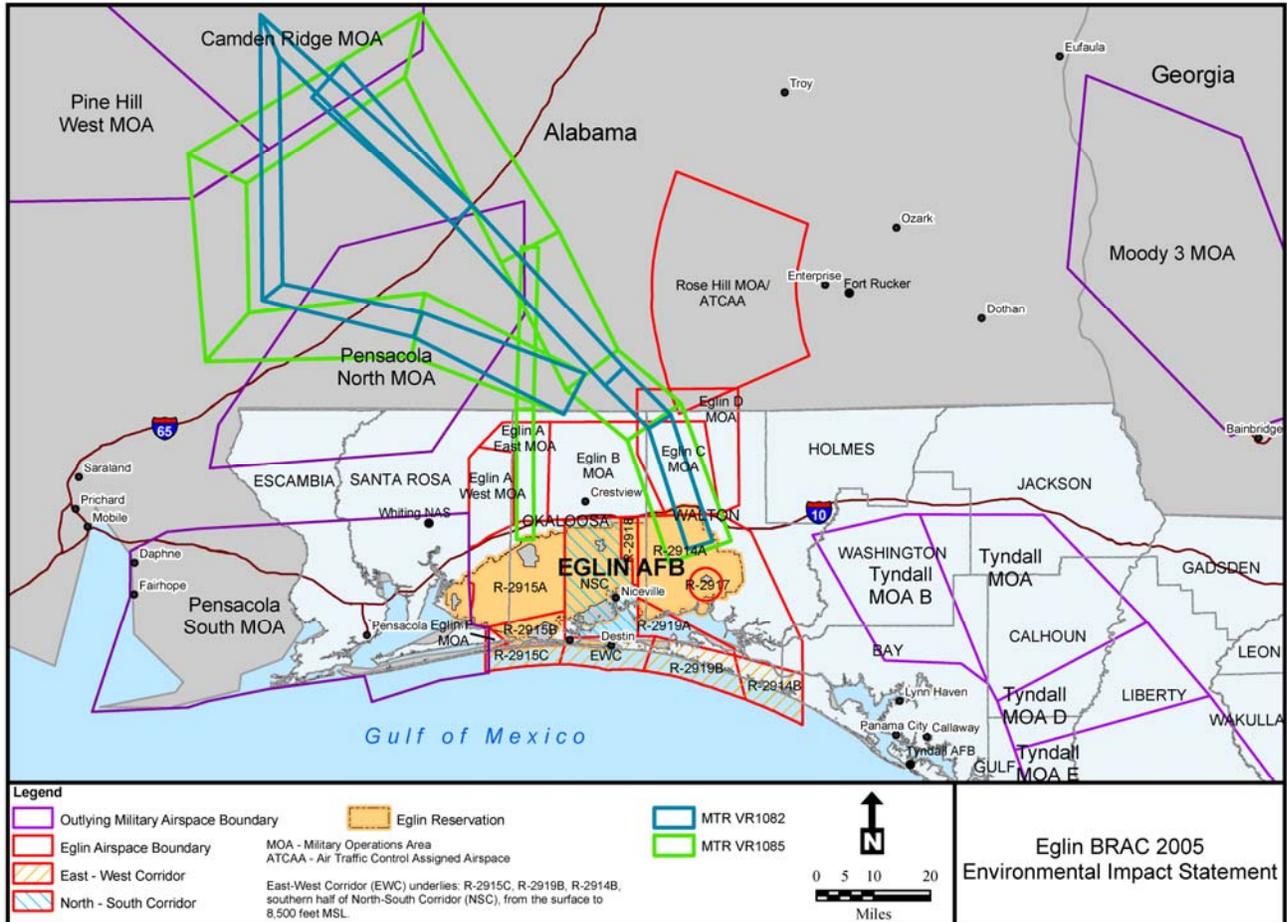


Figure ES-4. Restricted Airspace, MOAs, and MTRs Used by Eglin Aircraft

This Proposed Action and alternatives summary describes the four BRAC requirements.

### 3.1 7SFG(A) CANTONMENT

The 7SFG(A) cantonment and 7SFG(A) training activity would be located within Eglin AFB Range boundaries. There are five proposed alternative locations on Eglin for the 7SFG(A) cantonment area and five proposed locations for 7SFG(A) training. Cantonment locations are described first, followed by training alternatives.

To implement the relocation of the 7SFG(A) to Eglin AFB, the 7SFG(A) identified cantonment requirements that include establishing a Special Operations Forces (SOF) Compound with facilities for three Special Forces Battalions, one Motorized Special Forces Battalion, one Group Support Battalion, and the Group Headquarters (HQ). Current facilities identified to support the 7SFG(A) are presented in Table ES-1. These facilities would be constructed over the calendar years (CY) 2008-2011. Table ES-2 projects annual construction expenditures.

**Table ES-1. 7SFG(A) - Proposed Cantonment/Support Facility Requirements for 7SFG(A)**

Facility	Total Square Footage Required
Special Forces Group Operations Building	68,800
Special Forces Battalion Operations Complex	119,900
Special Forces Battalion Operations Complex	119,900
Special Forces Battalion Operations Complex	119,900
Special Forces Battalion Operations Complex (Expanded)	120,000
Support Battalion Complex	71,000
Vehicle Maintenance Complex	100,000
Privately Owned Vehicle (POV) Parking	700,000
Organizational Vehicle Parking	800,000
Logistics Complex	47,400
Petroleum, Oil, and Lubricant Storage	2,300
Enlisted Unaccompanied Housing	35,100
Enlisted Unaccompanied Housing	35,100
Enlisted Unaccompanied Housing	35,100
Dining Facility	23,000
Access Control Facility	3,400
Tactical Communications Center (with 10-acre antenna farm)	3,800
Wash Platform	2,340
Ammunition Storage Magazine	10,300
Ammunition Surveillance/Inspection	5,000
Segregated Ammunition Storage	3,000
Indoor Baffle Range	23,000
Deployment Readiness Center	50,000
Combat Readiness Training Facility	44,400
Maritime Operations Facility	18,500
Hazardous Materials Storage	6,700
Deployment Equipment Storage	36,600
UAV Hangar	9,200
Sidewalks	285,800
Roads	1,771,200
Concrete Aprons	600,000
MWD Kennel	10,000
Fire Station	8,500
Medical Clinic	23,000
Chapel	10,000
AAFES Shoppette	10,000
<b>Total</b>	<b>5,332,240</b>

**Table ES-2. Estimated 7SFG(A)  
Annual Budget Allocations**

Year	Millions of FY08 Dollars
FY 08	10.7
FY 09	220.0
FY 10	38.5
FY 11	115.4

Approximately 2,200 officers, non-commissioned officers (NCOs), and soldiers associated with the 7SFG(A) are projected to arrive in mid to late 2011. Table ES-3 summarizes the number of persons associated with the 7SFG(A) realignment to Eglin AFB (Vavrin, 2007).

**Table ES-3. 7SFG(A) - Estimated Personnel at Eglin AFB**

Personnel	Number
<b>Total Daily 7SFG(A) Personnel</b>	<b>2,200</b>
<i>Spouses</i>	<i>1,452</i>
<i>Children</i>	<i>2,415</i>
<b>Total</b>	<b>6,067</b>

Vavrin, 2007

The 7SFG(A) utilizes wheeled but not tracked (e.g., tank) vehicles and unmanned aerial vehicles (UAVs) during training exercises. The 7SFG(A) has no aircraft and conducts air operations training with various Army and Air Force fixed-wing and rotary-wing aircraft. Five locations were identified as alternatives for the 7SFG(A) cantonment area. These are presented on Figure ES-5. The 7SFG(A) preferred location is Alternative 3 in the north central portion of Eglin AFB. Figure ES-5 presents the five alternative 7SFG(A) cantonment areas and the five alternative 7SFG(A) training areas on Eglin AFB. The range training is described below.



### 3.2 7SFG(A) RANGE TRAINING

The 7SFG(A) proposed range training locations on Figure ES-5 would involve the activities described in Table ES-4.

#### Firing Ranges

The 7SFG(A) requires range land with facilities, utilities, roads, trails, and other assets necessary to fulfill weapons training certifications for individuals and team training.

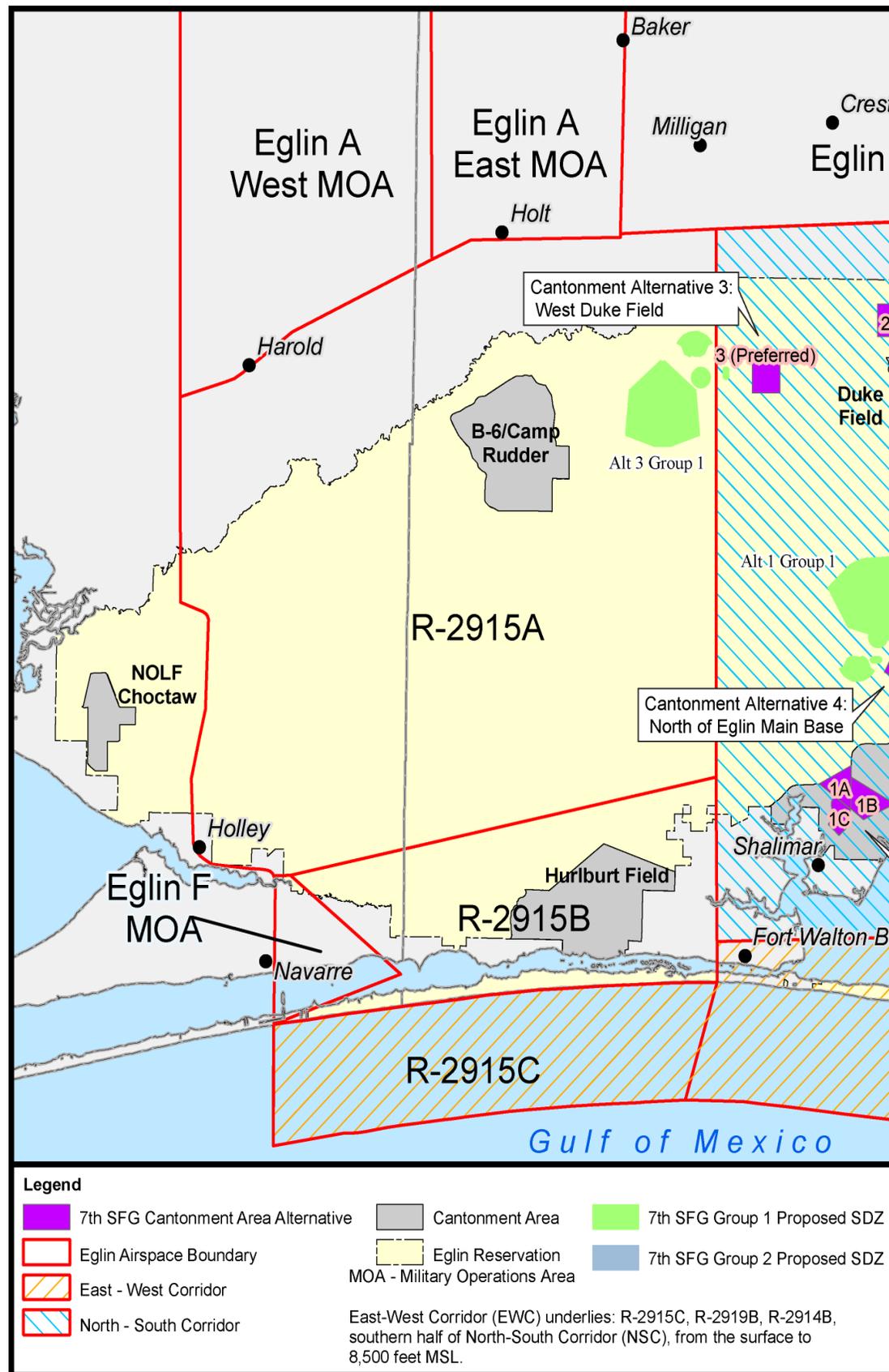
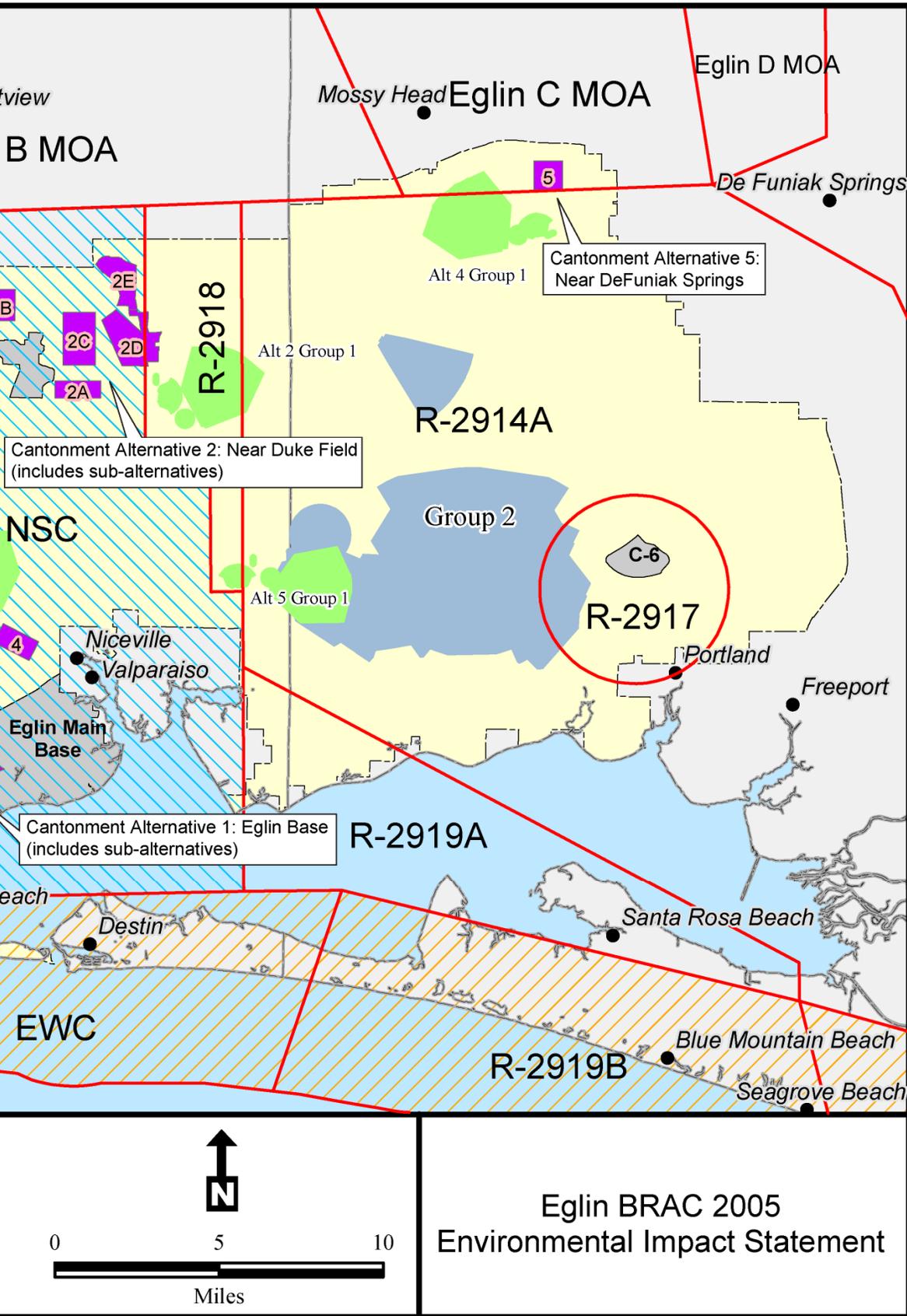


Figure ES-5. 7SFG(A) Cantonment Area and Training



Eglin BRAC 2005  
Environmental Impact Statement

Area Alternative Locations

October 2008

2005 BRAC Decisions and Related Actions  
Final Environmental Impact Statement Executive Summary  
Eglin Air Force Base, Florida

**Table ES-4. Training Activities Associated With the 7SFG(A)**

Activity	Training
Firing Operations - Firing Ranges	Individual weapon
	Crew served weapon
	Team training
	Indirect fire system
	Explosives
Aircraft Operations - Fixed-Wing and Rotary	Infiltration/Exfiltration
	Insertion/Extraction Systems
	Container Delivery
	Close Air Support
	Airborne Operations
	Air Assault
Water Operations and Ground Maneuvers	Water Infiltration/Extraction
	Ground Infiltration/Extraction
	Ground Mobility
	Reconnaissance/Surveillance
	Medical Evacuation
	Stalking
	Convoy
	Visibility

Table ES-5 identifies the training facilities and acreages for any 7SFG(A) range alternative required for weapons training and certification. Group 1 ranges would be dedicated ranges which could have any combination of 7SFG(A) personnel conducting operations on all available training days. The Group 2 ranges would be within the 30-minute travel time from any 7SFG(A) cantonment and could be used by 7SFG(A) or other qualified range user groups. The five proposed alternatives for Group 1 ranges and the overall proposed Group 2 range location are depicted on Figure ES-5. Alternative 3 is the preferred alternative for the 7SFG(A) ranges. The Surface Danger Zone (SDZ) is the ground and airspace designated within the training complex for vertical and lateral containment of projectiles, fragments, debris, and components resulting from the firing, launching, or detonation of weapon systems to include ammunition, explosives, and demolition explosives.

Table ES-6 lists the current and annual estimated ammunition use for all 13 training ranges for 2,200 troops.

**Table ES-5. Required Weapons Training Ranges for the 7SFG(A)**

Facility Description	Group	Size (acres)	SDZ (acres)	Total (acres)
SOF Shoot House (SOF 1)	1	0.72	2,682.48	2,682.48
SOF Sniper Range Suite (SOF 2)	2	182.88	6,413.88	6,413.95
SOF Breach Facility (SOF 3)	1	4.00	193.09	197.10
SOF Shotgun Range (SOF 4)	1	13.96	3,049.55	3,052.31
MK19/M203 Grenade Launcher Range (SOF 5)	2	180.88	1,034.17	1,034.18
Mortar Weapons System Range (SOF 6)	2	2,965.25	3,164.37	3,502.20
Hand Grenade Qualification Course (SOF 7)	1	10.01	45.99	45.99
Urban Assault Course (SOF 8)	2	17.60	2,737.64	2,738.59
SOF Battle Area Complex (SOF 9)	2	2,372.20	18,886.83	18,886.83
Anti-Armor Tracking and Live Fire (SOF 10)	2	741.31	2,759.52	2,759.52
Qualification Training Range (SOF 11)	2	218.18	4,945.49	4,945.73
SOF Light Demolition Range (SOF 12)	2	26.93	2,583.20	2,583.20
SOF 25 Meter Zero Range (SOF 13)	2	2.72	4,669.42	4,669.42
<b>Total</b>		<b>6,736.64</b>	<b>53,165.63</b>	<b>53,511.5</b>

**Table ES-6. Estimated 7SFG(A) Ammunition Expenditure Per Range**

Munition	Group 1 Ranges	Group 2 Ranges	Total
Small caliber (5.56mm - .50 cal)	1,326,000	7,351,000	8,677,000
Large caliber (40mm - 84mm)	NA	42,000	42,000
Other Explosives	300,000	700,000	1,000,000

## Water Operations and Ground Maneuvers

Water operations and associated ground maneuver provide training for a wide variety of activities such as reconnaissance, surveillance, visibility training, convoy training, and so on. The water operations and ground maneuver requirements do not include any live fire activity outside Firing Ranges. Figure ES-6 identifies areas which could be used for water training and ground maneuvers.

A 125 square kilometer (km<sup>2</sup>) (48.26 square miles [mi<sup>2</sup>]) area (not defined in any particular shape) is the Army guideline for one ground training mission (U.S. Army, 2004a). The infiltration/exfiltration training activities may involve any combination of ground operations, water operations, and air operations. Ground training includes a number of activities and troop movements are typically stealthy as units transit from one objective to another. Troops use a number of different bivouac scenarios that vary from tents on concrete pads to primitive camping.

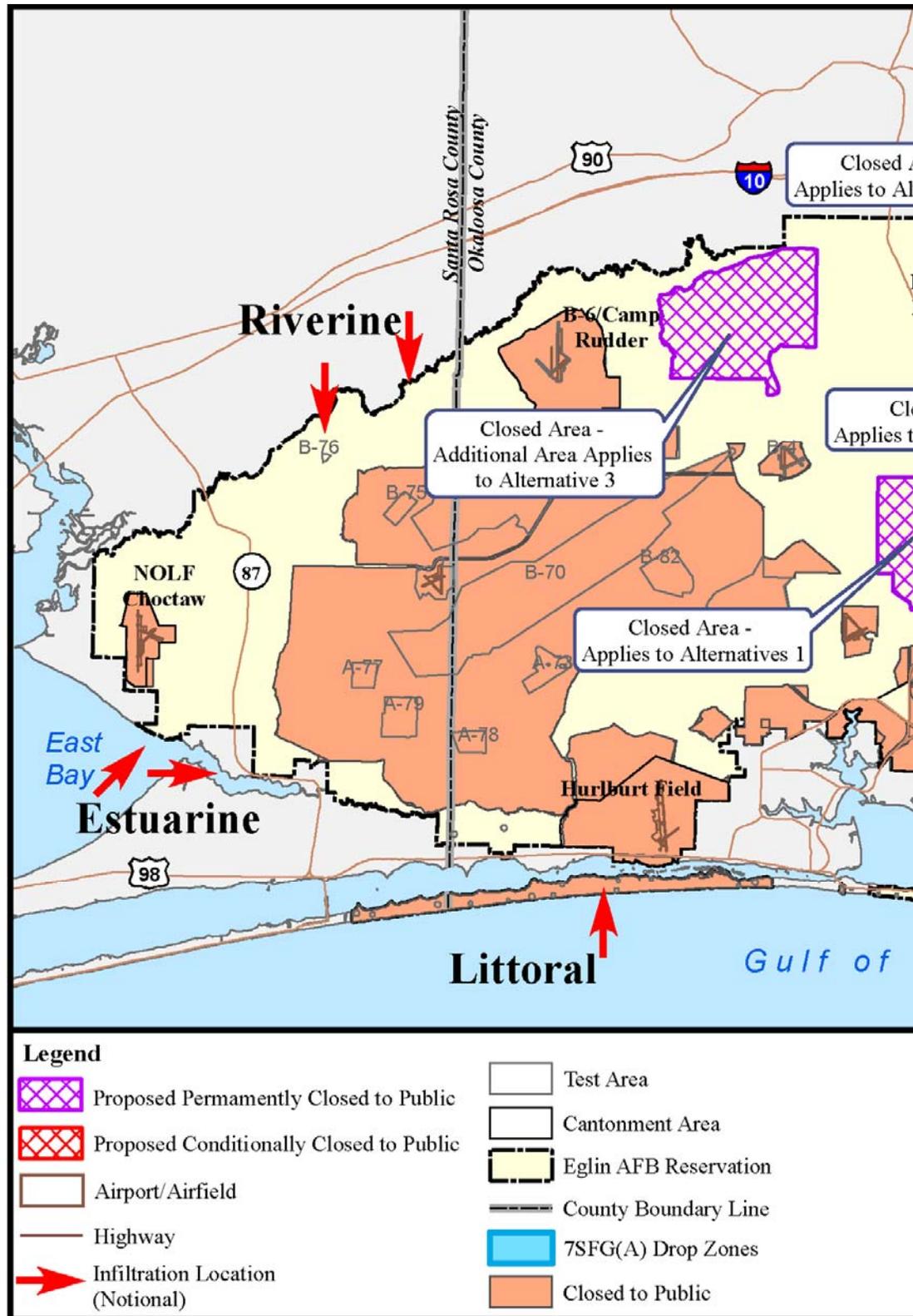
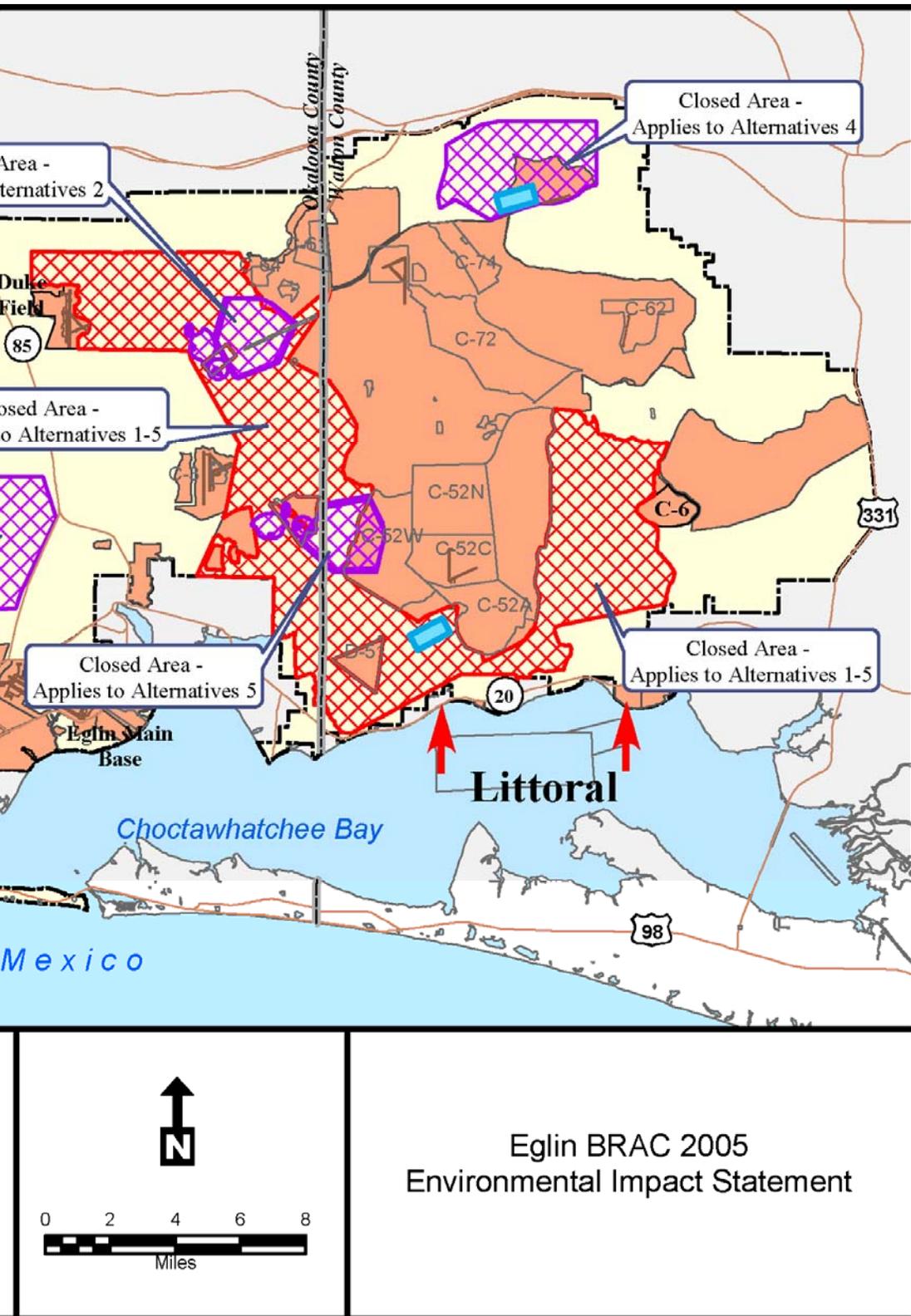


Figure ES-6. Proposed 7SFG(A) Drop Zones, Closed



Maneuver Areas, and Infiltration Locations

Water training for 7SFG(A) includes infiltration and exfiltration to and from Eglin AFB through water-to-land transitions via zodiac-type boat operations and through air-to-water transitions from paratroops or paradrops. These activities would occur within the waters and adjacent shoreline of the Choctawhatchee Bay, Santa Rosa Sound and Island, the Yellow River, East Bay, and East Bay River.

The 7SFG(A) would perform ground maneuver activities on land areas within the Eglin Reservation at one of the five proposed alternative locations depicted on Figure ES-5. Some alternative ground maneuver areas have been historically open to public recreation during selected times and these would be conditionally closed the first year of the 7SFG(A)'s training. The conditionally closed areas would be evaluated for recreational use following review of training requirements the first year. Figure ES-6 presents the conditionally closed areas.

Table ES-7 includes the conditionally closed acreage common to all alternatives and the alternative-specific acreages.

**Table ES-7. Proposed Conditionally Closed Areas for Each 7SFG(A) Range Alternative**

Alternative	Conditionally Closed Areas (acres)		
	Common to all Alternatives	Alternative-specific	Total
1	53,590	5,620	59,210
2	53,590	0	53,590
3	53,590	8,630	62,220
4	53,590	7,582	61,172
5	53,590	0	53,590

Aircraft, UAVs, and ground support vehicles are occasionally integrated into the training to deliver and retrieve the participating troops, provide situational awareness, or provide support and logistics. Ground vehicle movement is normally on the existing road and trail network and can include offroad use of all-terrain vehicles (ATVs) or High Mobility Multipurpose Wheeled Vehicles (HMMWVs). Within the land area of the Eglin Reservation there are some operating constraints, including those based on current agreements with the U.S. Fish and Wildlife Service (USFWS) to protect threatened or endangered species.

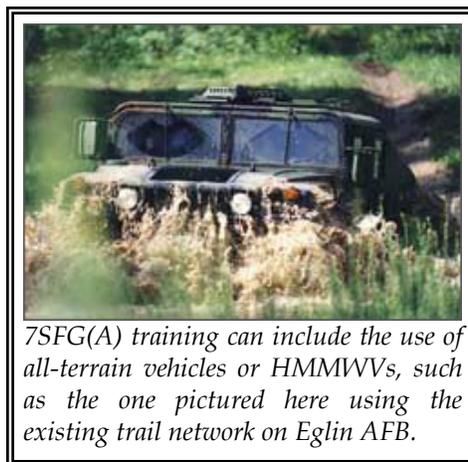


Table ES-8 describes the equipment that would be utilized by the 7SFG(A) for water operations and ground maneuvering.

**Table ES-8. Estimated 7SFG(A) Equipment Requirements for Water Operations and Ground Maneuvering**

Equipment Type	Operation	Missions/Year	Hours/Year
<b>Ground Vehicles - Wheeled</b>			
HMMWV (1¼-ton)	Mobility Training	288	576
	Live Fire Platform	144	432
	Zone Recce	144	432
HMMWV (Heavy)	Convoy Training	40	80
	SPT Live Fire	20	60
HMMWV (Expanded)	Communication Exercises	20	60
	Range Support	3,665	29,323
	DZ Support	816	3,264
2½-ton Cargo Truck LMTV	DZ Support	816	3,264
	Boat Transport	140	280
	Convoy Training	40	120
	Live Fire Platform	20	60
5-Ton Cargo LMTV	Exercise Support	20	80
	Ammo Transport	200	200
	Live Fire Platform	20	60
ATV/Motorcycle	Mobility Training	288	576
<b>Watercraft</b>			
Combat Rubber Raiding Craft (Zodiac Boats)	UWO Training (12 Scuba Teams)	120	480
	Water DZ Support	20	60

ATV = All Terrain Vehicle; CAS = Close Air Support; DZ = Drop Zone; HMMWV = High Mobility Multipurpose Wheeled Vehicle; LMTV = Light Medium Tactical Vehicle; SDZ = Surface Danger Zone; SOF = Special Operations Forces; SPT = Support; UWO = Underwater Ordnance

Air Force or Army rotary or fixed-wing aircraft are used for the insertion, extraction, movement, or supplying of ground troops. The 7SFG(A) would use existing helicopter landing zones (HLZs) and add two parachute Drop Zones (DZs) to the existing DZs.

## Group 2 Firing Ranges

Group 2 Ranges have relatively large SDZs and are proposed to be located on existing Eglin Test Areas (TAs) which have and are being used for live-fire training on the eastern side of the Range. This would minimize the creation of any new dudded or unexploded ordnance (UXO)-contaminated areas.

## Aircraft Operations to Support 7SFG(A) Training

The 7SFG(A) range training at Eglin would use fixed-wing, rotary-wing operations, and UAV aircraft. Table ES-9 describes the types of air operations, altitude required, annual estimated number of missions and hours, and capabilities required for the type of air operation listed. The 7SFG(A) would access airspace within the Eglin Range (over land and coastal areas) to conduct air operations.

**Table ES-9. Estimated Annual Requirements for 7SFG(A) Aircraft Operations**

Type of Air Operation		Altitude	# of Missions	# of Hours	Capabilities Required
<i>Rotary-Wing</i>	Airborne Operations	1,500 feet maximum	68	272	DZ
	Helocast		9	96	Water DZ
	FRIES		111	666	HLZ
	Sling Load		20	340	HLZ
	Air Assault		79	948	HLZ
	<b>TOTAL</b>		<b>287</b>	<b>2,322</b>	
<i>Fixed-Wing</i>	Static Line Airborne Operations	1,500 feet maximum	157	628	DZ
	Military Free Fall Airborne Operations	22,000–35,000 feet	55	220	DZ
	RAPIDS		21	168	Landing Strip for C-130
	Container Delivery System Operations		17	68	
	Close Air Support		36	144	Targets
	<b>TOTAL</b>		<b>286</b>	<b>1,228</b>	
<b>Air Operations Totals</b>			<b>573</b>	<b>3,550</b>	

Sources: U.S. Army, 2005; Dill, 2006b

DZ = Drop Zone; Helocast operations involve soldiers jumping from low flying helicopters into the water, usually no more than 40-foot-high jumps at 40 knots speed; FRIES = Fast Rope Insertion/Extraction System; HLZ = Helicopter Landing Zone; RAPIDS = Rapid Infiltration/Exfiltration

7SFG(A) would use existing HLZs, existing DZs, and two new DZs in Figure ES-6. The proposed DZs would be rectangles of approximately 1,500 meters by 700 meters (4,921 feet by 2,297 feet). The DZ size is dictated by the number of parachutists, the altitude, and the speed of the drop. This size would allow for 32 total parachutists released from a C-130 aircraft at 1,000 feet above ground level (AGL). This size would be able to accommodate a variety of airborne tasks including parachute drops, container delivery systems, and vehicles.



7SFG(A) training would include the use of vehicle transported and launched UAVs to provide observation support to ground troops. The UAV flights would be scheduled and remain within Eglin restricted airspace.

### 3.3 SUMMARY OF 7SFG(A) REQUIREMENTS

To beddown and train the 7SFG(A) at Eglin AFB, would require construction, personnel relocation, and on-going training. Five proposed alternative cantonment locations have been identified with sublocations for Alternatives 1 and 2. Approximately 5.1 million square feet of buildings and hard surfaces would be constructed from 2008 through 2011. An estimated 2,200 officers, NCOs, and soldiers would arrive and begin training in 2011. An estimated 3,867 dependents would also arrive in 2011.

Training would consist of ground maneuvers on foot or with light (HMMWV-type) vehicles. Range training would require maneuvers with bivouac locations. Such maneuvers would not be compatible with other users and public access would not be permitted. Air transport and zodiac-type boat infiltrations would be included in mission training. Five proposed alternatives are considered for Group 1 dedicated ranges. The proposed Group 2 firing ranges would be located in areas on Eglin where live-fire currently occurs.

### 3.4 JSF IJTS CANTONMENT

To implement the JSF IJTS, the Air Force, Navy, and Marines identified the need for a cantonment area, sufficient airspace, and ground targets. The JSF IJTS purpose is to train F-35 pilots, aviators, and maintenance support personnel for the life of the program. The F-35 is a single-seat, single-engine, supersonic aircraft capable of performing and surviving lethal strike warfare missions. The three F-35 variations are a conventional take-off and landing (CTOL or F-35A), a short take-off and vertical landing (STOVL or F-35B), and a carrier variant (CV or F-35C). The dimensions of the F-35 are similar to those of the F-15. Figure ES-7 describes the visual difference between the F-15 which has been at Eglin since 1978 and the F-35 projected to arrive in 2010. Table ES-10 presents the proposed number and types of F-35s that would be phased in between 2010 and 2016. The 107 aircraft represent Primary Assigned Aircraft (PAA). Each aircraft squadron typically also has one or two Backup Aircraft Inventory (BAI), so the actual number of aircraft may exceed the 107 PAA aircraft.



Figure ES-7. F-35 and F-15 Aircraft Characteristics Comparison

**Table ES-10. Proposed Delivery Schedule for F-35 Aircraft at Eglin AFB**

Year	Aircraft Variant (Quantity)			Total
	CTOL	STOVL	CV	
2010	6	0	0	6
2011	9	9	0	24
2012	3	2	2	31
2013	3	4	4	42
2014	31	5	9	87
2015	20	0	0	107
2016	0	0	0	107
<b>Total</b>	<b>72</b>	<b>20</b>	<b>15</b>	<b>107</b>

CTOL = Conventional Take-Off and Landing; STOVL = Short Take-Off Vertical Landing; CV = Carrier Variant

\*This information was provided by the JSF Program Office in June 2008 (Gigon, 2008) and only includes Primary Assigned Aircraft. Aircraft numbers beyond CY 2012 are subject to change as they are outside of the current Five-Year Defense Plan. Yearly numbers may vary as aircraft move to support other locations and operations.

The JSF IJTS cantonment area would accommodate personnel, support flight operations, and maintenance students. Table ES-11 lists the estimated total personnel associated with the JSF IJTS after CY 2016. Building renovation, demolition, and/or construction would be required at both proposed cantonment alternatives. The JSF IJTS facilities would house academic classrooms, virtual trainers, flying training squadrons, pilot maintenance trainers, and hardware trainers. The JSF IJTS has a training requirement for munitions storage and live ordnance loading areas located near the flight line.

Pilots, maintainer instructors, government civilians, and contractor support personnel would be required to execute the proposed academic training courses. Approximately 200 instructors would include 134 pilot instructors (both military and contractor) and 66 maintainer instructors. The estimated number of students attending the JSF IJTS at any one time would be approximately 545 (109 pilot and 436 maintainer students).

**Table ES-11. JSF IJTS - Estimated Personnel at Eglin AFB**

<b>Personnel</b>	<b>Number</b>
Pilot Instructors	134
Maintainer Instructors	66
Pilot Students	109
Maintainer Students	436
Government Civilians	30
Contractors	150
Aircraft Maintainers	1,076
Aircraft Maintenance Squadron	325
<b>Total Daily JSF Personnel</b>	<b>2,326</b>
<i>Spouses*</i>	1,163
<i>Children*</i>	1,396
<b>Total People New to Area</b>	<b>4,885</b>

\*Due to lack of demographic data for the JSF IJTS program, it is assumed there is a 50 percent distribution of married personnel and a 30 percent distribution of personnel with no more than two children.

Two locations on Eglin Main Base are proposed as operationally reasonable alternatives for the JSF IJTS cantonment (Figure ES-8):

- JSF IJTS Alternative 1: 33<sup>rd</sup> Fighter Wing (33 FW) Area
- JSF IJTS Alternative 2: 46<sup>th</sup> Test Wing (46 TW) Area (East Side of Eglin Main Runway)

The munitions storage area would be the same for either alternative and would require expansion of the existing munitions storage area.

Alternative 1 would construct approximately 23 new facilities or buildings, taxiways, and runways for a total construction of near 3.4 million square feet (ft<sup>2</sup>) (Table ES-12). Road construction would add an additional 0.5 million ft<sup>2</sup>. JSF IJTS Alternative 1 would also renovate and/or demolish nearly 0.6 million ft<sup>2</sup> of existing facilities and renovate 1.4 million ft<sup>2</sup> of the West Apron and 1.0 million ft<sup>2</sup> of roads and pavements. Alternative 1 is the preferred alternative for the JSF IJTS.

Alternative 2 would construct approximately 21 new facilities/buildings and additional facilities for a total construction of approximately 2.9 million ft<sup>2</sup> plus 0.5 million ft<sup>2</sup> of new roads (Table ES-13). JSF IJTS Alternative 2 would renovate and/or demolish approximately 3 million ft<sup>2</sup> of existing facilities plus 1 million ft<sup>2</sup> of roads and pavements.

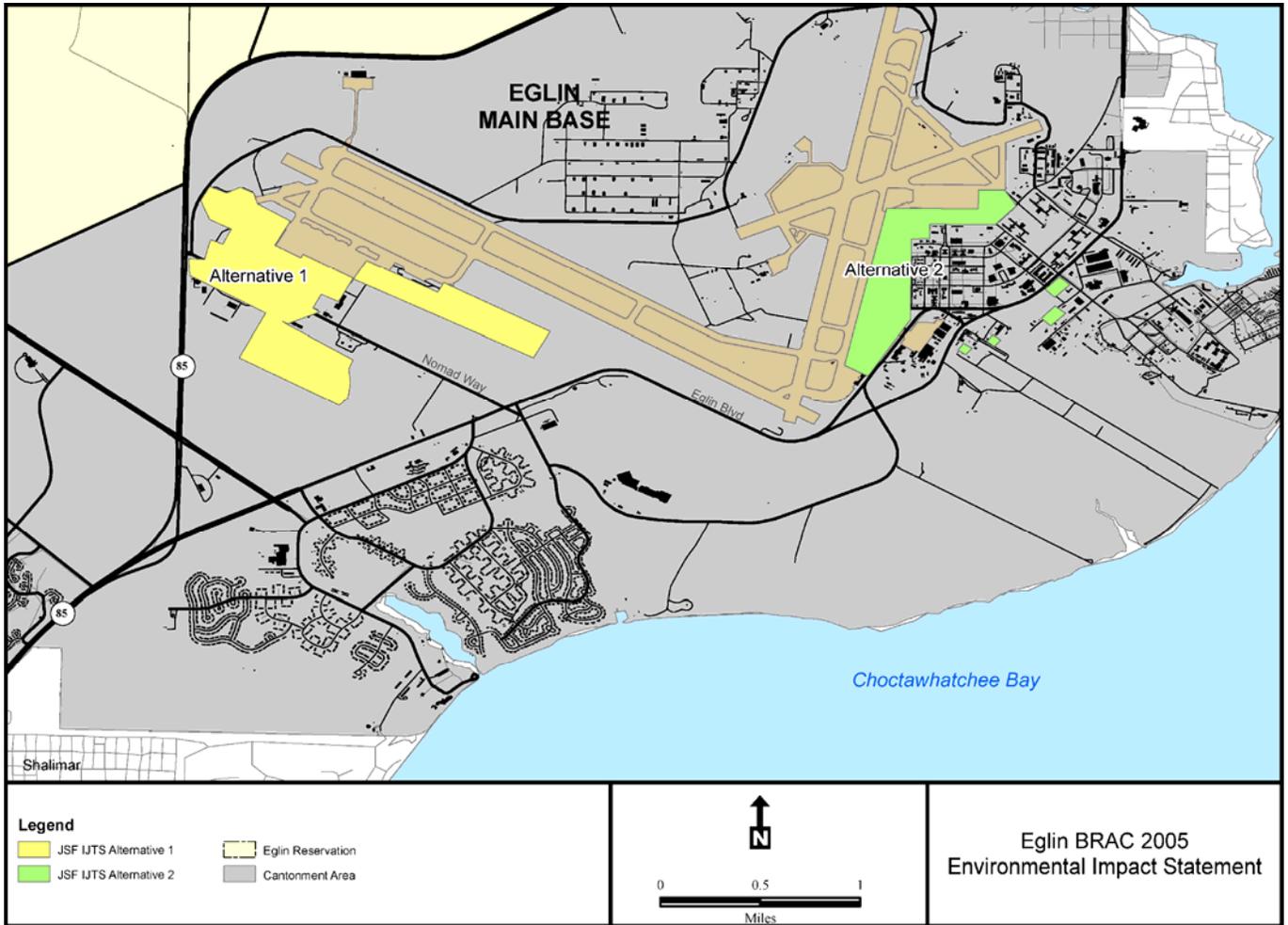


Figure ES-8. JSF IJTS Complex Alternative 1 and Alternative 2 Proposed Location

Table ES-12. Proposed Facilities Associated With JSF IJTS Alternative 1

MILCON Project	Disposition			Square Footage
	Demo	Ren	New	
Sqd Ops/AMU (AF-1)			X	77,644
Integrated Training Center (ITC)			X	200,000
Munitions Maintenance			X	39,468
Dorm (100 Room)			X	40,479
Dorm (100 Room)			X	40,479
Dining Facility			X	14,010
Duke Tower			X	1,041
POL Hydrant Pits			X	8 Each
POL West Side Tank Headers			X	4 Each
POL West Side Ops Facility			X	5,000
POL Fillstands Flightline			X	2 Each
POL Bulk Storage Tanks			X	100 MBBL
Sqd Ops/AMU (Marines)			X	49,830
Sqd Ops/AMU (Navy)			X	49,830
Sqd Ops/AMU (AF-2)			X	74,147
Sqd Ops/AMU (AF-3)			X	74,147
Rinse Facility "Bird Bath" N			X	3,000
Rinse Facility "Bird Bath" S			X	3,000
New Apron			X	864,000
Taxiway Extension			X	879,300
Live Ordnance Loading Area			X	850,500
TAMS			X	22,500
Flare			X	2,000
AME Maintenance			X	5,000
Wash Rack			X	11,000
Wing/Group HQs			X	20,000
Satellite Medical Facility			X	
Utilities			X	1 LS
Roads			X	506,000
STOVL Pad (Eglin)			X	30,000
STOVL Tower (Eglin)			X	1 Each
STOVL Pad (Duke)			X	30,000
STOVL Tower (Duke)			X	1 Each
West Apron		X		1,410,658
Renovate 1318 (Phase 1)		X		22,963
Renovate 1404 – Storage		X		48,001
Renovate 1309 – SimBay		X		17,595
Renovate 1318 (Phase 2)		X		34,445
Renovate 1344 – WLT		X		27,321
Renovate 1326 – Groups HQ		X		19,764
Renovate 1312 – AF/DON Ops		X		17,740
Renovate 1321 – OSS		X		34,868
Renovate 1315 – Wing HQ		X		21,317
Renovate 1343 – AME		X		36,998
Comm Support Flight		X		8,870
Munitions Maintenance Facility(ies)		X		5,219

Continued on the next page...

**Table ES-12. Proposed Facilities Associated With JSF IJTS Alternative 1, Cont'd**

MILCON Project	Disposition			Square Footage
	Demo	Ren	New	
Munitions Maintenance Facility(ies)		X		4,624
Munitions Maintenance Facility(ies)		X		7,360
Renovate 1363 – FTD		X		23,462
Tech Training Det/Sqd CC Staff		X		8,870
Add/ Alter Calibration Lab		X		14,654
MXS 1328		X		27,609
Pavement Improvements		X		500,000
Roads		X		506,000
Duke Tower		X		1,041
Demo Jet Engine Shop	X			7,400
Demo Fuel Shop	X			18,807
Demo Storage Facility	X			100
Demo 58th AMU Hangar	X			33,998
Demo 60th AMU Hangar	X			36,968
Demo Pump Station	X			1 Each
Demo Chaplain	X			439
Demo LOX Storage	X			3,395
Demo Engine Shop	X			62,481
Demo AGE	X			15,783
Demo Weapon Release Shop	X			9,680
Demo Aircraft Shop	X			1,440
Demo LOX Plant	X			672
Demo Jet Engine Shop	X			3,200
Demo Pavilion	X			1 Each
Petroleum Ops	X			567
Weapon Systems Management	X			630
Munitions Control	X			800
Munitions Accountability/Ops	X			800
Building 1278	X			1,789
Gazebo "J"	X			(negligible)

Sources: Roxstrom, 2006; AF/DoN = Air Force/Department of the Navy

AGE = Aerospace Ground Equipment; AME = Alternate Mission Equipment; AMU = Aircraft Maintenance Unit; CC = Commander; Demo = Demolish; Det = Detachment; FTD = Field Training Detachment; HQ = Headquarters; LOX = Liquid Oxygen; MBBL = Thousand Barrels; MILCON = Military Construction; MXS = Maintenance Squadron; Ops = Operations; OSS = Operational Support Squadron; POL = Petroleum, Oil, or Lubricant; Ren = Renovate; Sqd = Squadron; STOVL = Short Take-Off and Vertical Landing; TAMS = Tactical Aircraft Maintenance Specialist; WLT = Weapons Load Trainer

**Table ES-13. Proposed Facilities Associated With JSF IJTS Alternative 2**

MILCON Project	Disposition			Square Footage
	Demo	Ren	New	
Squad Ops/ AMU (AF#1) (end-state)			X	77,644
JSF ITC			X	260,000
JSF Student Dormitory (steady state)			X	121,437
Dining Facility			X	14,010
POL Hydrant Pits			X	8 Each
POL Fillstands Flightline			X	2 Each
POL Bulk Storage Tanks			X	100 MBBL
Squad Ops/ AMU (Navy) (end-state)			X	49,830
Squad Ops/ AMU (Marines) (end-state)			X	49,830
Squad Ops/ AMU (AF#2) (end-state)			X	74,147
Squad Ops/ AMU (AF#3) (end-state)			X	74,147
Freshwater Rinse Area North (Bird Bath)			X	4,000
Freshwater Rinse Area South (Bird Bath)			X	4,000
Taxiway to TW "F"			X	875,000
Live Ordnance Loading Area			X	1,200,000
Aircraft Wash Rack			X	11,050
JSF Wing HQ Building (end-state)			X	20,000
Modular Storage Magazine			X	4,164
Modular Storage Magazine (small)			X	1,926
Conventional Munitions Mx Fac			X	9,921
Aircraft Munitions Training Facility			X	23,457
Munitions Supervisory Facility (Approx)			X	7,000
Utilities			X	1 LS
Roads			X	506,000
STOVL Pad (Eglin)			X	30,000
STOVL Tower (Eglin)			X	1 Each
STOVL Pad (Duke)			X	30,000
STOVL Tower (Duke)			X	1 Each
Munitions Arming Area		X		100,000
Hot Gun/De-arming Area		X		200,000
AME Maintenance		X		16,068
AME Maintenance		X		8,000
East Parking Apron Repairs		X		2,133,423
Backshop (Wheel/Tire/Batteries/ AGE)		X		63,796
Storage		X		40,000
Renovate 1309 – SimBay		X		17,595
Weapons Load Training		X		15,666
Operations Support Group		X		32,459
JSF Wing HQ Building		X		31,979
Munitions Maintenance Facility(ies)		X		5,219
Munitions Maintenance Facility(ies)		X		4,624
Munitions Maintenance Facility(ies)		X		7,360

*Continued on the next page...*

**Table ES-13. Proposed Facilities Associated With JSF IJTS Alternative 2, Cont'd**

MILCON Project	Disposition			Square Footage
	Demo	Ren	New	
Add/Alter Calibration Lab		X		14,654
Pavement Improvements		X		500,000
Roads		X		506,000
Corrosion Control Utility Storage		X		500
Duke Tower		X		1,041
Squad Ops/AMU (Navy/Marines)		X		129,766
Squad Ops (2 Squadrons) (initial)		X		38,000
AMU (AF#1) (initial)		X		38,440
AMU (AF#2) (initial)		X		38,340
Corrosion Control		X		31,832
HQ Center	X			4,518
Law Center	X			4,518
Education Center	X			28,764
Communication Facility	X			13,082
Communication Facility	X			12,602
Munitions Control	X			800
Munitions Accountability/Ops	X			800
Munitions Entry Control Facility	X			1,789
Gazebo "J"	X			(negligible)

Source: Roxstrom, 2006

AF = Air Force; AGE = Aerospace Ground Equipment; AME = Alternate Mission Equipment; AMU = Aircraft Maintenance Unit; Demo = Demolish; HQ = Headquarters; MILCON = Military Construction; Mx Fac = Maintenance Facility; MBBL = Thousand Barrels; Ops = Operations; POL = Petroleum, Lubricant, or Oil; Ren = Renovate; STOVL = Short Take-Off Vertical Landing; TW = Taxiway

Alternative 2 siting in the 46 TW area would require the 46 TW personnel and functions to be relocated to the 33 FW area. Facilities to accommodate this move are listed in Table ES-14. This move would add approximately 0.4 million ft<sup>2</sup> of new construction, and 0.2 million ft<sup>2</sup> renovation and/or demolition to Alternative 2.



*The 33 FW area has supported F-15 operations by Air Combat Command. Under Alternative 1, the 33 FW area would be rebuilt to support the F-35 and under Alternative 2 the area would be rebuilt to support the relocated 46 TW.*

**Table ES-14. Facilities that Would Need to be Constructed, Renovated, or Demolished Due to JSF IJTS Siting in Existing 46 TW Area**

Project	Disposition			Square Footage
	Demo	Ren	New	
New Hangar			X	129,766
Taxiway to new hangar			X	90,000
New Hangar			X	38,440
New Hangar			X	38,340
New Squadron Operations			X	38,000
New Administration			X	60,000
Renovate 1315 – Wing Headquarters		X		21,317
Renovate 1312 – Squadron Operations		X		17,740
Renovate 1339 – Fuel Barn		X		18,807
Renovate 1321 – Warehouse Supply		X		34,868
Renovate 1404 – Storage For 600		X		48,001
Backshop (Wheel/Tire/Batteries/AGE)		X		57,408
Demolish (Demo) Jet Engine Shop	X			7,400
Demo Pump Station	X			1 Each
Demo Chaplain	X			439
Demo Liquid Oxygen (LOX) Storage	X			3,395
Demo LOX Plant	X			672
Demo Jet Engine Shop	X			3,200

Source: Roxstrom, 2006

AGE = Aerospace Ground Equipment

### 3.5 JSF FLIGHT TRAINING

The Air Force, Navy, and Marines F-35 aircraft has had only limited operational activity to date. The F-35 is a new weapon system and operational details of training with this system are on-going and continue to mature. As with any new aircraft, the Air Force anticipates a continued large learning curve in terms of system capabilities and training requirements. The Air Force would manage evolution in the JSF training program at Eglin by incorporating the adaptive management approach described in the beginning of this Executive Summary and in the Final EIS to the on-going basing of the F-35 aircraft.



*The F-35 is a new weapon system, which will evolve with time. Adaptive management will permit modification of management practices to achieve project objectives and environmental protection.*

The planning process to fulfill BRAC direction for F-35 IJTS activities at Eglin AFB, has addressed various uncertainties about system operations. Eglin AFB and the area around the base are dynamic locations. It is likely that there will be unanticipated changes in baseline conditions, better understanding of the weapon system, or new information on the effectiveness of mitigation measures. The variables analyzed in this

EIS and their relationship to biological, physical, and social systems are complex. The Air Force has done its best to accurately analyze and predict potential impacts and anticipate future conditions using the best available information and tools at the time of this analysis.

Adaptive Management is an approach recognized by the President's Council on Environmental Quality (CEQ) to facilitate meeting NEPA Section 101 goals. This approach is the continuous modification of management practices to achieve both project objectives and environmental protection. Such approach shifts thinking away from the old project paradigm of "predict, mitigate, and implement" to "predict, mitigate, implement, monitor, and adapt." "Adaptive management recognizes the limits of knowledge and experience and moves iteratively toward goals in the face of uncertainty" (CEQ, 1997).

The adaptive management approach allows for an examination and testing of various hypotheses regarding the F-35 presence, while allowing meaningful data to be gathered, evaluated, and used for sound program management decisions. This long-term process is built around a continuous cycle of experimentation, evaluation, learning, and improvement over time. Adaptive management will improve understanding of the various assets that are part of a complex interrelated F-35 system.

### **JSF Flight Training Alternatives**

Two proposed JSF alternatives have been developed to bracket the projected JSF flight training requirements at the different airfields on Eglin AFB (Figure ES-9). As the F-35 program evolves and matures at Eglin AFB, elements of the IJTS program may change. Consequently, the F-35 IJTS would adaptively manage program issues over time throughout the delivery, basing, and training of the weapon system through approximately CY 2020.

The two proposed alternatives used in this EIS to bracket projected JSF training focus on the use of Eglin Main Base and two auxiliary airfields. The two alternatives present a projected low and high operations at each airfield. The elements in common among the alternatives include the amount of flight training, the use of airspace, and ordnance training.

The proposed flight training would be conducted on average 246 days per year, or approximately 20.5 days per month. Training operations would occur five days per week with approximately 88 percent of the flights between 7:00 a.m. and 10:00 p.m. in compliance with operating procedures that govern flight rules.

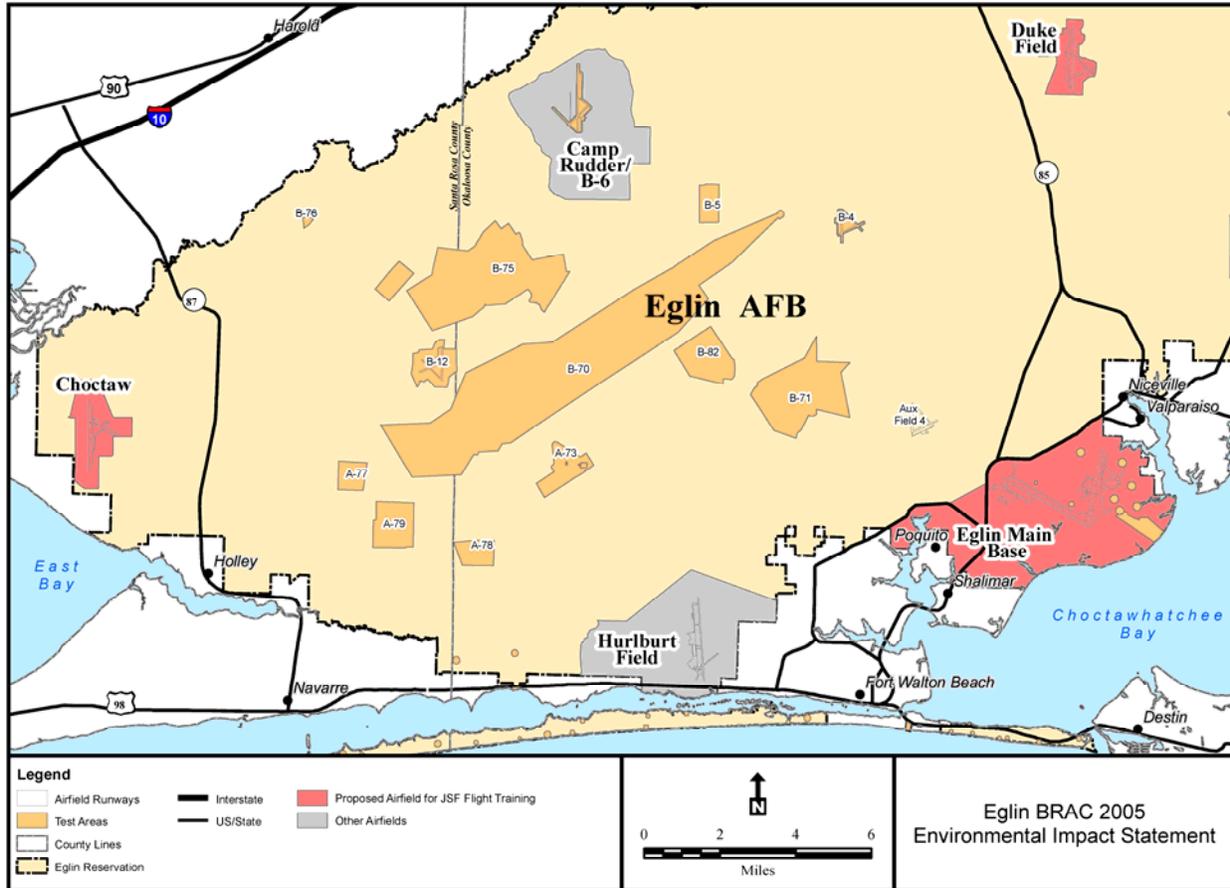


Figure ES-9. Proposed Airfields for JSF Flight Training

A *training sortie* refers to the flight of a single aircraft from takeoff through landing, including performance of a mission or training event. JSF students would require approximately 122 sorties per day to complete the flight training syllabus. The F-15 sorties, currently performed by the 33 FW, would no longer occur. The change in sorties would result in a net increase of approximately 80 sorties per day and 20,000 sorties per year.

Table ES-15 provides the estimated training sorties based on the preliminary syllabus for the Air Force (CTOL), Marines (STOVL), and Navy (CV).

Table ES-15. Proposed Number of Sorties by Aircraft Variant for JSF Training

Sorties	CTOL	STOVL	CV
Daily	74	24	24
Annual	14,235	4,617	4,617
With 8% Re-fly	15,473	5,018	5,018
With 15% CT/COB	18,204	5,904	5,904
UTE rate (Average Number of Sorties per Month per Aircraft)	21	25	33

Source: JSF Program Office, 2007

JSF = Joint Strike Fighter; CT/COB = Continuation Training/Cost of Business; CTOL = Conventional Take-Off and Landing; CV = Carrier Variant; STOVL = Short Take-Off Vertical Landing; UTE = utilization

Each sortie produces at least two operations. Some sorties can result in more than two operations, such as if an aircraft performs a touch-and-go during a sortie. The number of operations for the two flight training alternatives and the 2005 flight operations are presented in Table ES-16. The number of operations is the number of times one aircraft crosses the end of one runway and is used as input for environmental analysis. The F-35 training could approximately double the airfield operations on Eglin AFB. The total operations allocated to each airfield would be between the range of the alternatives presented in Table ES-16. That range permits the Air Force to implement adaptive management techniques to training operations as additional information becomes available regarding F-35 training requirements.

**Table ES-16. Annual Airfield Operations for JSF Alternatives**

Alternative	Aircraft Type	Airfield			Total
		Eglin	Duke	Choctaw	
Baseline (2005)	F-15 (33 FW)	29,206	0	0	29,206
	Other	76,582	24,643	76,467	177,692
	<b>Total</b>	<b>105,788</b>	<b>24,643</b>	<b>76,467</b>	<b>206,898</b>
Alternative 1	F-35	121,286	84,956	33,633	239,875
	Other	74,253	24,643	76,467	175,363
	<b>Total</b>	<b>195,539</b>	<b>109,599</b>	<b>110,100</b>	<b>415,238</b>
Alternative 2	F-35	175,013	35,762	23,997	234,772
	Other	74,253	24,643	76,467	175,363
	<b>Total</b>	<b>249,266</b>	<b>60,405</b>	<b>100,464</b>	<b>410,135</b>

Eglin is the Main Operating Base common to all alternatives. Eglin Main departure and termination flights account for approximately 60,000 annual operations or about 25 percent of the total proposed operations for the JSF at Eglin AFB.

The JSF would utilize a variety of special use airspace (SUA) on a routine basis to perform flight training identified in the syllabus. Figure ES-3 presented the types of airspace used in training. The distribution of the proposed sorties in SUA would be dictated by the utilization, scheduling priorities, and training requirements. Table ES-17 is a notional estimate of the distribution of sorties in each airspace.

**Table ES-17. Estimated Annual Sorties  
in Airspace Proposed for F-35 Training**

Airspace Element	Estimated CY 2016	
	F-35	Other Aircraft
R-2914A	3,278	6,772
R-2914B	3,278	302
R-2915A	3,278	24,439
R-2915B	3,278	1,929
R-2915C	3,278	1,135
R-2919A	3,278	704
R-2919B	3,278	428
Eglin MOA - A	3,278	629
Eglin MOA - C	3,278	264
Tyndall MOA C/D/E/F	546	4,094
W-151A	24,046	3,543
W-151B	24,046	3,265
W-151C	24,046	3,653
W-151D	12,023	3,225
W-151E	12,023	2,528
W-151F	12,023	2,447
VR-1082	295	173
VR-1085	295	73

JSF flight training would use ordnance, such as laser- and Global Positioning System (GPS)-guided bomb units (GBUs), 25-millimeter (mm) ammunition for strafing, and defensive flares. The JSF Program Office estimates that both the students and instructor pilots would carry and/or release the ordnance identified in Table ES-18.

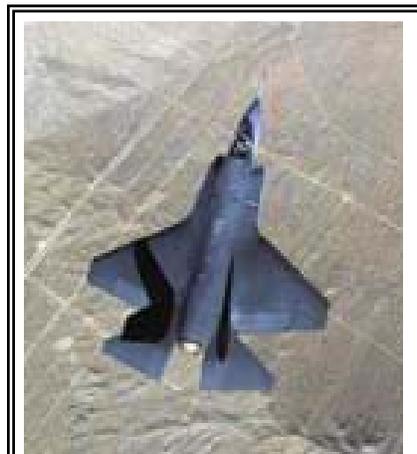
**Table ES-18. Annual Ordnance Requirements  
for JSF Training**

Type of Ordnance	Annual Quantity
GBU-12 (live)	635
GBU-12 (inert)	219
25-mm (TP)	208,518
Flares (MJU-8/27)	1,363

GBU = Guided Bomb Units; TP = Target Practice

The Air Force proposes that the live and inert ordnance be used on existing targets on the eastern and western sides of the Eglin Range. For strafing, the JSF flight training would use TA C-62 on the east and TA B-75 on the west. For both inert and live ordnance, TAs C-52E on the east and B-82 on the western side would be used (Figure ES-9). All munitions fired over the Gulf of Mexico into warning areas would be inert.

The Eglin-based JSF pilots are not planning to train with defensive chaff in Eglin scheduled airspace. Defensive flares deployed during training would be used according to established Eglin procedures over warning areas and the Eglin Reservation. Over the Eglin Reservation, the minimum altitude for flare release is 500 feet AGL except over test areas where the minimum altitude is 200 feet. Release altitudes are adjusted for periods of high or above fire danger. Pilots would avoid expending flares over populated areas, structures, or personnel.



*The F-35 would train with live and inert ordnance on existing Eglin AFB targets. The F-35 would use flares during training, but would not use defensive chaff.*

### 3.6 SUMMARY OF JSF REQUIREMENTS

Beddown and training of the JSF IJTS at Eglin AFB would require demolition, renovation, construction, personnel relocation, and ongoing flight training. Two alternative cantonment locations have been identified, both in close proximity to the Eglin Main Base airfield. Approximately 6.9 million square feet of buildings and hard surfaces would be renovated or constructed from 2008 to 2013 for Alternative 1. The comparable number for Alternative 2 is 7.4 million square feet. These facilities would support 107 F-35 PAA comprised of Air Force, Marine, and Navy variants. An estimated 200 instructors, 545 students, 30 civilians, 150 contractors, and an aircraft maintenance support with 1,401 personnel would arrive between 2010 and 2016 to support flight and mechanic training. An estimated 2,559 dependents would accompany the personnel.

Flight training would consist of operations from Eglin Main Base, Duke Field, and Choctaw Field, munitions use on approved Eglin Ranges, defensive flare use in authorized airspace, flight training to include supersonic flight in overwater warning areas, and training in on- and off-base airspace, including low-level training on MTRs in Florida and Alabama. Two alternative levels of flight operations are considered for each of the three Eglin AFB fields used in training. These operation levels bracket the estimated flight activity with a low and high number of operations at each field. The decision maker could select one of these two alternatives or any of a number flight operation combinations for each location as long as the level of operations were between the range of flight operations addressed at each field and the operations accomplished mission requirements.

### 3.7 NO ACTION ALTERNATIVE

The CEQ regulations (40 CFR Section 1502.14(d)) require the alternatives analysis in the EIS to “include the alternative of no action.” “No action” is the baseline condition with

no 7SFG(A) or JSF IJTS BRAC beddown or training taking place. No action does include the F-15 aircraft leaving and other scheduled Eglin changes not related to BRAC. The regulations require the analysis of the No Action alternative even if the Air Force must, by law, implement the BRAC decision. The No Action analysis provides a benchmark and enables decision makers to identify the environmental context and intensity of BRAC alternatives. The Air Force is the military department exercising real property accountability for Eglin AFB. Consequently, the EIS has been developed in compliance with the promulgated Air Force NEPA-implementing regulations (32 CFR 989), as directed by 32 CFR 174.17, *Revitalizing Base Closure Communities and Addressing Impacts of Realignment*.

## 4. ENVIRONMENTAL CONSEQUENCES

The public and agency scoping process focused the analysis associated with the 2005 BRAC implementation at Eglin AFB on the following environmental resources: Airspace Management, Socioeconomics (including impacts to children and Environmental Justice), Noise, Land Use (including changes to range access), Transportation, Utilities, Air Quality, Safety, Solid Waste, Hazardous Materials (including Hazardous Waste), Physical Resources (including water resources), Biological Resources, and Cultural Resources (including historic structures). The Final EIS presents consequences to each resource for each component of the Proposed Action. The Final EIS results are summarized below. The reader of this Executive Summary is encouraged to review the entire Final EIS for a comprehensive environmental analysis of each environmental resource.

### 4.1 AIRSPACE MANAGEMENT

Airspace management is defined as the direction, control, and handling of flight operations in the “navigable airspace” that overlies the geopolitical borders of the United States and its territories. Eglin SUA identified for military and other governmental activities is charted and published by the National Aeronautical Charting Office in accordance with Federal Aviation Administration (FAA) Order 7400.2 and other applicable regulations and orders. Figure ES-2 displays the airspace managed and/or used by Eglin-based aircraft.

There is substantial demand by both military and civilian users of the airspace in this region. The existing airspace use will be complicated by expanding population along the Gulf Coast and proposed expansions of regional civil air operations at exactly the time the F-35 will be expanding military training operations.

Competing future needs for regional airspace have the potential to impact future users. A regional airspace planning effort is needed to assess and successfully manage the

direction, control, and handling of the combined future civil and military regional flight operations.

There would nearly be an estimated annual doubling of airfield operations for all of the alternatives. This would increase the workload of air traffic controllers. Both alternatives would increase traffic aircraft at Duke Field, Eglin Main Base, and Choctaw Field to varying degrees.

Increased flights in the MOAs and MTRs would increase the need for vigilance on the part of all civil and military aviation traversing the airspace at altitudes where aircraft could be encountered. All pilots are responsible for applying see-and-avoid principles during flight.



*The Okaloosa Regional Airport is joint use with Eglin AFB. JSF flight training will substantially increase activity and a regional assessment of airspace use would benefit civilian and military airspace users.*

## 4.2 NOISE

Noise is defined as any unwanted sound. Defining characteristics of noise include sound level (amplitude), frequency (pitch), and duration. Each of these characteristics plays a role in determining the intrusiveness and level of impact of the noise on a noise receptor. The term “noise receptor” means any person, animal, or object that hears or is affected by noise.

Annoyance, speech interference, sleep interference, human health consequences, structural effects, and wildlife impacts have all been associated with noise. The EIS noise section (Section 7.3) addresses general noise impacts on humans and structures. Other EIS sections, including the following, discuss the impacts of noise on land use (EIS Section 7.4), environmental justice (EIS Section 7.5), biological resources (EIS Sections 4.12, 5.11, and 7.12), and cultural resources (EIS Section 7.13). The EIS Appendix E, *Noise*, provides additional detail regarding noise metrics, analysis methodology, and impacts.

A generalized categorization of noise-induced annoyance can be found in Table ES-19. Day-Night Average Sound Level (DNL) (A-weighted sound) is used to assess noise for which audible sound is the concern (subsonic aircraft noise, small-arms fire). CDNL (C-weighted Decibel Day-Night Average Sound Level) is used to assess noise in which vibration and low-frequency components are a concern (sonic booms, high-explosive munitions noise).

**Table ES-19. Relationship Between Noise Level and Percent of Population Highly Annoyed**

Criteria	Noise Level		
A-weighted Average Noise Levels (Continuous Noise)	< 65 dB	65-75 dB	> 75 dB
C-Weighted Average Noise Levels (Impulsive Noise)	< 62 dBC	62-70 dBC	> 70 dBC
Unweighted Peak Noise Levels (Small Arms Noise)	≤ 87 dBP	87-104 dBP	> 104 dBP
Percent of Population Highly Annoyed	< 15%	15%-39%	> 39%

The Federal Interagency Committee on Urban Noise (FICUN) developed recommendations on compatibility of land uses with noise (FICUN, 1980). These recommendations have been adopted, with minor modifications, by the Department of Defense (DoD) (Department of Defense Instruction [DoDI] 4165.57). The EIS addresses construction and operation noise associated with the BRAC actions.

**7SFG(A) Cantonment.** Construction noise associated with any of the alternatives would be temporary and localized to the area immediately surrounding the construction site. Activities at 7SFG(A) Cantonment Alternatives would not be expected to result in annoyance to off-base residents.

**7SFG(A) Range Training.** Noise impacts from any of the 7SFG(A) range alternatives would be similar. Weapons training would result in increases in munitions noise near range locations. Munitions noise from 7SFG(A) Range Alternatives 1 through 4 would result in 43 acres of off-range property being affected by noise at greater than 62 dB CDNL whereas 201 off-range acres would be similarly affected by 7SFG(A) Range Alternative 5. Even in areas where impulse noise would not be in excess of 62 dB CDNL, the change in the noise environment could be noticeable to off-base residents near the ranges. Impulse noise would have the characteristics of distant thunder and this change could be seen as undesirable by individuals. Range construction noise would be limited to relatively undeveloped areas with no known sensitive receptors. Training with vehicles would be similar in nature to existing range noise sources and would be dispersed over very large areas. Vehicular noise would not occur at a frequency and intensity expected to cause impacts.

**JSF Cantonment.** Implementation of either alternative would result in temporary increases in noise levels in the vicinity of the project area during construction, demolition, and renovation. The alternative construction areas are near the runway and frequently subjected to high levels of aircraft noise. Construction noise would last only for the duration of the projects and is expected to be limited to normal working hours (7:00 AM to 5:00 PM). Overall, construction noise would not be expected to affect off-base residents.

**JSF Flight Training.** The Final EIS estimates the noise levels and describes the impacted areas (see Final EIS Section 7.3). The estimated off-base population near Eglin Main Base and Duke Field exposed to aircraft noise would increase from flight

operations and an estimated 200 annual engine runups. Aircraft operations and engine runups were used to calculate projected noise conditions on and off base. Figure ES-10 is a two-page spread with calculated noise contours under Alternative 1. Figure ES-11 presents the noise contours under Alternative 2.

Persons off base near Eglin Main and Duke Field subject to noise levels of 65 dB DNL or greater are estimated to increase from the baseline of 2,113 persons to 6,757 persons for JSF Flight Training Alternative 1 and 11,156 for Alternative 2. The estimated population affected by greater than 75 dB DNL would increase from the baseline of 142 to 2,174 persons for JSF Flight Training Alternative 1, and 2,721 for Alternative 2. The DoD Instruction 4165.57 noted that above 65 dB DNL is the exterior noise level generally not recommended for residential use. Hospitals and schools within the Valparaiso and Niceville areas under JSF Flight Training Alternatives 1 or 2, would experience noise levels greater than 65 dB DNL. No hospitals are impacted at this noise level under baseline conditions. A close-up of the projected noise contours over the off-base Valparaiso and Niceville areas are presented for Alternative 1 in Figure ES-12 and Alternative 2 in Figure ES-13.

*Several public commenters expressed concerns about increased noise from new aircraft, increased number of training flights, increased number of night flights, engine testing, and the potential impact on the community. Please see EIS Sections 7.3, 7.4, and 7.5*

Under baseline conditions, no off-base residents near Choctaw Field are within the 65 dB DNL noise contours. There would be an estimated 114 off-base residents near Choctaw Field under noise contours greater than 65 dB DNL for Alternative 1 and 6 off-base residents for Alternative 2. Sensitive receptors near Choctaw Field are not projected to be affected by noise greater than 65 dB DNL under baseline conditions or for any of the alternatives.

*Public commenters expressed concerns with potential hearing loss as a result of increased noise and potential effects to Valparaiso schools and churches. Please see EIS Sections 4.13, 7.3, 7.4, 7.5, 7.12, and 7.13.*

Average noise levels under military training routes (MTRs) and SUA proposed to be used by the JSF would increase over baseline levels. For MTRs, the lowest altitude of 500 feet AGL was used to calculate noise levels. The actual altitude flown for the 295 annual sorties would depend on mission and training requirements. The areas in which the affected MTRs and SUA are located are primarily rural/agricultural or open water. Several small towns and rural residents would be affected by increased noise as a result of training on the MTRs. The average of two F-35 overflights at 500 feet AGL five days a week would create enough noise energy to change the noise conditions under the MTRs from below 45 dB DNL to approximately 75 dB DNL. The sudden overflight and noise would be expected to annoy rural residents. Change in noise level under SUA proposed to be used by the JSF would range from a decrease of 1 dB DNL to an increase of 19 dB DNL.

Sonic booms experienced beneath W-151 would increase in frequency from 0.15 to 0.25 per day. Boom overpressure would remain similar to those experienced with the F-15s under baseline conditions. Sonic boom overpressure generated during F-35 training would be below the pressure at the surface created by F-15 training. The pressure of the surface would be well below the impulse-noise thresholds for harassment of marine mammals and indicate the lack of impact on marine mammals of all types. JSF munitions use would increase average noise levels near targets. Noise levels from JSF munitions training are not projected to affect off-range areas with noise levels greater than 62 dB CDNL.

#### **4.2.1 Approximation of Alternatives 1 and 2 at 2013**

As indicated in Section 1.1 of the EIS, there are uncertainties associated with the JSF activities until the flight operations can be fully implemented and tested over time. Therefore, the Air Force will accommodate these unknowns by implementing an adaptive management approach.

To help illustrate the noise environment over time, a “snapshot” was developed that represents of Eglin AFB aircraft operations and expected related noise anticipated during 2013, at a specific point in time in the JSF delivery schedule is presented. The snapshot represents the total number of operations (approximately 302,800 annually) and the distribution among the three airfields projected for 2013 based on low-rate initial production. This is based on the number of all aircraft, including but not limited to the F-35, anticipated to be present at Eglin AFB by 2013, which is prior to the decisions on initial operational capability and full-rate production of the F-35 aircraft. (The full-rate production decision involves review of the JSF training program to determine whether it is sufficiently mature to begin full-scale production of the aircraft.)

The number of people exposed to noise at greater than 65 dB DNL is anticipated to be 3,870 during the 2013 approximation as compared to the 2016 end-state of 6,871 people in Alternative 1 and 11,162 in Alternative 2. In the early years of implementation, the local community will experience reduced noise as compared to the 2006 Air Installation Compatible Use Zone (AICUZ) because of the drawdown of 33 FW. However, as the JSF arrives in 2010 there will be increased levels of noise but that increase will not be accelerated until the 2013 time frame.

### **4.3 LAND USE**

Land use generally refers to the management and use of land by people. The region of influence (ROI) for land use includes land areas proposed for 7SFG(A) and JSF IJTS use as well as adjacent properties and land areas. This includes the majority of Eglin AFB (Eglin Main Base and the Eglin Range) and off-base areas in Okaloosa, Santa Rosa, and Walton Counties.

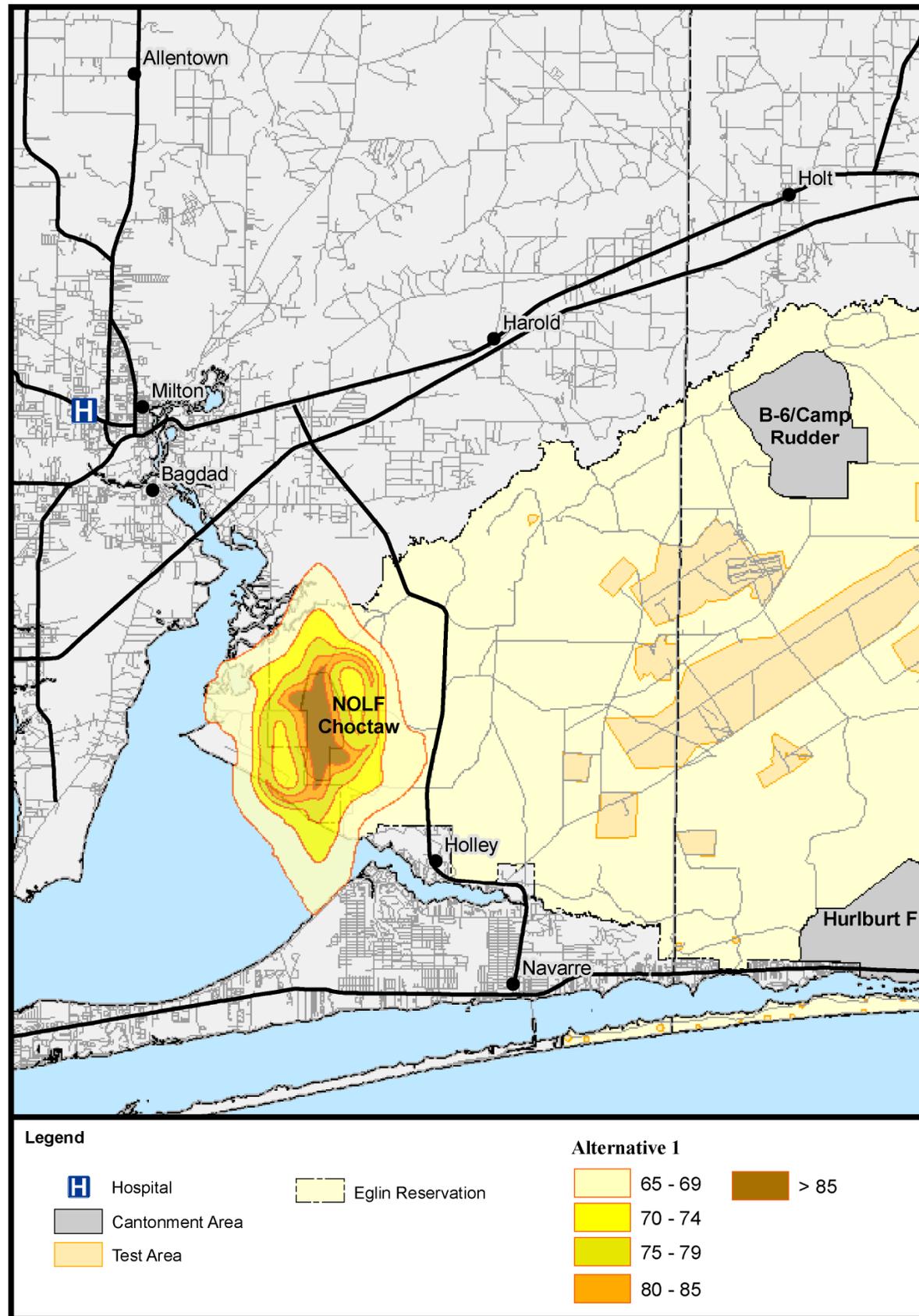
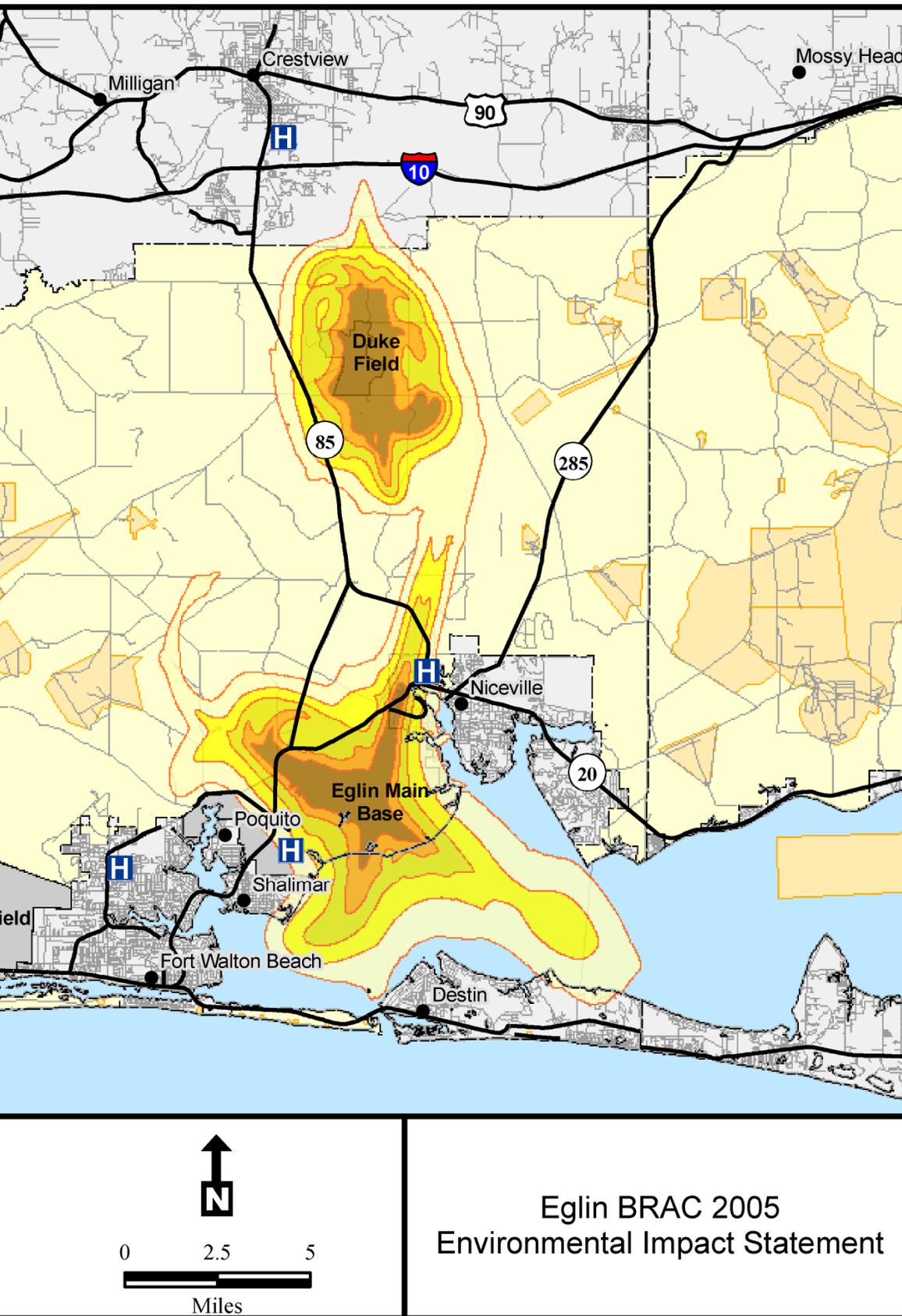


Figure ES-10. JSF



### Eglin BRAC 2005 Environmental Impact Statement

Alternative 1 Profile

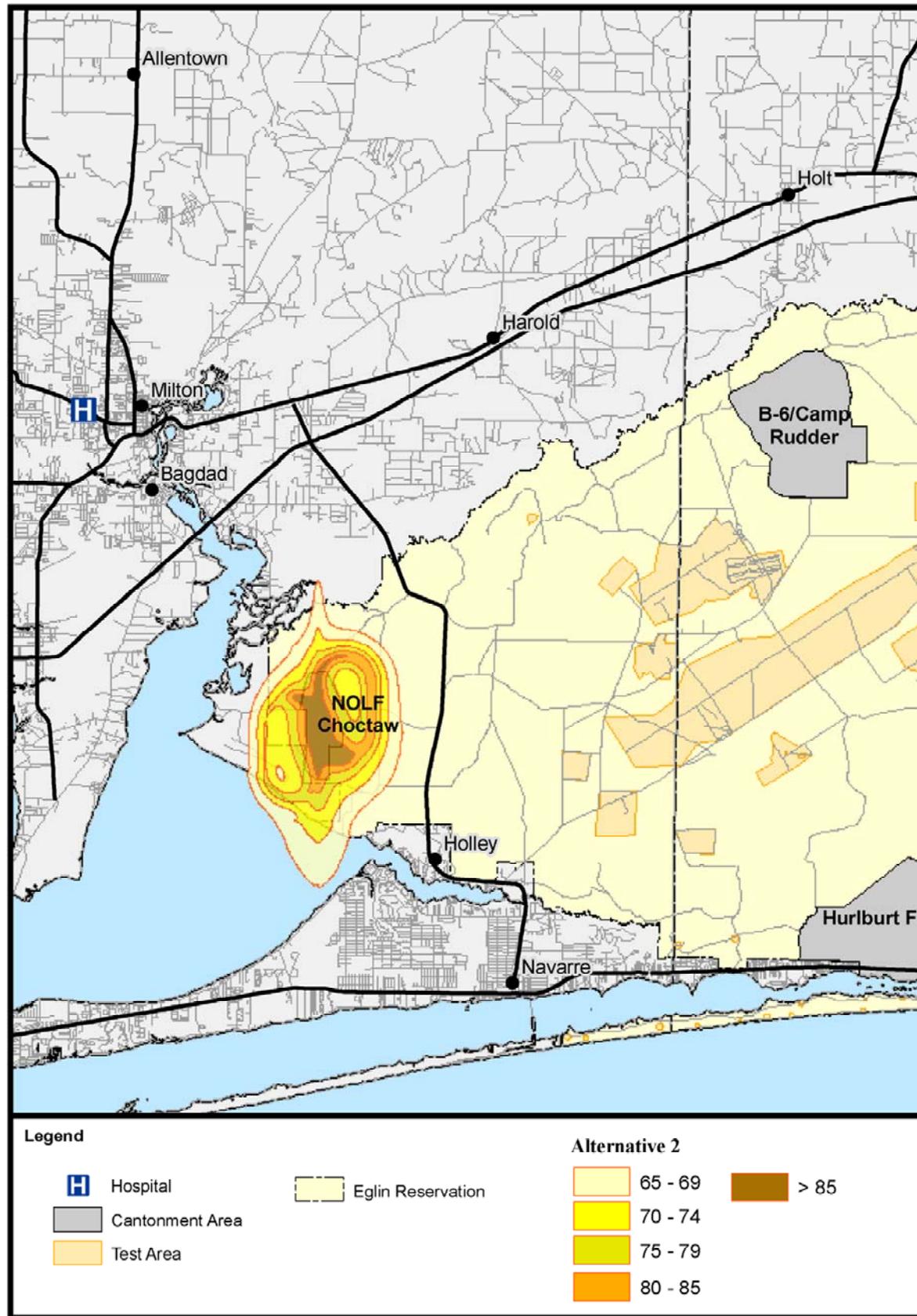
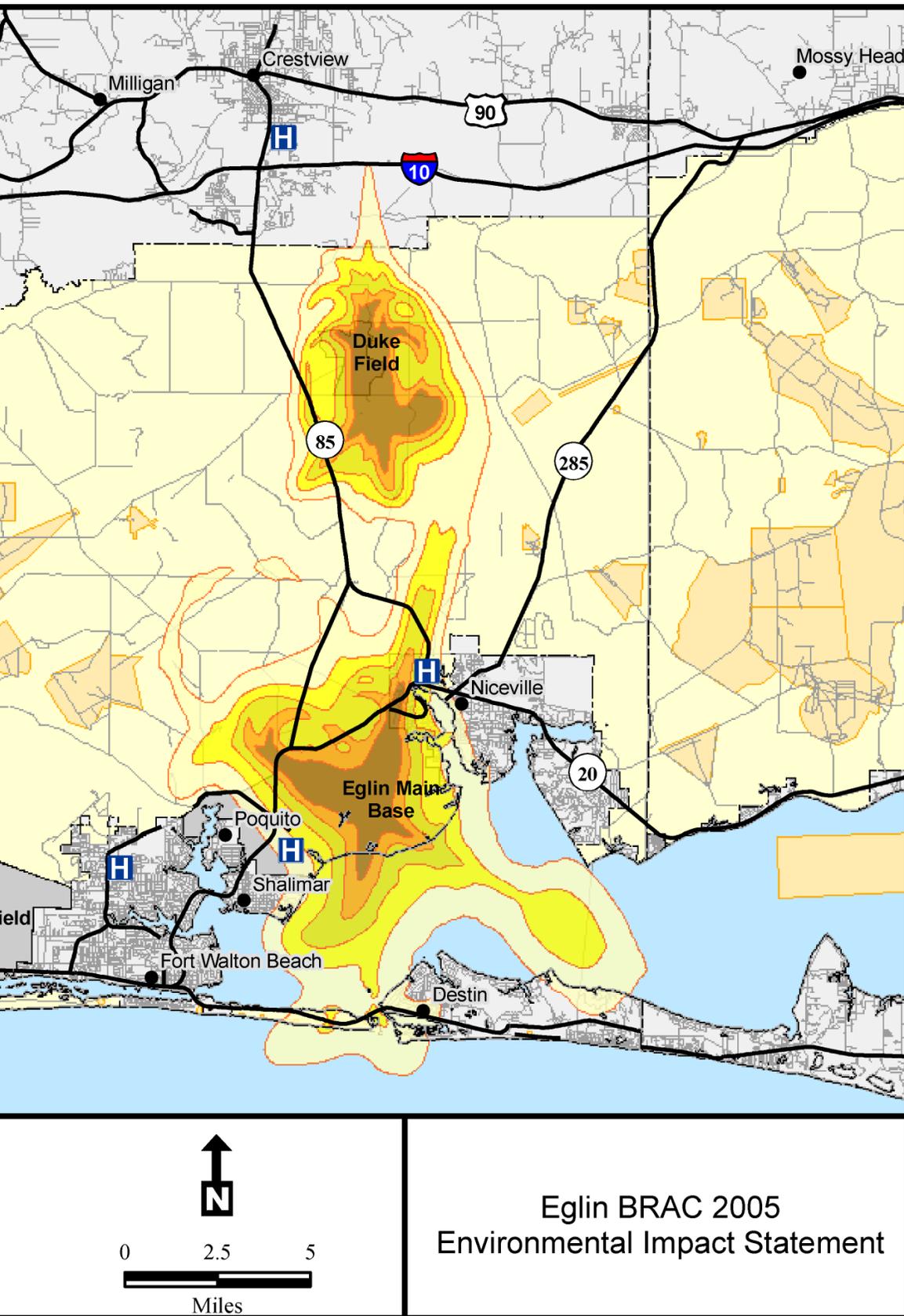


Figure ES-11. JSF



Alternative 2 Profile

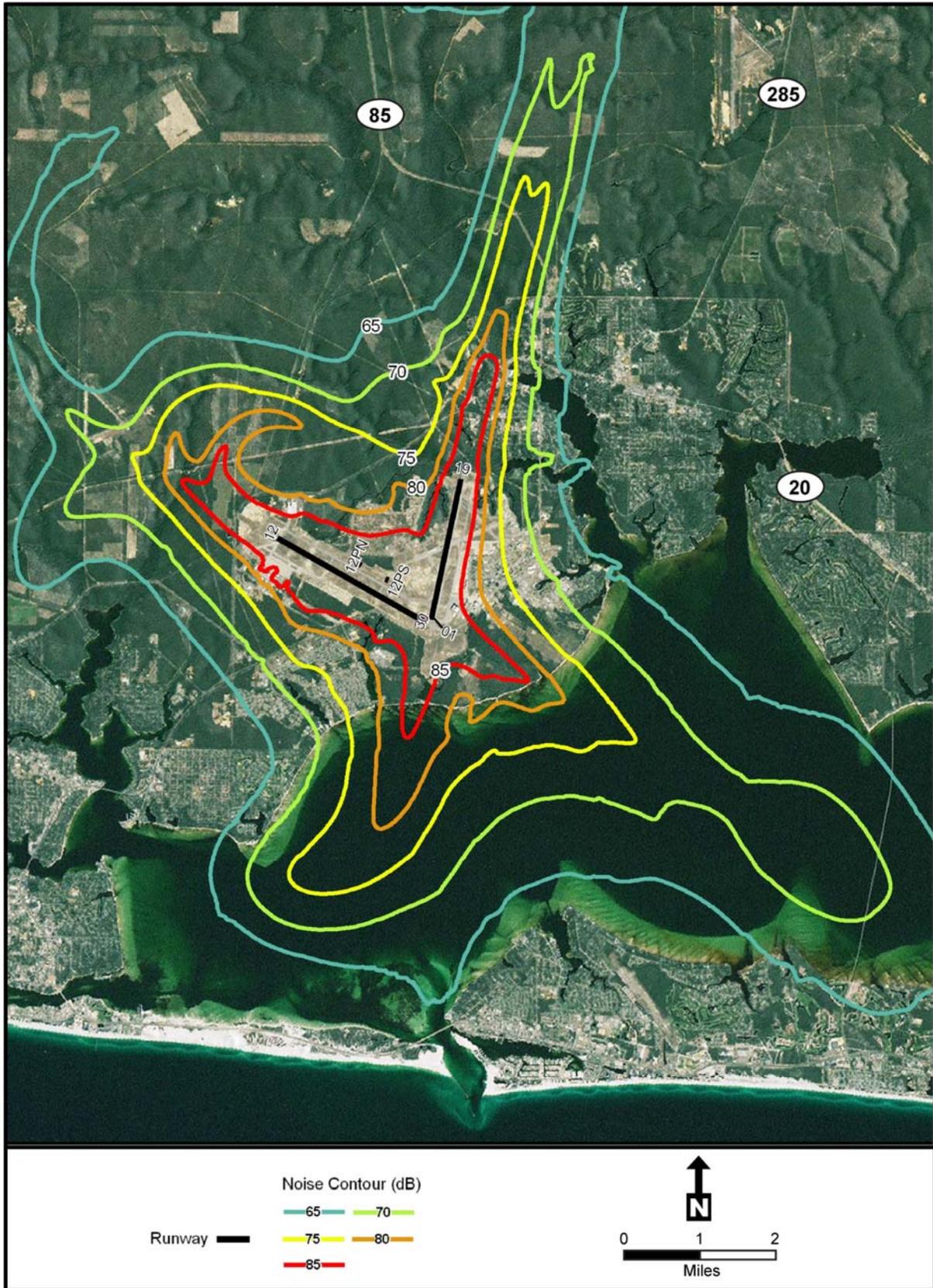


Figure ES-12. JSF Alternative 1 Noise Contour Close-up

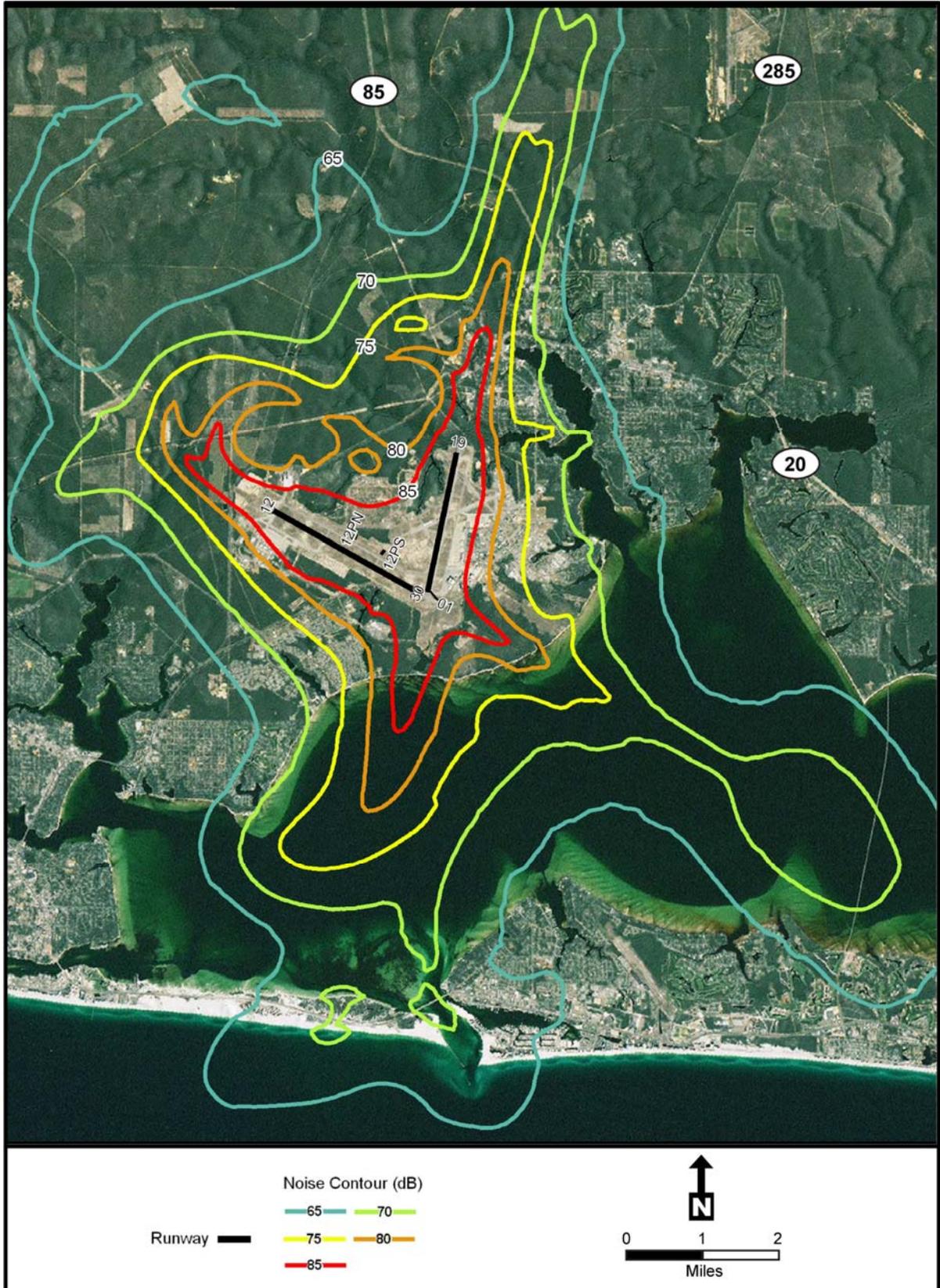


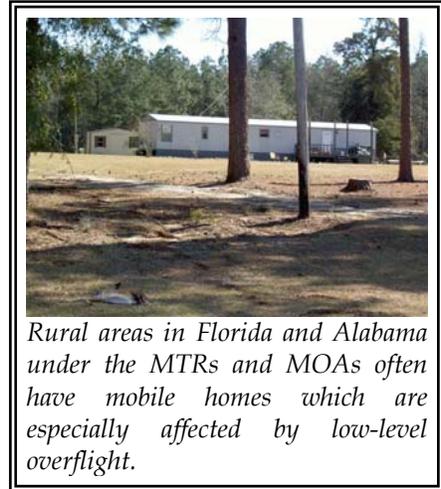
Figure ES-13. JSF Alternative 2 Noise Contour Close-up



*Parts of the Florida Trail traverse Eglin and are open for public use on scheduled days, typically weekends. Only Cantonment Alternative 2E and Range Alternative 3 have the potential to impact trail access.*

**7SFG(A) Cantonment.**

Implementing any of the 7SFG(A) cantonment alternatives would result in a land use change from open space to industrial, administrative, housing (unaccompanied), and outdoor recreation. Alternative 2E would impact a portion of the Florida Scenic Trail and the campground at Jr. Walton Pond. To mitigate the impact to the Florida Trail, the impacted section would be moved from the center of the Alternative 2E site to run along the northern border of the Alternative 2E site. There would be no land use impacts to any off-base areas. There would be a loss of public access and outdoor recreation associated



*Rural areas in Florida and Alabama under the MTRs and MOAs often have mobile homes which are especially affected by low-level overflight.*

with 7SFG(A) Cantonment Alternatives 2, 3, 4, and 5. The acreage would vary from approximately 500 acres for Alternatives 2A, 2B, 3, 4, and 5 to 716 acres for Alternative 2E, 1,022 for Alternative 2C, and 1,281 for Alternative 2D.

*Public access to the Florida Trail was a public concern. Please note caption under Florida Trail picture on this page and related discussions on this page.*

**7SFG(A) Range Training.** Construction of the Group 1 Ranges and associated SDZs would result in the permanent closure of 5,620 acres for Alternative 1; 3,119 acres for Alternative 2; 8,630 acres for Alternative 3; 7,582 acres for Alternative 4; and 11,106 acres for Alternative 5. Currently these areas are used for recreation when permitted by military missions. The proposed location of the Group 1 Ranges and SDZs for Alternative 3 would require the 6<sup>th</sup> Ranger Training Battalion to modify their current maneuver areas to the west of Camp Rudder. Duck Pond, the associated campground, and a portion of the Florida Scenic Trail would be impacted by the Alternative 3 closed area. This would reduce recreational use of the area and could be seen as an adverse effect by recreational users. However, to mitigate the impact to the Florida Trail, a new section of trail would be constructed north of the closed area associated with the Alternative 3 Group 1 Ranges along Range Road 211.



*Hunting is one permitted recreational use on Eglin AFB which would be impacted by closures for required training.*

Impacts from the implementation of the Group 2 ranges would be the same for all alternatives since they would be located in the same area. Approximately 9,570 acres, constituting the physical Group 2 ranges, would be permanently closed to public access/recreation. An additional approximately 44,020 acres associated with the Group 2 ranges (SDZs and maneuver areas) would be conditionally closed for public access/recreation. When not being used for military test or training missions, certain portions of Eglin AFB have been made available for permitted recreation activities. Conditional closure would occur for the first full year of training. Following training experiences and evaluation, the 7SFG(A) and Eglin AFB would determine the extent of future land use restrictions. The process is similar to what occurs under baseline conditions where land available to permitted public access varies each year. The impact would be that substantially more land would be under review and potentially not accessible for public recreation.

The primary use of the Range is for military test and training and there are other public outdoor recreation areas available in the region. Recreational users of Eglin lands could see the reduced availability as an adverse impact. The training alternatives would not have any direct impact on any surrounding community land use outside the Eglin Reservation.

**JSF Cantonment.** Construction of new facilities and modification of existing facilities in the cantonment area would be consistent with the overall Base Master Plan. There would be no change to the existing land use for the munitions storage area. JSF cantonment construction and use activities would be compatible with the existing land use patterns in the surrounding area, and no off-base land use direct impacts would occur. JSF cantonment and housing accessibility would be determined by the final land use plan and housing location. Under any alternative, Eglin residences would be accessible by individuals with base passes.

*One concern that arose during scoping questioned whether Eglin residences would be accessible to the public. Please see access explanation on this page.*

*Scoping commenters wanted to know what land uses were considered compatible under different noise levels. Please see Sections 5.3 and 7.4.*

**JSF Flight Training.** JSF flight training would produce noise levels above the current baseline, which would result in land use incompatibility for certain land uses at Eglin Main, Duke Field, and affected off-base areas. Approximately 43,213 acres under JSF Flight Training Alternative 1 or 46,345 acres under Alternative 2 on and in the immediate vicinity of Eglin Main Base, and Eglin AFB's interstitial areas would be exposed to noise levels greater than 65 dB DNL. Residential use is generally incompatible with noise levels above 65 dB DNL, as noted in Section 4.2 of this Executive Summary.

Under JSF Flight Training Alternatives 1 and 2, the entire developed area of Duke Field would experience increased noise exposure of greater than 85 dB DNL, including the unaccompanied housing area.

Approximately 3,405 and 5,008 acres of off-base community land near Eglin Main Base would be exposed to noise levels greater than 65 dB DNL with implementation of JSF Flight Training Alternative 1 or 2, respectively. Noise impacts on the surrounding communities would be greatest northeast of Eglin Main Base in Valparaiso and Niceville. Other impacted areas include unincorporated areas of Okaloosa County, part of the city of Shalimar, the eastern end of Okaloosa Island, a portion of Destin, property located just east of Destin near the Mid-Bay Bridge, and the area southeast of Crestview over the Shoal River (see Figure ES-12 and Figure ES-13).

For JSF Flight Training Alternative 1, 4,755 acres and for Alternative 2, 2,296 acres off-base in the vicinity of Choctaw Field would be under the 65 dB DNL or greater noise contour. This land is primarily open/agriculture/low density land use category and the current use would be compatible with potential noise levels. However, under Alternative 1, there are 19 acres of residential land around the 65 dB DNL noise contour. Noise levels of 65 dB DNL or greater would generally not be compatible with residential use. New homes within 65 dB DNL noise contours can be designed and constructed to reduce interior noise levels to the desired 45 dB DNL levels.

A seller disclosure that the home is located in a high noise area is frequently required.

*Public commenters expressed concern that noise could affect future building permits. Please see explanation on this page.*

#### 4.4 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Socioeconomic resources are defined as the basic attributes associated with human activities. Of particular interest are population; economic factors including employment and income; and public services including schools, law enforcement, and emergency services. Environmental Justice addresses children, minority, and low-income populations. The ROI for the socioeconomic and environmental justice resources for all BRAC-related actions is defined as Okaloosa County, Santa Rosa County, and Walton County.

**Aggregated Socioeconomic Effects.** The BRAC actions would have schedule overlaps in execution and spending effects. The personnel associated with the 7SFG(A) as well as the JSF IJTS would arrive in the ROI through the same time period from 2008 to 2016. In addition, actions associated with the No Action Alternative such as the drawdown of the 33 FW would also overlap with the BRAC actions. Table ES-20 presents the estimated total jobs attributable to

*Commenters at scoping requested that all BRAC activities at Eglin be aggregated to make it easier for local citizens to see and understand impacts. Chapter 8 of this EIS aggregates impacts from the BRAC actions.*

BRAC-related actions during this period. The direct base jobs support an induced number of jobs. Military construction (MILCON) directly supports jobs and expenditures create indirect and induced jobs within the ROI. The table demonstrates that total jobs will vary from FY08 through FY12 and then stabilize in the 32 to 33 thousand range. An aggregated analysis has been prepared for the relevant actions.

**Table ES-20. Projected Eglin AFB Supported Jobs in the Region**

	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Officers	1,563	1,538	1,499	2,039	2,066	2,095	2,115	2,138	2,152
Enlisted	6,368	5,585	4,997	7,992	8,303	8,586	8,846	9,113	9,276
Civilian/Other	9,147	9,203	9,509	9,592	9,563	9,585	9,586	9,661	9,661
Total	17,078	16,326	16,005	19,623	19,932	20,266	20,547	20,912	21,089
Induced	9,859	9,425	9,240	11,328	11,507	11,700	11,862	12,072	12,175
Milcon/Related <sup>1</sup>	1,626	6,632	3,796	2,964	832	0	0	0	0
Total Jobs	28,563	32,383	29,041	33,915	32,271	31,966	32,409	32,984	33,264

Note: 1. Includes Direct, Indirect, and Induced.

Socioeconomic effects are primarily driven by changes in population which in turn drive changes in other socioeconomic indicators such as employment and housing. As discussed in the Final EIS (EIS Section 4.4), the 7SFG(A) adds an estimated total of 8,583 people to the region, including the direct increase from the incoming personnel and the indirect and induced increase from people relocating to the region for secondary employment. The JSF would have a similar increase on regional population with an estimated increase of 7,472 (EIS Section 6.4). The No Action Alternative includes the drawdown of the 33 FW and decreases people in the region by 7,004 persons. There would be a net increase of 9,051 directly related persons to the three-county region (Table ES-21).

**Table ES-21. Population Growth by County, 2000-2030**

Location	Census 2000	Estimated 2005	Projected 2030	Average Annual Change 2000-2005	Average Annual Change 2005-2030
Okaloosa County	170,498	192,665	264,260	2.5%	1.3%
Santa Rosa County	117,743	141,481	226,057	3.7%	1.9%
Walton County	40,601	54,320	98,242	6.0%	2.4%
Total ROI	328,842	388,466	588,559	3.4%	1.7%
Florida	15,982,824	17,872,296	25,898,476	2.3%	1.5%

Source: Office of Economic and Demographic Research, The Florida Legislature, 2005

Each of the BRAC actions would overlap in execution and spending effects. Construction would occur over a period of years and the personnel associated with the 7SFG(A) and the JSF IJTS would arrive in the ROI.

Net employment would increase as a result of the aggregated BRAC action. The 7SFG(A) would create a total of 3,527 jobs including the employment of the incoming personnel and secondary jobs that would be created from the additional spending of the incoming personnel. The JSF personnel would increase employment by 3,648 jobs. The actions associated with the No Action Alternative would decrease the number of jobs in the region by 3,423. Net employment in the region would be expected to increase by 3,753 jobs, an increase of 2.0 percent.

*During public scoping, concerns were expressed about secondary growth impacts to land use and commercial and housing demand. Please see Section 7.5.*

Assuming one job per household, the number of housing units demanded would increase by 3,753 housing units. This would represent 2.0 percent as a result of the incoming personnel.

After cantonment and training locations are selected, individual Air Force, Army, Marine, and Navy military and civilian personnel will make decisions regarding residential locations. The overall and per year ROI population changes could have some stabilizing effect on the regional economy. The total 2.0 percent increase in housing demand over approximately eight years would not be greater than normal growth experienced in the ROI. Table ES-21 presents the projected ROI population growth prepared in 2005. Local areas which have been growing and have space to grow, such as Crestview, could experience a greater population increase than built-up areas.

*One scoping commenter was concerned with equivalent analyses of local communities. Please see Sections 4.3, 4.4, 7.4, and 7.5.*

Other areas could experience growth or stabilize housing values with the demand from in-migrating personnel. During the Draft EIS public commenting period, questions were raised about the potential for property value impacts from noise. Potential impacts within the 65 or greater dB DNL contour could include disclosure of noise contours during sale and increased annoyance of residents. Property value impact would be difficult to predict because property value is dependent on multiple variables including demand for housing and location. Such factors as national interest rates, housing sales in other areas, schools, and hurricanes affect housing values in the ROI. If an exactly equal property in an equal neighborhood with equal schools outside a 55 dB DNL noise contour were compared with an exactly equal property inside a greater than 65 dB DNL contour, noise contours could be a factor in property appraisal valuation.

*Public commenters requested an assessment of the impacts of each alternative on property values. Please see comment on this page and Section 7.5 for further information.*

The aggregate BRAC actions would increase the number of students in the three school districts in the ROI. An estimated 1,957 students could enter the region's school districts from the 7SFG(A) actions and 1,589 students could enter as a result of the



*Student increases are estimated for the region although the actual increase to a specific school district would depend on individual choices. Communities such as Crestview would be expected to see growth if the 7SFG(A) cantonment were located at Alternatives 2 or 3.*

JSF. An estimated 1,243 students would be expected to leave the region's school districts from the change in personnel related to the No

Action alternative. The net estimated student increase from BRAC would be 2,302 and increase the student population by 3.7 percent (Table ES-22). As with housing noted above and the demand for public services noted below, the school districts directly affected would depend upon residential choices of individual assigned personnel. Historically, 92 percent of the personnel have located in Okaloosa County with 6 percent in Santa Rosa County and 2 percent in Walton County.

*During scoping, commentors requested information about the number of students to manage the impact to schools of an increased local population. Please see comments on this page.*

The net revenues collected by the three school districts would also increase. School revenues would be projected to increase by over \$12 million, an increase of 2.9 percent.

Demand on public services including law enforcement, fire protection, and medical services would increase. An estimated additional 68 law enforcement officers, 24 firefighters, and 466 medical professionals would be needed throughout the region to maintain the current level of public services in relation to the increased population. The alternative selected and the residential choices of individuals would determine the local impact to services. The city of Crestview has been growing without the BRAC action and could be expected to continue growing under any BRAC alternative.

*Scoping comments asked whether the Crestview Police Department is equipped to serve and protect a larger community. Please see comments on this page.*

**Table ES-22. Aggregated Socioeconomic Effects of BRAC**

	7SFG(A) Effects Totals	JSF IJTS Effects Totals	No Action Alternative Effects Totals	Aggregated Effects	
				Totals	Total Percent Change
<b>Population</b>					
Existing Conditions, 2005 <sup>(a)</sup>	388,466	388,466	388,466	388,466	
Direct	6,067	4,885	-4,561	6,391	1.6%
Induced	2,516	2,587	-2,443	2,660	0.7%
Total	8,583	7,472	-7,004	9,051	2.3%
<b>Employment</b>					
Existing Conditions, 2004 <sup>(b)</sup>	189,469	189,469	189,469	189,469	
Direct	2,200	2,326	-2,172	2,354	1.2%
Induced	1,287	1,322	-1,251	1,359	0.7%
Total	3,527	3,648	-3,423	3,753	2.0%
<b>Housing</b>					
Existing Conditions, 2000 <sup>(c)</sup>	156,795	156,795	156,795	156,795	
Direct	2,200	2,326	-2,172	2,354	1.5%
Induced	1,287	1,322	-1,251	1,359	0.9%
Total	3,527	3,648	-3,423	3,753	2.4%
<b>Students</b>					
Existing Conditions, 2005 <sup>(d)</sup>	61,955	61,955	61,955	61,955	
Direct	1,521	879	-821	1,580	2.5%
Induced	435	710	-422	723	1.2%
Total	1,957	1,589	-1,243	2,302	3.7%
<b>School Revenue</b>					
Existing Conditions, 2005 <sup>(e)</sup>	\$413,847,831	\$413,847,831	\$413,847,831	\$413,847,831	
Direct	\$10,144,790	\$5,862,554	-\$8,689,533	\$,317,811	1.8%
Induced	\$4,602,302	\$4,732,454	-\$4,468,349	\$4,866,408	1.2%
Total	\$14,747,092	\$10,595,008	-\$13,157,882	\$12,184,219	2.9%
<b>Law Enforcement</b>					
Existing Conditions, 2005 <sup>(f)</sup>	670	670	670	670	
Total	37	31	N/A	68	10.1%
<b>Fire Protection</b>					
Existing Conditions, 2006 <sup>(g)</sup>	657	657	657	657	
Total	13	11	N/A	24	3.7%
<b>Medical</b>					
Existing Conditions, 2006 <sup>(h)</sup>	11,446	11,446	11,446	11,446	
Total	249	217	N/A	466	4.1%

a. Office of Economic and Demographic Research, The Florida Legislature, 2005

b. U.S. Bureau of Economic Analysis, 2006

c. U.S. Census Bureau, 2000a, 2000b, 2000c

d. Florida Department of Education, 2005a

e. Florida Department of Education, 2005b

f. Florida Department of Law Enforcement, 2005

g. Department of Homeland Security, U.S. Fire Administration, 2006

h. Orcutt, 2006

The BRAC actions would result in additional construction spending to build or renovate suitable facilities for the 7SFG(A) and the JSF IJTS. This would occur over a three to five year construction period. Table ES-23 presents the regional direct, indirect, and induced economic effects of construction expenditures. The current regional construction industry had 15,400 jobs in 2004. The direct construction jobs would peak at an estimated 4,325 in FY 09. This would represent 28 percent of regional construction workers. Depending on the demand for construction workers at the time, this percentage could either relieve a depressed construction industry or induce temporary construction resources to locate in the ROI for specific projects. Construction activities would be concentrated on-base and would not affect off-base properties. Operations would create noise impacts.

*Scoping questions asked whether construction or operations could result in deterioration to housing. Please see EIS Section 7.3*

**Table ES-23. Estimated Impact of Military Construction**

	Direct	Indirect	Induced	Total
Total Spending (Output)	\$762,099,968	\$194,143,002	\$259,956,694	\$1,216,199,677
Incomes Generated	\$346,824,576	\$82,779,526	\$83,123,107	\$512,727,198
Jobs Supported	10,338	2,290	3,223	15,850

Source: Haas Center for Business Research and Economic Development, 2006

**Environmental Justice.** Minority and low-income populations would not be adversely impacted by the construction or operations of the 7SFG(A) or the associated ranges. There would be no expected environmental justice impacts from the noise levels of 62 CDNL or above 65 dB DNL associated with the 7SFG(A) ranges.

Given the time period for the relocation, the number of personnel entering the area, and the large capacity of the ROI for growth, the JSF IJTS would not be expected to disproportionately affect children, minority, or low-income properties.

JSF Flight Training Alternatives 1 and 2 would not produce a disproportionate impact to minority or low-income populations in the vicinity of Eglin Main Base. Table ES-24 presents the percentage of minority and low income populations within the county that would be overflowed in each alternative as compared to the Community of Concern, which is the respective county. Minority and low-income populations in Fort Walton Beach, and minority/low-income populations in Valparaiso and Niceville would be subject to noise impacts, but the impact would not be disproportionate as compared to the Community of Concern.

*Scoping questions were concerned about the city of Valparaiso and schools near potential training areas. Please see EIS Sections 7.4 and 7.5.*

**Table ES-24. Overflown Population and Populations of Concern by County, 2000**

Airspace	Florida County	Overflown Population	Overflown Minority Population	% Overflown Minority	County CoC % Minority	Overflown Low Income Population	% Overflown Low Income	County CoC % Low Income
<b>Alternative 1 Airfield</b>								
Outside Eglin (Choctaw)	Santa Rosa	114	7	6.14	10.89	14	12.28	9.83
Outside Eglin (Duke/Main Base)	Okaloosa	6,757	1,374	20.33	19.03	679	10.05	8.84
<b>Alternative 2 Airfield</b>								
Outside Eglin (Choctaw)	Santa Rosa	6	-	0.00	10.89	1	16.67	9.83
Outside Eglin (Duke/Main Base)	Okaloosa	11,155	1,458	13.07	19.03	1,031	9.24	8.84

In the vicinity of Eglin Main Base, five schools and four childcare centers in Okaloosa County, including in Valparaiso and Destin, would be subject to noise levels in excess of 65 dB DNL associated with JSF Flight Training Alternative 1. Under JSF Flight Training Alternative 2, eight schools and five childcare centers in Okaloosa County, including in Valparaiso and Destin, would be subject to noise levels in excess of 65 dB DNL. Under either alternative, special risks to children from aircraft noise would be anticipated. No school or childcare centers are known to occur under the noise contours associated with Duke Field or Choctaw Field under any of the alternatives. MTRs VR-1082 and VR-1085, proposed for use in JSF flight training, overfly 10 counties in Florida and Alabama. Parts of three counties in Alabama (Clarke, Monroe, and Wilcox) have an estimated 21,323 persons who could potentially be affected by a change in noise levels from an ambient of less than 45 dB DNL to between 57 to 76 dB DNL. The Tyndall MOAs overfly portions of Bay, Calhoun, Franklyn, and Gulf counties and R-2965 overflies portions of Okaloosa, Santa Rosa, and Washington counties. Aircraft sortie-operations on the MTRs would be an average of 2 per weekday. Individual overflights could be alarming to people overflown and would be expected to cause high annoyance to between 6 and 40 percent of the population affected. Comparable changes would occur to noise under the Tyndall MOAs and to private lands under Restricted Area R-2915. Table ES-25 presents the percentage range of minority and low-income persons in the counties and under the training airspaces. In all cases, the increased noise could be expected to increase annoyance. In most counties, the training airspace overlies higher concentrations of minority or low-income populations than in

the counties as a whole. Flight training could result in a disproportionate impact upon minority and low-income populations in specific counties under the training airspace.

**Table ES-25. Percentage Range of Minority and Low-Income Persons Under Training Airspace**

Airspace	Disproportionate Overflowed Population	Percent Minority		Percent Low Income	
		County	Overflowed	County	Overflowed
VR-1082	1,901	43 to 73	82 to 98	21 to 40	35 to 43
VR-1085	4,026	43 to 44	69 to 81	21 to 40	25 to 38
Tyndall MOAs <sup>1</sup>	5,997	17 to 22	6 to 39	13 to 20	18 to 31
R-2915 <sup>2</sup>	33,628	11 to 19	5 to 26	10 to 20	7 to 33

1. Eglin MOA A overflies some private lands.
  2. R-2914 overflies an additional three persons.
- Source: U.S. Census Bureau, 2000

Flight training operations from the JSF are anticipated to present special risks to children as there are several schools and daycares that underlie the SUA. The JSF flight training would increase the noise levels currently experienced by these schools and daycares and would have the potential to interrupt speech and disrupt the learning process in classrooms.

#### 4.5 TRANSPORTATION

Transportation resources analyzed within this EIS include the regional roadway network and the roadways within Eglin AFB. Collectively, these resources compose the ROI for transportation. Regional transportation networks are currently inadequate for the population.



**7SFG(A) Cantonment.** Implementing 7SFG(A) Cantonment Alternatives 1 or 4 would result in 16 to 17 roadway segments comprising portions of State Routes (SRs) 189, 188, 393, 30, 85, and 397 operating at Level of Service (LOS) D or worse.

*Public commenters requested the installation of traffic flow and reduction measures, such as additional stoplights and/or changes to highway access points. Please see EIS Sections 4.5 and 6.5.*

Currently about 50 percent of these segments are deficient or operating worse than the adopted LOS standard. For 7SFG(A) Cantonment Alternative 2, three roadway segments are projected to be deficient with respect to the adopted LOS standard including portions of SR 85. All of these deficient segments operate in a failing condition today. For 7SFG(A) Cantonment Alternative 5, five segments are deficient with respect to the adopted LOS standard, including portions of

*One public issue was how the beddown will affect traffic flow. Please see comments on this page.*

US 90, US 331, and SR 285. Project traffic is projected to impact the SR 285 segments. Portions of US 90 and US 331 are deficient today. Alternative 2 or 3 would involve signal controls at the Duke Field road. Regional traffic flow is an existing problem and will need to be resolved with regional solutions. The Air Force will work with regional agencies to support identification of solutions.

**7SFG(A) Range Training.** Range training would occur on the Eglin Reservation using the existing roadway network. Off-base military highway vehicle travel would be infrequent and would not be expected to add to existing highway congestion. There are no transportation impacts associated with any of the 7SFG(A) range alternatives.

*One public comment dealt with potential highway congestion from military training vehicles. Please see comment on this page.*

**JSF Cantonment.** The JSF cantonment Alternative 1 would potentially impact 17 roadways. Figure ES-14 presents the existing regional transportation network and identifies the highway segments expected to decline in level of service with the implementation of the BRAC action. The public may perceive a significant adverse impact with six of the 17 impacted roadways, including SR 85 between SR 123 and the Air Combat Command (ACC) Gate at Nomad Way; SR 85 between the ACC Gate at Nomad Way and SR 189 (Lewis Turner Boulevard); SR 85 between SR 189/SR 397 (Eglin Boulevard) and 12<sup>th</sup> Avenue; SR 123 between SR 85 and the SR 85/SR 20 intersection; SR 189 between General Bond Boulevard and Mooney Road; SR 189 between Mooney Road and SR 188 (Racetrack Road). If the JSF cantonment Alternative 2 were implemented, 18 roadway segments would be deficient with respect to the adopted LOS standard, including portions of Barrancas Avenue, SR 20, SR 30 (US 98), SR 85, SR 123, SR 189, SR 393 (Mary Esther Boulevard), and SR 397. Eight of 24 affected roadways may be perceived by the public to be significantly and adversely impacted. On-base impacts resulting from JSF cantonment Alternative 2 (located east of the Eglin Runway) would likely require some improvement to Barrancas Avenue, Choctawhatchee Road, and Daytona.

*Several public commenters requested information on highway infrastructure redesign and funding to handle traffic increases and congestion. Please see EIS Section 4.5 and 6.5.*

**JSF Flight Training.** There are no transportation impacts associated with implementation of any of the flight training alternatives.

## 4.6 UTILITIES

The utilities described and analyzed for potential impact include potable water, wastewater, electricity, and natural gas. The description of each utility and the impact analysis focus on the existing infrastructure (e.g., wells, water systems, wastewater treatment plants), current utility use, and any pre-defined capacity or limitations as set forth in permits or regulations.

**7SFG(A) Cantonment.** An increase in potable water usage would occur, but usage would still be within permitted limits for 7SFG(A) Cantonment Alternatives 1 and 4. For 7SFG(A) Cantonment Alternative 2, the increase would result in an exceedance of the permit limits at Duke Field. An additional or expanded water system would need to be established for the 7SFG(A) cantonment area at Duke Field. Industrial use of potable water may require drawing water from the Sand and Gravel Aquifer to reduce usage from the Floridan Aquifer. Since the areas along the boundaries of the Eglin Range proposed for 7SFG(A) Cantonment Alternatives 2 and 5 contain no potable water wells, a potable water system would need to be established for either of these alternatives which requires a new consumptive use permit (CUP) and a potable water system (PWS) permit. There would be no changes required to the existing permits for Cantonment Alternatives 1, 2, or 4. No wastewater treatment system is associated with either Alternative 3 or 5, and an approximately 100,000-gallon-per-day on-site wastewater treatment system and infrastructure would be required, or under Alternative 3 only, wastewater would need to be directed to Bob Sikes Reclamation Facility in Crestview. The amount and type of wastewater expected to be produced would also require permitting from the FDEP. Electric power and natural gas would require additional infrastructure.

*Commenters at scoping questioned whether the current water and sewer system can handle the increased needs of a larger population. Please see Sections 4.6 and 6.6.*

**7SFG(A) Range Training.** Group 2 Range, TAs C-52 and C-72 currently have utilities and supporting infrastructure, with the exception of natural gas. Some electrical distribution lines may require relocation depending on the final layout of the proposed ranges. TA C-53 would require potable water wells and septic tanks under a new or amended CUP. Electrical distribution lines are available near and within TA C-53. Group 1 Ranges under Alternatives 2 and 5 would be sited around TA C-2 and TA C-53, respectively, which lack utilities and would require potable water wells, a CUP, septic tanks, and new infrastructure to support all utilities, including electricity and natural gas. Range Alternatives 3 and 4 would be sited in areas with no existing utilities. Potable water wells, CUP, septic tanks, and infrastructure would be required.

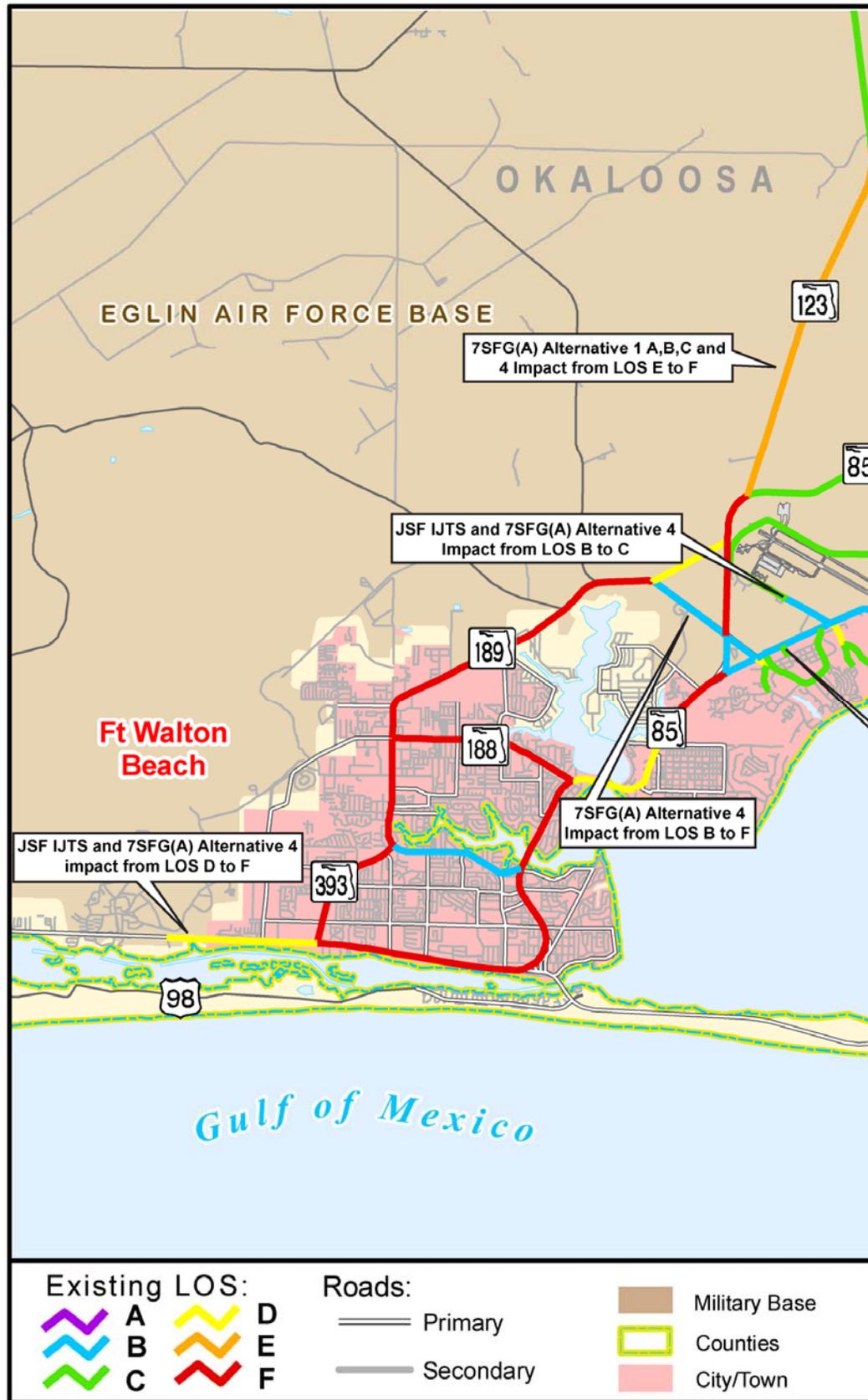
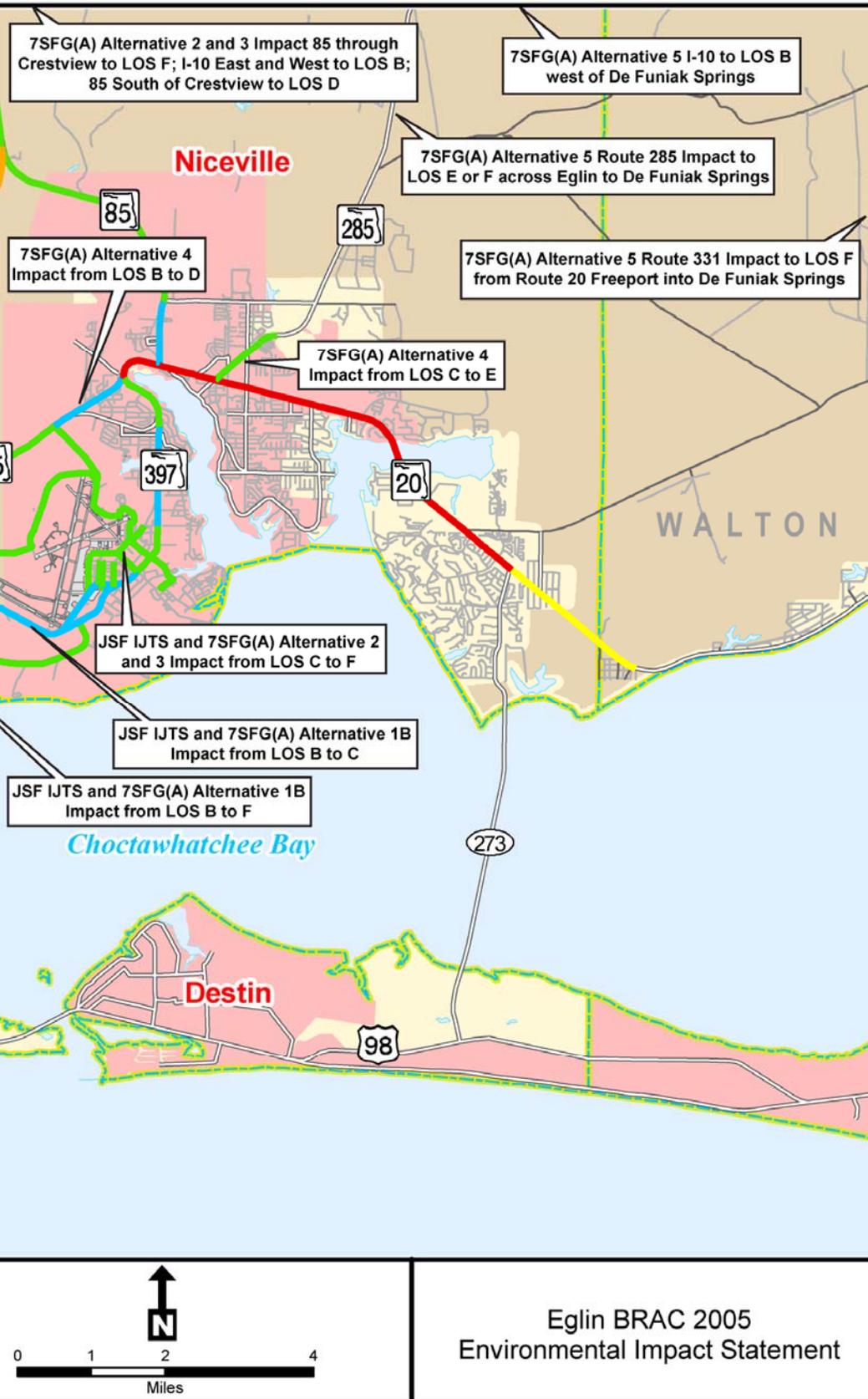


Figure ES-14. Regional Transportation Impacts



to Main Highway Segments

**JSF Cantonment.** Both alternatives would be within permitted limits with the increase in potable water usage and wastewater generation. Industrial water usage would increase and Eglin AFB may be required to draw from the Sand and Gravel Aquifer to reduce strain on the Floridan Aquifer. Adequate electrical and natural gas supply exists in Northwest Florida to service Alternatives 1 or 2. Infrastructure additions and/or modifications would be required to accommodate JSF IJTS facilities.

*Scoping commenters questioned whether an infrastructure plan would be needed to ensure that wastewater, electricity, and natural gas needs will be adequately met. Please see EIS Sections 4.6 and 6.6.*

**JSF Flight Training.** Potable water, wastewater, and electrical infrastructure are currently in place at each of the proposed outlying fields. The Eglin Main Base is supplied by two water systems which collectively have enough excess capacity to handle the additional air traffic controllers and fire and crash protection crews. The potable water system at Duke Field is projected to have enough capacity to accommodate the additional JSF mission. The current Duke Field water system would not have the capacity to support both the JSF mission and the 7SFG(A) cantonment. An additional water system would be needed at Duke Field to support both new missions. Wastewater treatment, electricity, and natural gas infrastructures are already in place at each of the outlying fields. Increases in usage from the JSF missions would not exceed capacity, so no impacts are expected to these utilities.

#### 4.7 AIR QUALITY

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The Florida Department of Environmental Protection (FDEP) operates air quality monitors in various counties throughout the state (FDEP, 2004). Although there are no ambient monitors in Okaloosa County, there are monitors in neighboring Santa Rosa and Bay counties. All of these counties are classified as attainment areas (USEPA, 2007).

**7SFG(A) Cantonment.** The individual pollutant emissions from the project would not exceed the 250 tons per year and pollutant emissions would not exceed 10 percent of the total ROI emissions for each corresponding pollutant. Carbon monoxide (CO) would be the highest pollutant emission at 160 tons per year and 0.11 percent of the ROI emissions at the peak of the construction activity. The highest pollutant percentage is for particulate matter with a diameter of less than or equal to 10 microns (PM<sub>10</sub>) and nitrogen oxides (NO<sub>x</sub>), which is approximately 0.14 and 0.16 percent of the ROI's total emissions, respectively, based on the USEPA's 2002 National Emissions Inventory (NEI). This construction effect on local air quality would be temporary. Increases in vehicular emissions from traffic are not expected to adversely impact overall air quality.

**7SFG(A) Range Training.** Construction activities and use of munitions, wheeled vehicles, aircraft, and watercraft for training operations would result in CO and PM<sub>10</sub> emissions above the criterion of 250 tons per year (tpy). This equates to an increase of 0.3 and 1.4 percent of the ROI respectively. This would be below the 10-percent criterion established for conformity analysis for the ROI. Adverse impacts to regional air quality are not expected.

**JSF Cantonment.** Individual pollutant emissions from construction and personnel activities associated with either JSF cantonment alternative would not exceed 10 percent of the total ROI emissions for each corresponding pollutant despite a temporary increase in PM<sub>10</sub> emissions above the 250 tpy criterion (418.47 tpy and 1.38 percent of the ROI). The increase in local air emissions would be temporary. Increases in vehicular emissions from traffic are not expected to adversely impact overall air quality.

**JSF Flight Training.** There would be an increase in emissions from aircraft operations and particulate matter from munitions training. Munitions use would not result in any adverse effects to regional air quality. The use of live 25-mm rounds on TA C-62 for strafing runs would minimally increase the air emissions in Walton County. Adverse effects to the regional air quality are not expected from the addition of these training activities. Aircraft emissions would increase. The highest pollutant percentage is for NO<sub>x</sub>, at 6.75 percent of the ROI's annual emissions. This increase is below the 10 percent criterion; thus, no air quality issues are anticipated with the addition of the F-35 aircraft to Eglin AFB.

*One comment during public scoping expressed concern with possible pollution over the city of Valparaiso. Please see EIS Section 7.7.*

The four BRAC decisions, when combined, are not projected to produce combined emissions which could impact regional air quality or affect the current air quality attainment status in the ROI counties.

## 4.8 SAFETY

The safety analyses address explosive safety, ground safety, and flight safety issues. Explosive safety relates to the management and use of ordnance or munitions associated with training activities including the application of explosive safety quantity distances (ESQDs). Ground safety considers issues associated with operations and maintenance activities that support range operations, including fire response. Flight safety considerations include aircraft mishaps and bird-aircraft strike hazards.

**7SFG(A) Cantonment.** No existing ESQDs would be affected by the construction of the cantonment area under any of the alternatives, except 2B. 7SFG(A) Cantonment Alternative 2B would require coordination with Eglin AFB and EOD to ensure that required safety buffers are maintained.

**7SFG(A) Range Training.** Safety footprints or SDZs would be employed for land-based training where live ordnance is used. For the proposed live-fire ranges, personnel exclusion zones and appropriate safety buffers would be developed and implemented. Standard safety procedures, such as closing range gates and blocking all passable trails, would be implemented in all cases to exclude unauthorized public access to affected areas during training activities. Air Force and Army ground safety procedures would preclude ground safety impacts. Most areas on the Eglin Range have the potential for UXO contamination. Consultation and coordination with 96 CES/CEB would be required prior to commencement of any activity associated with the development on, or use of, these areas to mitigate any potential adverse impacts from UXO.



*Eglin AFB has multiple policies in place to reduce the risk of fire and has mutual aid agreements with local communities to support rapid response and fire suppression.*

Ground safety includes fire control. Eglin Range clears areas where munitions could contribute to fires, has altitude limitations on defensive flare use to insure flare burn-out, and has mutual aid agreements with local communities to support rapid suppression of any fires.

**JSF Cantonment.** Eglin AFB would develop and implement appropriate ESQDs to mitigate potential hazards associated with the storage of munitions for either alternative. No adverse impacts to explosive safety from implementation of the JSF IJTS are anticipated. No unusual ground safety risks would be expected from ground operations or demolition/construction activities as current operational processes and procedures as well as standard industrial safety standards would be followed.

**JSF Flight Training.** Based on historical data on mishaps at all installations, and under all conditions of flight, the military services calculate Class A mishap rates per 100,000 flying hours for each type of aircraft in the inventory. Class A mishaps result in loss of life, permanent total disability, a total cost in excess of \$1 million, or the destruction of an aircraft. Table ES-26 presents Class A mishap rates for aircraft, including the existing F-15 and the three aircraft the F-35 is designed to replace or supplement: the A-10, F-16, and F-18.

**Table ES-26. Class A Mishap Rates for Aircraft**

Aircraft	Rates per 100,000 Flying Hours
A-10	2.35
F-15	2.07
F-16	3.88
F-18	3.34
AV-8B	4.24

Source: AFSC, 2004; AFSC, 2006



*The F-35 is a new, single-engined aircraft which does not yet have a calculated Class A accident potential rate. The F-35 is likely to have an accident potential rate comparable to the F-16 which it replaces.*

The F-35 is a new, single-engined aircraft and has not flown 100,000 hours to permit calculation of a Class A mishap rate. The F-35A and C could have an eventual Class A mishap rate comparable to the F-16. The possible mishap rate for the F-35B could be comparable to the AV-8B. While the Air Force cannot predict future F-35 performance, given advances in single engine technology and enhanced safety systems, the F-35 should deliver an even better safety record than previous single engine aircraft. As such, the Air Force would not expect the F-35 destroyed aircraft rates to exceed the initial rates of the F-16.

Implementation of any of the alternatives would not be expected to prevent or limit the ability of range managers to conduct EOD and range maintenance activities. Aircraft-delivered ordnance (e.g., GBUs) would require identification of weapon safety footprints to define personnel evacuation areas during training activities. Any unique training associated with F-35 crash response would also have to be extended to personnel from local fire departments. Specific procedures would be implemented for minimizing the risk of fire from range operations. Current safety policies and procedures at Eglin are designed to ensure that the potential for aircraft mishaps is reduced to the lowest possible level. These safety policies and procedures would continue under any of the alternatives. For any of the alternatives, the number of total annual sorties for all aircraft at the base would increase. The number of bird strikes per year would similarly increase from the 150 strikes in the past 11 years attributable to fighter aircraft. The overall risk associated with bird-aircraft strikes is expected to remain low.

*Public comments on safety asked about increased potential for accident and safety risks associated with F-35 training. Please see comments on this page and EIS Section 7.8.*

There is the potential for a commanded release of aircraft-delivered ordnance to be ineffective, resulting in “hung” ordnance. In such an event, JSF personnel would act in accordance with appropriate Air Force instruction and pilots will follow the specific procedures applicable to the type of hung ordnance their aircraft is carrying. Whenever possible, pilots with hung ordnance will fly a straight-in approach avoiding populated areas to Eglin Main Base.

Because the aircraft’s bombing system is a man-made, electromechanical system, it is impossible to state categorically that an accidental release of ordnance could never occur; however, safety risk analyses show that the risk of accidental releases that could have serious consequences is so small that it can be essentially discounted (Air Combat Command, 1999).

The AICUZ Program is used to promote compatible land development in areas subject to aircraft noise and accident potential. The AICUZ compatible use zones include the Clear Zone (CZ), Accident Potential Zone (APZ) I, and APZ II. The CZ, APZ I, and APZ II are the zones classified by the military that are located immediately off the end of the runways. These zones delineate the areas with the highest accident potential based on historical accident data.

The CZ is an area 3,000 feet wide by 3,000 feet long and is located at the immediate end of the runway. APZ I is a 3,000 foot wide by 5,000 foot long area located just beyond the CZ and has land use compatibility guidelines that allow a variety of industrial, manufacturing, transportation, communication, utilities, wholesale trade, open space, and agricultural uses. Uses that concentrate people in small areas are not compatible. Developed properties in Valparaiso and Niceville are currently within APZ I.

APZ II is less critical than APZ I, but still poses potential for accidents. APZ II is 3,000 feet wide and extends 7,000 feet beyond APZ I. Compatible land uses include low density single family residential, and low intensity business and commercial uses. High density places of assembly (e.g., theaters, schools, churches, and restaurants) are not considered compatible. The western half of Niceville is currently within APZ II.

There currently exist incompatible land uses in APZ I and APZ II. The safety risk from aircraft Class A mishap somewhat increases with the additional aircraft, although the APZs do not change with the proposed F-35 training.

#### 4.9 SOLID WASTE

Solid waste includes wastes commonly referred to as municipal solid wastes (such as garbage and refuse) and construction and demolition (C&D) debris, which consists of discarded materials generally not soluble in water (steel, glass, brick, concrete, asphalt, and so on).

**7SFG(A) Cantonment.** Solid waste generated by incoming personnel and their families would be approximately 4,983 tpy, a net increase of about 2 percent. During construction activities, annual debris waste would vary from 2,483 tons (7SFG(A) Cantonment Alternatives 2, 3, and 5) to 2,555 tons (Alternatives 1 and 4). The debris generated during 7SFG(A) construction would increase landfill use in Okaloosa County by approximately 3 percent or by approximately 2 percent in Santa Rosa County.

**7SFG(A) Range Training.** Based upon construction activities, a total of 13,348 tons of debris would be generated during construction



activities for each of the alternatives. The debris would increase use in Okaloosa County by approximately 4 percent or by approximately 3 percent in Santa Rosa County. Approximately 330,392 tons of land clearing debris would be generated during construction and 195 tons/year of metallic debris from range operations. The debris associated with land clearing and range operations is not expected to require disposal.

**JSF Cantonment.** The increase in population (4,885 persons) from either alternative would result in an increase in the annual generation of municipal solid waste of approximately 4,012 tons. This is an increase of approximately 2 percent to Okaloosa County landfills. Both on-base and off-base solid waste removal would continue to be through contracted services. Approximately 18 tons of metallic debris would be generated from aircraft servicing on an annual basis from either alternative. This material is anticipated to be recycled and would not impact available landfill capacity within the ROI.

*A solid waste comment during scoping asked about efficient removal of solid waste/garbage from impacted communities. Please see comment on this page and EIS Sections 6.6 and 6.9.*

Construction, demolition, or renovation debris would increase annual landfill use in Okaloosa County and Santa Rosa County by approximately 20 percent to 30 percent during the three- to five-year construction period. Current analysis indicates that landfills have a life expectancy of 18 to 30 years. The debris for disposal during the three- to five-year construction phase would be expected to shorten landfill life expectancy by an estimated one year.

**JSF Flight Training.** It is estimated that GBU debris would generate approximately 257 tons of solid waste per year. The expenditure of live 25-mm ammunition would generate a total weight of approximately 61 tons of projectile and casings on an annual basis during training activities. It is anticipated that the bulk of the debris generated would be in the form of scrap metal which would either remain on the range or be reclaimed.

**Aggregated BRAC Effects.** Total waste generation from the proposed BRAC beddown and training would be an approximate 11 percent annual increase in Okaloosa County solid waste generation and approximate 5 percent annual increase in Santa Rosa County solid waste generation. The Proposed Action or any action alternative combination would shorten landfill life expectancy in Okaloosa and Santa Rosa counties by approximately three years from a range of life expectancy of 18 to 30 years to a life expectancy range of 15 to 27 years. The length of time to obtain land and permits for construction and operation of landfills would suggest such activity needs to be initiated by landfill agencies.

#### 4.10 HAZARDOUS MATERIALS AND HAZARDOUS WASTE

Examples of hazardous materials include petroleum products/fuels, and paint-related products. Hazardous materials includes potential chemical releases to the environment

resulting from proposed ordnance used in training operations. Hazardous wastes are defined as any solid, liquid, or contained gaseous or semisolid waste, or any combination of wastes that pose a substantive present or potential hazard to human health or the environment.

Management of hazardous wastes would be performed according to prescribed procedures already in place at Eglin AFB. Renovation/demolition of some of the buildings could result in the production of small amounts of lead-based paint (LBP) or asbestos wastes. Hazardous and non-hazardous waste would be generated as a result of maintenance functions associated with new aircraft on the base. Eglin AFB would establish new initial accumulation points (IAPs) at generation locations, and personnel managing these locations would be properly trained in waste management. No change to permits, hazardous waste generator status, or management procedures would be required.

*During scoping, two commenters expressed concern with hazardous materials/waste generation at project sites near the city of Valparaiso. Please see EIS Sections 6.10 and 7.10.*

**7SFG(A) Cantonment.** The 7SFG(A) cantonment alternative locations are within the existing Eglin cantonment area or within Eglin AFB at locations removed or separated by buffer areas from off-base communities, including the city of Valparaiso. No environmental restoration program (ERP) sites would be impacted by 7SFG(A) Cantonment Alternatives 2-5. For 7SFG(A) Cantonment Alternative 1, the development on or near any ERP sites on Eglin AFB would be coordinated with the Eglin Environmental Office, the USEPA, the FDEP, and other relevant stakeholders, as required.

**7SFG(A) Range Training.** There are no ERP sites located in the area surrounding any of the proposed Group 1 Range locations. Construction would avoid sites DP-09 and SS-25, since land use controls are in place at these two sites. All other sites in the vicinity are classified as "no further action (NFA)" and thus would not be adversely impacted by construction of Group 2 Ranges. Although ground maneuvering operations may occur throughout the range, only AOC-97, designated as NFA, is located within the designated ground maneuvering area. Due to non-invasive nature of ground maneuvering activities, there would be no expected impacts to ERP sites. Hazardous waste would be generated as a result of munitions use during training. Munitions-related debris, including lead and residual trace metals, would be deposited at live firing ranges and would not be collected for recycling. Annual deposition of lead and copper would be an estimated 93,000 and 294,000 pounds, respectively. These would represent nearly twice the copper and over five times the lead currently deposited on Eglin ranges. Petroleum, oil, or lubricants (POLs) could occur during training locations and result in clean-up requirements. Eglin has established procedures for handling POL spills and all participants would be required to adhere to these procedures. EOD clean-up would be performed in accordance with Eglin procedures.

**JSF Cantonment.** Hazardous and non-hazardous wastes would be generated as a result of demolition, construction, and maintenance functions associated with new aircraft. Asbestos and LBP debris may be generated as a result of proposed building renovation/demolition activities. Proper disposal of asbestos and LBP wastes would be conducted in accordance with state and federal regulations. Eglin AFB would extend established procedures with new IAPs at generation locations, and properly trained personnel managing these locations. Management of hazardous wastes would be performed according to prescribed procedures already in place. No change to permits, hazardous waste generator status, or management procedures would be required for the JSF cantonment. Development on or near any ERP sites on Eglin AFB would be coordinated with the Eglin Environmental Office, the USEPA, the FDEP, and other relevant stakeholders, as required. Specific ERP sites with ongoing remediation activities would be avoided during construction (ST-75/ST-67, SS-274, LF-03, OT-35, ST-54). Implementation of management requirements including training and certification of contractors and transport and disposal documentation records would mitigate any adverse impacts. Wastes would be accompanied by a waste manifest and disposed at a state-approved facility.

**JSF Flight Training.** Training ordnance and targets would generate lead, munitions-related chemicals, flare debris, and target solid waste. EOD cleanup would generate additional hazardous materials which would be disposed of using established Eglin procedures. Training activities would not result in hazardous waste thresholds being exceeded for any chemicals.

Fuel release events may occur within JSF Flight Training airspace during air-to-air refueling or in-flight emergencies (IFE) in which fuel stores are jettisoned from the aircraft. However, this is not normal Air Force practice and is not done in the base airspace environment. In emergency situations, procedures require that fuel dumping be coordinated with

*Public commenters expressed concern with potential fuel releases over populated areas. Please see EIS Section 7.10.*

ATC and be conducted, to the extent possible, over water or unpopulated land areas at an altitude at least 5,000 feet above the highest obstacle (AACI 11-201, 28 July 2006). Please see EIS Section 7.10 for more discussion on fuel release events.

#### 4.11 PHYSICAL RESOURCES

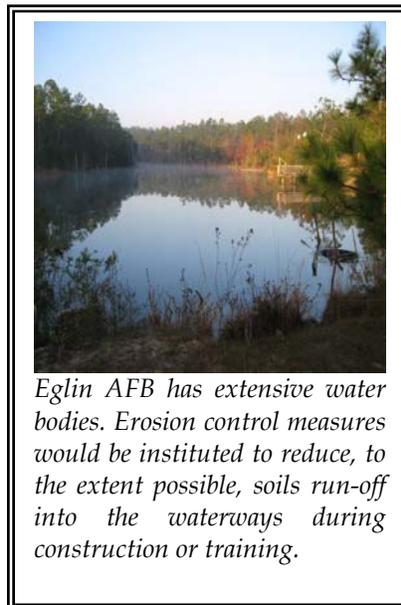
Physical resources include topography, geology, soils, and water. Surface waters and wetlands have the potential to be impacted by land clearing and construction and demolition activities. Surface waters include bays, bayous, lakes, rivers, streams, ponds, and springs. Wetlands are areas of transition between terrestrial and aquatic systems where the water table is usually at or near the surfaces.

Of special concern are two aquifers located under Eglin AFB, the Sand and Gravel Aquifer and the Floridan Aquifer. Eglin AFB uses only a small amount of water from

the Sand and Gravel Aquifer, but the Floridan Aquifer is used extensively for drinking water. The Floridan Aquifer is located below the Sand and Gravel Aquifer and extends beneath peninsular Florida.

**7SFG(A) Cantonment.** Construction of any alternative would increase impervious surface area and stormwater runoff. Site design would reduce the potential for stormwater and sediment transport offsite into surface waters through grading to concentrate run-off into the permeable soil types and relatively flat terrain at the site. Construction permits are expected to involve the implementation of stormwater management practices. An Erosion, Sedimentation, and Pollution Control Plan would be required for construction. This would serve to further ensure that erosion and the transport of sediment off the project site do not occur. The Army, through the Base Civil Engineer, would obtain construction and stormwater permits as required by FDEP to implement stormwater management practices.

These permits would require the implementation of site-specific management actions and best management practices (BMPs), such as planting vegetation, and employing silt fences, and hay bales. No adverse impacts to surface waters or wetlands quality are expected from the implementation of any alternatives.



*Eglin AFB has extensive water bodies. Erosion control measures would be instituted to reduce, to the extent possible, soils run-off into the waterways during construction or training.*

**7SFG(A) Range Training.** Land clearing activities associated with construction of firing ranges would potentially impact soil in areas associated with 7SFG(A) Range Alternatives 1, 2, 4, and 5. Exposed soil would be susceptible to erosion from wind, water and military maneuvering. Stormwater modeling indicates the likelihood of water-borne erosion and transport of soil is low due to soil permeable characteristics. Construction would require the development of a Storm Water Pollution Prevention Plan (SWPPP). The plan would identify BMPs to ensure minimal adverse impacts from soil erosion. Soils at 7SFG(A) Range Alternative 3 are not as permeable as soils at Alternative 1 and 2 and Alternative 3 terrain is more steeply sloped. Erosion control measures would have limited effectiveness at the steeply sloped areas. Potential impacts to water resources would result from training operations and/or equipment movement off of paved roads. Public or agency reviewers could see potential soil erosion at this site to have the potential to adversely affect downstream water resources. Implementation of any of the alternatives would include plans to avoid, to the extent practicable, wetlands, prevent erosion and subsequent sedimentation in streams, obtain all applicable permits, and develop a mandatory comprehensive stormwater, erosion, and sedimentation control plan.

*Scoping commenters expressed interest in potential impacts to surface water resources, wetlands, and floodplains. Please see EIS Sections 4.11, 5.10, 6.11, and 7.11.*

Over time Alternatives 1 through 5 7SFG(A) range soils would contain high levels of copper and lead from small arms projectiles. The lead and copper levels expected in range soils would pose a potential ecological risk. The potential exists for lead to migrate into surface waters from erosion of soil that contains this particulate metal (Agency for Toxic Substances and Disease Registry [ATSDR], 2005) though downward migration through permeable soils is more likely. Lead leached into groundwater may eventually reach surface waters. The risk to surface waters is assumed to be minimal if the lead source is more than 0.25 mile away (USFWS, 2008).

Alternatives 1, 3, 4, and 5 contain one or more small arms ranges within 0.25 mile from creeks and streams. Thus, there is a risk that lead from these small arms ranges would leach into groundwater and eventually reach surface waters. Soil-stabilizing vegetation around proposed training areas may limit the transport of munition components via erosion into surrounding surface waters. The potential for surface water impacts from Alternative 2 is low as there are no surface waters within the 0.25 mile distance of the potential Group 1 range sites. Copper and zinc are not expected to reach levels of concern in surface waters for any of the 7SFG(A) range training alternatives. Transport of corroded cartridge brass (composed of 70 percent copper and 30 percent zinc) is not anticipated to impact surface water quality (U.S. Air Force, 2004g). Potential impacts to water quality could be reduced by implementation of range sustainability practices and procedures, including use of bullet containment methods and lead-based projectiles management, proactive monitoring for potential migration of metals, runoff control through the use of vegetative ground cover, mulches and compost, surface covers, and engineered runoff controls and recovery of brass casings expended during training.

**JSF Cantonment.** Alternative 1 and Alternative 2 construction would disturb 100 acres or 89 acres of ground. Construction, demolition, and renovation would have little potential to affect soils or create conditions that could result in serious erosion episodes. Most of the areas associated with JSF cantonment Alternative 1 and Alternative 2 sites are Urban Land and covered with pavement, cement, or existing buildings. The natural terrain not currently developed has relatively limited potential for erodibility.

A stormwater management system (i.e., pond, swale) to provide on-site treatment of stormwater would be expected to have a permit requirement during design. On-site storage of stormwater would prevent direct discharge of stormwater runoff to any surface waters and reduce any potential for adverse impacts to water quality. Implementation of a Stormwater, Erosion, and Sedimentation Control Plan, a SWPPP, and construction BMPs, as required by FDEP regulations, would serve to alleviate stormwater sedimentation runoff. These steps would reduce the potential for pollution to water resources, including surface waters adjoining the Destin area.

*Public comments included concerns on water quality and potential water pollution to the Destin, Florida area. Please see EIS Sections 4.11 and 6.11.*

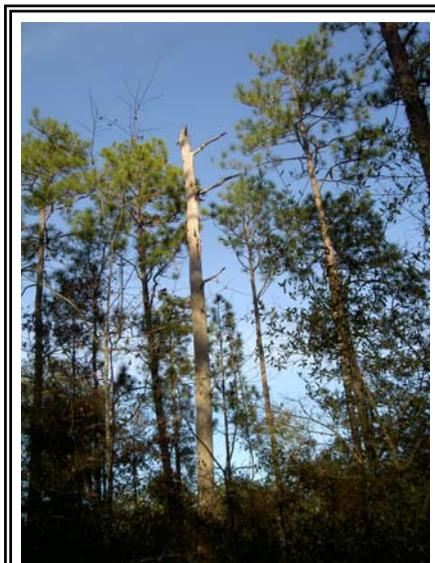
**JSF Flight Training.** The increase in munitions expended would have no adverse effects on environmental factors within TA B-75 or TA C-62. Soil erosion from current vegetation management practices would continue and would not change with additional ordnance. Soil and water impacts from increased JSF training on TA B-82 and C-52E would not be considered adverse.

#### 4.12 BIOLOGICAL RESOURCES

Biological resources include the native and introduced terrestrial and aquatic plants and animals found on and around Eglin AFB. The habitats of Eglin AFB are home to an unusually diverse biological community including several sensitive species and habitats. The Eglin AFB INRMP provides approved management practices for the Eglin natural environment. The Eglin INRMP would guide management of biological resources. The biological effects of each individual BRAC action are not likely to adversely affect biological resources, but the aggregate effects of all four actions are likely to adversely affect some biological resources.

*Public commenters wanted to be sure the beddown would be in compliance with the ecosystem management plan in Eglin AFB's INRMP; this will be the case.*

**7SFG(A) Cantonment.** Construction would remove some habitat for native and non-native species. No sensitive species or habitats are present within either of the proposed munitions storage areas; thus, no impacts to sensitive biological resources would occur at the munitions storage areas. Surveys would be performed on cantonment Alternatives 1, 2, 4, and 5, as site design is developed from conceptual design to actual building and facilities layout. Surveys would identify locations of gopher tortoises and commensals (e.g., indigo snakes) and these species would be relocated to avoid potential direct physical impacts from vehicles.



*Eglin represents a protected habitat for many native species. The increased human presence and activity could affect, but would not be expected to adversely affect, sensitive species within Eglin.*

*Public comments included requests to protect and maintain the diversity of species found in and around proposed alternative areas. Please see Sections 4.12, 5.11, 6.12, and 7.12.*

For 7SFG(A) Cantonment Alternative 3, red-cockaded woodpecker (RCW) foraging habitat would be removed and fire suppression may lead to the degradation of the surrounding foraging habitat. Direct physical impact to a bird would be considered remote; however, indirect impacts to RCWs could occur from the physical presence of personnel or equipment within foraging habitat. Indirect impacts could include changes in nesting behavior, changes in feeding, and

long-term alterations to the habitat. Forty-seven acres of the RCW habitat to be removed is classified as optimal habitat. This would leave 255 acres of foraging habitat which is above the managed stability standard and the recovery standard. All criteria would be above the recovery standards set for the Eglin RCW population. 7SFG(A) Cantonment Alternative 3 is not likely to adversely affect the RCW. Due to overall potential for impacts to federally listed species, an ESA Section 7 consultation has been conducted with the USFWS.

**7SFG(A) Range Training.** There would be no expected impacts to sensitive species associated with 7SFG(A) Range Alternative 4 as none has been documented in the area. For 7SFG(A) Range Alternative 1, range land clearing and construction would not occur in significant botanical sites (SBSs), outstanding natural areas (ONAs), or RCW foraging habitat. Clearing in an ONA/SBS may occur for the south DZ/landing zone (LZ). Clearing may occur near Okaloosa darter streams, potentially resulting in increased sedimentation. Water Operations and Air Operations would result in some increase in shoreline small boat landings and air traffic. Both water and air operations currently occur as part of normal Eglin operations and the increase is not expected to have an adverse impact upon water resources.



*7SFG(A) training is oriented toward stealthy maneuvering and foot patrols. These generally low impact activities could affect some sensitive species.*

Direct impacts to sensitive species as the result of munitions/pyrotechnics use are unlikely; although some increased risk of wildfire and chemical impacts would result. Impacts to sensitive habitats from dispersed ground maneuvering would not be expected although the dispersed nature of ground maneuvers could affect, but are not expected to adversely affect, sensitive species such as sea turtles, RCWs, flatwoods salamanders, indigo snakes, and Okaloosa darters from noise, direct impacts, and habitat alteration. Biological impacts for 7SFG(A) Range Alternative 2 are comparable to those described for Alternative 1 with the addition of two Group 1 Ranges located in an ONA/SBS. Land clearing and wildfires may degrade these habitats.

*Public comment included concerns about avoiding wetlands and avoiding threatened and endangered species such as Choctaw bean, tapered pigtee, southern sandshell and flatwoods salamanders. Please see Section 5.11.*

Impacts for 7SFG(A) Range Alternative 3 are comparable to those described for Alternative 1 with the addition of increased impacts to RCWs due to the location of the Group 1 Ranges near Camp Rudder. RCW foraging habitat (12.2 acres) would be removed. Of this, 4.9 acres are considered optimal habitat. The remaining 582 acres of foraging habitat would be above the managed stability standard and the recovery standard. 7SFG(A) Range Alternative 3 is not likely to adversely affect the RCW. Due to overall potential for impacts to federally

listed species, an ESA Section 7 consultation has been conducted with the USFWS. 7SFG(A) Range Alternative 5 would increase the potential for impacts from land clearing/construction and munitions/pyrotechnics use (i.e., sedimentation, chemical impacts) to the Okaloosa darter and potential flatwoods salamander habitat. The areas potentially impacted have a very low likelihood of actually supporting flatwoods salamander populations. Riparian areas would be avoided during the design phase. The implementation of 7SFG(A) Range Alternative 5 is not likely to adversely affect the Okaloosa darter or flatwoods salamander.



*The F-15, pictured here, has been operating in Eglin airspace for decades. JSF flight training is with a similar sized and performing aircraft and is not expected to adversely impact biological resources.*

**JSF Cantonment.** The project areas for JSF cantonment Alternative 1 and 2 are predominately urban/landscaped and located adjacent to the flight line with wildlife consistent with urban environments and no sensitive habitats. No direct adverse impacts would occur to flora, fauna, sensitive habitats, or sensitive species from either alternative.

Indirect impacts could occur to the Okaloosa darter stream north of the proposed JSF MSA expansion area (Toms Creek) as a result of sedimentation and runoff from the construction activities at the MSA. Erosion control measures such as silt fencing near Toms Creek would reduce potential runoff issues.

Eglin Natural Resources biologists indicate there is no chance for a cluster of 16 inactive RCW trees located within the area to become active, and a letter from the USFWS indicates that any future developments impacting RCW inactive trees on Eglin Main Base are not likely to adversely affect the RCW. The JSF IJTS is not likely to adversely affect the RCW or Okaloosa darter.

*Public commenters requested that species and species' habitat within each proposed project area be maintained and continue as viable wildlife areas.*

**JSF Flight Training.** Ground movements by aircraft would only occur on established air fields for all three alternatives. No impacts other than increased noise would be expected to occur from air operations to sensitive habitats. Since aircraft are already a major component of the existing noise environment at Eglin, aircraft noise from the alternatives would not pose a novel or new threat to birds or wildlife. The training altitudes and air-to-water transition would not produce overpressure from sonic booms which could harm marine life.

Noise is not expected to cause adverse species reactions, other than temporary flight. Species on Eglin AFB have been habituated to range activity. Direct impacts to sensitive habitats and species from munitions are unlikely; however, some increased risk of wildfire would result from munitions use for all three alternatives. Munitions use,

including flare use, would follow Eglin’s Wildfire Specific Action Guide Restrictions. Noise impacts to the RCW and bald eagle would be possible; however, RCWs and eagles continue to thrive near noisy test areas, indicating that habitat quality seems to be more influential in determining productivity, survival and population stability than noise. The RCW, sensitive habitats, and species are not likely to be adversely affected from munitions use.

#### 4.13 CULTURAL RESOURCES

As defined under 32 CFR 800 (l)(1), “Historic Property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet NRHP criteria.” The EIS appendix, *Cultural Resources*, provides details on how National Historic Preservation Act (NHPA) Section 106 compliance has been implemented regarding this Proposed Action. Particularly, a project-specific programmatic agreement (PA) was developed under provisions of NHPA Section 106 and in coordination with a number of outside parties. This PA is provided in Appendix F, and it accounts for known and potential effects upon cultural resources. Another PA, dated to 2003 and pre-existing from other cultural resources management needs, is applicable to the Proposed Action. It also is provided in Appendix F.

*During scoping, commentors wanted an accurate and comprehensive analysis of cultural resources within each proposed project area. Please see Sections 4.13, 5.12, 6.13, and 7.13.*

**7SFG(A) Cantonment.** For 7SFG(A) Cantonment Alternatives 1A, 3, 4, and 5, no resources were identified as eligible for listing on the NRHP and no historic structures, historic districts, or historic cemeteries are located within these areas. No adverse effects to cultural resources are associated with implementing one of these alternatives.

Alternative 1B includes the southern tip of a portion of the Strategic Air Command (SAC) Alert Historic District, although no impacts are expected. No standing historic structures, historic districts, or historic cemeteries are located within Alternative 1C. Two archaeological sites (8OK1835 and 8OK1836) within Alternative 1C are considered eligible for listing on the NRHP. Site planning for this area recognizes the existence of these two eligible sites and building improvement plans will account for these resources. If adverse effects to these resources are unavoidable, consultation with the State Historic



*Communities around Eglin AFB take steps to preserve and protect historic structures. The Fort Walton Beach schoolhouse, pictured here, is one of the communities restored historic buildings.*

Preservation Officer (SHPO) and development of specific mitigation measures or protection of these resources will occur.

Some archeological sites or archaeological occurrences have been identified in 7SFG(A) Cantonment Alternatives 2A and 2B, but none of these resources were evaluated as eligible for the NRHP. In 7SFG(A) Cantonment Alternative 2C, one archeological site has been identified that is considered potentially eligible for the NRHP, and this site will be avoided/protected until a formal determination of eligibility to the NRHP is made. The remaining archaeological sites are considered ineligible for the NRHP, and no other significant historic structures, historic districts, or historic cemeteries are located within this Alternative 2C area. No known cultural resources have been identified to date within 7SFG(A) Cantonment Alternatives 2D or 2E. Additional archaeological surveys will be completed for another 68 and 4.7 acres, respectively, within 7SFG(A) Cantonment Alternative 2D and 2E.

**7SFG(A) Range Training.** NRHP eligibility testing of 11 sites or avoidance of these sites, will be necessary for implementing any project alternatives. Historic Cold War structures (8WL1523) identified within one of the ranges (SOF 10) will be protected, or have adverse effects mitigated, under provisions of the existing 2003 PA. Within the Group 1 Range areas of 7SFG(A) Range Alternative 3, site 8OK2635 will require protection or mitigative treatment, unless it can be avoided. All these activities will involve coordination with others under procedures of the project-specific PA.

*Scoping commenters wanted to be sure that existing historic resources were adequately protected.*

*Commenters at scoping asked how the Air Force would avoid disturbance of Native American remains per the Native American Graves Protection and Repatriation Act. Please see comments on this page and EIS Section 5.12.*

Consulting parties to identify potential impacts included communications with Florida SHPO and four Native American tribes. The Miccosukee Tribe of Indians of Florida, the Seminole Tribe of Florida, the Poarch Band of Creek Indians, Alabama, and the Muskogee (Creek) Nation of Oklahoma were invited by Eglin AFB to participate early in the scoping process of this EIS. These are the federally recognized tribes that Eglin AFB consults for actions such as planning for BRAC. There are no Native American Graves Protection and Repatriation Act (NAGPRA) materials, impacts, or issues identified for any project alternatives. Should NAGPRA-related materials become revealed inadvertently in the course of implementing any alternatives, appropriate consultation will be conducted with tribes.

**JSF Cantonment.** Eglin’s Cultural Resources Branch, in consultation with the SHPO, determined that no additional archaeological survey is required for either Alternative 1 or 2 areas. Potential adverse effects to historic resources due to JSF cantonment Alternative 1 include the planned demolition of five structures (buildings 1339, 1343, 1345, 1352, and 1353), and the potential renovation of seven other structures within the



*Construction or renovation of buildings on Eglin Main Base would be required under either JSF IJTS alternative.*

SAC Alert Historic District (buildings 1285, 1315, 1318, 1321, 1326, 1328, and 1344), which is eligible for the NRHP. Potential adverse effects to cultural resources associated with JSF cantonment Alternative 2 include the planned demolition of two structures within the Eglin Field Historic District (buildings 238 and 246), and the potential renovation of one other structure within the SAC Alert District (building 1285). Mitigation for any structures impacted adversely under either alternative would be planned and implemented in consultation with the SHPO, per the 2003 PA.

**JSF Flight Training.** There will be no impacts to identified cultural resources resulting from normal aircraft operations at Eglin AFB, Duke Field, or Choctaw Field under any of the alternatives. There will be substantial noise effects within the areas of 65 dB DNL or greater, as discussed under Noise and Land Use above. The noise contours of 65 dB DNL or greater are not normally compatible with residential use. The noise and overpressure is not of the magnitude which could directly effect structures. The noise levels are expected to result in annoyance to residents within the Valparaiso community, including any residing in historic registry buildings. Such historic buildings are usually not capable of being renovated to substantially reduce interior noise without changing the structure appearance. An example would be replacing older windows or doors with more sound attenuating windows and doors. Flight training in the MOA and MTR airspaces could increase noise levels from ambient conditions to noise levels not considered compatible with residential occupancy. Impacts are not expected to be at noise levels which could directly affect historic structures under the airspace.

*One public scoping commenter expressed concern about noise impact to the Valparaiso historic registry and historic downtown district. Please see EIS Sections 7.4 and 7.13.*

## 5. COMBINED EGLIN BRAC DECISIONS

This section addresses the combined BRAC decisions. The four decisions which need to be made as part of the BRAC action at Eglin AFB are:

1. Where to locate a 7SFG(A) cantonment area on Eglin AFB
2. Where to accommodate 7SFG(A) mission training requirements
3. Where to locate the JSF IJTS cantonment area on Eglin AFB
4. Where to accommodate JSF flight training requirements within Eglin AFB-scheduled or used airspace

In addition to these BRAC decisions, there are a series of actions on Eglin which will occur under the No Action Alternative. The most noticeable of these will be the

departure of the 33 FW and associated personnel and aircraft, the privatization of military family housing, and a number of regional transportation projects. This section overlays the BRAC decisions on the future, or No Action, conditions. Each of the BRAC decisions has differing environmental consequences, as described in the EIS and summarized in this Executive Summary. This section presents an overall summary of the environmental consequences and considers the regional environmental effects of the combined Eglin BRAC decisions. Figure ES-15 is a color chart which depicts the results of the analysis contained in the EIS. The colors represent the following:

- Green - May include some beneficial or adverse environmental consequences, but the overall effect is one that can neither be termed beneficial nor adverse.
- Yellow - Potential adverse environmental consequences or burdens on the resource, or issues with the resource have been identified.
- Red - Unavoidable adverse environmental impact.
- Split boxes represent a designation between two categories above. Some of the impacts would fall into one category, with others in a different category. Therefore, it is not certain what the overall impact to the resource would be.

Environmental consequences for each of the four decisions are summarized in this section. In each case, the baseline conditions are presented first, followed by the estimated environmental effects for the specific BRAC action. At the conclusion of the table, the four Eglin BRAC decisions are combined and compared with the overall projected No Action conditions.

*Comments on cumulative projects during scoping asked about other military activities. The aggregated effects of BRAC decisions and other Eglin military activities are discussed in this Executive Summary section. Cumulative projects are discussed in EIS Section 2.9 and Chapter 9.*

Each color on the chart is derived from analysis presented in the EIS. The summary below identifies the baseline conditions for each BRAC decision and briefly explains the reason for the color on the chart. The color coding reflects mitigations required by regulatory/permits (e.g., stormwater permits). These “permit mitigations” would be implemented with any selected alternative.

Table ES-27 summarizes the environmental consequences from locating, constructing, and operating the 7SFG(A) cantonment. Table ES-28 summarizes the environmental consequences of the 7SFG(A) Mission Training Requirements. Table ES-29 summarizes the environmental consequences of the JSF IJTS cantonment construction and operation. Table ES-30 summarizes the environmental consequences of the JSF Flight Training. Table ES-31 summarizes the baseline conditions for No Action. Table ES-32 summarizes the overall environmental consequences from the combined BRAC decisions at Eglin AFB.

The combined Eglin BRAC decisions are expected to contribute to or result in unavoidable adverse impacts for the environmental resources of airspace, hazardous wastes, solid waste, transportation, land use, and noise.

Alternative		Airspace Management	Noise	Land Use	Socioeconomics and Environmental Justice	Transportation	Utilities	Air Quality	Safety	Solid Waste	Hazardous Materials and Hazardous Waste	Physical Resources	Biological Resources	Cultural Resources
<i>Baseline</i>		n/a	Green	Green	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Green
<i>7SFG(A) Cantonnement</i>	1A	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	1B	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	1C	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	2A	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	2B	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	2C	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	2D	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	2E	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	3	n/a	Green	Yellow	Green	Red	Red	Green	Green	Green	Green	Green	Green	Yellow
	4	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
5	n/a	Green	Yellow	Green	Red	Red	Green	Green	Green	Green	Green	Green	Yellow	
<i>Baseline</i>		Green	Green	Green	n/a	n/a	Green	Green	Green	Green	Green	Green	Green	Green
<i>7SFG(A) Ranges</i>	1	Green	Green	Green	n/a	n/a	Green	Green	Green	Green	Green	Green	Green	Green
	2	Green	Green	Green	n/a	n/a	Green	Green	Green	Green	Green	Green	Green	Green
	3	Green	Green	Yellow	n/a	n/a	Green	Green	Green	Green	Green	Green	Green	Green
	4	Green	Green	Green	n/a	n/a	Green	Green	Green	Green	Green	Green	Green	Green
	5	Green	Green	Green	n/a	n/a	Green	Green	Green	Green	Green	Green	Green	Green
<i>Baseline</i>		n/a	Green	Green	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Green
<i>JSF Cantonnement</i>	1	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
	2	n/a	Green	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Yellow
<i>Baseline</i>		Yellow	Yellow	Yellow	Green	n/a	Green	Green	Green	Green	Green	Green	Green	Green
<i>JSF Flight Training</i>	1	Yellow	Red	Yellow	Green	n/a	Green	Green	Green	Green	Green	Green	Green	Green
	2	Yellow	Red	Yellow	Green	n/a	Green	Green	Green	Green	Green	Green	Green	Green
<b>Four Components</b>														
<i>No Action</i>		Yellow	Yellow	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Green
<i>Combined Impacts</i>		Yellow	Red	Yellow	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Green

7SFG(A) = 7th Special Forces Group (Airborne); IJTS = Initial Joint Training Site; JSF = Joint Strike Fighter; n/a = not analyzed

Green - May include some beneficial or adverse environmental consequences, but the overall effect is one that can neither be termed beneficial nor adverse.

Yellow - potential adverse environmental consequences or burdens on the resource, or issues with the resource have been identified.

Red - unavoidable adverse environmental impact.

Split boxes represent a designation between two categories above. Some of the impacts would fall into one category, with others in a different category. Therefore, it is not certain what the overall impact to the resource would be.

**Figure ES-15. Combined BRAC Decisions to Beddown and Train the 7SFG(A) and JSF at Eglin AFB**

**Table ES-27. Location of the 7SFG(A) Cantonment**

- Baseline Conditions: Baseline conditions for most resources are considered green for the alternative 7SFG(A) cantonment locations. Some Eglin AFB utilities are dated and need upgrading, so a green/yellow designation was applied to utilities. Existing transportation in the region contains many segments which currently do not meet traffic flow needs, so existing conditions are red.
- Airspace is not directly related to the 7SFG(A) cantonment and was designated n/a.
- The cantonment area would not generate substantial noise except temporarily during construction, so it is green for all alternatives.
- Under land use, Alternatives 1A, 1B, and 1C are within the main base area and would result in less of a change to land use than the remaining alternatives. Alternative 1 is designated as green/yellow. The other cantonment alternatives exclude public recreation, and Alternative 2E affects a portion of the Florida Trail. Alternatives 2 through 5 are designated as yellow.
- Under socioeconomic and environmental justice, population increases associated with the 7SFG(A) beddown would increase requirements for schools and other community services. This would have some effect upon the communities and would require increases in personnel for community services. This resulted in a yellow designation.
- Under any 7SFG(A) cantonment alternative, transportation would continue to be adversely impacted with the added population, so transportation is red.
- Under utilities, Alternatives 1A, 1B, and 1C would be able to use utilities near the existing Air Force cantonment area. These utilities are in need of upgrading, and so a green/yellow designation is given. Alternatives 2 and 4 are located in an area where utility upgrades and extensions would be required, so they are designated yellow. Alternatives 3 and 5 would require extensive utility development both on-site and off-site. These are designated as red.
- Under any alternative, air quality, which is in attainment, is projected to continue to be in attainment, so it is green.
- Safety for all alternatives is identified as green except Alternatives 2. Alternative 2B would require EOD coordination for required safety buffers. Alternative 2 is designated yellow.
- All alternatives would generate solid waste during demolition, renovation, and construction and during operation. Solid waste is designated as yellow.
- All alternatives would generate hazardous materials during demolition, renovation, and construction and are designated yellow.
- Under physical resources, a majority of the locations increase impervious surface area and potentially affect stormwater runoff into nearby water bodies. These locations are designated as yellow. Alternative 3 is in an area of lower erosion risk and is given the green/yellow designation.
- Biological resources and sensitive species currently located in the areas of cantonment construction and development would be affected by cantonment construction and operations, so each of these alternatives is designated yellow.
- Cultural resources, including historic buildings as well as other potential sites, have been surveyed for each of the potential cantonment areas. In general, sensitive locations have been identified for Alternatives 1 and 2. Alternatives 3 through 5 have no sensitive locations identified, but sensitive locations could be uncovered during construction. A green/yellow designation is given to all alternatives.

**Table ES-28. 7SFG(A) Range Training Requirements**

- Baseline conditions include existing heavily used (yellow) airspace and hazardous materials in target areas (yellow). All other resources are designated as green within the areas potentially affected by 7SFG(A) training.
- Eglin AFB airspace is currently heavily used. The limited increase in airborne activities, including the use of UAVs, would keep airspace in the yellow category.
- The 7SFG(A) training would increase the use of munitions and result in increased noise from training. Although much of this noise would be on-base, some off-base noise increases would be experienced. Training noise is designated as yellow.
- The primary Eglin AFB land use is for military training, testing, and evaluation. Range alternatives require substantial changes in permitted recreational use of the range. Land use is designated yellow except range Alternative 3. Range Alternative 3 is designated yellow/red because of additional potential effects on recreation associated with Duck Pond.
- The 7SFG(A) training is expected to stay on the range and not have socioeconomic or environmental justice impacts except where they interact with land use.
- Transportation associated with the 7SFG(A) training is expected to be primarily on the range and is not applicable with respect to regional transportation.
- The amount of utilities needed for training ranges is not expected to be substantial. Utilities are designated green for all alternatives.
- Air quality is in attainment and is not expected to be impacted by range construction or training. Air quality is green.
- 7SFG(A) training is expected to affect safety through increased munitions use, increase EOD, and limitations on public access. Safety is designated yellow for all alternatives.
- Some solid waste would be generated for construction of training ranges, although much of the solid waste would be in the form of trees or debris which can be recycled or burned rather than deposited in a landfill. Solid waste is categorized as green.
- Eglin AFB is already a producer of substantial amounts of hazardous materials, including lead and munitions waste. This would continue and increase under the 7SFG(A) training. Hazardous materials and hazardous waste is designated as yellow for all alternatives.
- Physical resources would be affected by training activities including increased foot and off-road vehicular activities. Steps to reduce soil erosion and stormwater pollution prevention would be required. All alternatives have the potential for ecological effects based on soil concentrations of metals from munitions use. All alternatives except Alternative 2 have the potential for lead migration into surface waters. Physical resources are designated yellow at all alternative range locations.
- 7SFG(A) training would disturb areas to a greater extent than currently disturbed. This has the potential to affect biological resources, and project activities may affect but are not likely to adversely affect sensitive species. Biological resources are designated yellow for all alternatives.
- 7SFG(A) training would disturb areas to a greater extent than currently disturbed. This has the potential to affect cultural resources at all alternative locations. Cultural resources are designated yellow.

**Table ES-29. JSF IJTS Cantonment Area on Eglin AFB**

- The environmental baseline for ISF cantonment reflects the locations near the flight line. Transportation resources (red) are currently inadequate for traffic conditions and existing utilities are in need of upgrading (yellow). Other resources are designated green.
- The JSF cantonment alternatives are located within Eglin AFB and do not affect airspace. The flight training alternatives affect airspace and are discussed in Table ES-30.
- Noise from cantonment construction and personnel activities would be comparable to the baseline conditions. Flight line noise, discussed in Table ES-30 under JSF flight training requirements, dominates the cantonment alternative locations.
- Land use would be compatible with the base plan. Cantonment alternatives are within the existing areas currently with high levels of noise. High noise conditions result in land use being yellow.
- The JSF IJTS cantonment is not expected to substantively change socioeconomics or environmental justice with the drawdown of the F-15 personnel. Additional construction would be expected to stimulate regional economic activity. The socioeconomic and environmental justice category is green.
- Transportation includes a large number of road segments which do not meet designed service levels. The addition of personnel associated with the JSF cantonment, even with F-15 personnel leaving, would contribute to increased traffic and would continue the unavoidable adverse impact. Transportation is designated red. Regional transportation is a continuing problem and will require a regional solution.
- Current utilities are in need of maintenance and qualify as yellow. Construction of either alternative would improve on-base utilities with additional infrastructure. Base utilities would be within permitted levels and would continue to be designated as yellow.
- Under air quality, there would be some increase in emissions during cantonment construction and operations, but long-term air quality emissions are not expected to change the region's air quality attainment status.
- Safety includes additional munitions handling and explosive safety quantity distance designations. Safety is designated as yellow.
- The JSF cantonment would require substantial building demolition and renovation. This and additional population would increase the amount of solid waste. Alternative 2 generates more solid waste during construction. Solid waste is designated as yellow for either alternative.
- The JSF cantonment would require substantial building demolition and renovation. This would increase the amount of hazardous wastes, particularly lead-based paint and asbestos. Development near any ERP site would be coordinated with monitoring agencies. Hazardous materials and waste are designated as yellow.
- New hard surfaces would not be expected to affect physical resources because much of the area is currently developed and/or soils have limited erodibility. Both alternatives are green.
- Biological resources associated with the flight line are habituated to an urban setting and are not expected to be impacted by cantonment development. Tom's Creek is approximately 700 feet from Alternative 2 and the Okaloosa darter may be, but is not likely to be, adversely affected by surface runoff. Both alternatives are designated green.
- Some of the buildings undergoing renovation or demolition include buildings associated with SAC alert area. This is expected to have an effect on historic resources. Mitigation of these resources could occur, so historic resources within the cultural category are designated as green/yellow for either alternative.

**Table ES-30. JSF Flight Training**

- Baseline conditions include existing and growing airspace congestion, hazardous waste being deposited on ranges, noise contours, and safety zones extending off-base creating incompatible land uses. These resources are all yellow. There is no noticeable surface transportation associated with JSF flight training. The other resources are green.
- Regional airspace is currently congested, and the addition of the F-35 flight operations would add to that congestion. A yellow/red designation was given to airspace to identify the growing complexity of the requirements by civil and military aviation along the Florida panhandle.
- Noise levels from F-35 training would represent an unavoidable adverse impact to residents and sensitive receptors under the expanded noise contours. This includes off-base residents under restricted airspace, SUA, and MTRs. Noise is red.
- Land uses currently under the runway approaches are under high levels of noise. The increased noise levels associated with the F-35 are expected to affect recommended land uses in adjacent communities. Unavoidable adverse noise impacts would affect land uses near Choctaw Field, Duke Field, and especially in the vicinity of the Eglin Main Base. Land use is yellow/red for either alternative.
- Socioeconomics and environmental justice issues associated with JSF flight training over adjacent communities, on MTRs, and within SUA would impact populations, schools, and other noise-sensitive receptors. Socioeconomics and environmental justice were designated as yellow for either flight training alternative.
- Ground transportation is not considered to be an issue with JSF flight training. The extent of travel to support ranges would not be noticed in the overall transportation network.
- Utilities would not require extensive development to support JSF flight training. Potable water, wastewater, and electrical infrastructure are currently available at target locations and at outlying fields. Utilities are designated as green.
- Air quality attainment is expected to continue with the JSF flight training. Aircraft emissions and particulate matter from munitions are not expected to create pollution levels which would exceed air quality standards. Air quality is designated green.
- Safety zones extend outward from the base and encompass substantial portions of adjacent civilian communities. These create incompatible land uses. The increased number of F-35 flights and the change in the type of aircraft would continue to have safety designated as yellow. Explosive ordnance disposal would be accomplished by EOD trained personnel.
- Solid wastes would include clearing for some target areas. The overall effect of training is expected to increase solid waste disposal. A green/yellow designation was given for both alternatives.
- Under hazardous materials, current target areas have lead and other hazardous wastes and the JSF flight training would contribute hazardous waste to those target areas. Hazardous wastes are not expected to exceed threshold levels for any new chemicals. Hazardous materials and hazardous wastes are designated as yellow.
- Physical resources would likewise change in that additional munitions use and related training could result in long-term effects on soils within the target areas. Physical resources are designated as yellow.
- Biological resources in areas of JSF flight training are generally habituated to the level of military training expected to continue with the JSF. Eglin AFB has conducted Endangered Species Section 7 Consultation.
- Cultural resources are expected to change from the baseline condition with ongoing consultations. Cultural resources are designated as yellow for either alternative.

**Table ES-31. No Action Conditions for BRAC Decisions**

- Airspace constraints would continue with civilian and military demands creating a need to regionally address airspace requirements. No Action airspace is designated yellow.
- Noise would be less than the baseline. Less off-base acreage would be affected by high noise levels as a result of fewer air operations with the F-15s leaving. There would still be noise from continued operations which would affect off-base residences. Noise is designated yellow.
- Land use incompatibilities with safety zones and noise would continue although noise would be reduced with the loss of C-130 and F-15 aircraft. Land use is projected to be green under No Action.
- Socioeconomics would be affected in a variety of ways. Employment and regional income generated by the base would decline. Noise conditions would improve in nearby communities. The net effect is estimated to be green.
- Traffic conditions in the region would not be expected to substantially change with No Action. Road segments would continue to be at levels of service lower than designed. Baseline transportation would be designated red and continue to require regional solutions.
- Existing utilities would continue to degrade under No Action and are designated yellow.
- Air quality would continue to be in attainment under No Action. Air quality is green.
- Safety would continue to be an issue because the safety zones would continue to extend into residential and other incompatible land uses. Safety would continue to be yellow.
- Solid waste would not have the increased effects from demolition or renovation associated with the Eglin BRAC. Reduced base personnel would reduce solid waste generation. Under No Action, solid waste would be green.
- Hazardous wastes would continue to be generated as part of Eglin Range activities. Hazardous wastes would be yellow.
- Future construction and transportation projects on Eglin AFB would result in a green/yellow category for physical resources.
- Future construction and transportation projects on Eglin AFB would result in a green/yellow category for biological resources.
- Future construction projects and transportation on Eglin AFB would result in a green/yellow category for cultural resources.

**Table ES-32. Combined Eglin AFB BRAC Decisions**

- The four BRAC decisions would result in increased airspace congestion over Eglin AFB and within the region. Airspace would require regional solutions to address the projected growth in air traffic associated with civil and military activities. Airspace would be yellow/red.
- Noise would be an adverse unavoidable impact to on- and off-base residences as a result of both the number and types of aircraft training at Eglin AFB. Noise is red.
- Land use in the vicinity of the base would have additional areas subject to high noise levels, and the acreage of land use designated as incompatible uses would increase. Reduced recreational opportunities on Eglin AFB from range closure requirements would be expected to contribute to the adverse effects upon land use. Land use is given a yellow/red designation.
- Socioeconomics and environmental justice consequences of combined BRAC decision would positively support regional economic activity and contribute to the stabilization of housing prices. Socioeconomics and environmental justice would be affected by increased operations, increased noise, and low-level training in SUA and MTRs. The aggregated effect upon the socioeconomic resources was estimated to be yellow.
- Transportation is an ongoing problem in the ROI, and the introduction of 7SFG(A) and JSF IJTS personnel, even combined with the F-15 personnel leaving, would not improve highway conditions. More road segments would decline in levels of service. This is considered an adverse unavoidable impact, and transportation is designated red.
- Utilities are generally capable of meeting or expanding to meet the needs of the cantonment areas for both the 7SFG(A) and the JSF IJTS. Utilities are designated as yellow.
- Air quality is in attainment and is expected to remain in attainment. Short-term increases in emissions from construction and munitions would not be expected to degrade air quality. Aircraft operations would contribute to emissions, but most operations would be at levels above the mixing height. Air quality is projected to stay in attainment and continue green.
- Eglin AFB safety consequences would continue as a result of an increased number of operations, the projected Class A mishap rates, and the large number of incompatible land uses within the established safety zone. Safety is designated yellow.
- For solid waste, each of the BRAC decisions independently would generate a few percentage points increase for the demand for solid waste transportation and disposal. The combined BRAC effect has the potential to reduce the regional landfill capacity by an estimated 3 to 4 years. Given the length of time it takes to design and permit new landfills, regional action to expand landfill capacity is expected to be needed. Solid waste is identified as yellow/red.
- F-35 training would increase the quantity of hazardous materials. Building demolition and renovation would generate additional hazardous waste. Training activities, especially associated with the 7SFG(A), would increase the quantity of copper, lead, and other chemicals released to the environment. The combined effect of BRAC decisions is expected to result in a yellow/red designation for hazardous materials.
- Physical resources, including water consumption and water runoff, have the potential to be greater than existing conditions due to increased surface area. Water consumption from increased personnel is not expected to increase beyond the Eglin AFB water allocation. The increase in munitions use has the potential for ecological effects and leaching of metals to surface waters. Physical resources are designated yellow.
- The combined effect on biological resources includes cantonments and training. Each BRAC action independently may affect but is not likely to adversely affect sensitive species. Combined, the four BRAC decisions may affect and are likely to adversely affect sensitive biological species. A yellow category is designated for biological resources pending the result of ongoing consultations.
- Cultural resources are also categorized as yellow primarily due to demolition and/or renovation effects upon on-base historic buildings and areas subject to training activities.

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## ACRONYMS

33 FW	33 <sup>rd</sup> Fighter Wing	ITC	Integrated Training Center
46 TW	46 <sup>th</sup> Test Wing	JSF	Joint Strike Fighter
7SFG	7 <sup>th</sup> Special Forces Group	km <sup>2</sup>	Square Kilometer
A	Airborne	LBP	Lead-Based Paint
ACC	Air Combat Command	LOS	Level of Service
AFB	Air Force Base	LOX	Liquid Oxygen
AGE	Aerospace Ground Equipment	LZ	Landing Zone
AGL	Above Ground Level	MBBL	Thousand Barrels
AICUZ	Air Installation Compatible Use Zone	mi <sup>2</sup>	Square Miles
AME	Alternate Mission Equipment	MILCON	Military Construction
AMU	Aircraft Maintenance Unit	mm	Millimeter
APZ	Accident Potential Zone	MTR	Military Training Route
ATV	All-Terrain Vehicle	Mx Fac	Maintenance Facility
BAI	Backup Aircraft Inventory	MXS	Maintenance Squadron
BMP	Best Management Practice	NCO	Non-Commissioned Officer
BRAC	Base Realignment and Closure	NEI	National Emissions Inventory
C&D	Construction and Demolition	NEPA	National Environmental Policy Act
CC	Commander	NFA	No Further Action
CDNL	C-weighted Decibel Day-Night Average Sound Level	NHPA	National Historic Preservation Act of 1966
CEQ	Council on Environmental Quality	NO <sub>x</sub>	Nitrogen Oxides
CFR	Code of Federal Regulations	NRHP	National Register of Historic Places
CO	Carbon Monoxide	ONA	Outstanding Natural Area
CT/COB	Continuation Training/Cost of Business	Ops	Operations
CTOL	Conventional Take-Off and Landing	OSS	Operational Support Squadron
CUP	Consumptive Use Permit	PA	Programmatic Agreement
CV	Carrier Variant	PAA	Primary Assigned Aircraft
CY	calendar year	PM <sub>10</sub>	Particulate Matter with a Diameter of Less Than or Equal to 10 Microns
CZ	Clear Zone	POL	Petroleum, Oil, or Lubricant
dB	Decibels	POV	Privately Owned Vehicle
dba	A-Weighted Decibels	PWS	Potable Water System
dbc	C-Weighted Decibels	RCW	Red-cockaded Woodpecker
DBCRC	Defense Base Closure and Realignment Commission	Ren	Renovate
Demo	Demolish	ROI	Region of Influence
Det	Detachment	SAC	Strategic Air Command
DNL	Day-Night Average Sound Level	SBS	Significant Botanical Site
DoD	Department of Defense	SDZ	Surface Danger Zone
DoDI	Department of Defense Instruction	SHPO	State Historic Preservation Officer
DZ	Drop Zone	SOF	Special Operations Forces
EIS	Environmental Impact Statement	Sqd	Squadron
ERP	Environmental Restoration Program	SR	State Route
ESQD	Explosive Safety Quantity Distance	STOVL	Short Take-Off and Vertical Landing
FDEP	Florida Department of Environmental Protection	SUA	Special Use Airspace
FICUN	Federal Interagency Committee on Urban Noise	SWPPP	Storm Water Pollution Prevention Plan
ft <sup>2</sup>	Square Feet	TAMS	Tactical Aircraft Maintenance Specialist
FTD	Field Training Detachment	TA	Test Area
GBU	Guided Bomb Unit	tpy	Tons Per Year
GPS	Global Positioning System	TW	Taxiway
HLZ	Helicopter Landing Zone	U.S.	United States
HMMWV	High Mobility Multipurpose Wheeled Vehicle	UAV	Unmanned Aerial Vehicle
HQ	Headquarters	USEPA	U.S. Environmental Protection Agency
IAP	Initial Accumulation Point	USFWS	U.S. Fish and Wildlife Service
IJTS	Initial Joint Training Site	UTE	Utilization
		UXO	Unexploded Ordnance

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# Proposed Implementation of the Base Realignment and Closure (BRAC) 2005 Decisions and Related Actions at Eglin AFB, FL

Our goal is to give you a reader-friendly document that provides an in-depth, accurate analysis of potential environmental consequences. The organization of this Final Environmental Impact Statement, or Final EIS, is shown below:

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### Chapter 8 Summary of Potential Impacts

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### Appendices

## F-35 Variants

There are three variants of the new F-35, which will be training at Eglin Air Force Base (AFB) in accord with the Base Realignment and Closure 2005 law.

The F-35A is the Air Force's conventional take-off and landing (CTOL) fighter, which will replace the F-16 and other aircraft and is expected to be used by many United States allies.



The F-35B is the short take-off and vertical landing (STOVL), which will be used by the Marine Corps and the British Royal Navy.

The F-35C is the Navy's first carrier fighter designed with low observability and supersonic capabilities.



Public comments on this Environmental Impact Statement (EIS) are requested pursuant to the National Environmental Policy Act, 42 USC 4321, et seq. All written comments received will be made available to the public. The provision of private address information with your comment is voluntary. However, this information is used to compile the mailing list for EIS distribution and failure to provide such information will result in your name not being included on the list. Private address information will not be released for any other purpose unless required by law.