



# F-35A Training Basing

## Environmental Impact Statement

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## Final Executive Summary



June 2012

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This Executive Summary is not the *Final F-35A Training Basing Environmental Impact Statement*; rather, this Executive Summary is designed to provide overview information and direct the reader to the EIS. The EIS is designed to be a reader-friendly document that provides an in-depth, accurate analysis of the proposed F-35A training basing action, the alternative beddown locations, the different aircraft scenarios at the alternative locations, and the potential environmental consequences for each alternative location. The EIS, contained on the CDs located inside the back cover of this Executive Summary, includes all comments received from the public and agencies during review of the Draft EIS. The organization of the EIS is presented below:

<b>Overall Proposal</b>	<b>Table of Contents, List of Figures, List of Tables, and Acronyms and Abbreviations</b>							
	<b>Preface:</b> Detailed Guide for Reading the EIS	→ The Preface provides a detailed guide for reading the EIS.						
	<b>Chapter 1:</b> Purpose and Need for F-35A Training Basing	→ Chapter 1 explains the decision made by Congress to provide the U.S. Air Force with a next-generation fighter. Also described are the features of the F-35A, how the F-35A will be based, and how aircrews will train for their operational assignments.						
	<b>Chapter 2:</b> <ul style="list-style-type: none"> <li>• Overview of Proposed Action and Alternatives</li> <li>• Alternative Identification Process</li> <li>• Summary Comparison of Proposed Action and Alternatives</li> </ul>	→ Chapter 2 provides an overview of the Proposed Action and alternatives, which is to beddown the F-35A at Boise AGS, Holloman AFB, Luke AFB, and/or Tucson AGS.						
	<b>Chapter 3:</b> Resource Definition and Methodology for Analysis	→ Chapter 3 defines the environmental resources that could potentially be affected by the Proposed Action and explains the methodology used to evaluate the potential impacts.						
	<b>Chapter 4:</b> Base-Specific Sections	→ Base-specific sections are listed below.						
<b>Base Specific Information</b>	<b>Boise AGS</b>		<b>Holloman AFB</b>		<b>Luke AFB</b>		<b>Tucson AGS</b>	
	Section BO 1.0 Alternative Overview		Section HO 1.0 Alternative Overview		Section LU 1.0 Alternative Overview		Section TU 1.0 Alternative Overview	
	Section BO 2.0 Base-Specific Project Details		Section HO 2.0 Base-Specific Project Details		Section LU 2.0 Base-Specific Project Details		Section TU 2.0 Base-Specific Project Details	
	Section BO 3.0 Affected Environment and Environmental Consequences		Section HO 3.0 Affected Environment and Environmental Consequences		Section LU 3.0 Affected Environment and Environmental Consequences		Section TU 3.0 Affected Environment and Environmental Consequences	
Section BO 4.0 Cumulative Effects, Irreversible and Irretrievable Commitment of Resources		Section HO 4.0 Cumulative Effects, Irreversible and Irretrievable Commitment of Resources		Section LU 4.0 Cumulative Effects, Irreversible and Irretrievable Commitment of Resources		Section TU 4.0 Cumulative Effects, Irreversible and Irretrievable Commitment of Resources		
<b>Overall Proposal</b>	References Volume 1	List of Preparers Volume 1	Index Volume 1	List of Repositories Volume 1	Glossary Volume 1	Appendices A, B, and C Volume 2		
	Appendix D, D.1, D.2, and D.3 Receipt and Locating Comments Volume 2		Appendix D, D.4 and D.5 Alphabetical Directory Volume 2		Appendix D, D.6, D.7, D.8, and D.9 Copies of Letters and Transcripts Volume 2		Appendix D, D.10 Response to Comments Volume 2	
<b>DEIS Comments</b>	Appendix D, D.1, D.2, and D.3 Receipt and Locating Comments Volume 2		Appendix D, D.4 and D.5 Alphabetical Directory Volume 2		Appendix D, D.6, D.7, D.8, and D.9 Copies of Letters and Transcripts Volume 2		Appendix D, D.10 Response to Comments Volume 2	

The contents of this Executive Summary are presented below. This Executive Summary follows the pattern of the EIS with an initial discussion of the purpose and need for F-35A training followed by an abbreviated review of the environmental consequences at each alternative base under consideration. A table at the end of this Executive Summary compares the alternative locations. The reader is encouraged to turn to the EIS for a full explanation of the information presented in this Executive Summary.

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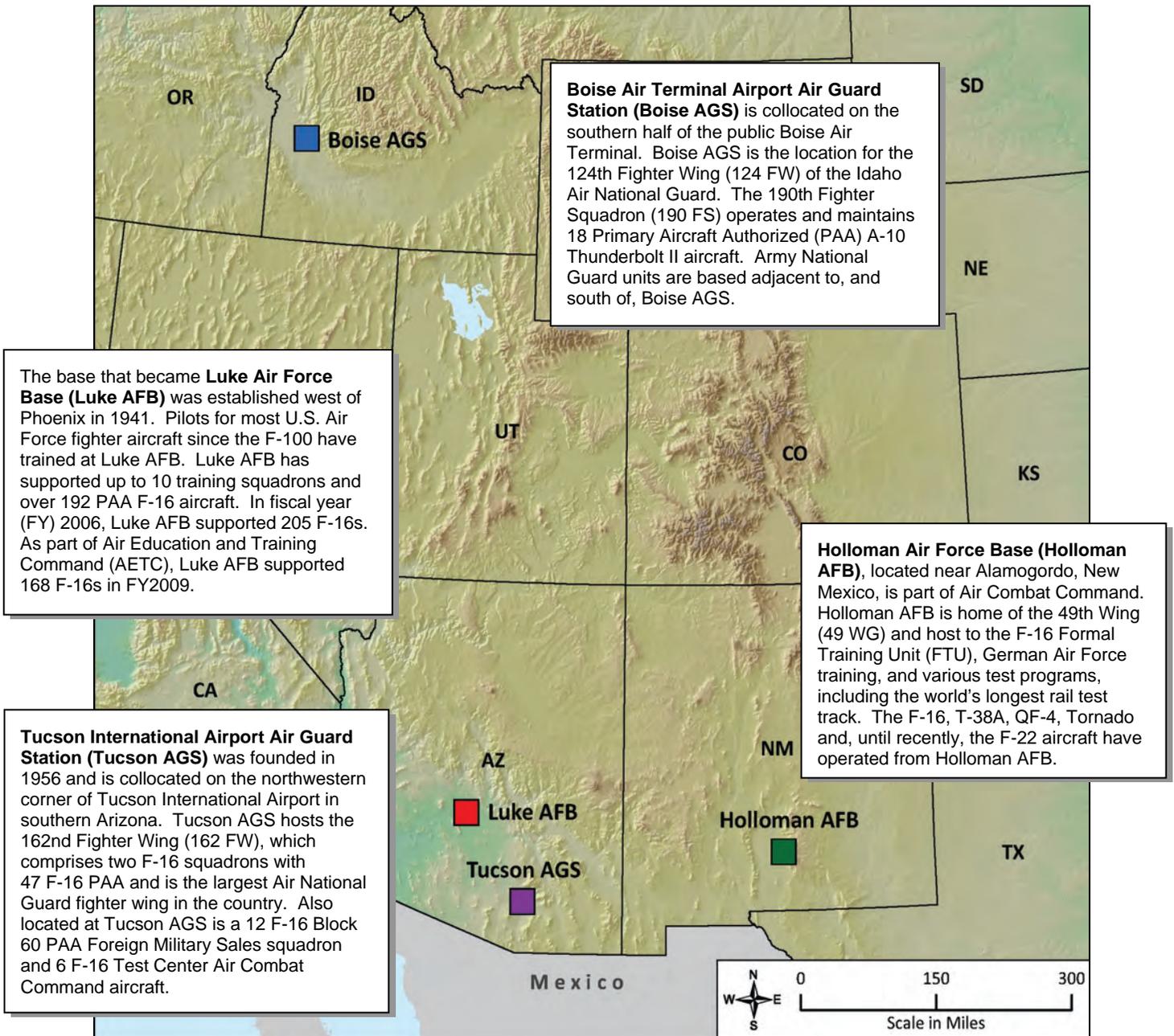
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## INTRODUCTION

The Environmental Impact Statement (EIS) for basing F-35A training aircraft analyzes the potential environmental consequences of a U.S. Air Force (Air Force) proposal to base a Pilot Training Center (PTC) with F-35A Lightning II aircraft at one of four bases, starting in 2013. New F-35A training aircraft could replace or supplement aircraft at the bases that currently support them. The Proposed Action considers the beddown of F-35A training aircraft at: Boise Air Terminal Airport Air Guard Station (Boise AGS), Idaho; Holloman Air Force Base (Holloman AFB), New Mexico; Luke Air Force Base (Luke AFB), Arizona; or Tucson International Airport Air Guard Station (Tucson AGS), Arizona. This map presents the locations.



Alternative Locations for F-35A Training Aircraft

# 1. Purpose and Need

## 1.1 Purpose

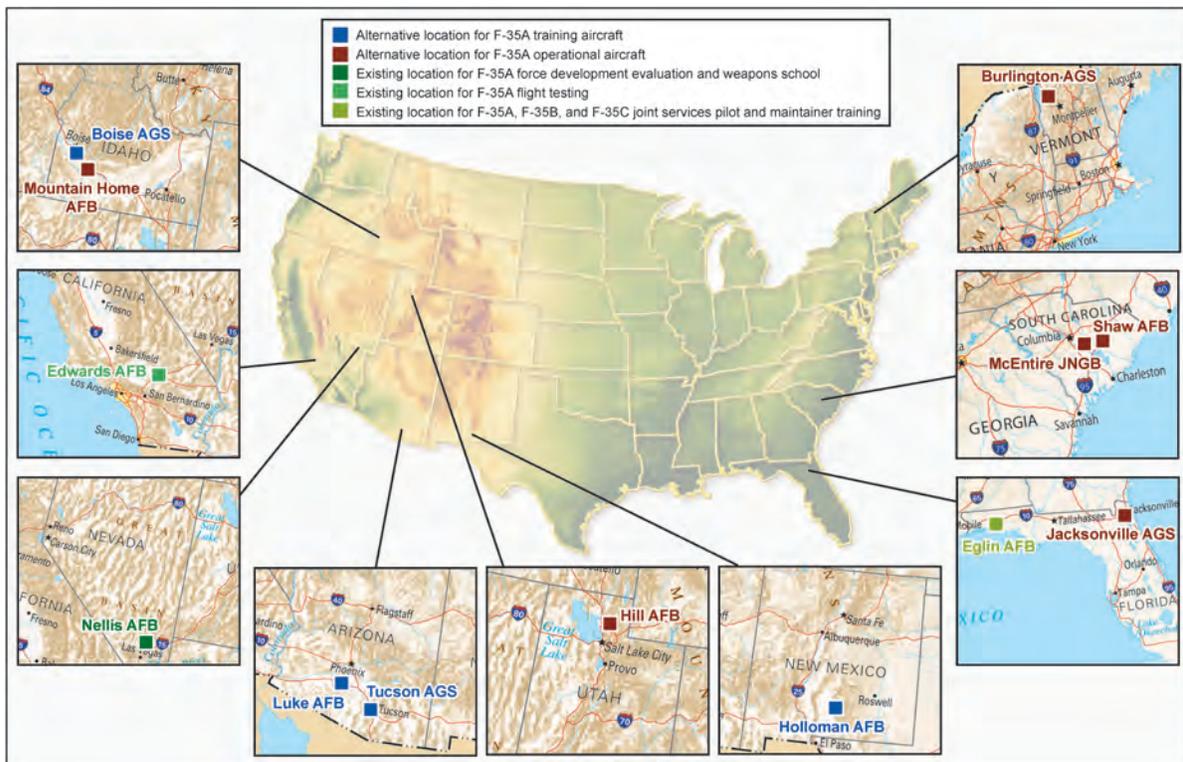
The purpose of the Proposed Action is to efficiently and effectively provide formal training that supplies qualified aircrew to feed and sustain the F-35A aircrew force.

## 1.2 Need

The need for the Proposed Action is to support aircrew formal training requirements associated with the F-35A. The F-35A is the 5th Generation Fighter replacement for aging aircraft scheduled to be withdrawn from service through 2025. F-35A warfighting missions can only be accomplished by properly trained pilots and personnel with adequate base facilities, military airspace, and military ground ranges to support the training. This EIS supports decisionmaking and evaluates the potential environmental effects of bedding down sufficient F-35A training aircraft to meet the overall goals and objectives of providing qualified F-35A pilots. Trained F-35A pilots and personnel must be available to meet F-35A scheduled delivery dates as legacy fighter aircraft are withdrawn from service. This EIS evaluates alternative locations for basing F-35A training aircraft.



*The Air Force F-35A embodies critical combat capabilities to fulfill multiple mission roles, with an emphasis on air-to-ground missions.*



*Air Force and Air National Guard Bases currently supporting or under consideration in 2013 as alternative locations for basing F-35A training or operational aircraft*

## 2. Alternative Identification Process

On August 31, 2009, the Deputy Secretary of the Air Force Installations and Environment tasked a group of senior action-level representatives from the Air Force Secretariat, Air Staff, and selected Major Commands to identify potential candidate bases. The Air Force identified objective criteria to assess Air Force installations' capacity to successfully support basing of the F-35A aircraft: mission, capacity, environmental considerations, and cost. The Air Force also developed qualitative operational considerations to determine which bases should be selected for basing of the F-35A aircraft. Chapter 2, Section 2.2.2, of the Final EIS explains the alternative identification methodology. The alternative basing locations addressed in the Final EIS are presented in Table 1 and in the map on page 4. The No Action at each of the alternative basing locations would constitute the baseline conditions at that location.

**Table 1. Comparison of Baseline Conditions and F-35A Scenarios at Each Alternative Base**

<i>Alternative</i>	<i>Aircraft Scenarios</i>						
<b>Boise AGS</b>	Baseline	B1	B2	B3	N/A	N/A	N/A
A-10	18	18	0	0			
F-35A	-	24	48	72			
Net Change	-	24	30	54			
<b>Holloman AFB</b>	Baseline	H1W/H1	H2W/H2	H3W/H3	H4	H5	N/A
F-16	50	50/0	50/0	50/0	0	0	
F-35A	-	24	48	72	96	120	
Net Change	-	24/-26	48/-2	72/22	46	70	
<b>Luke AFB</b>	Baseline	L1	L2	L3	L4	L5	L6
F-16	142	-142	-142	-142	-142	-142	-142
F-16 (FMS)	26	26	26	26	26	26	26
F-35A	-	24	48	72	96	120	144
Net Change	-	-118	-94	-70	-46	-22	2
<b>Tucson AGS</b>	Baseline	T1	T2	T3	N/A	N/A	N/A
F-16 (ANG)	47	-47	-47	-47			
F-16 (ACC)	6	6	6	6			
F-16 (FMS)	12	12	-12	-12			
F-35	-	24	48	72			
Net Change	-	-23	-11	13			

Note: See EIS, Table 2-2.

Key: ACC=Air Combat Command; ANG=Air National Guard; FMS=Foreign Military Sales; N/A=not applicable.

The Air Force identified potential candidate bases using specific planning conventions and processes, to include (among other issues) identifying the number of F-35A aircraft scheduled to be delivered between FY2013 and FY2017; identifying the number of F-35A aircraft to be allocated to training and to operations based on then-current national strategic considerations; and determining the number of bases minimally needed to support receipt of these aircraft for training and operations.

The Air Force is taking into consideration the beddown numbers of F-35A aircraft with and without currently based or scheduled to be based aircraft, as depicted in Table 1. The actual number and configuration of aircraft potentially based at any time in the future will be determined by national security factors existing at the time of delivery and will be consistent with the results of the EIS and other related factors. Eventually, the number of aircraft assigned and bases used in support of the F-35A mission could change in light of national strategic considerations and F-35A production and availability. As relevant to the EIS, the candidate basing process resulted in the following alternative locations for training with a 72 Primary Aircraft Authorized (PAA) configuration:

- Boise Air Terminal Airport Air Guard Station (Boise AGS)
- Holloman Air Force Base (Holloman AFB)
- Luke Air Force Base (Luke AFB)
- Tucson International Airport Air Guard Station (Tucson AGS)
- Eglin Air Force Base (Eglin AFB)

Subsequent to the alternative identification process, the airspace associated with Eglin AFB was determined to be too congested at this time to support the basing of more F-35A training aircraft than are already scheduled to be based at Eglin AFB to support the Integrated Joint Training Site. As a result, Eglin AFB was eliminated as an alternative for the basing of F-35A training aircraft that are the subject of this EIS.

The No Action Alternative for this Final EIS means that an F-35A training beddown would not take place. No F-35A personnel changes or construction would be performed, and no F-35A training activities would be conducted at any of the locations on the map on page 4. For the purpose of this EIS, the No Action Alternative constitutes the baseline conditions for each alternative location.



What is now Luke AFB has supported fighter training aircraft since 1941. Currently the base supports these F-16 training aircraft. The Air Force's Preferred Alternative in this EIS is Luke AFB with 72 F-35A training aircraft, known in the Final EIS as Scenario L3.

### 3. Aircraft Characteristics of the F-35A Lightning II

The Air Force designated the F-35A Lightning II to replace and supplement existing F-16, A-10, and other legacy aircraft fleets and to complement the F-22. F-35A aircraft would fulfill a wide range of roles and missions. The F-35A offers a unique combination of capabilities to achieve this multiple-mission role:

- Low Observability: Design features and radar-absorbent materials
- Range and Supersonic Speed: Combat radius and speed equivalent to or greater than the F-16
- Sensor Integration to Support Precision Munitions: Threat detection and precision munitions delivery at substantially greater distances than legacy aircraft
- Comprehensive Combat Information Systems: Highly sophisticated situation awareness for combat pilots
- Low Maintenance Costs: Computerized self-tests of all systems to enhance mission readiness



*The F-35A combines internal weapon bays and expanded fuel capacity to permit low-visibility penetration of enemy air defenses.*

### 4. F-35A Training Requirements

F-35A flight training missions would use ordnance, such as laser and global positioning system (GPS) Guided Bomb Units (GBUs) and 25-millimeter ammunition during strafing runs. F-35A students would also expend countermeasure flares during a portion of their flights. Use of flares would be subject to the altitude limitations of the training airspaces. F-35A pilots are not planning to train with chaff.

Base and airspace resource requirements are directly related to the scenarios of aircraft numbers evaluated at each alternative base. The Air Force has given consideration to the basing of aircraft in 24-aircraft increments at the four alternative locations. For both Boise AGS and Tucson AGS,

the Air Force has decided to limit the basing scenarios to three increments of 24 aircraft. Beddown of additional increments of F-35A training aircraft at these facilities would require base expansion, runway construction, or establishment of new airspace. The basing scenarios at Holloman AFB evaluate from one to three increments of 24 F-35A aircraft in addition to the baseline of the F-16 Formal Training Unit (FTU). To facilitate potential future decisionmaking with respect to F-35A basing and provide for comprehensive NEPA planning, the Air Force is also taking into consideration beddown of between one and five increments of 24 F-35A aircraft without the F-16 FTU. For Luke AFB, the Final EIS evaluates up to six increments of 24 training aircraft. The Air Force identified three increments of 24 training aircraft at Luke AFB as the Air Force's Preferred Alternative for the Final EIS. Table 1 summarizes the base alternatives and alternative scenarios.

## 5. Environmental Impact Analysis Process and Comment Summary

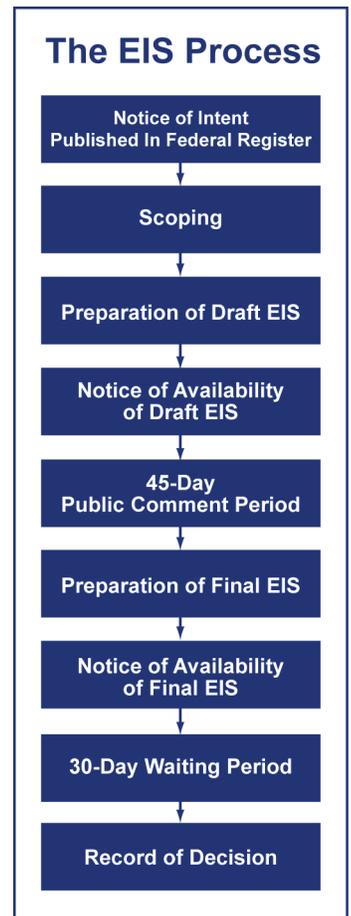
The *F-35A Training Basing EIS* was prepared in accordance with NEPA (42 *United States Code* [U.S.C.] 4321 et seq.), Council on Environmental Quality (CEQ) regulations (40 *Code of Federal Regulations* [CFR] 1500–1508), and *The Environmental Impact Analysis Process* (Air Force Instruction [AFI] 32-7061, as promulgated in 32 CFR 989 et seq.). NEPA is the basic national charter for identifying environmental consequences of major Federal actions available to the public, agencies, and the decisionmakers before decisions are made and before actions are taken.

The scoping period (from January 25, 2010, through May 17, 2010) identified environmental resources that needed to be assessed in the EIS.



The Draft F-35A Training EIS has undergone an extensive public scoping period, with 23 scoping meetings in three states.

The Draft EIS was prepared using the environmental resources identified during scoping. A Notice of Availability was published in the *Federal Register* on January 20, 2012, and 13 public hearings were held in three states to receive comments and issues of concern from the public and agencies during the 54-day review of the Draft EIS. During the review of the Draft EIS, 2,090 individuals attended and signed in at the public hearings. Commenters provided 1,771 letters and comments during the review period and 9,850 individual emails voicing support for Luke AFB as the F-35A training site were received. Representative comments are presented in Table 2. Please see the Final EIS Appendix D for all oral and written comments provided on the Draft EIS. Appendix D also contains responses to the environmental comments on the Draft EIS.



The Notice of Availability of the Final EIS began a 30-day waiting period before the Record of Decision (ROD) can be signed. The ROD is prepared in accordance with the CEQ regulations implementing NEPA at Title 40 *Code of Federal Regulations* (40 CFR Section 1505.2, Record of Decision in Cases Requiring Environmental Impact Statements). Specifically, the ROD:

- States the Air Force’s decision
- Identifies all alternatives considered by the Air Force in reaching the decision and specifies the environmentally preferred alternative
- Identifies and discusses relevant factors (e.g., statutory mission, national security policy, operational, environmental, economic and technical) that were considered in making the decision among the alternatives and states how those considerations entered into this decision; and
- States the mitigations adopted, determines whether all practicable means to avoid or minimize environmental harm from the selected alternative have been adopted, and summarizes the applicable monitoring and enforcement program adopted for the applicable mitigation.

**Table 2. Issues and Questions Identified During Draft EIS Public Review**

<i>Issues and Questions</i>	<i>Section in EIS or Comment Response Where Issue Is Addressed</i>			
	<i>Boise AGS</i>	<i>Holloman AFB</i>	<i>Luke AFB</i>	<i>Tucson AGS</i>
Do we need the F-35A?	1.1; 1.3	1.1; 1.3	1.1; 1.3	1.1; 1.3
How does the F-35A noise compare with that of other military aircraft?	3.2; BO 3.2.1	3.2; HO 3.2.1	3.2; LU 3.2.1	3.2; TU 3.2.1
How do the different F-35A alternatives and scenario impacts compare?	BO 3.1.2 through BO 3.15.2; Response NP-13	HO 3.1.2 through HO 3.15.2; Response NP-13	LU 3.1.2 through LU 3.15.2; Response NP-13	TU 3.1.2 through TU 3.15.2; Response NP-13
What is No Action?	2.5	2.5	2.5	2.5
Explain noise measures in the EIS.	3.2; Appendix B	3.2; Appendix B	3.2; Appendix B	3.2; Appendix B
What are the F-35A impacts to property values or property tax revenues?	3.9.2; BO 3.11.1.2; Appendix B.2.7; Response SO-13	3.9.2; HO 3.11.1.2; Appendix B.2.7; Response SO-13	3.9.2; LU 3.11.1.2; Appendix B.2.7; Response SO-13; Response SO-31	3.9.2; TU 3.11.1.2; Appendix B.2.7; Response SO-13
Could residents lose their homes or businesses as a result of F-35A noise?	Response SO-3; Response SO-18; Response SO-26	Response SO-3; Response SO-18; Response SO-26	Response SO-3; Response SO-18; Response SO-26	Response SO-3; Response SO-18; Response SO-26
Test flyovers of communities are needed for a community survey before an EIS can be prepared.	Response SO-7; Response NP-13	Response SO-7; Response NP-13	Response SO-7; Response NP-13	Response SO-7; Response NP-13
Would the Air Force regulate flight altitudes, training times, take-off and landings, or institute other mitigations to reduce noise impacts?	Response NP-33	Response NP-33	Response NP-33	Response NP-33
Will schools be retrofitted or closed due to noise impacts?	2.8.3; Response SO-32; Response SO-37		2.8.3; Response SO-32; Response SO-37	2.8.3; Response SO-32; Response SO-37
How would the basing of the F-35A mission affect Arizona State land use laws regarding property near a military airport?			LU 3.2.1; LU 3.2.2; LU 3.10.1; LU 3.10.2	TU 3.10.3.1
Can the F-35A train in local airspace?	2.2.1; BO 2.2	2.2.1; HO 2.2	2.2.1; LU 2.2	2.2.1; TU 2.2
What sonic booms are associated with the F-35A?	BO 3.2.2	HO 3.2.2	LU 3.2.2	TU 3.2.2
What would be the impact to recreational areas under the airspace?	BO 3.10.2.1; BO 3.10.2.2	HO 3.10.2.1; HO 3.10.2.2	LU 3.10.2.1; LU 3.10.2.2	TU 3.10.2.1; TU 3.10.2.2
What low level overflights would occur?	BO 2.2.1; BO 3.1.2	HO 2.2.1; HO 3.1.2	LU 2.2.1; LU 3.1.2	TU 2.2.1; TU 3.1.2

**Final  
June 2012**

<i>Issues and Questions</i>	<i>Section in EIS or Comment Response Where Issue Is Addressed</i>			
	<i>Boise AGS</i>	<i>Holloman AFB</i>	<i>Luke AFB</i>	<i>Tucson AGS</i>
What would be the impact to communities under the airspace?	BO 3.10.1; BO 3.10.2; BO 3.11.1; BO 3.11.2; Response SO-6; Response SO-45	HO 3.2.2; HO 3.10.1; HO 3.10.2; HO 3.11.1; HO 3.11.2; Response SO-6; Response SO-20; Response SO-45	LU 3.10.1; LU 3.10.2; LU 3.11.1; LU 3.11.2; Response SO-6; Response SO-45	TU 3.10.1; TU 3.10.2; TU 3.11.1; TU 3.11.2; Response SO-6; Response SO-45
How do we make damage claims for noise impacts?	BO 2.8.4	HO 2.8.4	LU 2.8.4	TU 2.8.4
What would the air quality emissions and air pollution effects be?	BO 3.3	HO 3.3	LU 3.3	TU 3.3
How will F-35As use Davis-Monthan AFB?				2.3.4; TU 3.11.1.1; TU 3.4.1.2
What are the safety risks from pilot error or mechanical malfunction?	BO 3.4.1; BO 3.4.2	HO 3.4.1; HO 3.4.2	LU 3.4.1; LU 3.4.2	TU 3.4.1; TU 3.4.2
How are pilots trained for such a sophisticated aircraft?	2.4.3	2.4.3	2.4.3	2.4.3
Are there special safety issues associated with a single-seat, single-engine aircraft?	BO 3.4.2.2	HO 3.4.2.2	LU 3.4.2.2	TU 3.4.2.2
What testing would occur before training aircraft beddown and flight over cities?	2.4.3.2	2.4.3.2	2.4.3.2	2.4.3.2
What chaff and flare use would occur with the F-35A?	2.4.5; BO 3.4.2.2	2.4.5; HO 3.4.2.2	2.4.5; LU 3.4.2.2	2.4.5; TU 3.4.2.2
Would the potential for fire increase with the F-35A?	2.4.5; BO 3.4.2.2; Response SO-8	2.4.5; HO 3.4.2.2; Response SO-8	2.4.5; LU 3.4.2.2; Response SO-8	2.4.5; TU 3.4.2.2; Response SO-8
Would jet fuel be dumped?	BO 3.4.2.2	HO 3.4.2.2	LU 3.4.2.2	TU 3.4.2.2
Would soils or water be impacted?	BO 3.5; BO 3.7	HO 3.5; HO 3.7	LU 3.5; LU 3.7	TU 3.5; TU 3.7
What would the impacts on wildlife and sensitive species be?	BO 3.6; BO 3.8; Appendix B.2.6	HO 3.6; HO 3.8; Appendix B.2.6	LU 3.6; LU 3.8; Appendix B.2.6	TU 3.6; TU 3.8; Appendix B.2.6
How would domestic and ranch animals be impacted?	2.8; Appendix B.2.6	2.8; Appendix B.2.6	2.8; Appendix B.2.6	2.8; Appendix B.2.6
What traditional or historic impacts would occur?	BO 3.9.1; BO 3.9.2	HO 3.9.1; HO 3.9.2	LU 3.9.1; LU 3.9.2	TU 3.9.1; TU 3.9.2
Would land use under the airspace be impacted?	BO 3.10.1; BO 3.10.2; BO 3.11.2	HO 3.10.1; HO 3.10.2; HO 3.11.2	LU 3.10.1; LU 3.10.2; LU 3.11.2	TU 3.10.1; TU 3.10.2; TU 3.11.2
How would existing land use statutes be affected?	3.2.2; BO 3.11.2.2	3.2.2	3.2.2; LU 3.2; LU 3.10	3.2.2; TU 3.10.3.1
What would the impacts on the local economy be?	BO 3.10.1.2; BO 3.10.2; BO 3.11.1.2	HO 3.10.1.2; HO 3.10.2; HO 3.11.1.2	LU 3.10.1.2; LU 3.10.2; LU 3.11.1.2	TU 3.10.1.2; TU 3.10.2; TU 3.11.1.2
How many jobs would be associated with the F-35A basing?	BO 3.11.1.2; Response SO-21; Response SO-25	HO 3.11.1.2; Response SO-21; Response SO-25	LU 3.11.1.2; Response SO-21; Response SO-25	TU 3.11.1.2; Response SO-21; Response SO-25
Would noise impact tourism or the ability to enjoy the natural environment?	BO 3.10.2	HO 3.10.2	LU 3.10.2	TU 3.10.2
Who will pay for the impact on school funding and neighborhoods?	2.8.2	2.8.2	2.8.2	2.8.2
A comprehensive community cost-benefit study is needed.	Response DO-10; Response SO-13	Response DO-10; Response SO-13	Response DO-10; Response SO-13	Response DO-10; Response SO-13
How would minorities and low-income populations be impacted?	BO 3.12.1; BO 3.12.2	HO 3.12.1; HO 3.12.2	LU 3.12.1; LU 3.12.2	TU 3.12.1; TU 3.12.2
What would the health impacts on children and young adults be?	BO 3.12.2.2; Appendix B.2.5	HO 3.12.2.2; Appendix B.2.5	LU 3.12.2.2; Appendix B.2.5	TU 3.12.2.2; Appendix B.2.5
What would the noise effects on schools or children be?	BO 3.2.1.2; BO 3.12.2.2; Appendix B.2.5	HO 3.2.1.2; HO 3.12.2.2; Appendix B.2.5	LU 3.2.1.2; LU 3.12.2.2; Appendix B.2.5	TU 3.2.1.2; TU 3.12.2.2; Appendix B.2.5

This Executive Summary addresses each of the alternative basing locations, starting with Boise AGS in Section 6.

## 6. Boise AGS Alternative Overview

Boise AGS's infrastructure and base resources would accommodate between one and three increments of 24 F-35A PAA. The A-10 mission currently located at Boise AGS would relocate to another installation if more than 24 F-35A training aircraft were bedded down. Figure 1 presents the potential location for construction and aircraft ramp space.

### 6.1 Boise AGS Alternative – Construction

Renovations would be required for the existing facilities and new construction would be required to create the F-35A campus. The beddown of 48 or 72 aircraft would require additional construction. A new F-35A campus would require the relocation of the Army National Guard from the south ramp of Boise AGS to the west ramp. Table 3 summarizes the amount of disturbed area associated with the renovation and construction projects needed under each beddown scenario.

**Table 3. F-35A Construction at Boise AGS Under Each Aircraft Scenario**

Scenario	Projects		Area (Square Feet)
	Renovation	New/ Addition	
B1 (24 Aircraft)	9	15	1,746,051
B2 (48 Aircraft)	9	16	1,770,251
B3 (72 Aircraft)	9	17	1,816,451

Note: See EIS, Table BO 2.1-2.



*Maintenance personnel, such as these Air National Guard personnel at Boise AGS, would be part of the team at any location selected for the F-35A training basing.*

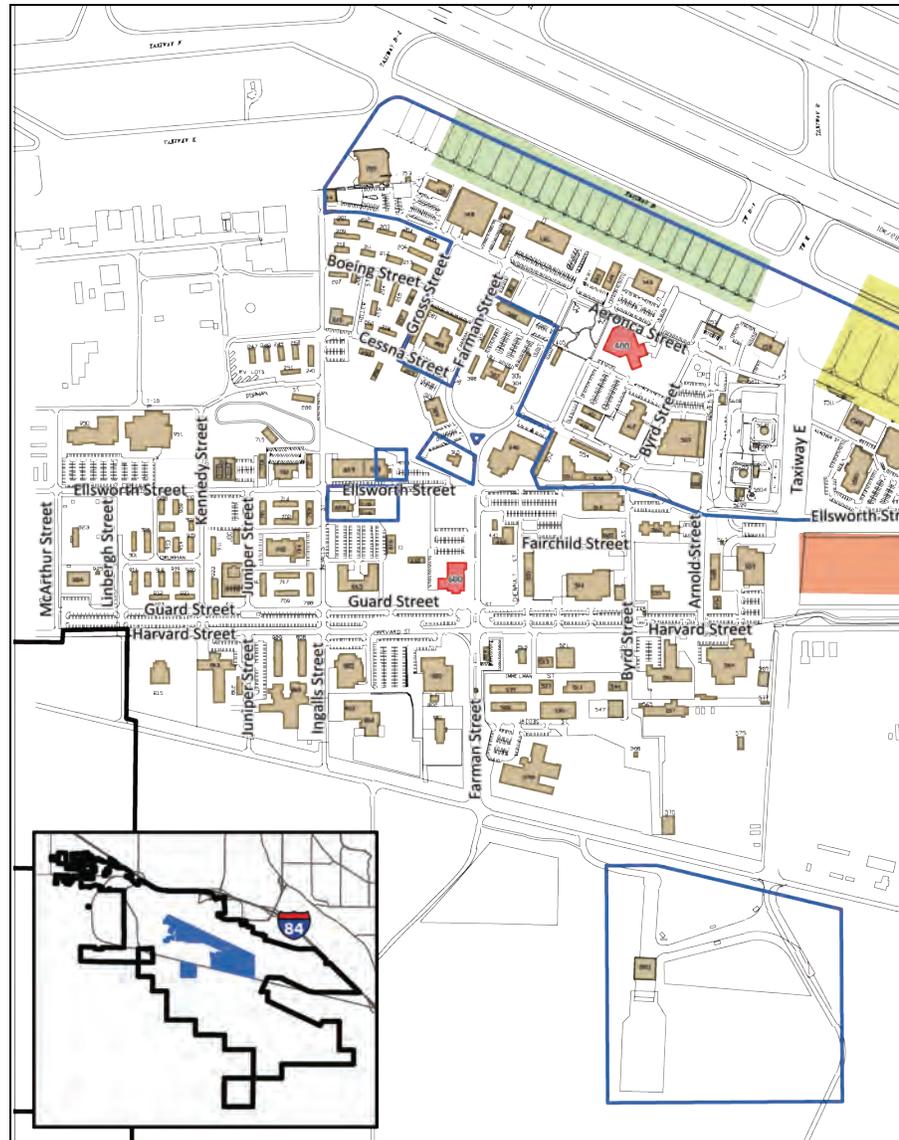


Figure 1. Boise

## 6.2 Boise AGS Alternative – Personnel Requirements

Beddown of the F-35A training mission would require basing sufficient and appropriately skilled personnel to operate and maintain the mission and provide necessary support services (see Table 4).

**Table 4. Boise AGS F-35A Training Mission Personnel Changes**

Aircraft Scenario	F-35A Personnel	F-35A Contractor Support	F-35A Students	Total Base Personnel	Total Dependents	Net Change
Baseline	–	–	–	1,550	3,410	N/A
B1 (24 Aircraft)	598	50	30	2,228	4,836	2,105
B2 (48 Aircraft)	1,846	50	60	2,769	5,959	3,768
B3 (72 Aircraft)	2,356	50	90	3,309	7,082	5,431

Note: See EIS, Table BO 2.1–3.

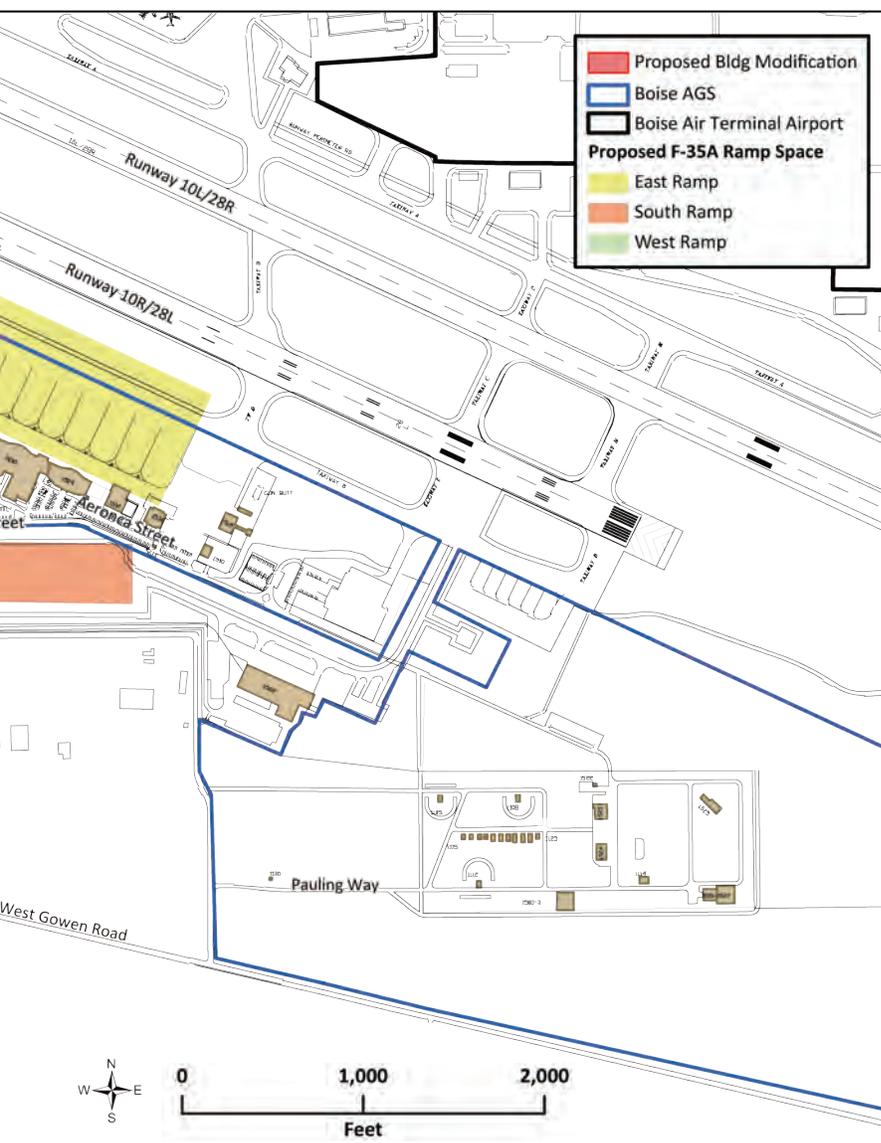
## 6.3 Boise AGS Alternative – Flight Operations

The F-35A would employ similar departure, closed pattern, overflight avoidance, and landing procedures as currently used by Boise AGS aircraft. F-35A operations (see Table 5) would adhere to existing restrictions, avoidance procedures, and agreements with the Boise Air Terminal Airport.

**Table 5. Boise AGS Baseline and Projected Annual Airfield Operations**

Source	Baseline	B1 (24 Aircraft)
F-35A	0	12,998
A-10	5,000	5,000
Other Military	7,122	7,122
Boise AGS Total	12,122	25,120
Boise Air Terminal Airport	117,350	148,655
<b>Total</b>	<b>129,472</b>	<b>173,775</b>
Projected Annual F-35A Airfield Operations		
Source	B2 (48 Aircraft)	B3 (72 Aircraft)
F-35A	26,000	38,998
A-10	0	0
Other Military	7,122	7,122
Boise AGS Total	33,122	46,120
Boise Air Terminal Airport	148,655	148,655
<b>Total</b>	<b>182,777</b>	<b>194,775</b>

Note: Other military includes the Army National Guard and other tenant units stationed at Boise AGS, as well as transient users. See EIS, Table BO 2.1–1.



AGS Airfield

## 6.4 Boise AGS Alternative – Environmental Consequences

**Noise and Land Use.** The Boise Air Terminal Airport is a joint use airfield that currently accommodates several varieties of civilian and military aircraft. Military aircraft based at Boise AGS include A-10, H-64, and H-60 aircraft. Table 6 lists the population and acreage under various noise contours near Boise AGS. The 65 decibel (dB) day-night average sound level (DNL) noise contours for each aircraft scenario are presented in Figure 2.

Public concerns focused on noise impacts to persons and property. As explained in EIS Section 3.9.2, noise can impact property values.

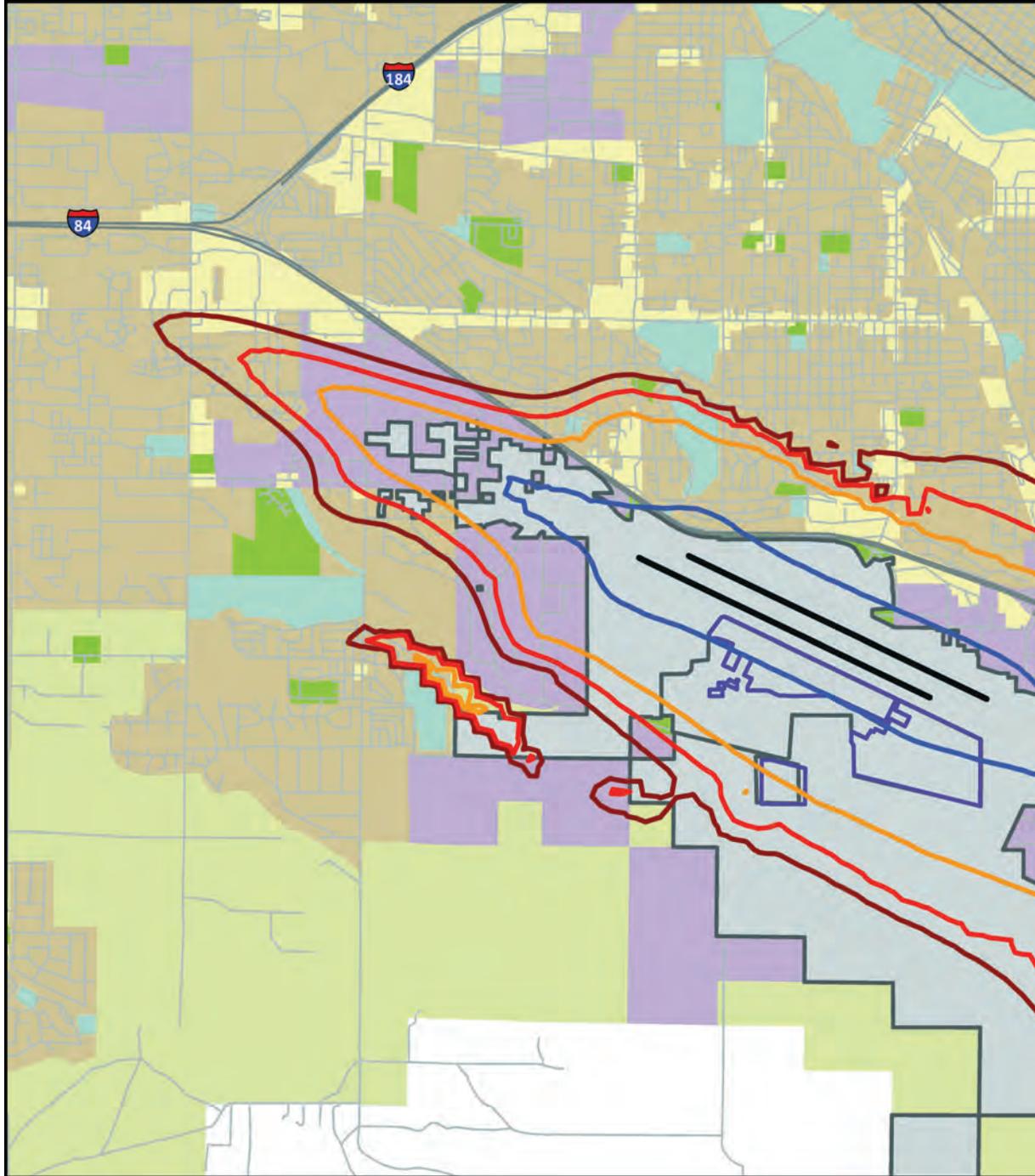
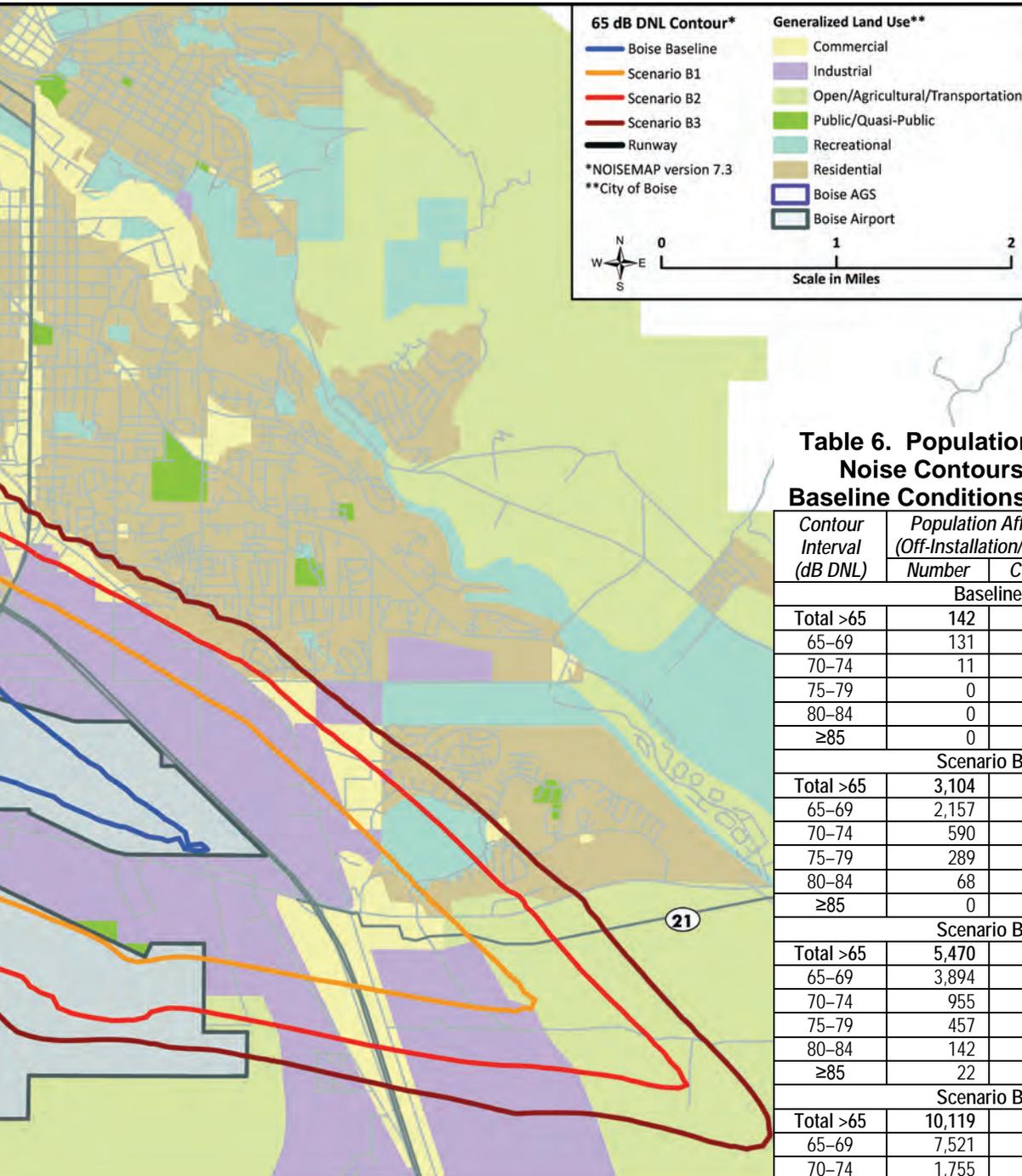


Figure 2. Land Use and Noise Contours in Areas Surrounding Boise

As demonstrated by Figure 2 and explained in EIS Section BO 3.10.1, off-base residential properties represent approximately 21, 254, 575, or 1,132 acres of the properties within the 65 dB DNL contours under No Action, Scenario B1, Scenario B2, or Scenario B3, respectively. Table 6 summarizes total population and acreage to be impacted by 65 dB DNL or greater noise levels. Operational mitigations were identified which included (1) instructing the departing aircraft climb to an altitude of 1,000 to 3,000 feet AGL and hold at that altitude, atmospheric conditions permitting, until away from the city before climbing,



aircraft climb to an altitude of 1,000 to 3,000 feet AGL and hold at that altitude, atmospheric conditions permitting, until away from the city before climbing,

**Table 6. Population and Acreage Under Noise Contours Near Boise AGS, Baseline Conditions and F-35A Scenarios**

Contour Interval (dB DNL)	Population Affected (Off-Installation/Airport)		Total Area Affected (Off-Installation/Airport)	
	Number	Change	Acres	Change
<b>Baseline Conditions</b>				
Total >65	142	N/A	89	N/A
65-69	131	N/A	82	N/A
70-74	11	N/A	7	N/A
75-79	0	N/A	0	N/A
80-84	0	N/A	0	N/A
≥85	0	N/A	0	N/A
<b>Scenario B1 (24 Aircraft)</b>				
Total >65	3,104	2,962	3,032	2,943
65-69	2,157	2,026	2,357	2,275
70-74	590	579	519	512
75-79	289	289	129	129
80-84	68	68	24	24
≥85	0	0	3	3
<b>Scenario B2 (48 Aircraft)</b>				
Total >65	5,470	5,328	5,038	4,947
65-69	3,894	3,763	3,395	3,313
70-74	955	944	1,320	1,313
75-79	457	457	253	253
80-84	142	142	60	60
≥85	22	22	10	10
<b>Scenario B3 (72 Aircraft)</b>				
Total >65	10,119	9,977	6,958	6,864
65-69	7,521	7,390	4,411	4,329
70-74	1,755	1,744	2,012	2,005
75-79	530	530	406	406
80-84	258	258	108	108
≥85	55	55	21	21

Note: See EIS, Table BO 3.2-2.

**AGS, Baseline Conditions and F-35A Scenarios**

(2) using runway 10R furthest from the city for departures, and (3) turning 30 degrees towards the south when departing. These operational mitigations reduce the population affected in Table 6 to 2,547, 3,956 and 5,886 under Scenarios B1, B2 and B3, respectively.

**Air Quality.** Air emissions from all three scenarios would not exceed any air quality significance threshold, except that proposed carbon monoxide (CO) emissions under Scenario B3 would exceed the conformity *de minimis* threshold of 100 tons per year (see Table 7). Therefore, to implement Scenario B3, either with or without operational mitigations, the Air Force first would have to apply one or more of the criteria under 40 CFR, Section 93.158(a) to make a positive general conformity determination for proposed CO emissions.

**Table 7. Scenario B3 Annual Operational Emissions**

Activity	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub>
F-35A Operations and AGE	4.65	150.28	125.82	13.47	2.19	2.19	44,522
Onsite POVs/GOVs	0.44	5.58	0.97	0.17	0.06	0.05	676
Offsite POVs	3.34	104.95	2.84	0.11	0.22	0.22	5,051
Nonroad	0.62	3.49	9.14	0.25	0.61	0.59	955
Point and Area Sources	11.21	3.98	3.51	0.02	1.67	1.54	3,326
<b>Total Projected Emissions – Scenario B3</b>	<b>20.26</b>	<b>268.28</b>	<b>142.28</b>	<b>14.02</b>	<b>4.75</b>	<b>4.59</b>	<b>54,530</b>
A-10 Year 2009 Base Case Emissions	(18.63)	(106.47)	(12.77)	(0.77)	(1.49)	(1.43)	(5,805)
Scenario B3 Minus Base Case Emissions	1.63	161.82	129.50	13.26	3.26	3.16	48,725
Ada County PSD and Conformity Thresholds	250	100	250	250	100	250	N/A

Note: (Number) denotes a negative number. See EIS, Table BO 3.3–6.

Key: AGE=aerospace ground equipment; CO<sub>2e</sub>=carbon dioxide equivalent; GOV=government-owned vehicle; NO<sub>x</sub>=nitrogen oxides; PM<sub>n</sub>=particulate matter less than or equal to n microns; POV=personally owned vehicle; PSD=Prevention of Significant Deterioration; SO<sub>2</sub>=sulfur dioxide; VOC=volatile organic compound.

**Safety.** Construction, renovation, and infrastructure improvement would be consistent with established safety distances. Ordnance would be handled in accordance with explosive safety directives and carried out by trained, qualified personnel. The F-35A is a relatively new type of aircraft; historical trends show that mishap rates of all types decrease the longer an aircraft is operational as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. The F-35A will have undergone approximately 10 years of flight testing prior to the time full-scale pilot training would occur at any alternative addressed in this EIS. Pilots would have extensive simulator training before flight. As the F-35A becomes more operationally mature, the aircraft mishap rate is expected to become comparable with a similarly sized aircraft with a similar mission. There would be no impacts on airfield safety.

**Socioeconomics and Environmental Justice.** The Federal Aviation Administration and U.S. Department of Defense have identified residential use as incompatible with annual noise levels above 65 dB DNL. Residents within the 65 dB DNL noise contour at Boise AGS could be impacted by the increased noise (see Table 6). Of special interest are minority and low-income populations, schools, and child care centers affected by noise levels greater than 65 dB DNL (see Table 8). Under Scenario B2 or B3, one child care center would experience noise levels above 75 dB DNL which are incompatible with educational services.

Construction activities under the three aircraft scenarios would create direct construction jobs, as well as indirect and induced jobs in other industries. Under Scenario B1, construction expenditures would create an estimated total of 2,188 jobs, 1,241 of which would be

concentrated in construction-related industries. Construction expenditures under Scenario B2 would result in an estimated 2,342 jobs. Scenario B3 would create 2,635 jobs as a result of construction. Construction expenditures and the jobs created would be temporary and would result in 2 to 3 years of stimulation to the local construction industry. Potential overall socioeconomic effects from the change in construction expenditures and personnel under each aircraft scenario are summarized in Table 9.

**Table 8. Boise AGS Populations of Concern Affected by Noise Levels Greater Than 65 dB DNL, Baseline Conditions and F-35A Scenarios**

	<i>Total Affected Population</i>	<i>Number (Percentage) Minority</i>	<i>Number (Percentage) Low-Income</i>	<i>Schools</i>	<i>Child Care Centers</i>
Baseline	142	24 (16.9)	26 (18.3)	0	0
Scenario B1	3,105	536 (17.3)	508 (16.4)	1	3
Scenario B2	5,472	871 (15.9)	826 (15.1)	1	6
Scenario B3	10,119	1,673 (16.5)	1,464 (14.5)	2	13

Note: See EIS, Tables BO 3.12-2 and BO 3.12-3.

**Table 9. Boise AGS Potential Socioeconomic Impacts, F-35A Scenarios**

	<i>Scenario B1 (24 Aircraft)</i>	<i>Scenario B2 (48 Aircraft)</i>	<i>Scenario B3 (72 Aircraft)</i>
<b>Construction (jobs)</b>			
Direct	1,241	1,328	1,494
Indirect	464	497	559
Induced	483	517	582
<b>Total</b>	<b>2,188</b>	<b>2,342</b>	<b>2,635</b>
<b>Population (persons)<sup>1</sup></b>			
Existing Conditions	205,671	205,671	205,671
Direct	2,105	3,768	5,431
<b>Total</b>	<b>207,776</b>	<b>209,439</b>	<b>211,102</b>
<i>Percentage Change</i>	<i>1.00</i>	<i>1.80</i>	<i>2.60</i>
<b>Firefighters (persons)<sup>1</sup></b>			
Existing Conditions	216	216	216
Direct	2	4	6
<b>Total</b>	<b>218</b>	<b>220</b>	<b>222</b>
<i>Percentage Change</i>	<i>1.00</i>	<i>1.80</i>	<i>2.60</i>
<b>Employment (jobs)<sup>2</sup></b>			
Existing Conditions	282,057	282,057	282,057
Direct	678	1,219	1,759
Induced	188	337	487
<b>Total</b>	<b>282,923</b>	<b>283,613</b>	<b>284,303</b>
<i>Percentage Change</i>	<i>0.30</i>	<i>0.60</i>	<i>0.80</i>
<b>Tax Revenues (\$ million)</b>			
State and Local Taxes	\$2.78	\$5.00	\$7.22
Federal Taxes	\$7.44	\$13.38	\$19.31
<b>Total</b>	<b>\$10.22</b>	<b>\$18.38</b>	<b>\$26.53</b>

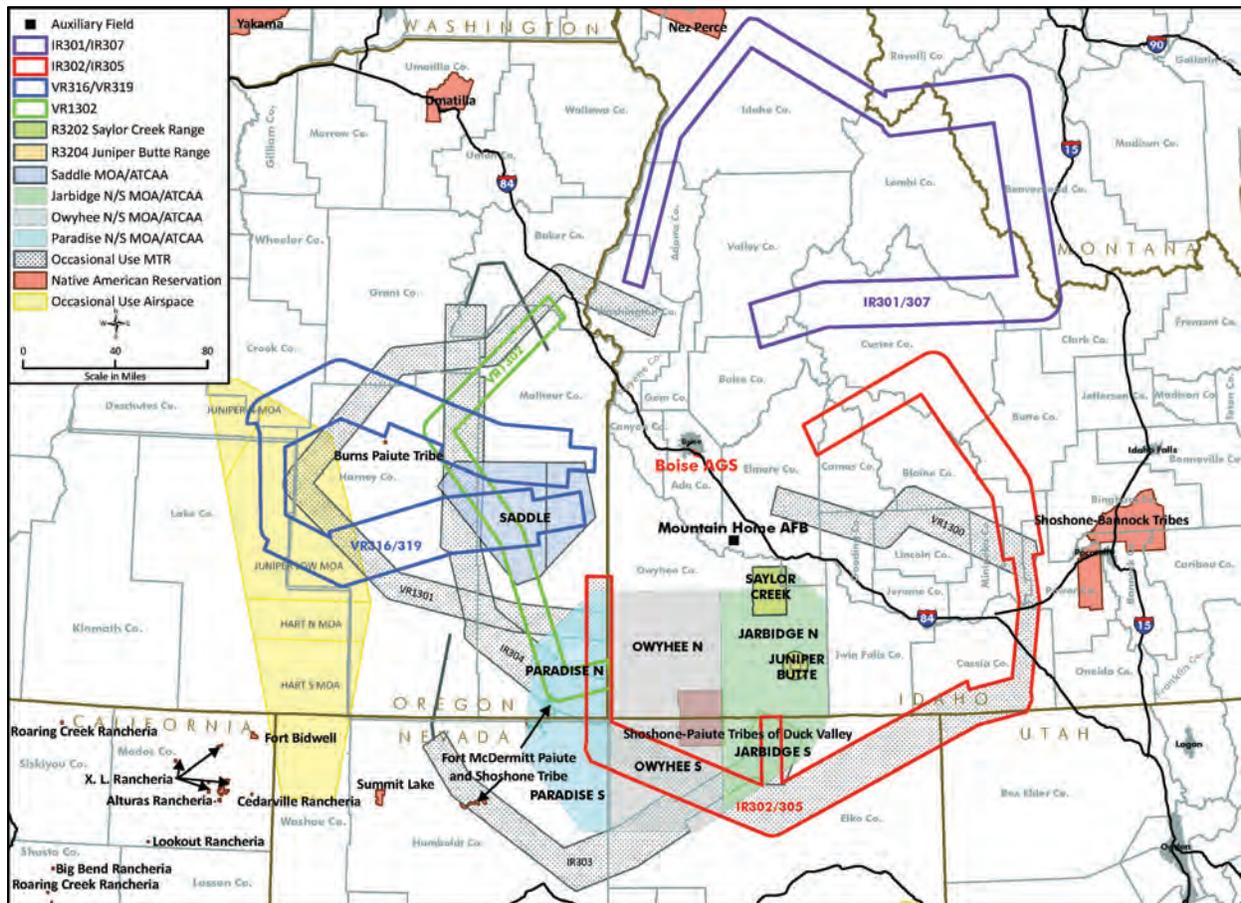
	<i>Scenario B1 (24 Aircraft)</i>	<i>Scenario B2 (48 Aircraft)</i>	<i>Scenario B3 (72 Aircraft)</i>
<b>Housing (units)<sup>1</sup></b>			
Existing Conditions	92,700	92,700	92,700
Direct	678	1,219	1,759
<b>Total</b>	<b>93,378</b>	<b>93,919</b>	<b>94,459</b>
<i>Percentage Change</i>	<i>0.70</i>	<i>1.30</i>	<i>1.90</i>
<b>Law Enforcement (persons)<sup>1</sup></b>			
Existing Conditions	407	407	407
Direct	4	7	11
<b>Total</b>	<b>411</b>	<b>414</b>	<b>418</b>
<i>Percentage Change</i>	<i>1.00</i>	<i>1.70</i>	<i>2.70</i>
<b>Medical Professionals (persons)<sup>2</sup></b>			
Existing Conditions	690	690	690
Direct	7	13	18
<b>Total</b>	<b>697</b>	<b>703</b>	<b>708</b>
<i>Percentage Change</i>	<i>1.00</i>	<i>1.90</i>	<i>2.80</i>
<b>Students (persons)<sup>1</sup></b>			
Existing Conditions	25,251	25,251	25,251
Direct	661	1,188	1,715
<b>Total</b>	<b>25,912</b>	<b>26,439</b>	<b>26,966</b>
<i>Percentage Change</i>	<i>2.60</i>	<i>4.70</i>	<i>6.80</i>
Student-Teacher Ratio	18.17	18.17	18.17
Number of Potential New Teachers	36	65	94

<sup>1</sup> City of Boise.

<sup>2</sup> Ada County.

Note: See EIS, Table BO 3.11-3.

**Airspace and Range Use.** F-35A flight activities would take place in existing airspace. No airspace modifications would be required for any of the scenarios. The training airspace and Military Training Routes (MTRs) (instrument routes [IR] and visual routes [VR]) are presented in Figure 3. Noise effects under training airspace are presented in Table 10. Projected F-35A munitions use on existing ranges is presented in Table 11. Weapons training for the F-35A training aircraft would be conducted in the Saylor Creek Range and Juniper Butte Range. Table 12 presents the populations of concern associated with the training airspace.



**Figure 3. Airspace and Ranges for the F-35A Beddown at Boise AFS**

**Table 10. Noise Environment for Boise AGS Training Airspace,  
Baseline Conditions and F-35A Scenarios**

Airspace Name <sup>1</sup>	Baseline			Scenario B1 (24 Aircraft)			Scenario B2 (48 Aircraft)			Scenario B3 (72 Aircraft)		
	DNL <sub>mr</sub>	CDNL	Booms/Day	DNL <sub>mr</sub>	CDNL	Booms/Day	DNL <sub>mr</sub>	CDNL	Booms/Day	DNL <sub>mr</sub>	CDNL	Booms/Day
Jarbridge North MOA/ATCAA	64	53	2.0	65	54	2.1	66	54	2.2	67	54	2.4
Jarbridge South MOA/ATCAA	<45	48	0.6	<45	48	0.6	<45	48	0.6	<45	48	0.6
Owyhee South MOA/ATCAA	<45	48	0.6	<45	48	0.6	<45	48	0.6	<45	48	0.6
Paradise North/South MOA/ATCAA	<45	48	0.6	<45	48	0.6	<45	48	0.6	<45	48	0.6
Owyhee North MOA/ATCAA	64	57	1.9	65	57	2	65	57	2.1	66	57	2.2
Saddle A/B MOAs/ATCAAs	<45	N/A	N/A	49	N/A	N/A	51	N/A	N/A	53	N/A	N/A
R-3202 (Saylor Creek Range)	64	53	2.0	65	54	2.1	66	54	2.2	67	54	2.4
R-3204 A/B (Juniper Butte Range)	64	53	2.0	65	54	2.1	66	54	2.2	67	54	2.4
IR-301/307	64	N/A	N/A	66	N/A	N/A	66	N/A	N/A	67	N/A	N/A
IR-302/305	65	N/A	N/A	66	N/A	N/A	67	N/A	N/A	68	N/A	N/A
VR-316/319	53	N/A	N/A	55	N/A	N/A	57	N/A	N/A	58	N/A	N/A
VR-1302	<45	N/A	N/A	<45	N/A	N/A	46	N/A	N/A	48	N/A	N/A

<sup>1</sup> Noise levels beneath MOAs listed also include noise generated by aircraft operating in overlying Air Traffic Control Assigned Airspace (ATCAA); airspace units in which supersonic noise levels are "N/A" are not authorized for supersonic flight. Jarbridge South, Owyhee South, and Paradise North/South MOAs and ATCAAs would be scheduled and used as a single airspace complex; therefore, the noise levels for these airspace units is generally the same. Jarbridge North MOA/ATCAA, R-3202, and R-3204 are used in conjunction with one another and therefore their noise levels are generally the same.

**Note:** See EIS, Table BO 3.2-5.

**Key:** CDNL=C-weighted day-night average sound level; DNL<sub>mr</sub>=onset rate-adjusted day-night average sound level; IR=Instrument Route; MOA=Military Operations Area; VR=Visual Route.

**Table 11. Boise AGS Projected F-35A Annual Munitions Use**

Munitions Type	F-35A Annual Usage			Range Permitted
	Scenario B1	Scenario B2	Scenario B3	
GBU-12 (live)	36	72	108	UTTR
GBU-12 (inert)	78	156	234	Saylor Creek
GBU-31 (inert)	20	40	60	Saylor Creek
GBU-32 (inert)	26	52	78	Saylor Creek
25-millimeter Target Practice	52,000	104,000	156,000	Saylor Creek
MJU-61/B Training Flares	26,400	52,800	79,200	Authorized Airspace

**Note:** See EIS, Table BO 2.2-5.

**Key:** MJU=Mobile Jettison Unit; UTTR=Utah Test and Training Range.

**Table 12. Boise AGS Populations of Concern Under the Training Airspace**

<i>Airspace Units</i>	<i>Counties Overflown</i>	<i>Total Affected Population (2010)</i>	<i>Minority</i>	<i>Percentage Minority</i>	<i>Low-Income</i>	<i>Percentage Low-Income</i>	<i>Youth</i>	<i>Percentage Youth</i>
Saddle A and B MOAs/ATCAAs	Malheur County, Oregon	1,353	311	23.0	240	17.7	165	12.2
	Harney County, Oregon							
Owyhee North/South MOAs/ATCAAs	Owyhee County, Idaho	2,180	922	42.3	381	17.5	586	26.9
	Elko County, Nevada							
Paradise North/South MOAs/ATCAAs	Elko County, Nevada	2,052	576	28.1	287	14.0	404	19.7
	Humboldt County, Nevada							
	Malheur County, Oregon							
	Owyhee County, Idaho							
Jarbidge North/South MOAs/ATCAAs	Elmore County, Idaho	1,715	639	37.2	265	15.5	458	26.7
	Owyhee County, Idaho							
	Twin Falls County, Idaho							
	Elko County, Nevada							
IR-301/307	Adams County, Idaho	8,625	495	5.7	1,286	14.9	1,700	19.7
	Boise County, Idaho							
	Custer County, Idaho							
	Idaho County, Idaho							
	Lemhi County, Idaho							
	Valley County, Idaho							
	Washington County, Idaho							
	Beaverhead County, Montana							
Ravalli County, Montana								
IR-302/305	Blaine County, Idaho	11,051	2,869	26.0	1,362	12.3	2,974	26.9
	Camas County, Idaho							
	Cassia County, Idaho							
	Elmore County, Idaho							
	Minidoka County, Idaho							
	Power County, Idaho							
	Elko County, Nevada							
	Humboldt County, Nevada							
	Malheur County, Oregon							
	Box Elder County, Utah							
VR-1302	Baker County, Oregon	1,401	295	21.1	179	12.8	192	13.7
	Harney County, Oregon							
	Malheur County, Oregon							
VR-316/319	Crook County, Oregon	6,945	859	12.4	1,049	15.1	1,340	19.3
	Deschutes County, Oregon							
	Grant County, Oregon							
	Harney County, Oregon							
	Lake County, Oregon							
	Malheur County, Oregon							

Note: See EIS, Table BO 3.12-4.

Key: ATCAA=Air Traffic Control Assigned Airspace.

Most of the F-35A training would occur above 10,000 feet above ground level (AGL), with low-level flight between 500 and 2,000 feet AGL occurring less than 3 percent of the time. Supersonic operations would occur in authorized airspace only.

**Natural and Cultural Resources.** No significant adverse effects on vegetation or wildlife from overflights or noise are anticipated. Flare use with the F-35A training would not appreciably increase any potential for wildland fires.

No impacts on historic properties under airspace associated with Boise AGS are expected. Ongoing use of airspace by F-15E, A-10, and transient aircraft has not impacted historic properties. Although there would be an increase in subsonic noise under the Military Operations Areas (MOAs) and MTRs, it would not be of sufficient magnitude to impact historic properties under airspace.

**Recreation.** Recreational activities occurring throughout the region already coexist with exposure to military overflight (see Baseline in Table 13). Increased numbers of overflights would increase the potential for recreational participants to experience the noise and startle effects from training aircraft. This could cause some degradation in the recreational environments for those affected.

**Table 13. Boise AGS Average Noise Levels by Airspace and Associated Recreational Use Areas**

Airspace	Recreational Resource	Noise Level (dB DNL <sub>mr</sub> )			
		Baseline Conditions	Scenario (No. of Aircraft)		
			B1 (24)	B2 (48)	B3 (72)
Jarbidge North MOA/ATCAA	Bruneau-Jarbidge Rivers Wilderness	64	65	66	67
Jarbidge South MOA/ATCAA	Jarbidge Wilderness Area	<45	<45	<45	<45
Owyhee North MOA/ATCAA	Big Jacks Creek Wilderness, North Fork Owyhee Wilderness, Pole Creek Wilderness, Owyhee River Wilderness	64	65	65	66
Owyhee South MOA/ATCAA	Owyhee River Wilderness	<45	<45	<45	<45
Paradise North MOA/ATCAA	Owyhee WSR, Owyhee River Wilderness	<45	<45	<45	<45
Paradise South MOA/ATCAA	N/A	<45	<45	<45	<45
Saddle A/B MOAs/ATCAAs	Owyhee WSR, Owyhee Reservoir	<45	49	51	53
R-3202 (Saylor Creek Range)	Snake River Birds of Prey NCA, Bruneau Dunes SP	64	65	66	67
R-3204A/B (Juniper Creek Range)	N/A	64	65	66	67
IR-301/307	Big Hole National Battlefield, Clark Canyon Reservoir and SRA, Deadwood Reservoir, Frank Church Wilderness, Hells Canyon NRA, Hells Canyon Wilderness Area, Rapid WSR, Salmon WSR, Selway WSR, Sawtooth NRA, Selway-Bitterroot Wilderness Area	64	66	66	67
IR-302/305	City of Rocks National Reserve, Craters of the Moon National Monument and Preserve, Craters of the Moon Wilderness, Jarbidge Wilderness Area, Minidoka NWR, Owyhee WSR, Sawtooth NRA and Wilderness Area	65	66	67	68
VR-316/319	Owyhee Reservoir, Owyhee WSR, Malheur NWR, Warm Springs Reservoir	53	55	57	58
VR-1302	Owyhee WSR, Owyhee River Wilderness	<45	<45	46	48

Note: See EIS, Table BO 3.10-8.

Key: NRA=National Recreation Area; NWR=National Wildlife Refuge; SRA=State Recreation Area; WSR=Wild and Scenic River.

**Native American Concerns.** The Air Force has contacted the following tribes to consult on a government-to-government basis regarding their concerns about potential impacts on traditional resources and traditional cultural properties (TCPs) under the airspace associated with Boise AGS: Shoshone-Bannock Tribes, Northwestern Band Shoshone/Brigham City Tribe, Burn Paiute Tribe, Paiute-Shoshone Tribes of Fort McDermitt, Alturas Rancheria,

Summit Lake Paiute, Klamath Tribe, Nez Perce Tribe, Fort Bidwell Reservation, Cedarville Rancheria, Pit River Tribe, and the Shoshone-Paiute Tribes of Duck Valley. The Air Force received two responses as of April 2012. The Klamath General Council and the Northwestern Band of the Shoshone Nation, Brigham City Office, expressed interest in the Air Force's action. The Klamath Tribes expressed concerns over the timing and elevation of training flights and do not want the training flights to affect migration of game animals or disturb ceremonial gatherings. Two Indian Reservations underlie Boise AGS primary use airspace (see Figure 3). TCPs and other traditional cultural resources are known to underlie this airspace. However, during Air Force consultation with interested Native American groups regarding airspace actions, the Shoshone-Paiute Tribes and the Fort McDermitt Paiute and Shoshone Tribe did not express concerns regarding the proposed Air Force use of airspace. Details on the consultation process are provided in the EIS.

**Auxiliary Airfields.**

Mountain Home Air Force Base (Mountain Home AFB) would be the auxiliary airfield for F-35A training aircraft based at Boise AGS. shows the 65 dB DNL noise contours at Mountain Home AFB, which would be the auxiliary airfield for Boise AGS F-35A training aircraft. Population and acreage under the noise contours from are summarized in Table 14.

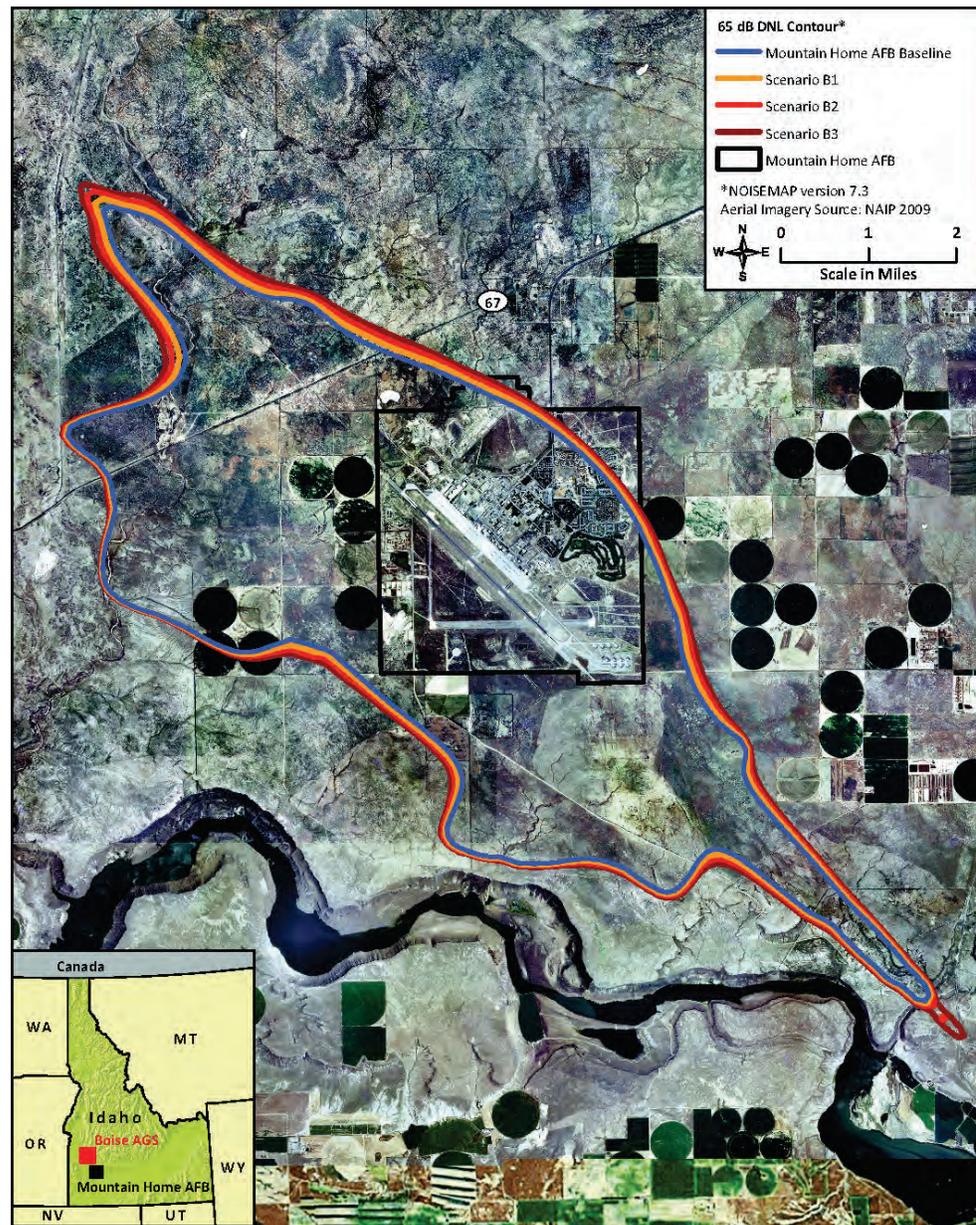


Figure 4. Mountain Home AFB 65 dB DNL Noise Contours, Baseline Conditions, and F-35A Scenarios

**Table 14. Population and Acreage Under Noise Contours Near Mountain Home AFB, Baseline Conditions and F-35A Scenarios**

Contour Interval (dB DNL)	Population Affected (Off-Installation/Airport)		Total Area Affected (Off-Installation/Airport)		Contour Interval (dB DNL)	Population Affected (Off-Installation/Airport)		Total Area Affected (Off-Installation/Airport)	
	Number	Change	Acres	Change		Number	Change	Acres	Change
Baseline					Scenario B2 (48 Aircraft)				
Total >65	10	N/A	13,658	N/A	Total >65	12	2	14,935	1,277
65-69	4	N/A	8,414	N/A	65-69	5	1	9,145	731
70-74	1	N/A	3,844	N/A	70-74	1	0	4,163	319
75-79	5	N/A	1,276	N/A	75-79	6	1	1,453	177
80-84	0	N/A	124	N/A	80-84	0	0	174	50
≥85	0	N/A	0	N/A	≥85	0	0	0	0
Scenario B1 (24 Aircraft)					Scenario B3 (72 Aircraft)				
Total >65	11	1	14,293	635	Total >65	12	2	15,602	1,944
65-69	4	0	8,775	361	65-69	5	1	9,540	1,126
70-74	1	0	4,001	157	70-74	1	0	4,325	481
75-79	6	1	1,367	91	75-79	6	1	1,539	263
80-84	0	0	150	26	80-84	0	0	198	74
≥85	0	0	0	0	≥85	0	0	0	0

Note: See EIS, Table BO 3.2-8.

## 7. Holloman AFB Alternative Overview

Holloman AFB's infrastructure and training airspace would accommodate a maximum of five increments of 24 F-35A PAA. A total of eight beddown scenarios at Holloman AFB are considered in the EIS. Scenarios H1W, H2W, and H3W evaluate the basing of 24, 48, and 72 F-35A PAA in addition to Holloman AFB's F-16 training mission. In order to facilitate future decision making as described in Section 4, Scenarios H1, H2, H3, H4, and H5 evaluate the basing of 24, 48, 72, 96, and 120 F-35A PAA without the F-16 training mission. The MQ-1 (Predator) and MQ-9 (Reaper) remotely piloted aircraft (RPA) training mission and tenant organizations, including the German Air Force, would remain under all scenarios, and the baseline and the effects of their operations are included as the No Action Alternative.

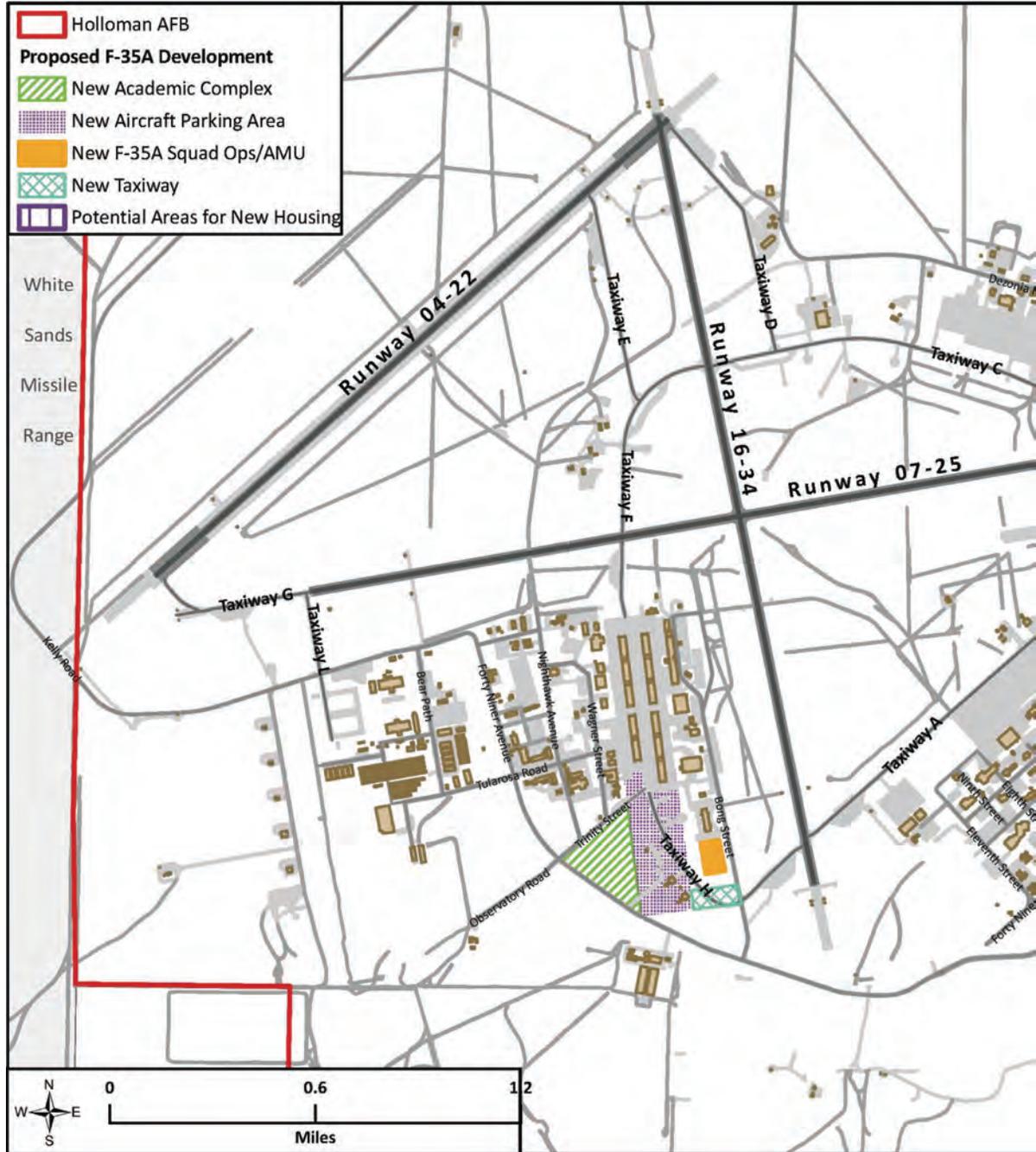
### 7.1 Holloman AFB Alternative – Construction

Table 15 summarizes the amount of disturbed area associated with the renovation and construction needed under each beddown scenario. Under Scenarios H1 through H5 existing facilities would accommodate some F-35A functions with renovation (Figure 5). Additional facilities would be required to beddown up to 120 aircraft (the largest number of aircraft proposed under the Holloman AFB alternative) under Scenario H5.

**Table 15. F-35A Construction at Holloman AFB Under Each Aircraft Scenario**

Scenario	Projects		Area (Square Feet)
	Renovation	New/Addition	
H1W (24 Aircraft)	1	32	3,483,068
H2W (48 Aircraft)	1	35	3,676,808
H3W (72 Aircraft)	1	38	3,870,549
H1 (24 Aircraft)	1	17	1,876,303
H2 (48 Aircraft)	2	21	1,920,413
H3 (72 Aircraft)	2	31	2,401,606
H4 (96 Aircraft)	3	34	2,542,717
H5 (120 Aircraft)	4	40	4,300,063

Note: See EIS, Tables HO 2.1-2 and HO 2.1-3.



**Figure 5. Holloman AFB Airfield**

## 7.2 Holloman AFB Alternative – Personnel Requirements

Beddown of the F-35A training mission would also require basing sufficient and appropriately skilled personnel to operate and maintain the mission and provide necessary support services. Each aircraft scenario has a different manpower requirement (see Table 16).

**Table 16. Holloman AFB F-35A Training Mission Personnel Changes**

Aircraft Scenario	F-35A Personnel	F-35A Contractors	F-35A Students	Total Base Personnel	Dependents	Net Change
Baseline	–	–	–	6,732	6,141	N/A
H1W	647	50	30	7,459	7,674	2,260
H2W	1,157	50	60	7,999	8,796	3,922
H3W	1,668	50	90	8,540	9,921	5,588
H1	647	50	30	6,391	5,325	(1,157)
H2	1,157	50	60	6,931	6,447	505
H3	1,668	50	90	7,472	7,571	2,170
H4	2,178	50	120	8,012	8,693	3,832
H5	2,688	50	150	8,552	9,815	5,494

Note: (Number) denotes a negative number. See EIS, Table HO 2.1-4.

## 7.3 Holloman AFB Alternative – Flight Operations

The F-35A would employ similar departure, closed patterns, and landing procedures as currently used by Holloman AFB aircraft. F-35A operations (see Table 17) would adhere to existing restrictions and avoidance procedures.

**Table 17. Holloman AFB Baseline and Projected Annual Airfield Operations**

	Baseline	Projected Annual F-35A Airfield Operations				
		H1W/H1 24 Aircraft	H2W/H2 48 Aircraft	H3W/H3 72 Aircraft	Scenario H4 96 Aircraft	Scenario H5 120 Aircraft
Scenarios H1W, H2W, and H3W						
F-35A	0	15,025	30,051	45,076	N/A	N/A
F-16	45,509	45,509	45,509	45,509	N/A	N/A
Other Military	57,454	57,454	57,454	57,454	N/A	N/A
<b>Total</b>	<b>102,963</b>	<b>117,988</b>	<b>133,014</b>	<b>148,039</b>	<b>N/A</b>	<b>N/A</b>
Scenarios H1, H2, H3, H4, and H5						
F-35A	0	15,025	30,051	45,076	60,102	75,128
F-16	45,509	0	0	0	0	0
Other Military	57,454	57,454	57,454	57,454	57,454	57,454
<b>Total</b>	<b>102,963</b>	<b>72,479</b>	<b>87,505</b>	<b>102,530</b>	<b>117,556</b>	<b>132,582</b>

Note: Other military includes the German Air Force, the RPA, and other tenant units stationed at Holloman AFB. See EIS, Table HO 2.1-1.



## 7.4 Holloman AFB Alternative – Environmental Consequences

**Noise and Land Use.** The F-35A generates an overflight sound exposure level approximately 2 dB higher than the F-16C during a typical non-afterburner departure at the location studied (Holloman Middle School). In traffic pattern flight in the vicinity of the base, the F-35A is calculated to be approximately 5 dB louder than the F-16C. In a typical arrival flight configuration, the F-35A is approximately 6 dB louder than the F-16C. Figure 6 presents the 65 dB DNL contours for the Holloman AFB beddown scenarios.

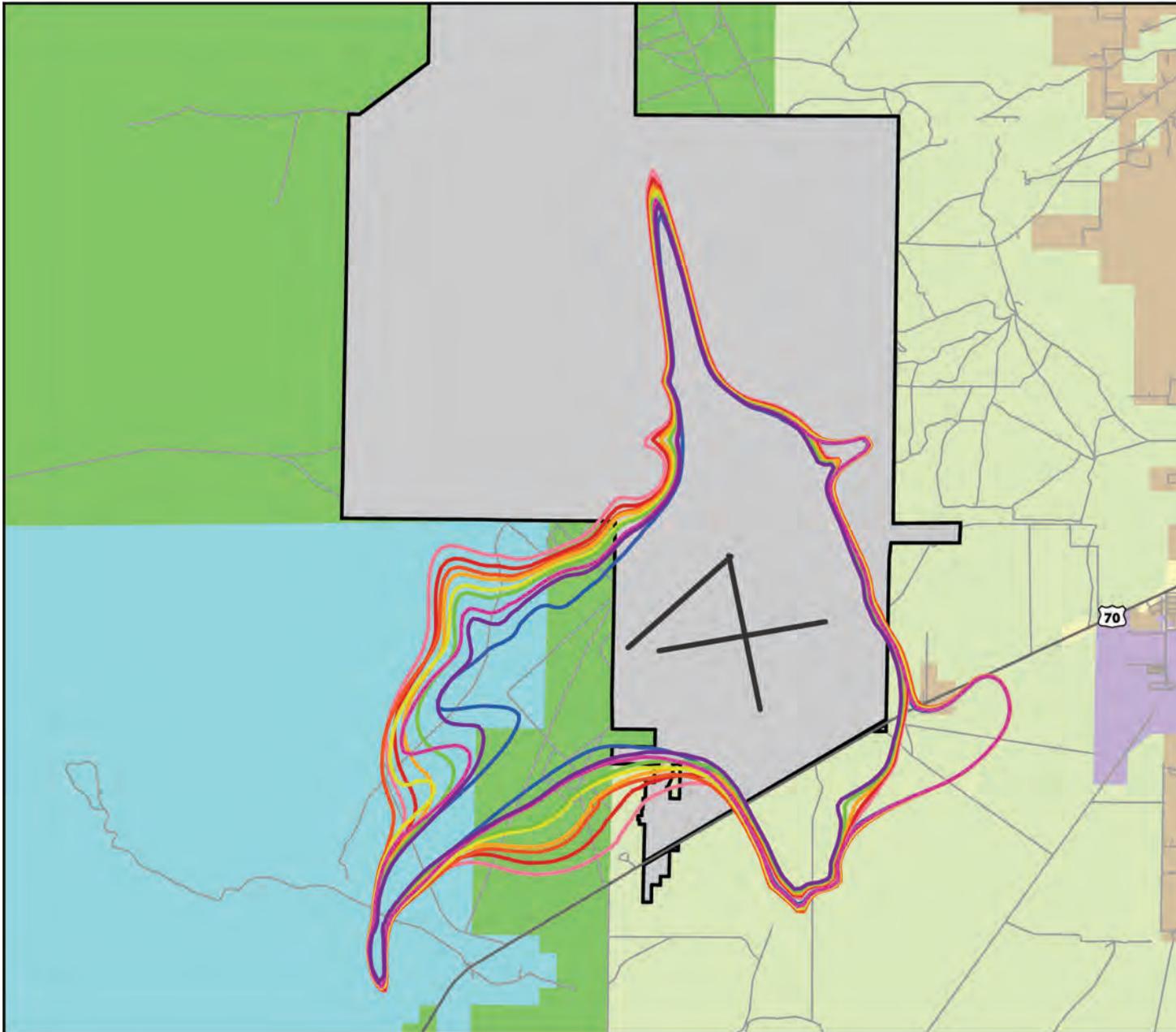
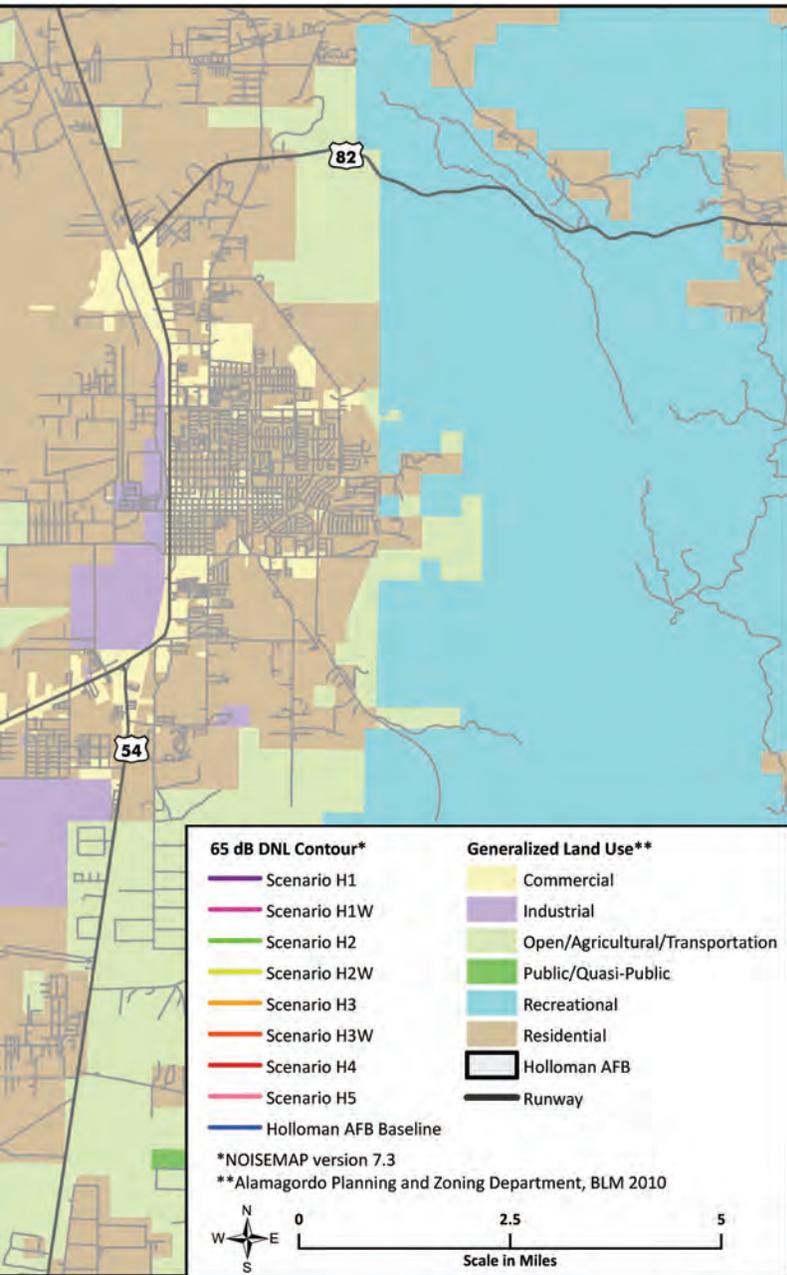


Figure 6. Land Use and Noise Contours in Areas Surrounding Holloman AFB, Baseline

The change in affected off-base populations and acreage under the 65 dB DNL noise contours under the aircraft scenarios is presented in Table 18. EIS Section HO 3.10.1 explains that off-base residential land impacted by noise levels above 65 dB DNL constitute 32, 37, 42, or 48 acres under No Action, Scenario H1W, Scenario H2W, or Scenario H3W, respectively. Scenarios H1 through H5 would reduce off-base land under the 65 dB DNL contours when compared with baseline or No Action conditions.

**Table 18. Population and Acreage Under Noise Contours Near Holloman AFB, Baseline Conditions and F-35A Scenarios**



**Conditions and F-35A Scenarios**

Contour Interval (dB DNL)	Population Affected (Off-Installation)		Total Area Affected (Off-Installation)	
	Number	Change	Acres	Change
<b>Baseline Conditions</b>				
Total >65	49	N/A	7,307	N/A
65-69	22	N/A	5,496	N/A
70-74	27	N/A	1,532	N/A
75 - ≥85	0	N/A	279	N/A
<b>Scenario H1W (24 Aircraft)</b>				
Total >65	48	(1)	9,304	1,997
65-69	21	(1)	6,450	954
70-74	27	0	2,261	729
75 - ≥85	0	0	593	314
<b>Scenario H2W (48 Aircraft)</b>				
Total >65	48	(1)	10,880	3,573
65-69	21	(1)	7,240	1,744
70-74	27	0	2,709	1,177
75 - ≥85	0	0	931	652
<b>Scenario H3W (72 Aircraft)</b>				
Total >65	48	(1)	12,283	4,976
65-69	21	(1)	7,953	2,457
70-74	27	0	3,091	1,559
75 - ≥85	0	0	1,239	960
<b>Scenario H1 (24 Aircraft)</b>				
Total >65	44	(5)	6,473	(834)
65-69	22	0	4,830	(666)
70-74	22	(5)	1,412	(120)
75 - ≥85	0	0	231	(48)
<b>Scenario H2 (48 Aircraft)</b>				
Total >65	44	(5)	8,025	718
65-69	22	0	5,531	35
70-74	22	(5)	1,920	388
75 - ≥85	0	0	574	295
<b>Scenario H3 (72 Aircraft)</b>				
Total >65	44	(5)	9,438	2,131
65-69	21	(1)	6,230	734
70-74	23	(4)	2,324	792
75 - ≥85	0	0	884	605
<b>Scenario H4 (96 Aircraft)</b>				
Total >65	44	(5)	10,721	3,414
65-69	21	(1)	6,869	1,373
70-74	23	(4)	2,679	1,147
75 - ≥85	0	0	1,173	894
<b>Scenario H5 (120 Aircraft)</b>				
Total >65	44	(5)	11,833	4,526
65-69	20	(2)	7,395	1,899
70-74	24	(3)	3,001	1,469
75 - ≥85	0	0	1,437	1,158

Note: (Number) denotes negative number. See EIS, Table HO 3.2-2.

**Air Quality.** The greatest net increases in operational emissions of any beddown scenario would occur under Scenario H3W (see Table 19). The increase in CO emissions under this scenario would exceed the Prevention of Significant Deterioration (PSD) threshold of 250 tons per year. These emissions would amount to 1.9 percent of the annual CO emissions for Otero County. These emissions would occur across a wide area of the county and would not result in substantial impacts in a localized area. The county attains all National Ambient Air Quality Standards (NAAQS) by wide margins; therefore, these emissions would not contribute to an exceedance of an ambient air quality standard.

**Table 19. Scenario H3W Annual Operational Emissions**

Activity	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub>
F-35A Operations and AGE	4.54	145.08	135.91	14.18	2.25	2.25	46,828
Onsite POVs/GOVs	2.44	28.11	22.44	0.01	4.22	4.22	704
Offsite POVs	9.25	101.72	5.90	0.36	0.35	0.32	35,996
Point and Area Sources	27.46	5.89	5.77	0.44	3.34	3.34	172
<b>Total Projected Emissions – Scenario H3W</b>	<b>43.68</b>	<b>280.79</b>	<b>170.01</b>	<b>14.99</b>	<b>10.16</b>	<b>10.13</b>	<b>83,701</b>
<b>PSD Thresholds</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

Note: See EIS, Table HO 3.3-8.

**Safety.** Infrastructure improvement would be consistent with established safety distances and would not result in any greater safety risk. Ordnance would be handled in accordance with explosive safety directives and carried out by trained, qualified personnel. The F-35A is a relatively new type of aircraft; historical trends show that mishap rates of all types decrease the longer an aircraft is operational as flight crews and maintenance personnel learn more about the aircraft’s capabilities and limitations. As the F-35A becomes more operationally mature, the aircraft mishap rate is expected to be comparable with a similarly sized aircraft with a similar mission. There would be no impacts on airfield safety.

**Socioeconomics and Environmental Justice.** Under the baseline conditions, as well as under any beddown scenario, two on-base schools and two on-base child care centers are affected by noise levels between 70 and 74 dB DNL (see Table 20).

**Table 20. Holloman AFB Populations of Concern Affected by Noise Levels Greater Than 65 dB DNL, Baseline Conditions and F-35A Scenarios**

	Total Affected Population	Number (Percentage) Minority	Number (Percentage) Low-income	Number of Schools	Number of Child Care Centers
Baseline	48	14 (29.2)	5 (10.4)	2	2
Scenario H1W	48	14 (29.2)	5 (10.4)	2	2
Scenario H2W	48	14 (29.2)	5 (10.4)	2	2
Scenario H3W	48	14 (29.2)	5 (10.4)	2	2
Scenario H1	43	17 (39.5)	5 (11.6)	2	2
Scenario H2	43	17 (39.5)	5 (11.6)	2	2
Scenario H3	43	17 (39.5)	5 (11.6)	2	2
Scenario H4	43	17 (39.5)	5 (11.6)	2	2
Scenario H5	43	17 (39.5)	5 (11.6)	2	2

Note: See EIS, Tables HO 3.12-2 and HO 3.12-3.

Construction activities under the F-35A aircraft scenarios would create additional direct construction jobs, as well as indirect and induced jobs in other industries. Scenario H1 would result in an estimated total of 718 jobs, 625 of which would be concentrated in

construction-related industries. The construction expenditures under Scenario H5 would create 4,415 jobs. These construction jobs under each scenario would compose between 3.4 percent and 14.5 percent of the total employment in Otero County.

Employment opportunities could result in an in-migration from surrounding communities and counties for 2 to 3 years as construction workers move to Otero County to capture the new jobs. In-migration could place stress on existing community services and schools. Table 21 summarizes potential socioeconomic effects from the change in personnel.

**Table 21. Holloman AFB Potential Socioeconomic Impacts, F-35A Scenarios**

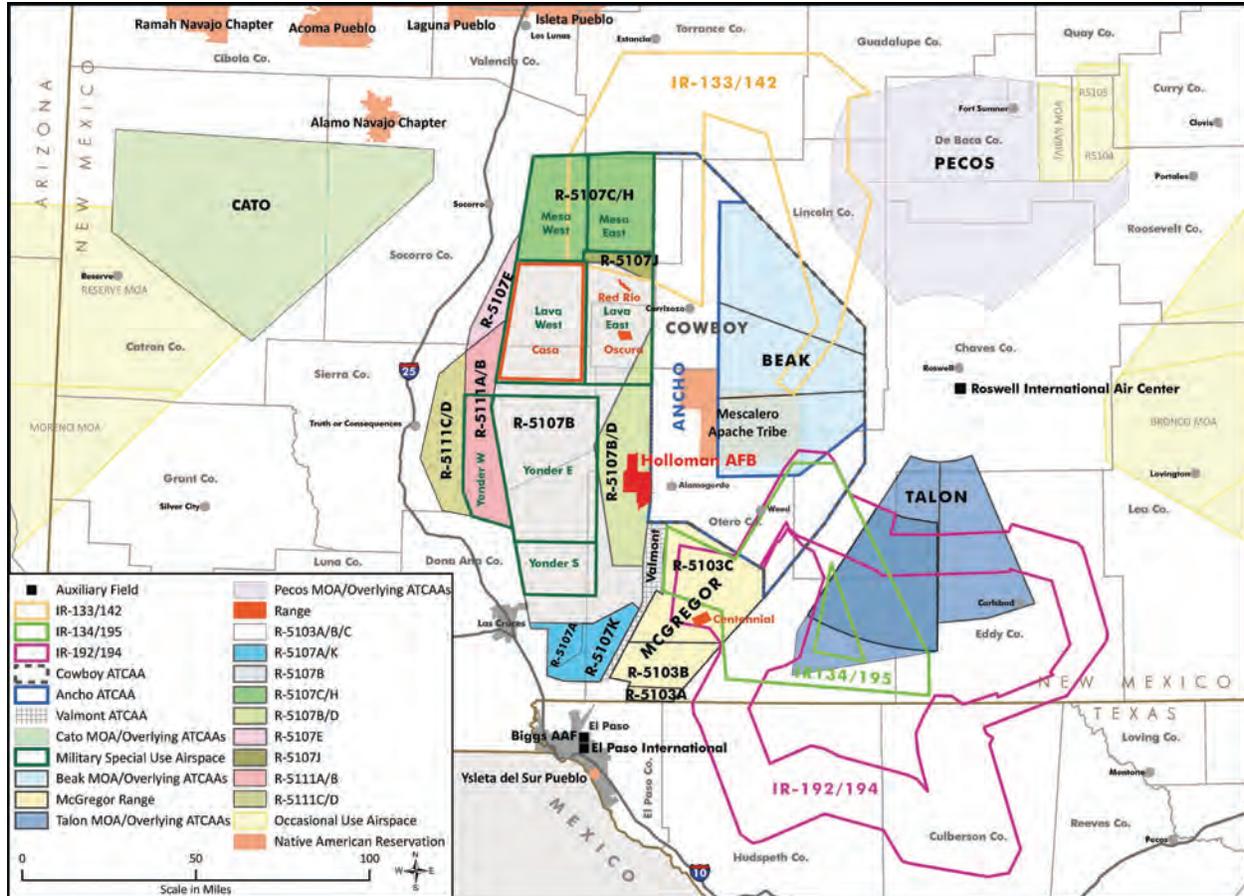
	Scenario H1W	Scenario H2W	Scenario H3W	Scenario H1	Scenario H2	Scenario H3	Scenario H4	Scenario H5
<b>Construction (jobs)<sup>1</sup></b>								
Direct	2,999	3,560	4,122	625	901	2,045	2,451	3,841
Indirect	227	269	312	47	68	155	185	291
Induced	221	262	303	46	66	151	180	283
<b>Total</b>	<b>3,447</b>	<b>4,091</b>	<b>4,737</b>	<b>718</b>	<b>1,036</b>	<b>2,351</b>	<b>2,816</b>	<b>4,415</b>
<b>Population (persons)<sup>2</sup></b>								
Existing Conditions	30,403	30,403	30,403	30,403	30,403	30,403	30,403	30,403
Direct	2,260	3,922	5,588	(1,157)	505	2,170	3,832	5,494
<b>Total</b>	<b>32,663</b>	<b>34,325</b>	<b>35,991</b>	<b>29,246</b>	<b>30,908</b>	<b>32,573</b>	<b>34,235</b>	<b>35,897</b>
Percentage Change	7.4	12.9	18.4	(3.8)	1.7	7.1	12.6	18.1
<b>Employment (jobs)<sup>1</sup></b>								
Existing Conditions	28,216	28,216	28,216	28,216	28,216	28,216	28,216	28,216
Direct	727	1,267	1,808	(341)	199	740	1,280	1,820
Induced	123	215	306	(58)	34	125	217	308
<b>Total</b>	<b>29,066</b>	<b>29,698</b>	<b>30,330</b>	<b>27,817</b>	<b>28,449</b>	<b>29,081</b>	<b>29,713</b>	<b>30,344</b>
Percentage Change	3.0	5.3	7.5	(1.4)	0.8	3.1	5.3	7.5
<b>Housing (units)<sup>2</sup></b>								
Existing Conditions	16,307	16,307	16,307	16,307	16,307	16,307	16,307	16,307
Direct	727	1,267	1,808	(341)	199	740	1,280	1,820
<b>Total</b>	<b>17,034</b>	<b>17,574</b>	<b>18,115</b>	<b>15,966</b>	<b>16,506</b>	<b>17,047</b>	<b>17,587</b>	<b>18,127</b>
Percentage Change	4.5	7.8	11.1	(2.1)	1.2	4.5	7.8	11.2
<b>Students (persons)<sup>2</sup></b>								
Existing Conditions	6,124	6,124	6,124	6,124	6,124	6,124	6,124	6,124
Direct	709	1,235	1,763	(332)	194	722	1,248	1,775
<b>Total</b>	<b>6,833</b>	<b>7,359</b>	<b>7,887</b>	<b>5,792</b>	<b>6,318</b>	<b>6,846</b>	<b>7,372</b>	<b>7,899</b>
Percentage Change	11.6	20.2	28.8	(5.4)	3.2	11.8	20.4	29.0
Student-Teacher Ratio	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25
Potential Number of New Teachers	30	53	76	-	8	31	54	76
<b>Tax Revenues (\$ million)<sup>1</sup></b>								
State and Local Taxes	\$4.15	\$7.23	\$10.32	\$(1.95)	\$1.14	\$4.22	\$7.31	\$10.39
Federal Taxes	\$10.51	\$18.32	\$26.15	\$(4.93)	\$2.88	\$10.70	\$18.51	\$26.32
<b>Total</b>	<b>\$14.66</b>	<b>\$25.56</b>	<b>\$36.47</b>	<b>\$(6.88)</b>	<b>\$4.01</b>	<b>\$14.93</b>	<b>\$25.82</b>	<b>\$36.71</b>
<b>Law Enforcement and Firefighters (persons)<sup>2</sup></b>								
Existing Conditions	82	82	82	82	82	82	82	82
Direct	3	5	7	-	1	3	5	7
<b>Total</b>	<b>85</b>	<b>87</b>	<b>89</b>	<b>82</b>	<b>83</b>	<b>85</b>	<b>87</b>	<b>89</b>
Percentage Change	3.7	6.1	8.5	0.0	1.2	3.7	6.1	8.5
<b>Medical Professionals (persons)<sup>1</sup></b>								
Existing Conditions	820	820	820	820	820	820	820	820
Direct	29	50	72	-	6	28	49	71
<b>Total</b>	<b>849</b>	<b>870</b>	<b>892</b>	<b>820</b>	<b>826</b>	<b>848</b>	<b>869</b>	<b>891</b>
Percentage Change	3.5	6.1	8.8	0.0	0.8	3.4	6.0	8.6

<sup>1</sup> Otero County.

<sup>2</sup> City of Alamogordo.

Note: (Number) denotes a negative number. See EIS, Tables HO 3.11-4 and HO 3.11-6.

**Airspace and Range Use.** F-35A training flight activities would take place in existing airspace (Figure 7). No airspace modifications would be required for any of the scenarios. Existing ranges on White Sands Missile Range (WSMR) and Centennial Range located within McGregor Range would be used for munitions training (see Table 22). Table 23 presents the existing and projected noise conditions under the training airspace. Residents of Weed and neighboring communities under the overlap of IR-192/194 and IR-134/195, as well as supersonic training in the overlying Cowboy ATCAA, expressed annoyance with existing military aircraft overflight and noise and expected greater annoyance with Holloman AFB alternative F-35A training overflights.



**Figure 7. Airspace and Ranges for the F-35A Beddown at Holloman AFB**

**Table 22. Holloman AFB Projected F-35A Annual Munitions Use**

Munitions Type	Projected Annual F-35A Usage					Range Permitted
	Scenarios H1W/H1 24 Aircraft	Scenarios H2W/H2 48 Aircraft	Scenarios H3W/H3 72 Aircraft	Scenario H4 96 Aircraft	Scenario H5 120 Aircraft	
GBU-12 (live)	36	72	108	144	180	Red Rio Range only
GBU-12 (inert)	78	156	234	312	390	Red Rio and Centennial Ranges only
GBU-31 (inert)	20	40	60	80	100	Red Rio and Centennial Ranges only
GBU-32 (inert)	26	52	78	104	130	Red Rio and Centennial Ranges only
25-millimeter Target Practice	52,000	104,000	156,000	208,000	260,000	All Ranges
MJU-61/B Training Flares	26,400	52,800	79,200	105,600	132,000	Authorized Airspace

Note: See EIS, Table HO 2.2-6.

**Table 23. Noise Environment for Holloman AFB Training Airspace,  
Baseline Conditions and F-35A Scenarios**

Airspace	Baseline			F-35A Beddown Scenarios H1W, H2W, H3W								
	DNL <sub>mr</sub>	CDNL	Booms/ Day	H1W (24 Aircraft)			H2W (48 Aircraft)			H3W (72 Aircraft)		
				DNL <sub>mr</sub>	CDNL	Booms/ Day	DNL <sub>mr</sub>	CDNL	Booms/ Day	DNL <sub>mr</sub>	CDNL	Booms/ Day
Beak MOAs/overlying ATCAAs	<45	49	1.4	45	50	1.6	47	50	1.7	49	50	1.8
Pecos MOA/ATCAAs	<45	46	0.4	46	47	0.4	48	47	0.5	49	47	0.5
Cato MOA/ATCAAs	<45	<45	0.1	<45	<45	0.1	45	<45	0.1	46	<45	0.2
Talon MOA/ATCAAs	54	N/A	N/A	57	N/A	N/A	58	N/A	N/A	59	N/A	N/A
R-5107 (Red Rio)	59	48	0.6	63	48	0.6	65	48	0.6	66	48	0.6
R-5107 (Oscura)	57	47	0.5	62	47	0.5	65	47	0.5	66	48	0.5
R-5107 (Lava E/W)	61	52	1.5	63	52	1.6	64	52	1.6	64	53	1.7
R-5107 (Mesa L/H)	63	52	1.5	63	52	1.6	64	52	1.6	64	52	1.6
R-5107 (Yonder)	63	53	1.8	63	53	1.8	64	53	1.8	65	53	1.9
R-5103 (Centennial)	54	47	0.5	58	47	0.5	60	47	0.5	62	47	0.5
R-5103 (McGregor)	56	45	0.3	59	46	0.4	60	47	0.5	62	47	0.5
IR-133/142	55	N/A	N/A	57	N/A	N/A	59	N/A	N/A	60	N/A	N/A
IR-134-195	49	N/A	N/A	52	N/A	N/A	53	N/A	N/A	54	N/A	N/A
IR-192/194	53	N/A	N/A	56	N/A	N/A	57	N/A	N/A	58	N/A	N/A

Airspace	F-35A Beddown Scenarios H1, H2, H3, H4, H5														
	H1 (24 Aircraft)			H2 (48 Aircraft)			H3 (72 Aircraft)			H4 (96 Aircraft)			H5 (120 Aircraft)		
	DNL <sub>mr</sub>	CDNL	Booms/ Day	DNL <sub>mr</sub>	CDNL	Booms/ Day	DNL <sub>mr</sub>	CDNL	Booms/ Day	DNL <sub>mr</sub>	CDNL	Booms/ Day	DNL <sub>mr</sub>	CDNL	Booms/ Day
Beak MOAs/overlying ATCAAs	<45	46	1.0	47	46	1.2	48	47	1.3	50	47	1.5	51	48	1.6
Pecos MOA/ATCAAs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cato MOA/ATCAAs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Talon MOA/ATCAAs	53	N/A	N/A	55	N/A	N/A	56	N/A	N/A	57	N/A	N/A	58	N/A	N/A
R-5107 (Red Rio)	61	45	0.3	64	45	0.3	66	45	0.3	67	46	0.3	68	46	0.4
R-5107 (Oscura)	61	45	0.3	64	46	0.3	66	46	0.4	67	46	0.4	68	46	0.4
R-5107 (Lava E/W)	62	52	1.4	64	52	1.5	64	52	1.5	65	52	1.6	66	52	1.7
R-5107 (Mesa L/H)	63	52	1.4	64	52	1.4	64	52	1.4	65	52	1.5	65	52	1.5
R-5107 (Yonder)	63	51	1.3	64	51	1.3	65	51	1.3	65	52	1.4	66	52	1.4
R-5103 (Centennial)	56	<45	0.2	59	43	0.2	61	44	0.2	62	44	0.3	63	45	0.3
R-5103 (McGregor)	59	45	0.3	61	46	0.4	63	46	0.4	64	47	0.5	65	48	0.5
IR-133/142	57	N/A	N/A	59	N/A	N/A	60	N/A	N/A	61	N/A	N/A	62	N/A	N/A
IR-134/195	52	N/A	N/A	53	N/A	N/A	54	N/A	N/A	55	N/A	N/A	56	N/A	N/A
IR-192/194	56	N/A	N/A	57	N/A	N/A	58	N/A	N/A	59	N/A	N/A	60	N/A	N/A

Note: See EIS, Table HO 3.2-4. Noise levels beneath MOAs listed also include noise generated by aircraft operating in overlying ATCAAs; airspace units in which supersonic noise levels are "N/A" are not authorized for supersonic flights.

**Natural and Cultural Resources.** The previous and ongoing exposure of wildlife to training by other aircraft in the airspace would result in no anticipated significant adverse effects on vegetation or wildlife from overflights or noise. Measures to avoid the potential for wildland fire from flare use would result in no increased fire risk. No impacts on historic properties under airspace associated with Holloman AFB are expected under this alternative.

Table 24 presents the minority, low-income, and youth populations under the training airspace.

**Table 24. Holloman AFB Populations of Concern Under the Training Airspace**

<i>Airspace Units</i>	<i>Counties Overflowed</i>	<i>Total Affected Population (2010)</i>	<i>Minority</i>	<i>Percentage Minority</i>	<i>Low-Income</i>	<i>Percentage Low-Income</i>	<i>Youth</i>	<i>Percentage Youth</i>
Beak A/B/C MOAs and overlying Cowboy ATCAA	Chaves Lincoln Otero Socorro Torrance	65,498	26,689	40.7	10,743	16.4	14,731	22.5
Cato MOA <sup>1</sup>	Catron Socorro	2,184	801	36.7	385	17.6	424	19.4
Pecos MOAs <sup>1</sup>	Chaves De Baca Guadalupe Lincoln Roosevelt	4,309	1,663	38.6	850	19.7	1,003	23.3
Talon Low/High West/High East MOA	Chaves Eddy Otero	40,280	16,394	40.7	6,961	17.3	10,424	25.9
R-5107B (Yonder and Lava Ranges)	Doña Ana Lincoln Otero Sierra Socorro	25,982	12,596	48.5	4,555	17.5	6,431	24.7
R-5107 C/H (Mesa Ranges)	Socorro Torrance	1,532	918	59.9	338	22.1	388	25.4
R-5107 B/J (Red Rio Range)	Lincoln Socorro	17,933	10,284	57.3	4,892	27.3	3,980	22.2
R-5107 B/D (Oscura Range)	Lincoln Otero	802	328	40.8	138	17.2	228	28.4
R-5103 (McGregor and Centennial)	Otero	1,661	1,024	61.6	450	27.1	446	26.9
IR-133/142	Guadalupe Lincoln Socorro Torrance	6,795	3,314	48.8	1,304	19.2	1,479	21.8
IR-134/195	Chaves Eddy Otero	7,078	4,356	61.5	2,020	28.5	2,026	28.6
IR-192/194	Chaves Eddy Otero Culberson, Texas Hudspeth, Texas	10,477	6,240	59.6	2,713	25.9	2,913	27.8

<sup>1</sup>. Airspace unit is included under the primary use airspace under Scenarios H1W, H2W, and H3W only.

Note: See EIS, Table HO 3.12-4.

**Recreation and Rural Communities.** Rural communities near or adjacent to the recreational areas would experience noise levels comparable to those in Table 25. Residents of communities, such as Weed, New Mexico, expressed annoyance with overflights. These communities are under the overlap of IR-134/195 and IR-192/194. No Action noise levels of 55 dB DNL could increase to 62 dB DNL under Scenario H5.

The projected increase in noise levels by airspace over recreational use areas are presented in Table 25. No new types of impacts would be introduced into training airspace as a result of the beddown of the F-35A. Projected training operations at the auxiliary airfields that would be used by F-35A training aircraft based at Holloman AFB are presented in Table 26.

**Table 25. Holloman AFB Average Noise Levels by Airspace and Associated Recreational Use Areas<sup>1</sup>**

Airspace	Associated Recreational Resource	Baseline Noise Level (DNL <sub>mr</sub> )	Projected Average Noise Level(DNL <sub>mr</sub> ) <sup>2</sup>				
			Scenario (No. of Aircraft)				
			H1W/H1 (24)	H2W/H2 (48)	H3W/H3 (72)	H4 (96)	H5 (120)
Beak MOAs/ATCAA	Capitan Mountain Wilderness, White Mountain Wilderness, Ski Apache, Lincoln NF, Cibola NF, Little Black Peak Carrizozo Lava Flow WSA, Valley of Fires SP	<45	45/<45	47/47	49/48	50	51
Pecos MOA/ATCAA	Sumner Lake SP	<45	46/N/A	48/N/A	49/N/A	N/A	N/A
Cato MOA/ATCAA	Withington Wilderness	<45	<45/N/A	45/N/A	46/N/A	N/A	N/A
Talon MOA/ATCAA	Avalon Reservoir, Brantley Reservoir and SP, Living Desert SP, Lincoln NF	54	57/53	58/55	59/56	57	58
R-5107 Lava E/W	Trinity Site, MacDonald Ranch	61	63/62	64/64	64/64	65	66
R-5107 Mesa L/H	Salinas Pueblo Missions NM (Gran Quivira), Sevilleta NWR	63	63/63	64/64	64/64	65	65
R-5107 Yonder, B/D	San Andres NWR, White Sands NM	63	63/63	64/64	65/65	65	66
R-5103 Centennial	Otero Mesa- no public access	54	58/56	60/59	62/61	62	63
R-5103 McGregor	Otero Mesa, Lincoln NF, Oliver Lee Memorial SP, Culp Canyon WSA	56	59/59	60/61	62/63	64	65
IR-133/142	Capitan Mountain Wilderness, Salinas Pueblo Missions NM (Gran Quivira, Abo, and Quarai Units), Valley of Fires SP, Lincoln NF	55	57/57	59/59	60/60	61	62
IR-134/195	Brokeoff Mountains WSA, Culp Canyon WSA, Devil's Den Canyon WSA, Guadalupe Escarpment WSA, Lincoln NF	49	52/52	53/53	54/54	55	56
IR-192/194	Brantley Reservoir, Culp Canyon WSA, Guadalupe Mountains NP, Lincoln NF, Carlsbad Caverns NP	53	56/56	57/57	58/58	59	60
R-5107B	White Sands National Monument	63	63/63	64/64	65/65	65	66
R-5107B/D	White Sands National Monument	63	63/63	64/64	65/65	65	66

<sup>1</sup> Does not include list of Wilderness Study Areas (WSA);

<sup>2</sup> X/Y represents noise level with and without F-22 mission.

Note: See EIS, Table HO 3.10-9.

Key: NF=National Forest; NM=National Monument; SP=State Park.

**Native American Concerns.** The Air Force has contacted the following tribes to consult on a government-to-government basis regarding their concerns about potential impacts on traditional resources and TCPs under the airspace associated with Holloman AFB: Fort Sill Apache, Jicarilla Apache Nation, Mescalero Apache Tribe, Apache Tribe of Oklahoma, White Mountain Apache Tribe, Ashiwi Pueblo, Comanche Nation, Haaku Pueblo, Hopi Tribe, Isleta del Sur Pueblo, Isleta Pueblo, Kiowa Tribe of Oklahoma, Laguna Pueblo, Alamo Navajo Chapter, Ramah Navajo Chapter, Sandia Pueblo, Tamaya Pueblo, and Zia Pueblo. The Mescalero Apache Tribe indicated in an oral response and the Isleta del Sur Pueblo indicated in a written response that they had no comments on the Air Force Proposal. The Hopi Tribe responded in writing that they consider prehistoric archaeological resource as TCPs, and that unless additional surveys identify prehistoric cultural resources or any are inadvertently discovered, they would defer further consultation on the proposed project to the State Historic

Preservation offices and other interested tribes and parties. More details on the consultation process to date are provided in the EIS.

**Auxiliary Airfields.** Auxiliary airfields for Holloman AFB F-35A training aircraft would be Biggs Army Airfield (AAF) on Fort Bliss, El Paso International Airport (EPIA), and Roswell International Air Center (RIAC). The F-35A training scenarios are presented in Table 26.

**Table 26. Baseline and Projected Annual Holloman AFB Auxiliary Airfield Operations at Biggs AAF, EPIA, and RIAC**

Aircraft Type	Baseline Annual Airfield Operations	Projected Annual F-35A Airfield Operations				
		H1W/H1	H2W/H2	H3W/H3	H4	H5
<b>Biggs Army Airfield (Biggs AAF)</b>						
F-35A	0	3,884	7,768	11,652	15,536	19,420
F-16	0	0	0	0	0	0
Other Military Aircraft	126,301	126,301	126,301	126,301	126,301	126,301
<b>Total</b>	<b>126,301</b>	<b>130,185</b>	<b>134,069</b>	<b>137,953</b>	<b>141,837</b>	<b>145,721</b>
<b>El Paso International Airport (EPIA)</b>						
F-35A	0	2,871	5,742	8,613	11,484	14,355
F-16	0	0	0	0	0	0
Other Military Aircraft	817	817	817	817	817	817
Civilian Aircraft	108,373	108,373	108,373	108,373	108,373	108,373
<b>Total</b>	<b>109,190</b>	<b>112,061</b>	<b>114,932</b>	<b>117,803</b>	<b>120,674</b>	<b>123,545</b>
<b>Roswell International Air Center (RIAC)</b>						
Scenarios H1W, H2W, H3W						
F-35A	0	3,208	6,416	9,624	N/A	N/A
F-16	8,960	8,960	8,960	8,960	N/A	N/A
Other Military Aircraft	36,056	36,056	36,056	36,056	N/A	N/A
Civilian Aircraft	24,716	24,716	24,716	24,716	N/A	N/A
<b>Total</b>	<b>69,732</b>	<b>72,940</b>	<b>76,148</b>	<b>79,356</b>	<b>N/A</b>	<b>N/A</b>
Scenarios H1, H2, H3, H4, H5						
F-35A	0	3,208	6,416	9,624	12,832	16,040
F-16	8,960	0	0	0	0	0
Other Military Aircraft	36,056	36,056	36,056	36,056	36,056	36,056
Civilian Aircraft	24,716	24,716	24,716	24,716	24,716	24,716
<b>Total</b>	<b>69,732</b>	<b>63,980</b>	<b>67,188</b>	<b>70,396</b>	<b>73,604</b>	<b>76,812</b>

Note: See EIS, Table HO 2.2-5.

Figure 8 displays the calculated 65 dB DNL contours for EPIA and Biggs AAF from F-35A training activity.

Figure 9 and Figure 10 display the calculated 65 dB DNL contours for RIAC from the F-35A training scenarios presented in Table 26.

Table 27 presents more detailed population and land use information associated with the noise contours for Biggs AAF. Table 28 summarizes the potentially affected population for EPIA, and

Table 29 provides comparable information for RIAC.

Table 30 lists the number and percentage of minority and low-income populations affected by noise levels greater than 65 dB DNL under each F-35A aircraft scenario. The number of schools affected by noise levels greater than 65 dB DNL under each aircraft scenario is also included in Table 30.

Auxiliary field training could significantly impact populations, schools, and child care centers near EPIA and RIAC.

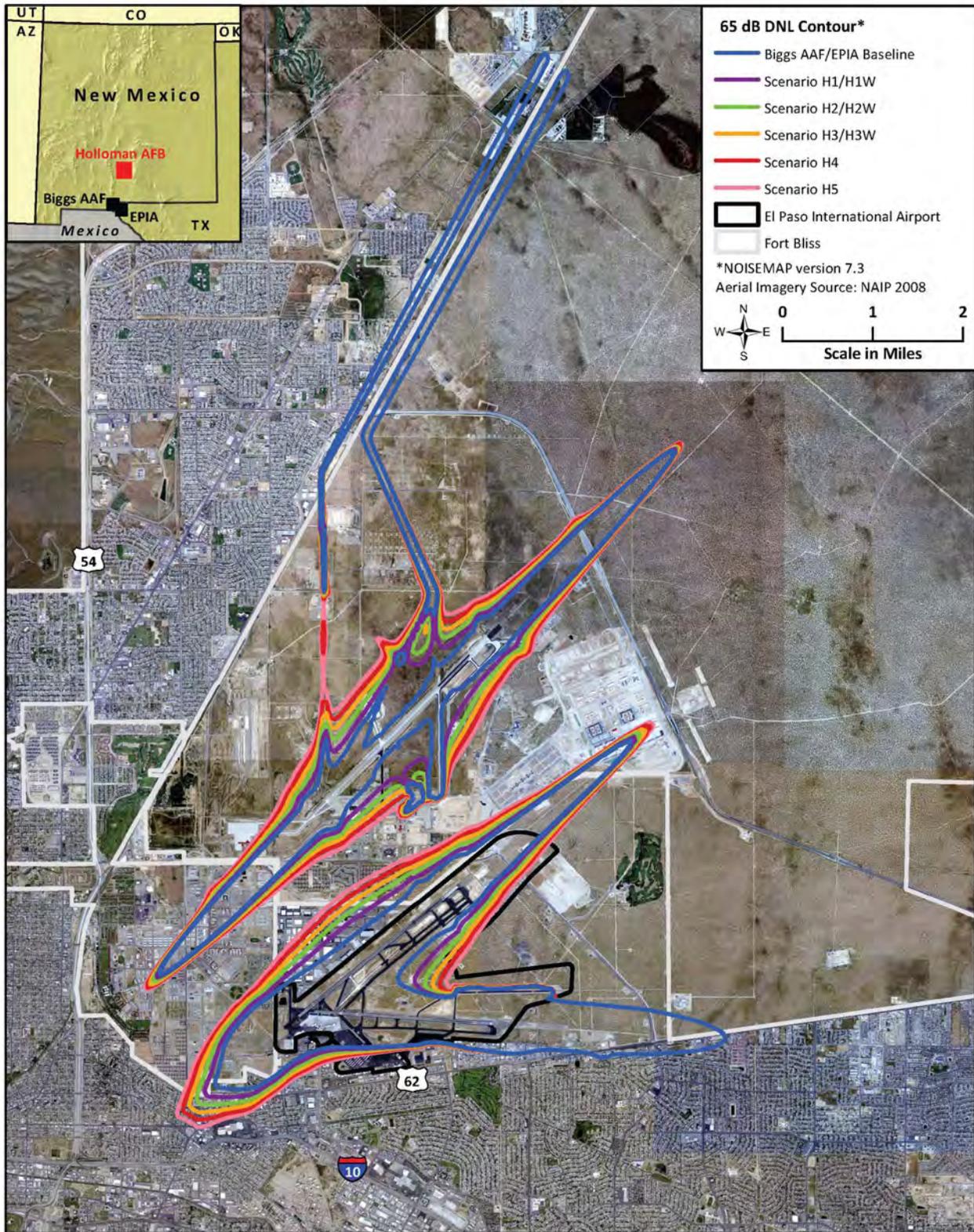


Figure 8. 65 dB DNL Noise Contours at EPIA and Biggs AAF

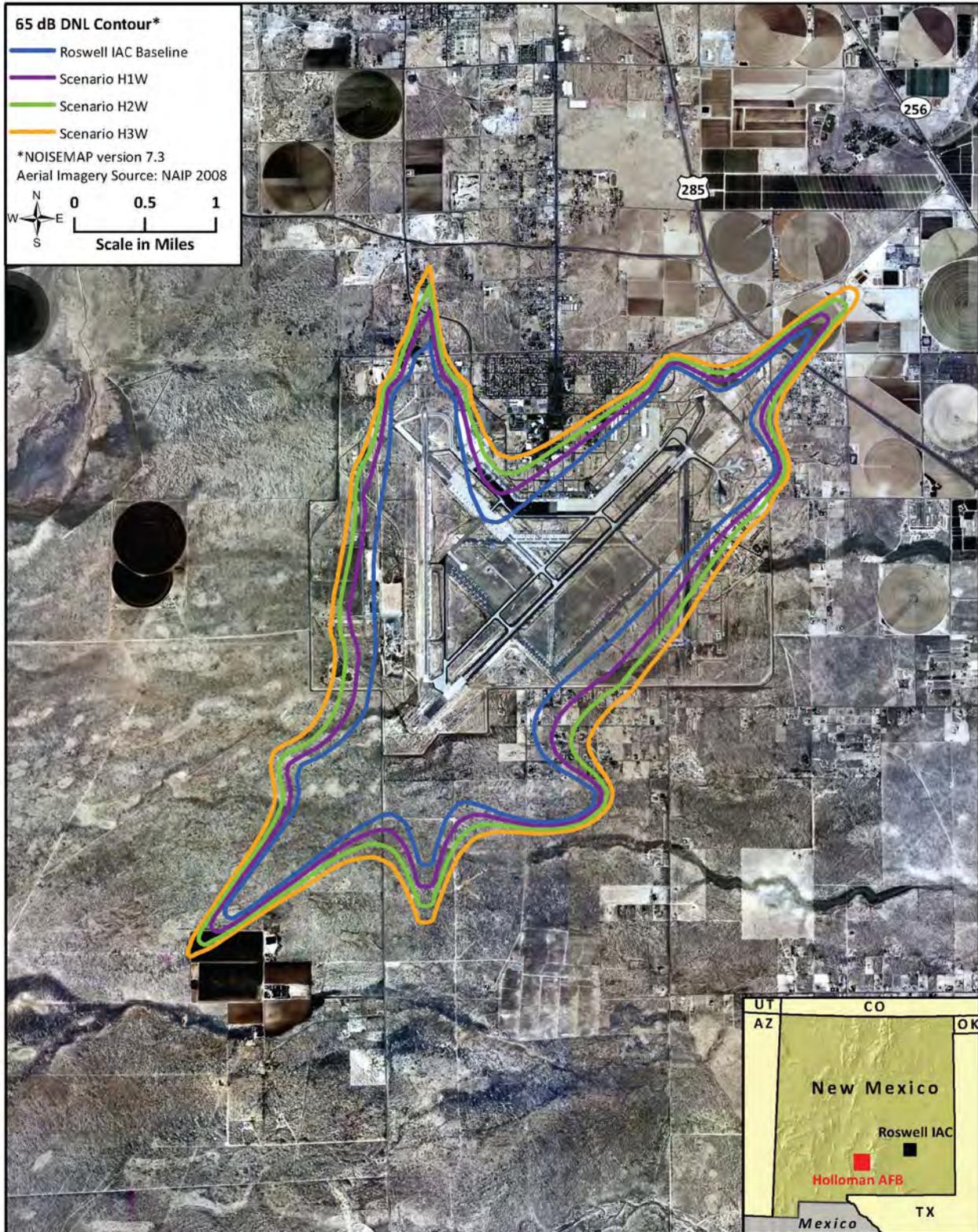


Figure 9. 65 dB DNL Noise Contours at RIAC Under Scenarios H1W, H2W, and H3W

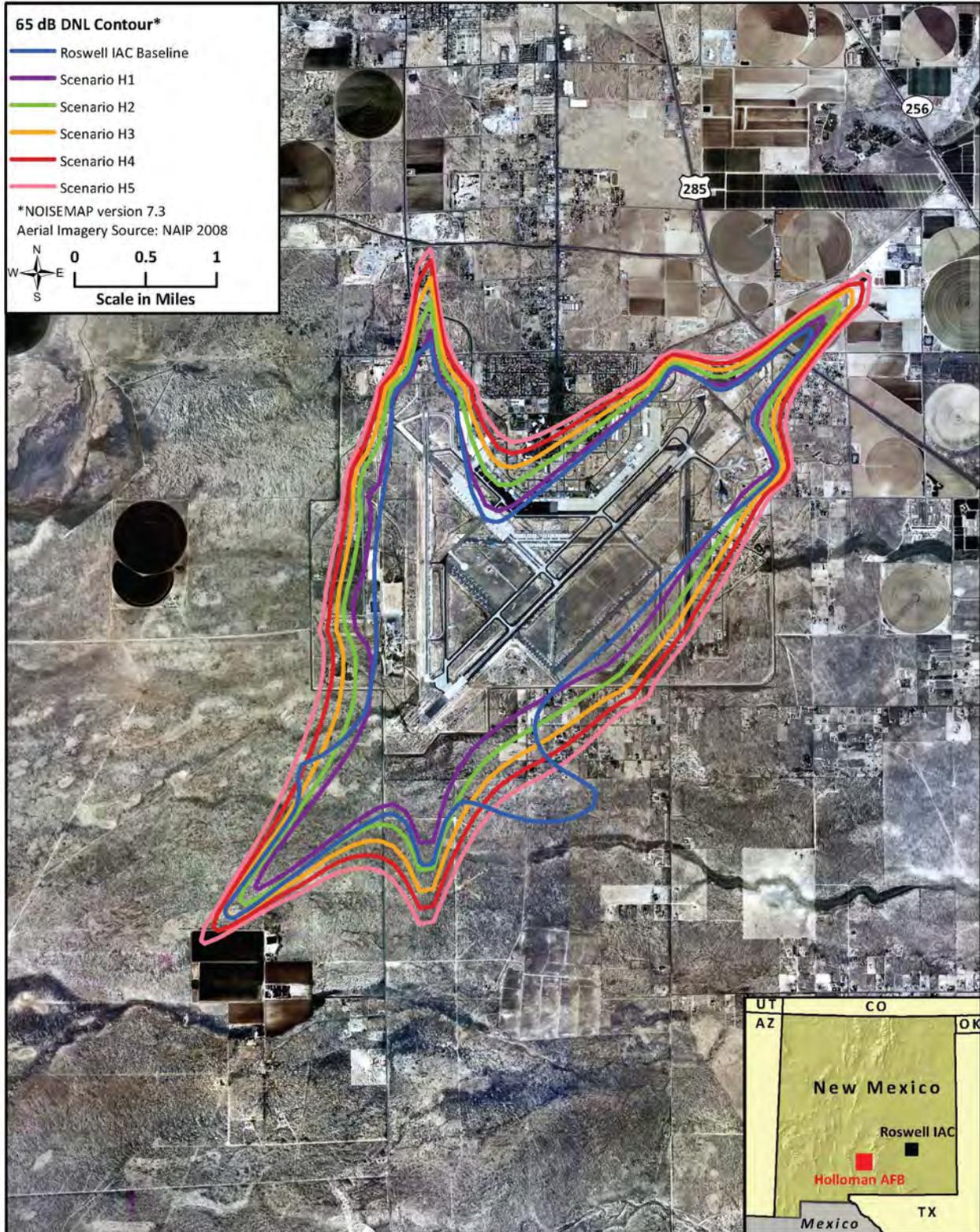


Figure 10. 65 dB DNL Noise Contours at RIAC Under Scenarios H1, H2, H3, H4, and H5

**Table 27. Population and Acreage Under Noise Contours Near Biggs AAF,  
Baseline Conditions and F-35A Scenarios**

Contour Interval (dB DNL)	Population <sup>1</sup>				Total Area <sup>1</sup>				Population <sup>1</sup>				Total Area <sup>1</sup>			
	Baseline								H1 and H1W (24 Aircraft)				H2 and H2W (48 Aircraft)			
	Number	Change	Acres	Change	Number	Change	Acres	Change	Number	Change	Acres	Change				
Total >65	638	N/A	257	N/A	667	29	259	2	701	63	262	5				
65-69	621	N/A	255	N/A	643	22	257	2	666	45	259	4				
70-74	17	N/A	2	N/A	24	7	2	0	35	18	3	1				
75-79	0	N/A	0	N/A	0	0	0	0	0	0	0	0				
80-84	0	N/A	0	N/A	0	0	0	0	0	0	0	0				
≥85	0	N/A	0	N/A	0	0	0	0	0	0	0	0				
Contour Interval (dB DNL)	H3 and H3W (72 Aircraft)				H4 (96 Aircraft)				H5 (120 Aircraft)							
	Number	Change	Acres	Change	Number	Change	Acres	Change	Number	Change	Acres	Change				
	Total >65	736	98	265	8	769	131	268	11	786	148	270	13			
65-69	688	67	262	7	709	88	264	9	714	93	266	11				
70-74	48	31	3	1	60	43	4	2	72	55	4	2				
75-79	0	0	0	0	0	0	0	0	0	0	0	0				
80-84	0	0	0	0	0	0	0	0	0	0	0	0				
≥85	0	0	0	0	0	0	0	0	0	0	0	0				

<sup>1</sup>. Total area lists the off-installation affected area only.

Note: See EIS, Table HO 3.2-8.

**Table 28. Population and Acreage Under Noise Contours at EPIA,  
Baseline Conditions and F-35A Scenarios**

Contour Interval (dB DNL)	Population <sup>1</sup>				Total Area <sup>1</sup>				Population <sup>1</sup>				Total Area <sup>1</sup>			
	Baseline								H1 and H1W (24 Aircraft)				H2 and H2W (48 Aircraft)			
	Number	Change	Acres	Change	Number	Change	Acres	Change	Number	Change	Acres	Change				
Total >65	1,295	N/A	1,201	N/A	1,643	348	1,388	187	2,241	946	1,526	325				
65-69	1,295	N/A	912	N/A	1,643	348	999	87	2,240	945	1,076	164				
70-74	0	N/A	236	N/A	0	0	305	69	1	1	326	90				
75-79	0	N/A	48	N/A	0	0	79	31	0	0	120	72				
80-84	0	N/A	4	N/A	0	0	4	0	0	0	4	0				
≥85	0	N/A	1	N/A	0	0	1	0	0	0	0	(1)				
Contour Interval (dB DNL)	H3 and H3W (72 Aircraft)				H4 (96 Aircraft)				H5 (120 Aircraft)							
	Number	Change	Acres	Change	Number	Change	Acres	Change	Number	Change	Acres	Change				
	Total >65	2,590	1,295	1,648	447	2,857	1,562	1,768	567	3,179	1,884	1,887	686			
65-69	2,589	1,294	1,148	236	2,856	1,561	1,225	313	3,178	1,883	1,302	390				
70-74	1	1	344	108	1	1	361	125	1	1	380	144				
75-79	0	0	143	95	0	0	156	108	0	0	165	117				
80-84	0	0	12	8	0	0	25	21	0	0	39	35				
≥85	0	0	1	0	0	0	1	0	0	0	1	0				

<sup>1</sup>. Total area lists the off-airport affected area only. (Number) denotes a negative number.

Note: See EIS, Table HO 3.2-9.

**Table 29. Population and Acreage Under Noise Contours Near RIAC,  
Baseline Conditions and F-35A Scenarios**

Contour Interval (dB DNL)	Population <sup>1</sup>		Total Area <sup>1</sup>		Population <sup>1</sup>		Total Area <sup>1</sup>		Population <sup>1</sup>		Total Area <sup>1</sup>	
	Baseline				H1W (24 Aircraft)				H2W (48 Aircraft)			
	Number	Change	Acres	Change	Number	Change	Acres	Change	Number	Change	Acres	Change
Total >65	61	N/A	3,703	N/A	169	108	4,484	781	255	194	5,117	633
65-69	60	N/A	1,819	N/A	167	107	2,111	292	249	189	2,394	283
70-74	1	N/A	904	N/A	2	1	1,068	164	6	5	1,181	113
75-79	0	N/A	490	N/A	0	0	560	70	0	0	661	101
80-84	0	N/A	351	N/A	0	0	435	84	0	0	442	7
≥85	0	N/A	139	N/A	0	0	310	171	0	0	439	129
Contour Interval (dB DNL)	H3W (72 Aircraft)				H1 (24 Aircraft)				H2 (48 Aircraft)			
	Number	Change	Acres	Change	Number	Change	Acres	Change	Number	Change	Acres	Change
	Total >65	358	297	5,676	1,192	66	5	3,426	(277)	164	103	4,138
65-69	338	278	2,659	548	66	6	1,483	(336)	163	103	1,799	(20)
70-74	20	19	1,290	222	0	(1)	827	(77)	1	0	964	60
75-79	0	0	742	182	0	0	476	(14)	0	0	566	76
80-84	0	0	455	20	0	0	411	60	0	0	422	71
≥85	0	0	530	220	0	0	229	90	0	0	387	248
Contour Interval (dB DNL)	H3 (72 Aircraft)				H4 (96 Aircraft)				H5 (120 Aircraft)			
	Number	Change	Acres	Change	Number	Change	Acres	Change	Number	Change	Acres	Change
	Total >65	247	186	4,745	1,042	368	307	5,295	1,592	558	497	5,805
65-69	240	180	2,086	267	345	285	2,359	540	509	449	2,616	797
70-74	7	6	1,079	175	23	22	1,189	285	49	48	1,292	388
75-79	0	0	657	167	0	0	719	229	0	0	779	289
80-84	0	0	435	84	0	0	461	110	0	0	482	131
≥85	0	0	530	349	0	0	567	428	0	0	636	497

<sup>1</sup> Population and total area affected both on- and off-airport. (Number) denotes a negative number.  
Note: See EIS, Table HO 3.2-7.

**Table 30. Populations of Concern Affected by Noise Levels Greater Than 65 dB DNL at  
Holloman AFB Auxiliary Airfields, Baseline Conditions and F-35A Scenarios**

		Total Affected Population	Number (Percentage) Minority	Number (Percentage) Low-Income	Number of Schools	Number of Child Care Centers
Biggs AAF	Baseline	638	452 (70.8)	147 (23.0)	0	0
	Scenarios H1W/H1 (24 Aircraft)	667	467 (70.0)	152 (22.8)	0	0
	Scenarios H2W/H2 (48 Aircraft)	700	482 (68.9)	156 (22.3)	0	0
	Scenarios H3W/H3 (72 Aircraft)	736	501 (68.1)	162 (22.0)	0	0
	Scenario H4	769	516 (67.1)	166 (21.6)	0	0
	Scenario H5	786	524 (66.7)	167 (21.2)	0	0
EPIA	Baseline	1,295	1,184 (91.4)	384 (29.7)	3	2
	Scenarios H1W/H1 (24 Aircraft)	1,644	1,482 (90.1)	487 (29.6)	5	3
	Scenarios H2W/H2 (48 Aircraft)	2,240	1,971 (88.0)	664 (29.6)	5	3
	Scenarios H3W/H3 (72 Aircraft)	2,590	2,270 (87.6)	767 (29.6)	6	3
	Scenario H4	2,857	2,503 (87.6)	846 (29.6)	7	3
	Scenario H5	3,179	2,794 (87.9)	942 (29.6)	7	4
RIAC	Baseline(H1W/H2W/H3W)	61	37 (60.7)	13 (21.3)	2	0
	Scenario H1W (24 Aircraft)	169	115 (68.0)	26 (15.4)	3	1
	Scenario H2W (48 Aircraft)	255	175 (68.6)	57 (22.4)	3	1
	Scenario H3W (72 Aircraft)	357	241 (67.5)	79 (22.1)	3	1
	Baseline (H1/H2/H3/H4/H5)	61	37 (60.7)	13 (21.3)	2	0
	Scenario H1 (24 Aircraft)	66	48 (72.7)	11 (16.7)	3	1
	Scenario H2 (48 Aircraft)	164	119 (72.6)	36 (22.0)	3	1
	Scenario H3 (72 Aircraft)	247	176 (71.3)	55 (22.3)	3	1
	Scenario H4	368	251 (68.2)	82 (22.3)	4	1
Scenario H5	558	375 (67.2)	124 (22.2)	4	1	

Note: See EIS, Tables HO 3.12-6, HO 3.12-7, and HO 3.12-8.

## 8. Luke AFB Alternative Overview

### 8.1 Luke AFB Alternative – Construction

Luke AFB’s infrastructure and base resources would accommodate up to six increments of 24 PAA or up to 144 training aircraft. Some of the F-16s currently stationed at Luke AFB are programmed for retirement, while two F-16 training squadrons are scheduled to be relocated to Holloman AFB. Two F-16 Foreign Military Sales squadrons with 26 aircraft would remain. Figure 11 presents an overview of the airfield area, and Table 31 summarizes the amount of disturbed area associated with the renovation and construction needed under each beddown scenario. Renovations would be required for the existing facilities and facilities vacated by the departing F-16 aircraft. The beddown of 48 or more aircraft would require additional construction for squadron operations, maintenance, and hangars. Construction of new academic training facilities (including simulators, additional hangar bays, and squadron operations) would be required.

**Table 31. F-35A Construction at Luke AFB Under Each Aircraft Scenario**

Scenario	Projects		Area (Square Feet)
	Renovation	New/ Addition	
L1 (24 Aircraft)	20	11	679,631
L2 (48 Aircraft)	22	14	761,691
L3 (72 Aircraft)	24	21	814,051
L4 (96 Aircraft)	26	25	933,951
L5 (120 Aircraft)	28	27	985,651
L6 (144 Aircraft)	32	30	1,067,051

Note: See EIS, Table LU 2.1–2.

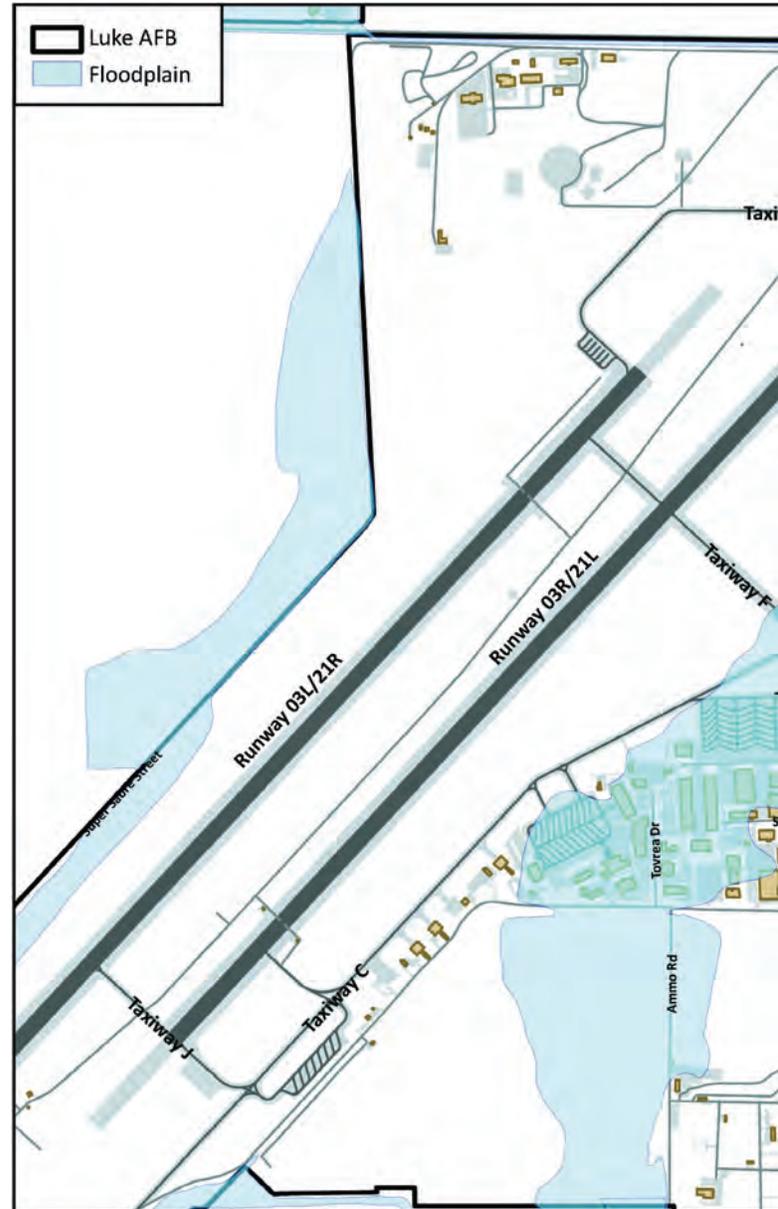
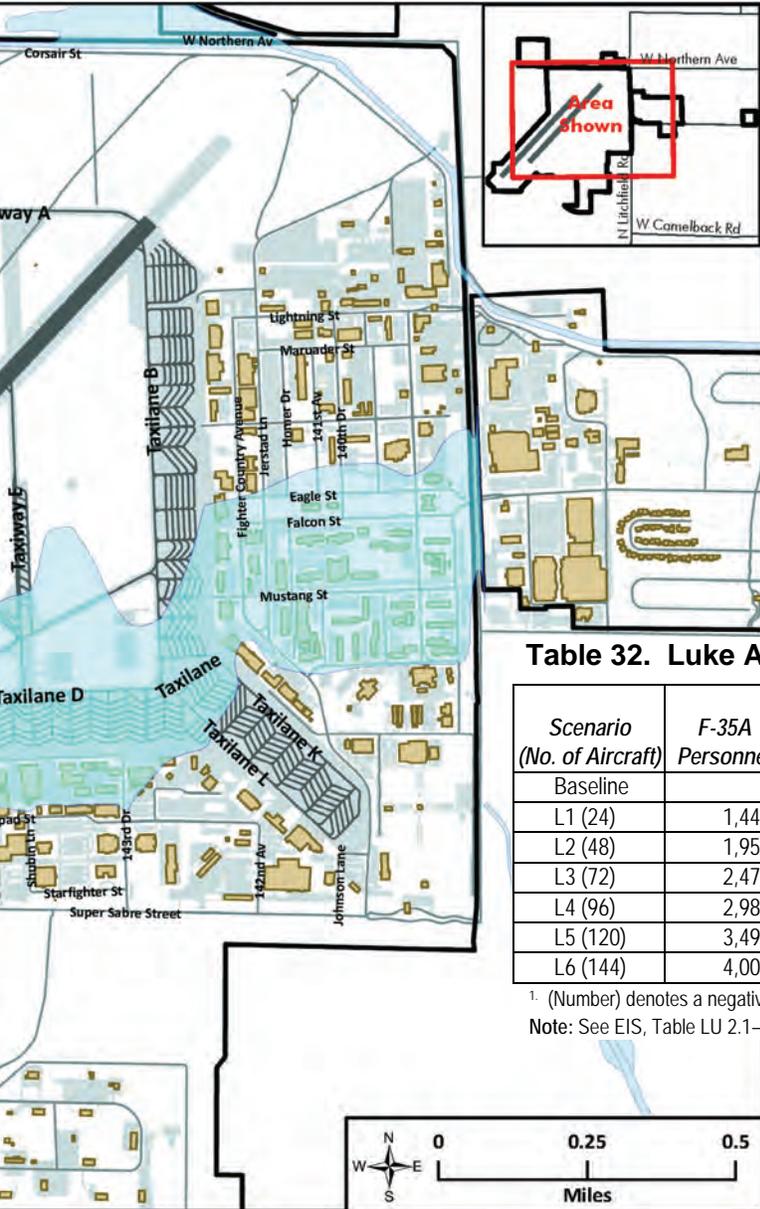


Figure 11.

## 8.2 Luke AFB Alternative – Personnel Requirements

Beddown of the F-35A training mission would also require basing sufficient and appropriately skilled personnel to operate and maintain the mission and provide necessary support services. Each aircraft scenario has a different manpower requirement (see Table 32).



## 8.3 Luke AFB Alternative – Flight Operations

The F-35A would employ similar departure, closed patterns, and landing procedures as currently used by Luke AFB aircraft. F-35A operations (see Table 33) would adhere to existing restrictions and avoidance procedures. A variety of potential operational mitigations were evaluated for Luke AFB, including runway usage, additional altitude hold downs, and additional use of auxiliary fields. The potential mitigations were determined to not result in noticeable noise reduction and/or to unacceptably affect safety of operations.

**Table 32. Luke AFB F-35A Training Mission Personnel Changes**

Scenario (No. of Aircraft)	F-35A Personnel	F-35A Contractor Support	F-35A Students	Total Base Personnel	Total Dependents	Net Change <sup>1</sup>
Baseline	–	–	–	6,842	9,821	N/A
L1 (24)	1,449	50	30	6,464	8,923	(1,276)
L2 (48)	1,959	50	60	7,004	10,045	386
L3 (72)	2,470	50	90	7,545	11,170	2,052
L4 (96)	2,980	50	120	8,085	12,292	3,714
L5 (120)	3,490	50	150	8,625	13,414	5,376
L6 (144)	4,001	50	180	9,166	14,538	7,041

<sup>1</sup>. (Number) denotes a negative number.  
Note: See EIS, Table LU 2.1–3.

**Table 33. Luke AFB Baseline and Projected Annual Airfield Operations**

	Baseline Annual Airfield Operations	Projected Annual F-35A Airfield Operations					
		Scenario L1 (24)	Scenario L2 (48)	Scenario L3 (72)	Scenario L4 (96)	Scenario L5 (120)	Scenario L6 (144)
F-35A	–	12,662	25,342	37,986	50,648	63,310	75,972
F-16	82,393	16,364	16,364	16,364	16,364	16,364	16,364
Transient	2,820	1,097	1,097	1,097	1,097	1,097	1,097
<b>Total</b>	<b>85,213</b>	<b>30,123</b>	<b>42,803</b>	<b>55,447</b>	<b>68,109</b>	<b>80,771</b>	<b>93,433</b>

Note: Transient aircraft include A-10, C-130, C-21, C-5, F-15, F-18, T-1, C-135, and C-130. See EIS, Table LU 2.1–1.

## 8.4 Luke AFB Alternative – Environmental Consequences

**Noise and Land Use.** In a typical non-afterburner departure configuration, the F-35A generates an overflight sound exposure level approximately 6 dB higher than the F-16C equipped with a Pratt and Whitney 220 engine at the location studied (Cotton Lane Community Church). In traffic pattern flight, the F-35A is approximately 9 dB louder than the F-16C. In arrival flight, the F-35A is approximately 15 dB louder than the F-16C. The implementation of regulatory requirements to reduce noise impacts in areas adjacent to Luke AFB was addressed in State Statutes (Arizona Revised

Statutes [ARS] 28-8481, -8482) adopted by the State of Arizona which utilized noise contours from a 1988 Joint Land Use Study (JLUS). Figure 12 presents the 65 dB DNL contours associated with baseline conditions, each beddown scenario, and the 65 dB DNL contour from the 1988 JLUS.

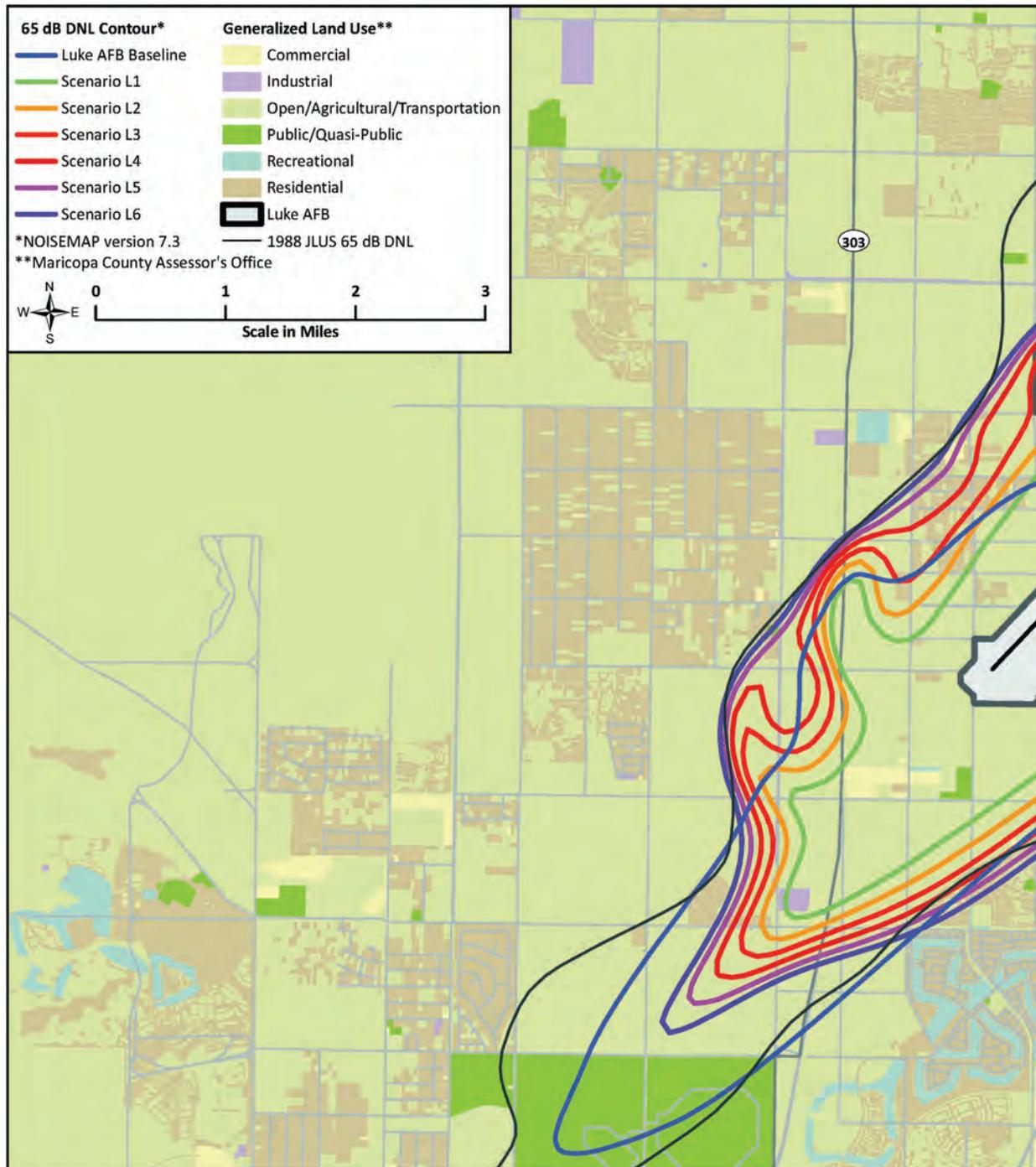


Figure 12. Land Use and Noise Contours in Areas Surrounding F-35A Training Basing Environmental Impact Statement

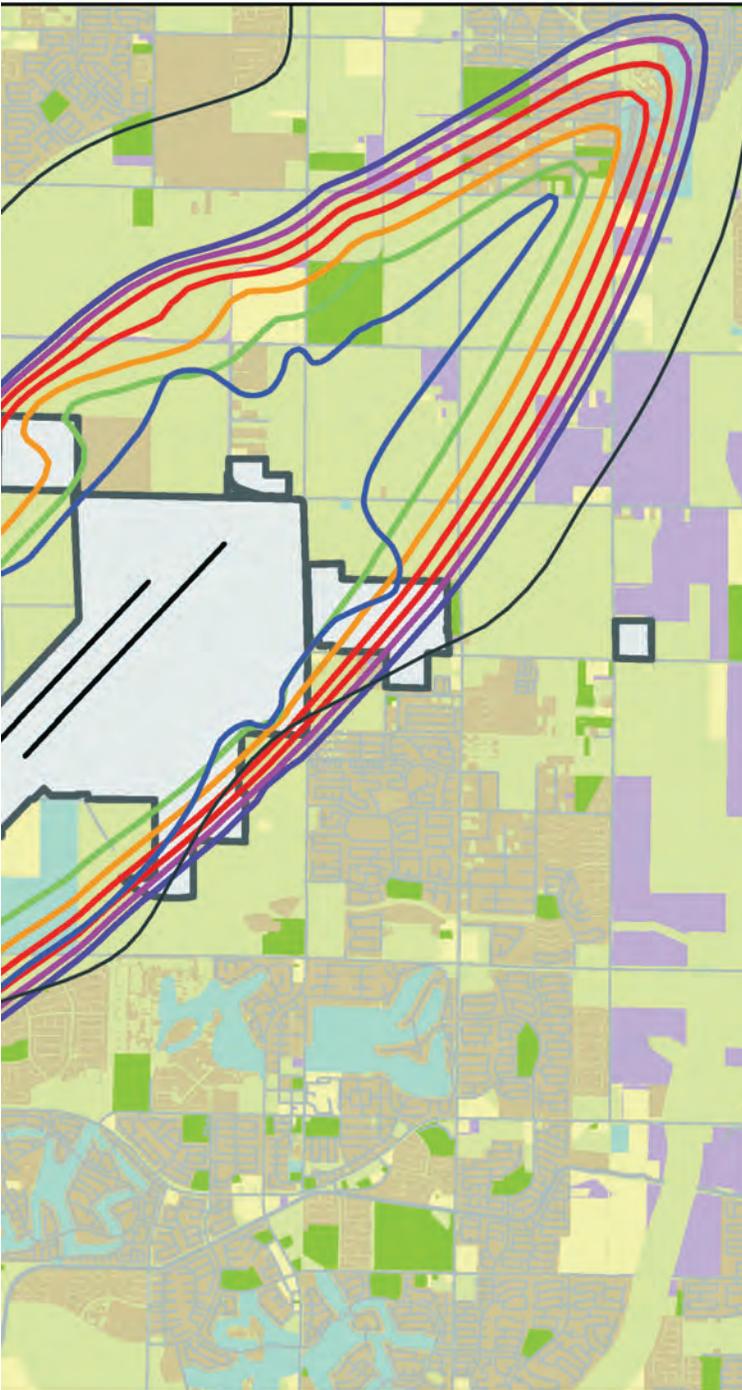
The State has codified land use limitations and mandatory noise attenuation measures for land use categories near military airports, including within the 1988 JLUS 65 dB DNL contour.

Table 34 summarizes acres and population under the baseline and scenario contours.

**Table 34. Population and Acreage Under Noise Contours Near Luke AFB, Baseline Conditions and F-35A Scenarios**

Contour Interval (dB DNL)	Population Affected (Off-Installation/Airport)		Total Area Affected (Off-Installation/Airport)	
	Number	Change	Acres	Change
<b>Baseline Conditions</b>				
Total >65	1,601	N/A	7,042	N/A
65-69	1,535	N/A	3,903	N/A
70-74	50	N/A	2,107	N/A
75 - ≥85	16	N/A	1,032	N/A
<b>Scenario L1 (24 Aircraft)</b>				
Total >65	200	(1,401)	4,763	(2,279)
65-69	149	(1,386)	3,173	(730)
70-74	38	(12)	1,309	(798)
75 - ≥85	13	(3)	281	(751)
<b>Scenario L2 (48 Aircraft)</b>				
Total >65	488	(1,113)	6,407	(635)
65-69	415	(1,120)	4,078	175
70-74	50	0	1,744	(363)
75 - ≥85	23	7	585	(447)
<b>Scenario L3 (72 Aircraft)</b>				
Total >65	1,181	(420)	7,916	874
65-69	1,090	(445)	4,903	1,000
70-74	59	9	2,135	28
75 - ≥85	32	16	878	(104)
<b>Scenario L4 (96 Aircraft)</b>				
Total >65	2,223	622	9,398	2,356
65-69	2,111	576	5,749	1,846
70-74	71	21	2,488	381
75 - ≥85	41	25	1,161	129
<b>Scenario L5 (120 Aircraft)</b>				
Total >65	3,216	1,615	10,679	3,637
65-69	3,078	1,543	6,420	2,517
70-74	88	38	2,816	709
75 - ≥85	50	34	1,443	411
<b>Scenario L6 (144 Aircraft)</b>				
Total >65	5,340	3,739	11,651	4,609
65-69	5,158	3,623	6,793	2,890
70-74	125	75	3,154	1,047
75 - ≥85	57	41	1,704	672

Note: (Number) denotes a negative number. See EIS, Table LU 3.2-1.



**Luke AFB, Baseline Conditions and F-35A Scenarios**

**Air Quality.** The net change in annual emissions between the 1999 base case and the basing of 24 to 144 F-35A training aircraft at Luke AFB would reduce emissions of all pollutants. Table 35 presents emission estimates for 144 F-35A training aircraft. Since the net effect of each basing action would not exceed any applicable conformity or PSD threshold, the F-35A beddown actions would produce less than significant air quality impacts.

**Table 35. Scenario L6 Annual Operational Emissions**

Activity	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub>
F-35A Operations and AGE	14.80	535.96	253.37	35.64	5.11	5.11	117,428
Transient Aircraft	8.61	24.08	6.59	0.76	0.19	0.18	1,497.07
GOVs	0.74	6.20	1.67	0.25	0.38	0.35	8,860
POVs	15.52	185.34	10.57	2.49	1.22	1.12	124,379
Nonroad	18.69	167.67	29.10	0.81	6.08	5.90	272,669
Point and Area Sources	22.16	9.64	9.98	2.53	2.19	2.02	125
F-16s Operations – All Sources	40.58	211.91	94.50	7.56	6.51	6.39	94,540
<b>Total Projected Emissions</b>	<b>121.10</b>	<b>1,140.81</b>	<b>405.77</b>	<b>50.03</b>	<b>21.67</b>	<b>21.07</b>	<b>619,497</b>
Year 1999 Base Case Emissions	499.63	1,882.06	635.02	73.34	47.21	45.84	789,009
Scenario L6 Minus Base Case Emissions	(378.52)	(741.25)	(229.25)	(23.31)	(25.54)	(24.77)	(169,512)
Maricopa County Conformity and PSD Thresholds	100	100	100	250	70	250	N/A
Exceeds Threshold?	No	No	No	No	No	No	N/A

Note: (Number) denotes a negative number. See EIS, Table LU 3.3-9.

**Safety.** Construction, renovation, and infrastructure improvement would be consistent with established safety-distances, Clear Zones, and Accident Potential Zones. Ordnance would be handled in accordance with explosive safety directives. The F-35A will have undergone approximately 10 years of testing before full-scale pilot training would occur at any of the bases addressed in this EIS. Historical trends show that mishap rates of all aircraft types decrease the longer an aircraft is operational as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. As the F-35A becomes more operationally mature, the aircraft mishap rate is expected to be comparable with a similarly sized aircraft with a similar mission. There would be no impacts on airfield safety.

**Socioeconomics and Environmental Justice.** Under Scenarios L5 and L6 two schools would be affected by noise levels between 65 and 69 dB DNL (see Table 36). Under Scenarios L5 and L6, the on-base child care center as well as two off-base child care centers would be affected by noise levels between 65 and 69 dB DNL.

Public concerns during EIS public hearings emphasized noise impacts. Transfers of residential property within the JLUS line are required to disclose that they are in a high noise area subject to noise levels of 65 dB DNL or greater whether or not the property is currently experiencing 65 dB DNL. Property values are discounted by the high noise level designation. Residential properties outside the JLUS line which could be newly impacted by 65 dB DNL would also be discounted due to the property transfer requirement to recognize proximity to a military base, although these properties are not within an existing high noise area.

An estimated 27, 372, or 749 residents are outside the JLUS line but inside the 65 dB DNL contour under Scenarios L4, L5, or L6, respectively. Of these people, 1 person, 193 persons, and 515 persons reside outside of both the baseline 65 dB DNL contour and the JLUS line but within the 65 dB DNL contour under basing Scenarios L4, L5, and L6, respectively.

**Table 36. Luke AFB Populations of Concern Affected by Noise Levels Greater Than 65 dB DNL, Baseline Conditions and F-35A Scenarios**

<i>Scenario (No. of Aircraft)</i>	<i>Total Affected Population</i>	<i>Number (Percentage) Minority</i>	<i>Number (Percentage) Low-Income</i>	<i>Number of Schools</i>	<i>Number of Child Care Centers</i>
Baseline	1,600	791 (49.4)	175 (11.0)	0	0
Scenario L1 (24)	199	123 (61.4)	24 (12.1)	0	0
Scenario L2 (48)	487	262 (53.7)	59 (12.1)	1	0
Scenario L3 (72)	1,181	454 (38.4)	143 (12.1)	1	1
Scenario L4 (96)	2,223	856 (38.5)	267 (12.0)	1	1
Scenario L5 (120)	3,215	1,262 (39.3)	384 (11.9)	2	3
Scenario L6 (144)	5,341	1,583 (29.6)	684 (12.8)	2	3

Note: See EIS, Table LU 3.12-2.

Potential overall socioeconomic effects from the change in personnel under each aircraft scenario are summarized in Table 37. Construction activities under the six aircraft scenarios would create additional direct construction jobs, as well as indirect and induced jobs in other industries. Construction expenditures under Scenario L1 would create an estimated total of 1,532 jobs, 783 of which would be concentrated in construction-related industries. Scenario L3 would create 2,290 jobs, and Scenario L6 would create 2,657 jobs. Construction jobs under any scenario would comprise less than 1 percent of the total employment in Maricopa County. Construction expenditures and the jobs created would be temporary and would result in 2 to 3 years of stimulation to the local construction industry.

**Table 37. Luke AFB Potential Socioeconomic Impacts, F-35A Scenarios**

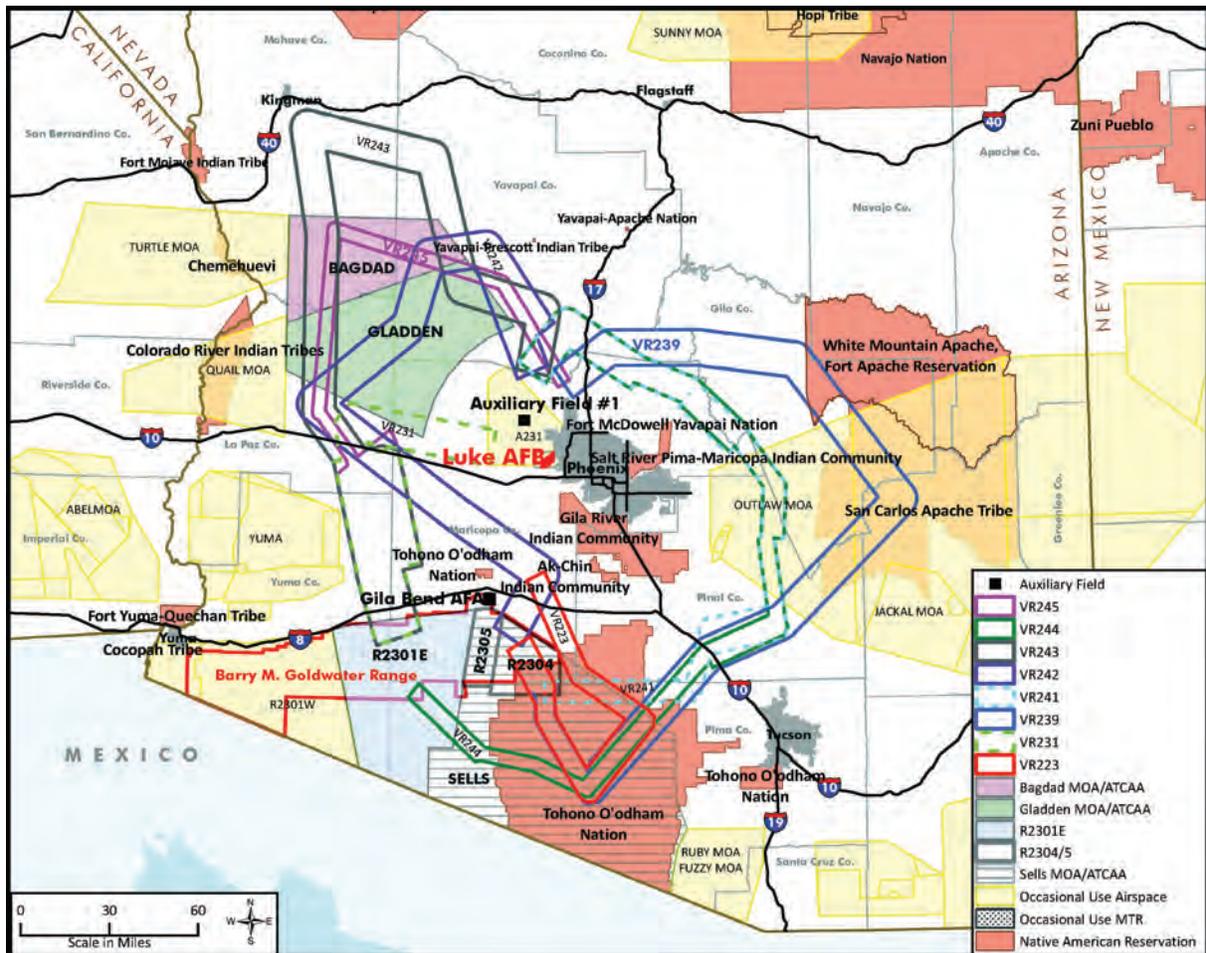
	<i>Scenario L1 (24 Aircraft)</i>	<i>Scenario L2 (48 Aircraft)</i>	<i>Scenario L3 (72 Aircraft)</i>	<i>Scenario L4 (96 Aircraft)</i>	<i>Scenario L5 (120 Aircraft)</i>	<i>Scenario L6 (144 Aircraft)</i>
<b>Construction (jobs)</b>						
Direct	783	937	1,171	1,373	1,530	1,358
Indirect	324	388	484	568	633	562
Induced	425	508	635	745	830	737
<b>Total</b>	<b>1,532</b>	<b>1,833</b>	<b>2,290</b>	<b>2,686</b>	<b>2,993</b>	<b>2,657</b>
<b>Population (persons)<sup>1</sup></b>						
Existing Conditions	2,217,825	2,217,825	2,217,825	2,217,825	2,217,825	2,217,825
Direct	(1,278)	385	2,049	3,712	5,375	7,039
<b>Total</b>	<b>2,216,547</b>	<b>2,218,210</b>	<b>2,219,874</b>	<b>2,221,537</b>	<b>2,223,200</b>	<b>2,224,864</b>
<i>Percentage Change</i>	<i>(0.06)</i>	<i>0.02</i>	<i>0.09</i>	<i>0.17</i>	<i>0.24</i>	<i>0.32</i>
<b>Employment (jobs)<sup>2</sup></b>						
Existing Conditions	2,310,410	2,310,410	2,310,410	2,310,410	2,310,410	2,310,410
Direct	(379)	162	702	1,243	1,783	2,323
Induced	(161)	69	299	529	759	989
<b>Total</b>	<b>2,309,870</b>	<b>2,310,641</b>	<b>2,311,411</b>	<b>2,312,182</b>	<b>2,312,952</b>	<b>2,313,722</b>
<i>Percentage Change</i>	<i>(0.02)</i>	<i>0.01</i>	<i>0.04</i>	<i>0.08</i>	<i>0.11</i>	<i>0.14</i>
<b>Housing (units)<sup>1</sup></b>						
Existing Conditions	1,639,279	1,639,279	1,639,279	1,639,279	1,639,279	1,639,279
Direct	(379)	162	702	1,243	1,783	2,323
<b>Total</b>	<b>1,638,900</b>	<b>1,639,441</b>	<b>1,639,981</b>	<b>1,640,522</b>	<b>1,641,062</b>	<b>1,641,602</b>
<i>Percentage Change</i>	<i>(0.02)</i>	<i>0.01</i>	<i>0.04</i>	<i>0.08</i>	<i>0.11</i>	<i>0.14</i>
<b>Students (persons)<sup>1</sup></b>						
Existing Conditions	370,736	370,736	370,736	370,736	370,736	370,736
Direct	(369)	158	685	1,211	1,738	2,265
<b>Total</b>	<b>370,367</b>	<b>370,894</b>	<b>371,421</b>	<b>371,947</b>	<b>372,474</b>	<b>373,001</b>
<i>Percentage Change</i>	<i>(0.10)</i>	<i>0.04</i>	<i>0.18</i>	<i>0.33</i>	<i>0.47</i>	<i>0.61</i>
Student-Teacher Ratio	18.69	18.69	18.69	18.69	18.69	18.69
Number of Potential New Teachers	-	8	37	65	93	121

**Final  
June 2012**

	Scenario L1 (24 Aircraft)	Scenario L2 (48 Aircraft)	Scenario L3 (72 Aircraft)	Scenario L4 (96 Aircraft)	Scenario L5 (120 Aircraft)	Scenario L6 (144 Aircraft)
<b>Tax Revenues (\$ million)</b>						
State and Local Taxes	\$(2.36)	\$1.01	\$4.36	\$7.73	\$11.09	\$14.44
Federal Taxes	\$(6.82)	\$2.91	\$12.63	\$22.36	\$32.07	\$41.78
<b>Total</b>	<b>\$(9.17)</b>	<b>\$3.92</b>	<b>\$16.99</b>	<b>\$30.09</b>	<b>\$43.16</b>	<b>\$56.23</b>
<b>Law Enforcement (persons)<sup>1</sup></b>						
Existing Conditions	5,869	5,869	5,869	5,869	5,869	5,869
Direct	-	1	5	10	14	19
<b>Total</b>	<b>5,869</b>	<b>5,870</b>	<b>5,874</b>	<b>5,879</b>	<b>5,883</b>	<b>5,888</b>
Percentage Change	0.0	0.0	0.1	0.2	0.2	0.3
<b>Firefighters (persons)<sup>1</sup></b>						
Existing Conditions	3,276	3,276	3,276	3,276	3,276	3,276
Direct	-	1	3	5	8	10
<b>Total</b>	<b>3,276</b>	<b>3,277</b>	<b>3,279</b>	<b>3,281</b>	<b>3,284</b>	<b>3,286</b>
Percentage Change	0.0	0.0	0.1	0.2	0.2	0.3

<sup>1</sup>. Total of cities in region of influence, listed in Table LU 3.11-1.  
<sup>2</sup>. Maricopa County.  
 Note: (Number) denotes a negative number. See EIS, Table LU 3.11-4.

**Airspace and Range Use.** F-35A training aircraft flights would use existing airspace units and ranges (Figure 13). Live weapon drops would be infrequent, with only one training event per syllabus requiring live weapons (see Table 38). Weapons training would be conducted in Barry M. Goldwater Range (BMGR) East. The F-35A would conduct supersonic operations similar to the F-16. Table 39 presents noise levels including projected supersonic events.



**Figure 13. Airspace and Ranges for the Potential F-35A Beddown at Luke AFB**

**Table 38. Luke AFB Projected F-35A Annual Munitions Use**

Munitions Type	Projected Annual F-35A Usage						Range Permitted
	Scenario L1 (24 Aircraft)	Scenario L2 (48 Aircraft)	Scenario L3 (72 Aircraft)	Scenario L4 (96 Aircraft)	Scenario L5 (120 Aircraft)	Scenario L6 (144 Aircraft)	
GBU-12 (live)	36	72	108	144	180	216	BMGR
GBU-12 (inert)	78	156	234	312	390	468	BMGR
GBU-31 (inert)	20	40	60	80	100	120	BMGR
GBU-32 (inert)	26	52	78	104	130	156	BMGR
25-millimeter Target Practice	52,000	104,000	156,000	208,000	260,000	312,000	BMGR
MJU-61/B Training Flares	26,400	52,800	79,200	105,600	132,000	158,400	Authorized Airspace

Note: See EIS, Table LU 2.2-5.

**Table 39. Noise Environment for Luke AFB Training Airspace, Baseline Conditions and F-35A Scenarios**

Airspace Name <sup>1</sup>	Baseline			L1 (24 Aircraft)			L2 (48 Aircraft)		
	DNL <sub>mr</sub>	CDNL	Booms/Day	DNL <sub>mr</sub>	CDNL	Booms/Day	DNL <sub>mr</sub>	CDNL	Booms/Day
Gladden / Bagdad MOAs	<45	54	2.4	45	47	0.5	48	48	0.7
Sells MOA	<45	54	2.3	<45	51	1.1	47	51	1.3
R-2301E Air-to-Air Area	55	52	2.7	58	48	1.1	61	48	1.1
R-2301E BMGR North TAC Range	61	54	2.3	63	50	1	65	50	1
R-2301E BMGR South TAC Range	61	53	2.2	63	49	0.9	65	49	1
R-2304/R-2305 BMGR East TAC Range	64	N/A	N/A	61	N/A	N/A	64	N/A	N/A
VR-239	<45	N/A	N/A	56	N/A	N/A	59	N/A	N/A
VR-245	<45	N/A	N/A	55	N/A	N/A	58	N/A	N/A
VR-223	47	N/A	N/A	49	N/A	N/A	52	N/A	N/A
VR-231	47	N/A	N/A	49	N/A	N/A	52	N/A	N/A
VR-241	<45	N/A	N/A	<45	N/A	N/A	<45	N/A	N/A
VR-242	<45	N/A	N/A	<45	N/A	N/A	<45	N/A	N/A
VR-243	<45	N/A	N/A	<45	N/A	N/A	<45	N/A	N/A
VR-244	<45	N/A	N/A	<45	N/A	N/A	<45	N/A	N/A

Airspace Name <sup>1</sup>	L3 (72 Aircraft)			L4 (96 Aircraft)			L5 (120 Aircraft)			L6 (144 Aircraft)		
	DNL <sub>mr</sub>	CDNL	Booms/Day									
Gladden / Bagdad MOAs	50	49	1	51	50	1	52	51	1	53	51	1
Sells MOA	49	52	1	50	52	2	51	53	2	52	53	2
R-2301E Air-to-Air Area	62	48	1	64	48	1	65	48	1	65	49	1
BMGR North TAC Range	67	51	1	68	51	1	69	51	1	70	51	1
BMGR South TAC Range	67	50	1	68	50	1	69	50	1	70	50	1
BMGR East TAC Range	65	N/A	N/A	66	N/A	N/A	67	N/A	N/A	68	N/A	N/A
VR-239	61	N/A	N/A	62	N/A	N/A	63	N/A	N/A	64	N/A	N/A
VR-245	60	N/A	N/A	61	N/A	N/A	62	N/A	N/A	63	N/A	N/A
VR-223	53	N/A	N/A	55	N/A	N/A	55	N/A	N/A	56	N/A	N/A
VR-231	53	N/A	N/A	54	N/A	N/A	55	N/A	N/A	56	N/A	N/A
VR-241	45	N/A	N/A	47	N/A	N/A	47	N/A	N/A	48	N/A	N/A
VR-242	45	N/A	N/A	47	N/A	N/A	47	N/A	N/A	48	N/A	N/A
VR-243	45	N/A	N/A	47	N/A	N/A	47	N/A	N/A	48	N/A	N/A
VR-244	46	N/A	N/A	47	N/A	N/A	48	N/A	N/A	48	N/A	N/A

<sup>1</sup> Noise levels beneath MOAs listed also include noise generated by aircraft operating in overlying ATCAAs; airspace units in which supersonic noise levels are "N/A" are not authorized for supersonic flight.

Note: See EIS, Table LU 3.2-6.

Key: TAC=Tactical.

Portions of the Tohono O’odham Nation are located under the Sells MOA/ Air Traffic Control Assigned Airspace (ATCAA) contributing to a high proportion of minority and low-income persons in Table 40.

**Natural and Cultural Resources.** Based on the very low percentage of time spent in low-level flight by F-35As training within the airspace and the previous and ongoing exposure of wildlife to training by other aircraft in the airspace, no significant adverse effects on vegetation or wildlife from overflights or noise are anticipated. No impacts on historic properties under airspace associated with Luke AFB are anticipated.

**Table 40. Luke AFB Populations of Concern Under the Training Airspace**

<i>Airspace Units</i>	<i>Counties Overflown</i>	<i>Total Affected Population (2010)</i>	<i>Minority</i>	<i>Percentage Minority</i>	<i>Low-Income</i>	<i>Percentage Low-Income</i>	<i>Youth</i>	<i>Percentage Youth</i>
Bagdad MOA/ATCAA	La Paz County	3,667	819	22.3	507	13.8	666	18.2
	Mohave County							
	Yavapai County							
Gladden MOA/ATCAA	La Paz County	7,590	1,593	21.0	1,006	13.3	1,149	15.1
	Maricopa County							
	Mohave County							
Sells MOA/ATCAA	Maricopa County	8,623	7,344	85.2	3,026	35.1	2,546	29.5
	Pima County							
	Pinal County							
VR-239	Maricopa County	25,356	9,689	38.2	4,423	17.4	6,397	25.2
	Yavapai County							
	Gila County							
	Graham County							
	Pima County							
VR-245	Maricopa County	4,373	1,491	34.1	861	19.7	955	21.8
	Yuma County							
	La Paz County							
	Mohave County							
	Yavapai County							
VR-223	Maricopa County	3,039	2,342	77.1	1,016	33.4	628	20.7
	Pima County							
	Pinal County							
VR-231	Maricopa County	5,889	2,205	37.4	712	12.1	1,455	24.7
	La Paz County							
	Yuma County							
VR-241	Yavapai County	14,717	4,024	27.3	1,898	12.9	3,024	20.5
	Maricopa County							
	Gila County							
	Pima County							
	Pinal County							
VR-242	Yavapai County	11,591	3,681	31.8	1,921	16.6	1,873	16.2
	La Paz County							
	Maricopa County							
VR-243	Yavapai County	9,586	2,331	24.3	1,663	17.3	1,676	17.5
	Mohave County							
	La Paz County							
	Yuma County							
	Maricopa County							
VR-244	Yavapai County	13,937	4,139	29.7	2,005	14.4	2,851	20.5
	Maricopa County							
	Gila County							
	Pima County							
	Pinal County							

Note: See EIS, Table LU 3.12-3.

**Recreation.** No new types of impacts would be introduced into recreation areas as a result of F-35A training, although some areas under the MTRs (e.g., VR-239 and VR-245) would experience a substantial increase in average noise levels (see Table 41). Measures to avoid the potential for wildland fire from flare use would result in no appreciable increase in the incidence of rangeland fires.

**Table 41. Luke AFB Average Noise Levels by Airspace and Associated Recreational Use Areas**

Airspace <sup>1</sup>	Recreational Resource	Baseline Conditions	Noise Level (dB DNL <sub>nr</sub> )					
			L1 (24)	L2 (48)	L3 (72)	L4 (96)	L5 (120)	L6 (144)
Gladden/Bagdad MOAs/ATCAAs	Alamo Lake SP, Arrastra Mountain Wilderness, Aubrey Peak Wilderness, Big Horn Mountain Wilderness, Bill Williams NWR, East Cactus Plain Wilderness, Harcuvar Mountain Wilderness, Harquahala Mountains Wilderness, Hummingbird Springs Wilderness, Rawhide Mountains Wilderness, Swansea Wilderness, Tres Alamos Wilderness, Upper Burro Creek Wilderness	<45	45	48	50	51	52	53
Sells MOA/ATCAA	Baboquivari Peak Wilderness, Cabeza Prieta NWR, Organ Pipe Cactus NM, Organ Pipe Cactus Wilderness	<45	<45	47	49	50	51	52
R-2301E Air-to-Air Area	Cabeza Prieta NWR and Wilderness, Organ Pipe Cactus Wilderness	55	58	61	62	64	65	65
VR-239	Agua Fria NM, Hells Canyon Wilderness, Hellsgate Wilderness, Horseshoe Reservoir, Ironwood Forest NM, Lake Pleasant RP, Mazatzal Wilderness, Needle's Eye Wilderness, Pichacho Peak SP, Salt River Canyon Wilderness	<45	54	57	58	60	61	61
VR-245	Aubrey Peak Wilderness, Eagletail Mountains Wilderness, Hassayampa River Canyon Wilderness, Hells Canyon Wilderness, Lake Pleasant RP, Rawhide Mountains Wilderness	<45	54	57	58	60	61	61
VR-223	Ironwood NM, South Maricopa Mountains Wilderness, Tohono O'odham Indian Reservation	47	49	52	53	55	55	56
VR-231	Big Horn Mountains Wilderness, Eagletail Mountains Wilderness, Hummingbird Springs Wilderness	47	49	52	53	54	55	56
VR-241	Agua Fria NM, Apache Lake, Bartlett Reservoir, Castle Creek Wilderness, Four Peaks Wilderness, Hells Canyon Wilderness, Horseshoe Reservoir, Ironwood Forest NM, Mazatzal Wilderness, Pichacho Peak SP, Prescott NF, Superstition Wilderness, Theodore Roosevelt Lake, Tohono O'odham Indian Reservation, Tonto NF, Tonto NM, White Canyon Wilderness	<45	<45	<45	45	47	47	48
VR-242	Arrastra Mountain Wilderness, Eagletail Mountains Wilderness, Harcuvar Mountains Wilderness, Hassayampa River Canyon Wilderness, Hells Canyon Wilderness, North Maricopa Mountains Wilderness, Prescott NF, Signal Mountain Wilderness, South Maricopa Mountains Wilderness, Tres Alamos Wilderness, Woolsey Peak Wilderness	<45	<45	<45	45	47	47	48
VR-243	Aubrey Peak Wilderness, Castle Creek Wilderness, Eagletail Mountains Wilderness, East Cactus Plain Wilderness, Hassayampa River Canyon Wilderness, Hells Canyon Wilderness, Hualapai Mountain Park, Prescott NF, Rawhide Mountains Wilderness, Swansea Wilderness, Wabayuma Peak Wilderness	<45	<45	<45	45	47	47	48
VR-244	Apache Lake, Bartlett Reservoir, Cabeza Prieta NWR, Castle Creek Wilderness, Four Peaks Wilderness, Hells Canyon Wilderness, Horseshoe Reservoir, Ironwood Forest NM, Mazatzal Wilderness, Organ Pipe Cactus NM, Organ Pipe Cactus Wilderness, Pichaco Peak SP, Prescott NF, Superstition Wilderness, Theodore Roosevelt Wilderness, Tohono O'odham Indian Reservation, Tonto NF, Tonto NM, White Canyon Wilderness	<45	<45	<45	46	47	48	48

<sup>1</sup>. Does not include list of WSAs.  
Note: See EIS, Table LU 3.10-9.  
Key: RP=Regional Park.

**Native American Concerns.** Given the proximity and joint use of airspace units between Luke AFB and Tucson AGS, consultation efforts with Native American tribes have been conducted jointly between Luke AFB and Tucson AGS. The Air Force has contacted the following tribes to consult on a government-to-government basis regarding their concerns about potential impacts on traditional resources and TCPs under the airspace associated with Luke AFB and Tucson AGS: Campo Band of Mission Indians, Fort McDowell Yavapai Nation, Fort Sill Apache Tribe of Oklahoma, Fort Yuma-Quechan Tribe, Pascua Yaqui Tribe of Arizona, Tonto Apache Tribe, the Ak-Chin Indian Community, Chemehuevi Tribe, Cocopah Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Gila River Indian Community, Hopi Tribe, Hualapai Tribe, Kaibab Band of Paiute Indians, Mescalero Apache Tribe, Navajo Nation, Salt River Pima-Maricopa Indian Community, Pueblo of Zuni Tribe, White Mountain Apache Tribe, San Carlos Apache Tribe, Yavapai-Apache Nation, Yavapai-Prescott Indian Tribe, and the Tohono O'odham Nation.

The Tohono O'odham Nation expressed interest in the Air Force's action. The Gila River Indian Community expressed concern over aircraft crash and recovery procedures' potential to impact archaeological sites and deferred to the Tohono O'odham Nation as the lead in future consultations. The Fort Yuma-Quechan Tribe, Cocopah Tribe, and Ak-Chin Indian Community deferred comments to the Tohono O'odham Nation. The Hopi Tribe responded in writing that they consider prehistoric archaeological resources as TCPs, and that unless additional surveys identify prehistoric cultural resources or any are inadvertently discovered, they would defer further consultation on the proposed project to the State Historic Preservation offices and other interested tribes and parties. The Navajo Nation, Kaibab Band of Paiute Indians, Chemehuevi Tribe, and the Mescalero Apache Tribe indicated that they have no concerns regarding the Air Force proposal. More details on the consultation process are provided in the EIS.

### **Auxiliary Airfields**

Auxiliary airfields for Luke AFB F-35A aircraft would be Gila Bend Air Force Auxiliary Field (Gila Bend AFAF) and Luke AFB Auxiliary Airfield 1 (Aux-1). Table 42 presents the auxiliary airfield baseline and projected operations.

**Table 42. Baseline and Projected Luke AFB Auxiliary Airfield Operations at Aux-1 and Gila Bend AFAF**

Aircraft Type	Baseline Annual Airfield Operations	Projected Annual F-35A Airfield Operations					
		Scenario L1 (24 Aircraft)	Scenario L2 (48 Aircraft)	Scenario L3 (72 Aircraft)	Scenario L4 (96 Aircraft)	Scenario L5 (120 Aircraft)	Scenario L6 (144 Aircraft)
<b>Aux-1</b>							
F-35A	0	4,474	8,948	13,422	17,897	22,371	26,845
F-16	18,954	508	508	508	508	508	508
<b>Total</b>	<b>18,954</b>	<b>4,982</b>	<b>9,456</b>	<b>13,930</b>	<b>18,405</b>	<b>22,879</b>	<b>27,353</b>
<b>Gila Bend AFAF</b>							
F-35A	0	5,776	11,553	17,331	23,108	28,884	34,661
F-16	5,596	2,278	2,278	2,278	2,278	2,278	2,278
Other Aircraft	4,045	4,045	4,045	4,045	4,045	4,045	4,045
<b>Total</b>	<b>9,641</b>	<b>12,099</b>	<b>17,876</b>	<b>23,654</b>	<b>29,431</b>	<b>35,207</b>	<b>40,984</b>

Note: See EIS, Table LU 2.2-4.

Table 43 summarizes the population in areas with noise levels greater than 65 dB DNL. Figure 14 displays calculated 65 dB DNL noise contours for Aux-1 associated with baseline conditions, F-35A training, and the 65 dB DNL contour from the 2004 JLUS.

**Table 43. Populations of Concern Affected by Noise Levels Greater Than 65 dB DNL at Luke AFB Auxiliary Airfields, Baseline Conditions and F-35A Scenarios**

	Total Affected Population	Number (Percentage) Minority	Number (Percentage) Low-Income
<b>Aux-1</b>			
Baseline	711	175 (24.6)	55 (7.7)
Scenario L1 (24 Aircraft)	126	29 (23.2)	2 (1.8)
Scenario L2 (48 Aircraft)	250	65 (26.1)	19 (7.6)
Scenario L3 (72 Aircraft)	327	87 (26.5)	25 (7.6)
Scenario L4 (96 Aircraft)	487	122 (25.1)	38 (7.8)
Scenario L5 (120 Aircraft)	648	157 (24.2)	50 (7.7)
Scenario L6 (144 Aircraft)	803	190 (23.7)	62 (7.7)
<b>Gila Bend AFAF</b>			
Baseline	3	0 (0.0)	1 (33.3)
Scenario L1 (24 Aircraft)	1	0 (0.0)	0 (0.0)
Scenario L2 (48 Aircraft)	5	1 (20.0)	0 (0.0)
Scenario L3 (72 Aircraft)	9	1 (11.1)	2 (22.2)
Scenario L4 (96 Aircraft)	11	1 (9.1)	3 (27.3)
Scenario L5 (120 Aircraft)	13	2 (15.4)	4 (30.8)
Scenario L6 (144 Aircraft)	15	2 (13.3)	4 (26.7)

Note: See EIS, Table LU 3.12-5.

Table 44 and Table 45 summarize the population and acreage affected. Figure 15 displays comparable data for Gila Bend AFAF including the 65 dB DNL contour from the 2005 JLUS. Similar to Luke AFB, the State has implemented regulatory requirements in areas adjacent to Aux-1 and Gila Bend AFAF as defined by the respective JLUS 65 dB DNL and above noise contour.

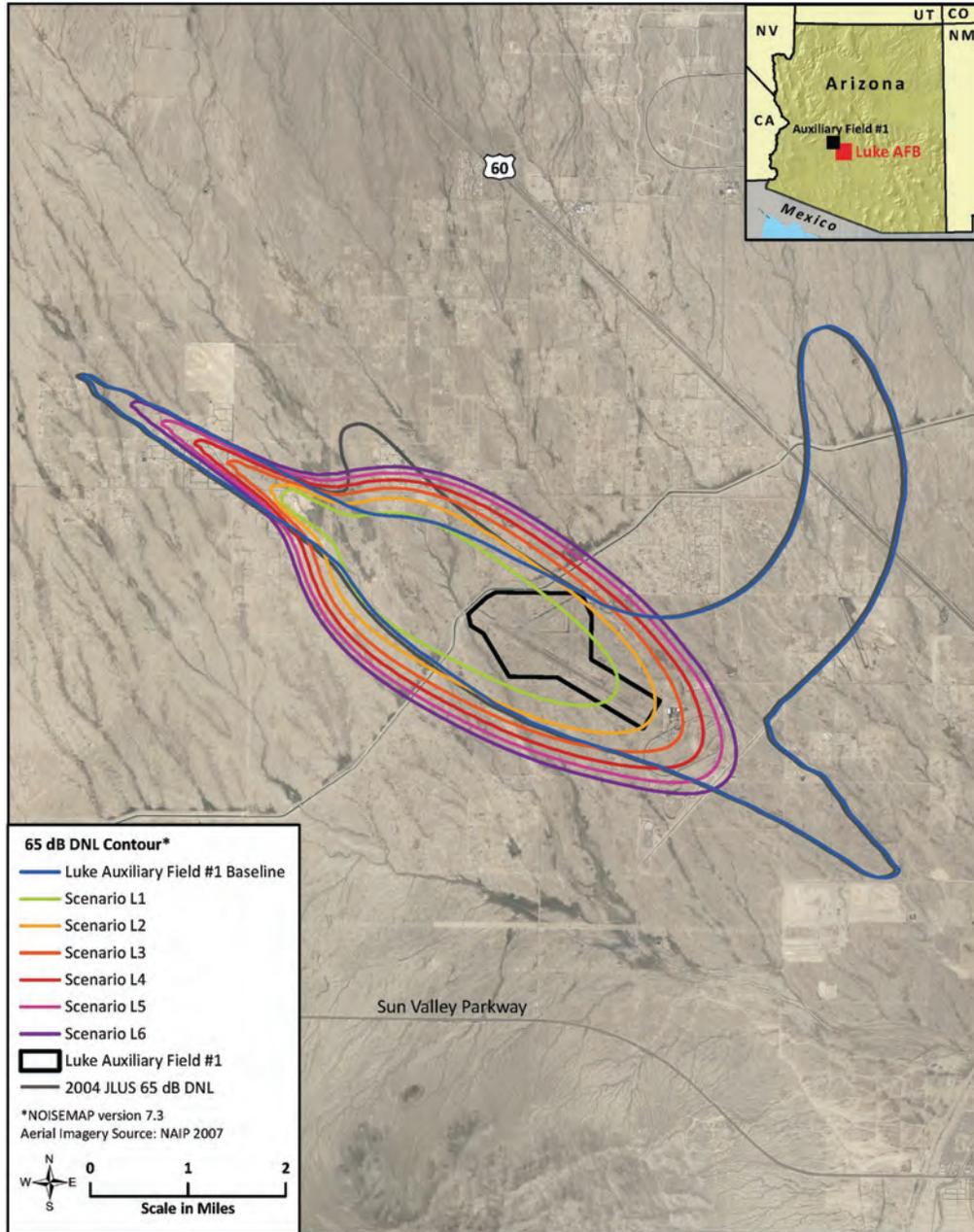


Figure 14. 65 dB DNL Noise Contours at Aux-1

Table 44. Population and Acreage Under Noise Contours at Aux-1, Scenarios L1, L3, and L6

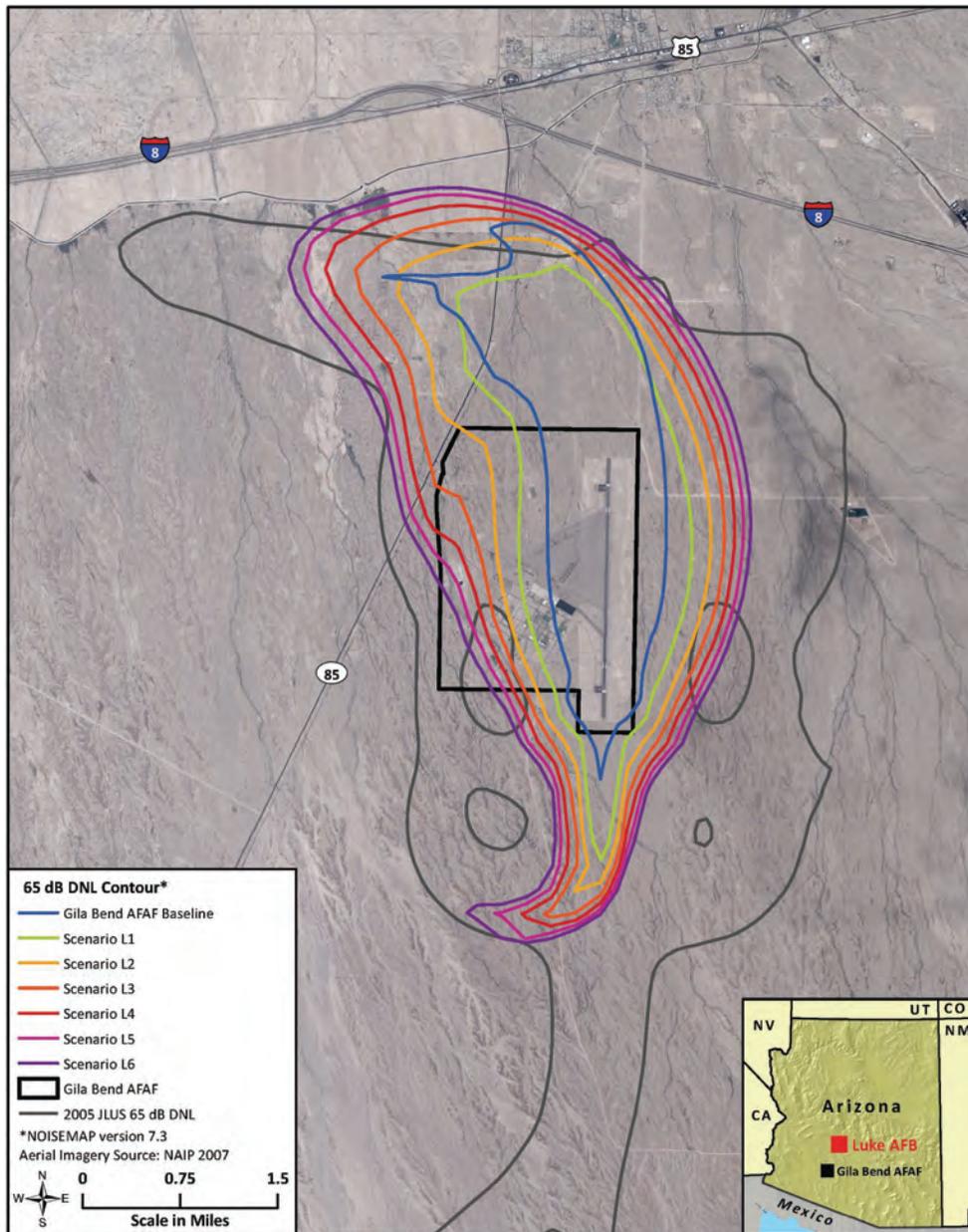
Contour Interval (dB DNL)	Scenario L1 (24 Aircraft)				Scenario L3 (72 Aircraft)				Scenario L6 (144 Aircraft)			
	Affected (Off-Installation/Airport)											
	Population		Acres		Population		Acres		Population		Acres	
	Number	Change	Number	Change	Number	Change	Number	Change	Number	Change	Number	Change
Total >65	125	(585)	1,388	(5,398)	327	(383)	3,203	(3,583)	802	92	5,451	(1,335)
65-69	90	(498)	813	(3,700)	223	(365)	1,934	(2,579)	574	(14)	3,293	(1,220)
70-74	17	(94)	283	(1,637)	70	(41)	719	(1,201)	173	62	1,300	(620)
75-79	8	1	161	(43)	16	9	268	64	30	23	439	235
80-84	6	2	102	(44)	8	4	158	12	11	7	205	59
≥85	4	4	29	26	10	10	124	121	14	14	214	211

Note: (Number) denotes a negative number. See EIS, Table LU 3.2-10.

**Table 45. Population and Acreage Under Noise Contours Near Gila Bend AFAF, Scenarios L1, L3, and L6**

Contour Interval (dB DNL)	Scenario L1 (24 Aircraft)				Scenario L3 (72 Aircraft)				Scenario L6 (144 Aircraft)			
	Affected (Off-Installation/Airport)											
	Population		Acres		Population		Acres		Population		Acres	
	Number	Change	Number	Change	Number	Change	Number	Change	Number	Change	Number	Change
Total >65	1	(2)	1,559	246	9	6	3,294	1,981	15	12	5,177	3,864
65-69	1	(2)	1,121	103	8	5	2,069	1,051	12	9	3,040	2,022
70-74	0	0	403	124	1	1	928	649	3	3	1,415	1,136
75-79	0	0	35	19	0	0	277	261	0	0	612	596
80-84	0	0	0	0	0	0	20	20	0	0	110	110
≥85	0	0	0	0	0	0	0	0	0	0	0	0

Note: (Number) denotes a negative number. See EIS, Table LU 3.2-9.



**Figure 15. Baseline Noise and F-35A Scenario 65 dB DNL Contours at Gila Bend AFAF**

## 9. Tucson AGS Alternative Overview

Tucson AGS's infrastructure and base resources would accommodate between one and three increments of 24 PAA. The F-16 training mission currently located at Tucson AGS would relocate under all three scenarios. The Netherlands F-16 training mission and the Air National Guard (ANG)/ Air Force Reserve Command Test Center (AATC) would remain under Scenario T1. Under Scenarios T2 and T3, the ANG/AATC would remain in place at Tucson AGS and would continue to operate 6 F-16 PAA, while the Netherlands F-16 training mission would relocate to another installation.

### 9.1 Tucson AGS Alternative – Construction

Figure 16 shows the Tucson AGS construction area, and Table 46 summarizes the amount of disturbed area associated with the renovation and construction needed under each beddown scenario.

**Table 46. F-35A Construction at Tucson AGS Under Each Aircraft Scenario**

Scenario	Renovation	New Addition	Area (Square Feet)
T1 (24 Aircraft)	6	16	1,437,040
T2 (48 Aircraft)	7	17	1,453,540
T3 (72 Aircraft)	6	17	1,466,740

Note: See EIS, Table TU 2.1–2.

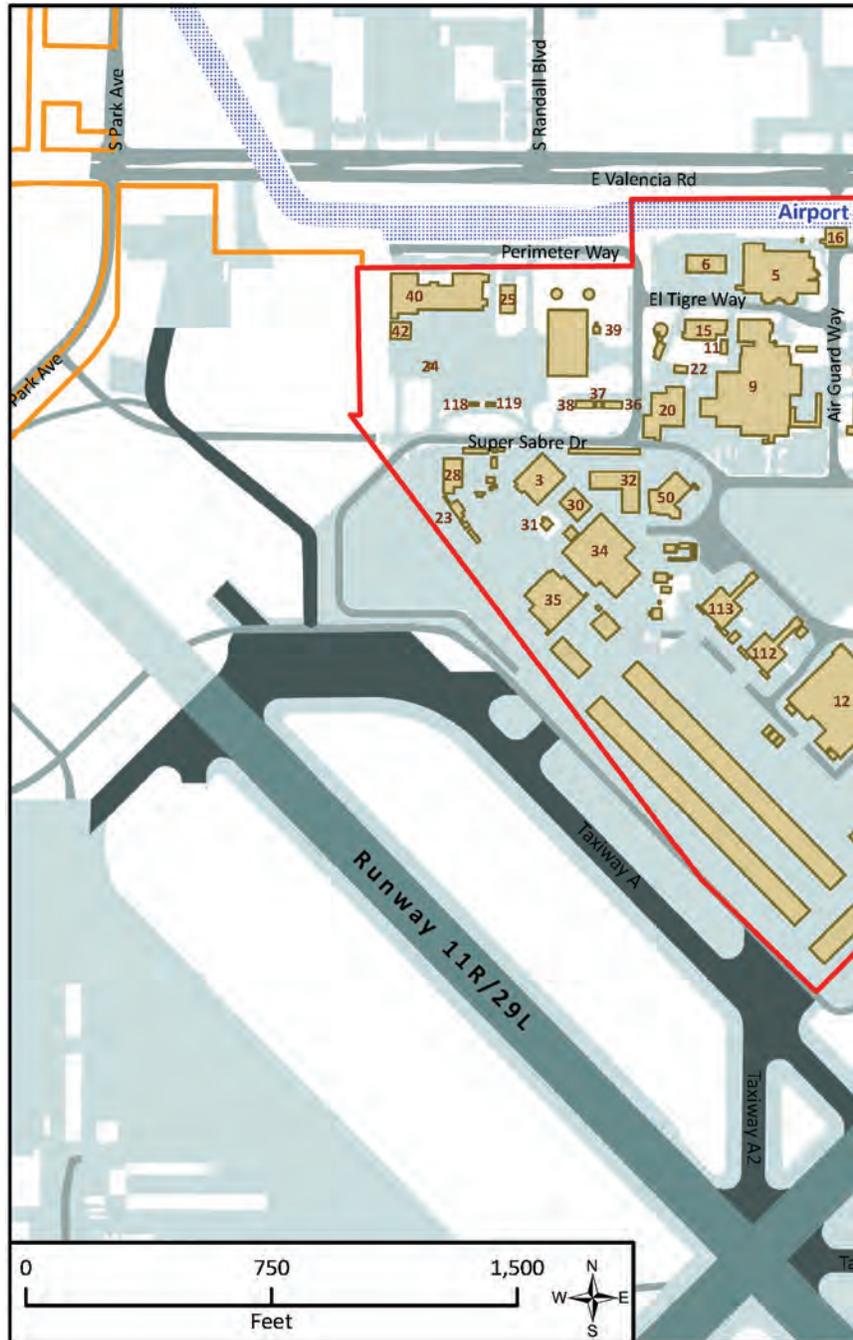


Figure 16. Tucson AGS

## 9.2 Tucson AGS Alternative – Personnel Requirements

Beddown of the F-35A training mission would also require basing sufficient and appropriately skilled personnel to operate and maintain the wing and provide necessary support services. Each aircraft scenario has a different manpower requirement (see Table 47).

## 9.3 Tucson AGS Alternative – Flight Operations

The F-35A would employ similar departure, closed patterns, and landing procedures as currently used by Tucson AGS aircraft. F-35A operations would adhere to existing restrictions, avoidance procedures, and agreements with the Tucson Airport Authority. F-35A flight operations for the Tucson aircraft scenarios are presented in Table 48.

**Table 47. Tucson AGS F-35A Training Mission Personnel Changes**

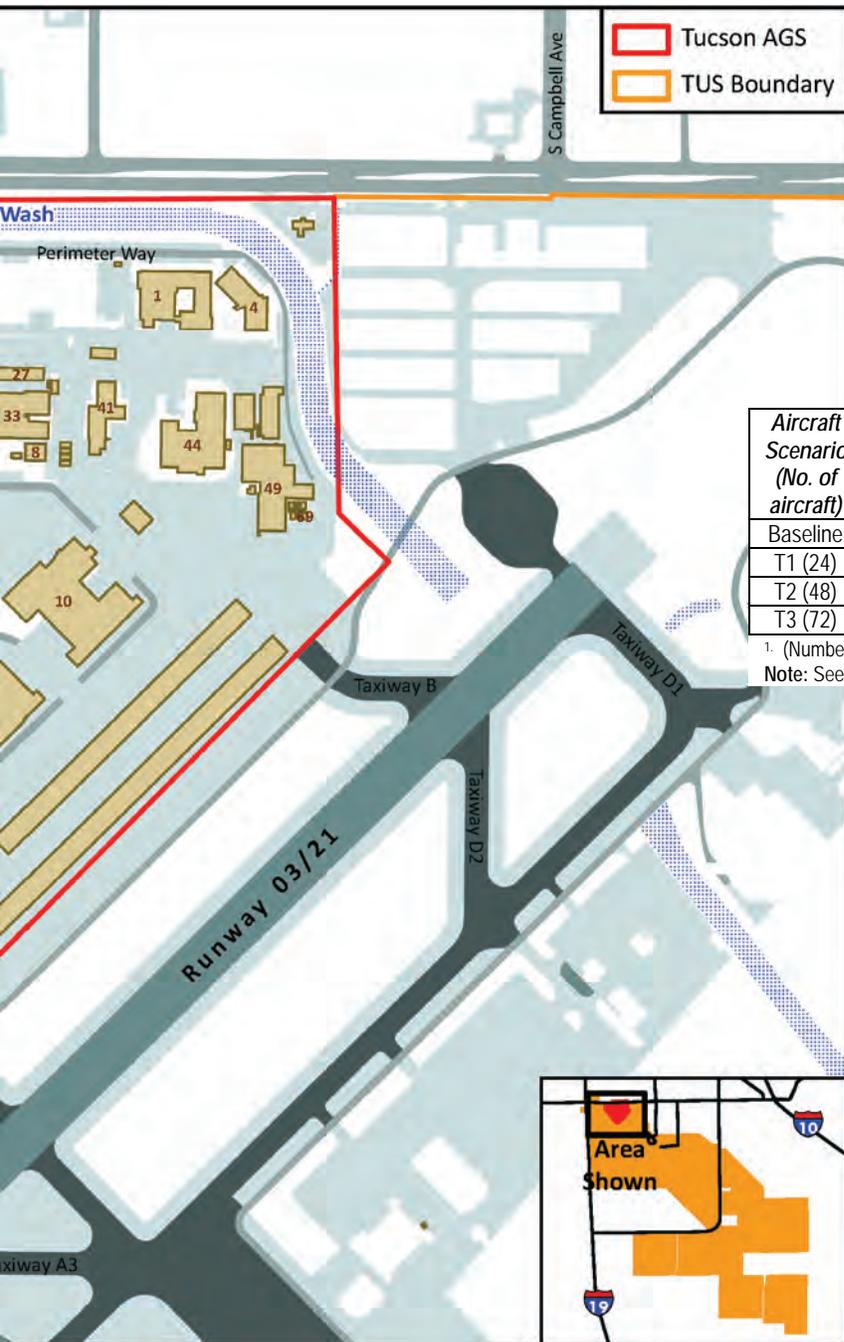
Aircraft Scenario (No. of aircraft)	F-35A Contractor Support	F-35A Students	Total Base Personnel	Total Dependents	Net Change <sup>1</sup>
Baseline	–	–	1,946	4,281	–
T1 (24)	50	30	1,813	3,922	(493)
T2 (48)	50	60	2,146	4,590	509
T3 (72)	50	90	2,297	4,856	926

<sup>1</sup>. (Number) denotes a negative number.  
Note: See EIS, Table TU 2.1–3.

**Table 48. Tucson AGS Baseline and Projected Annual Airfield Operations**

	Baseline Annual Airfield Operations	Projected Annual F-35A Airfield Operations		
		Scenario T1 24 Aircraft	Scenario T2 48 Aircraft	Scenario T3 72 Aircraft
F-35A	0	12,493	24,986	37,480
F-16	26,280	12,533	3,539	3,539
Other Military	2,189	2,189	2,189	2,189
Tucson AGS Total	28,469	27,215	30,714	43,208
Tucson International Airport	170,820	199,990	199,990	199,990
<b>Total</b>	<b>199,289</b>	<b>227,205</b>	<b>230,704</b>	<b>243,198</b>

Note: Other military includes transients such as A-10 and C-130.  
See EIS, Table TU 2.1–1.



Proposed F-35A Construction Area

## 9.4 Tucson AGS Alternative – Environmental Consequences

**Noise and Land Use.** The F-35A generates an overflight sound exposure level approximately 9 dB higher than the F-16C during a typical non-afterburner departure at the location studied (Ocotillo Elementary). In traffic pattern flight in the vicinity of the base, the F-35A is calculated to be approximately 9 dB louder than the F-16C. In a typical arrival flight configuration, the F-35A is approximately 9 dB louder than the F-16C. Figure 17 presents the

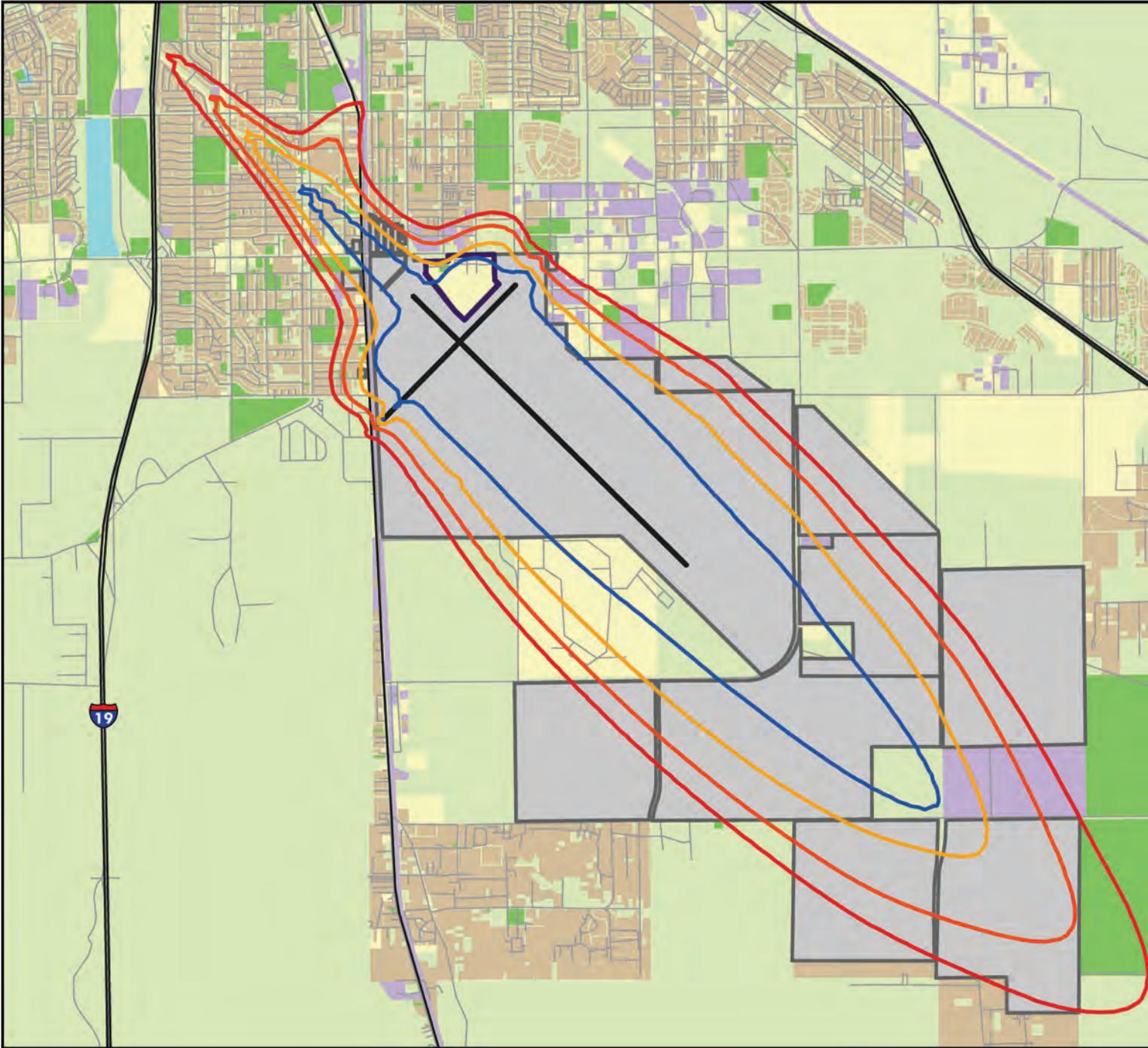
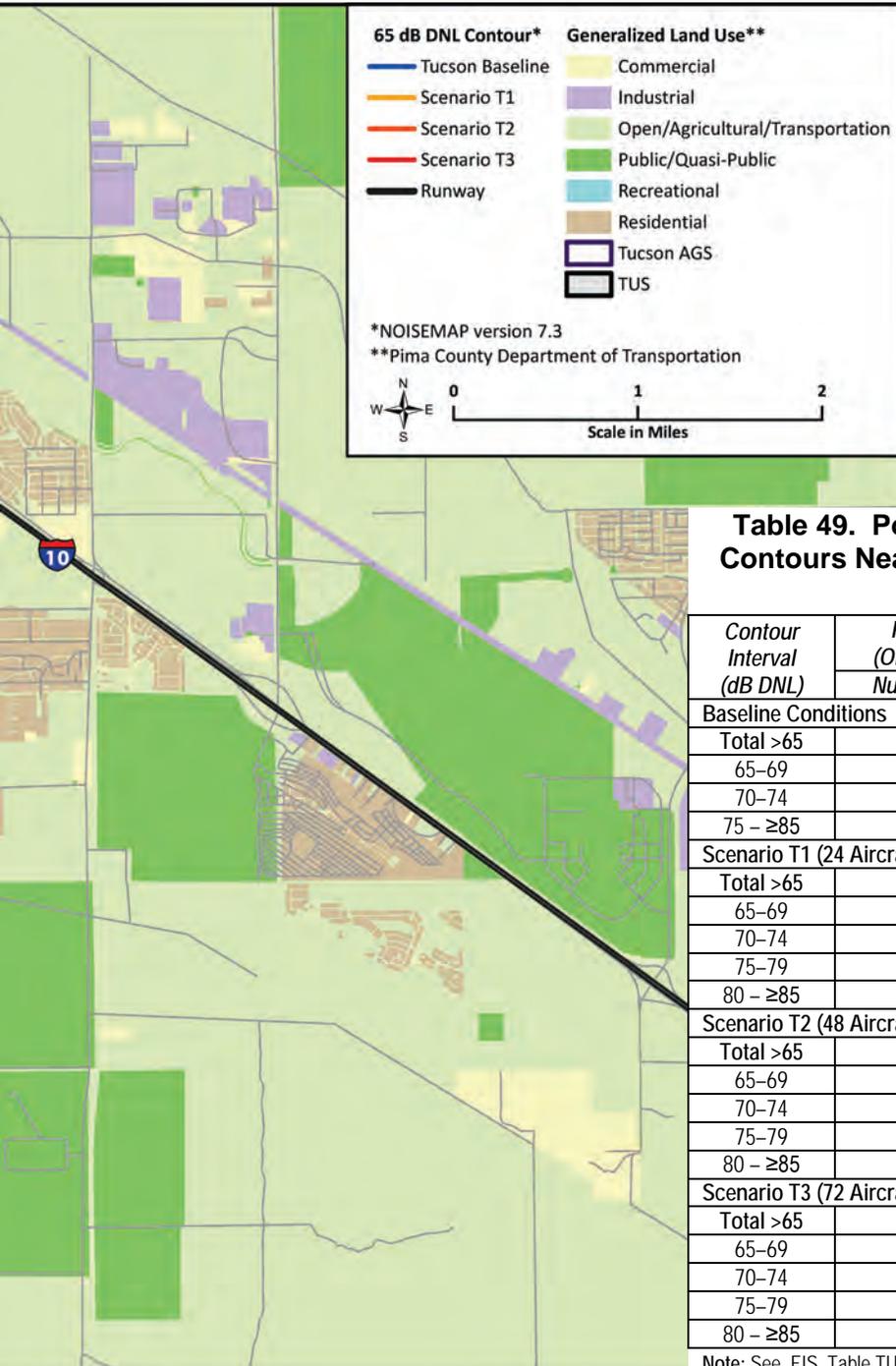


Figure 17. Land Use and Noise Contours in Areas Surrounding Tucson AGS,

65 dB DNL contours for the Tucson AGS beddown scenarios. Table 49 summarizes the population and acreage under noise contours associated with the Tucson AGS training aircraft beddown scenarios.

Public concerns for the Tucson alternative especially focused on noise impacts to persons and property. As explained in EIS Section 3.9.2, noise can impact property values. Studies of residential property values within the 65 dB to 75 dB DNL noise contours could be discounted

by 0.5 to 0.6 percent per dB DNL. As demonstrated by Figure 17 and explained in Section TU 3.10.1, off-base residential properties represent approximately 23, 0, 161, or 294 acres of the properties within the 65 dB DNL under No Action, Scenario T1, Scenario T2, or Scenario T3, respectively. Mitigations to reduce noise already being implemented at Tucson International Airport include a southeast launch to the extent possible and altitude restrictions.



**Table 49. Population and Acreage Under Noise Contours Near Tucson AGS, Baseline Conditions and F-35A Scenarios**

Contour Interval (dB DNL)	Population Affected (Off-Installation/Airport)		Total Area Affected (Off-Installation/Airport)	
	Number	Change	Acres	Change
<b>Baseline Conditions</b>				
Total >65	407	N/A	500	N/A
65-69	407	N/A	445	N/A
70-74	0	N/A	55	N/A
75 - ≥85	0	N/A	0	N/A
<b>Scenario T1 (24 Aircraft)</b>				
Total >65	1,918	1,511	1,200	700
65-69	1,902	1,495	866	421
70-74	16	16	269	214
75-79	0	0	62	62
80 - ≥85	0	0	3	3
<b>Scenario T2 (48 Aircraft)</b>				
Total >65	4,378	3,971	1,942	1,442
65-69	4,068	3,661	1,334	889
70-74	310	310	437	382
75-79	0	0	146	146
80 - ≥85	0	0	25	25
<b>Scenario T3 (72 Aircraft)</b>				
Total >65	8,534	8,127	2,938	2,438
65-69	7,817	7,410	1,996	1,551
70-74	717	717	660	605
75-79	0	0	230	230
80 - ≥85	0	0	52	52

Note: See EIS, Table TU 3.2-1.

**Baseline Conditions and F-35A Scenarios**

**Air Quality.** The addition of 24 F-35A training aircraft would result in a net reduction of all criteria pollutant emissions. The addition of 48 and 72 F-35A training aircraft would result in net reductions of all criteria pollutant emissions, except that these actions would produce net increases in emissions of nitrogen oxides (NO<sub>x</sub>) (see Table 50). Since the net effect of each basing action would not exceed any applicable conformity or PSD threshold, the F-35A beddown actions would produce less than significant air quality impacts.

**Table 50. Scenario T3 Annual Operational Emissions**

Activity	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub>
F-35A Operations and AGE	3.40	142.76	110.69	12.94	1.12	1.12	42,247
Onsite POVs/GOVs	0.32	2.55	0.65	0.12	0.05	0.05	4,450
Offsite POVs	3.38	63.58	3.04	0.11	0.22	0.20	4,965
Nonroad	0.29	10.82	0.81	0.03	0.06	0.06	1,307
Point and Area Sources	9.75	9.35	7.61	0.78	1.81	1.66	273
F-16 Operations – All Sources	6.07	26.23	7.73	1.50	0.68	0.66	3,222
<b>Total Projected Emissions – Scenario T3</b>	<b>23.21</b>	<b>255.29</b>	<b>130.53</b>	<b>15.48</b>	<b>3.94</b>	<b>3.75</b>	<b>56,464</b>
Year 2009 Base Case Emissions	67.61	306.95	86.67	15.96	7.32	7.14	45,109
Scenario T3 Minus Base Case Emissions	(44.40)	(51.65)	43.86	(0.48)	(3.38)	(3.39)	11,356
Pima County Conformity and PSD Thresholds	250	100	250	250	250	250	N/A
Exceeds Threshold?	No	No	No	No	No	No	N/A

Note: (Number) denotes a negative number. See EIS, Table TU 3.3-6.

**Safety.** Infrastructure improvement would be consistent with established safety distances and would not result in any greater safety risk. Ordnance would be handled in accordance with explosive safety directives and carried out by trained, qualified personnel. The F-35A will have undergone approximately 10 years of testing before full-scale pilot training would occur at any of the bases addressed in this EIS. Historical trends show that mishap rates of all types decrease the longer an aircraft is operational as flight crews and maintenance personnel learn more about the aircraft's capabilities and limitations. As the F-35A becomes more operationally mature, the aircraft mishap rate is expected to become comparable with a similarly sized aircraft with a similar mission. F-35A training aircraft would operate in a manner similar to the military aircraft currently based at Tucson AGS. There would be no anticipated increase in safety risks associated with aircraft mishaps.

During public hearings, a commenter wanted details about the use of Davis-Monthan AFB by F-35As from Tucson AGS. Under existing conditions and the No Action Alternative, F-16 aircraft use Davis-Monthan AFB on an infrequent basis to load live munitions for specific training requirements. The F-35A training aircraft would similarly use Davis-Monthan AFB for loading live munitions up to 108 times per year (under Scenario T3). This transient use would not detectably result in any noise effects nor would there be any change in safety effects.

**Socioeconomics and Environmental Justice.** Schools or child care centers potentially impacted under the Tucson AGS alternative would range from none under existing conditions to one school under Scenario T3 affected by noise levels between 65 and 69 dB DNL and one school affected by noise levels between 70 and 74 dB DNL (see Table 51). One child care center would be affected by noise levels between 65 and 69 dB DNL under Scenario T3.

**Table 51. Tucson AGS Populations of Concern Affected by Noise Levels Greater Than 65 dB DNL, Baseline Conditions and F-35A Scenarios**

Scenario (No. of Aircraft)	Total Affected Population	Number (Percentage) Minority	Number (Percentage) Low-Income	Number of Schools	Number of Child Care Centers
Baseline	407	378 (92.9)	149 (36.6)	0	0
Scenario T1 (24)	1,919	1,799 (93.7)	697 (36.3)	1	0
Scenario T2 (48)	4,378	4,107 (93.8)	1,458 (33.3)	2	1
Scenario T3 (72)	8,534	7,530 (88.2)	2,863 (33.5)	2	1

Note: See EIS, Tables TU 3.12-2 and 3.12-3.

Construction activities under the three aircraft scenarios would create additional direct construction jobs, as well as indirect and induced jobs in other industries. Under Scenario T1, construction expenditures would create an estimated total of 1,815 jobs, 1,239 of which would be concentrated in construction-related industries. Scenario T2 would create an estimated total of 1,887 jobs. Scenario T3 would create 2,089 jobs. Construction jobs under each scenario would compose less than 1 percent of the total employment in Pima County. Construction expenditures and the jobs created would be temporary and would result in 2 to 3 years of stimulation to the local construction industry. Potential overall socioeconomic impacts from the change in construction expenditures and personnel under each aircraft scenario are summarized in Table 52.

**Table 52. Tucson AGS Potential Socioeconomic Impacts, F-35A Scenarios**

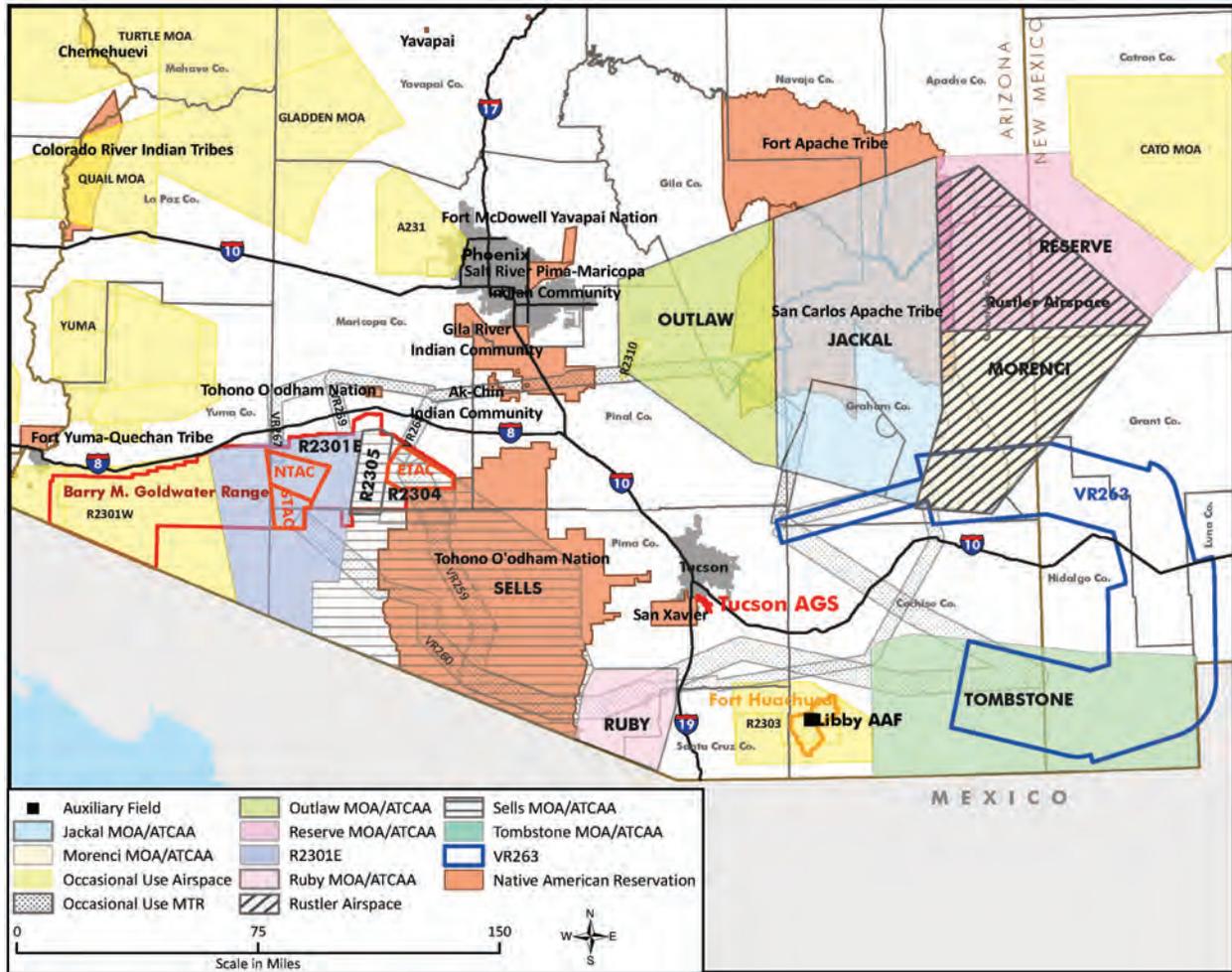
	Scenario (No. of Aircraft)				Scenario (No. of Aircraft)		
	T1 (24)	T2 (48)	T3 (72)		T1 (24)	T2 (48)	T3 (72)
<b>Construction (jobs)</b>				<b>Housing (units)<sup>1</sup></b>			
Direct	1,239	1,288	1,409	Existing Conditions	229,762	229,762	229,762
Indirect	273	284	359	Direct	(133)	200	351
Induced	303	315	321	<b>Total</b>	<b>229,629</b>	<b>229,962</b>	<b>230,113</b>
<b>Total</b>	<b>1,815</b>	<b>1,887</b>	<b>2,089</b>	Percentage Change	(0.06)	0.09	0.15
<b>Population (persons)<sup>1</sup></b>				<b>Law Enforcement (persons)<sup>1</sup></b>			
Existing Conditions	520,116	520,116	520,116	Existing Conditions	2,913	2,913	2,913
Direct	(493)	509	926	Direct	-	3	5
<b>Total</b>	<b>519,623</b>	<b>520,625</b>	<b>521,042</b>	<b>Total</b>	<b>2,913</b>	<b>2,916</b>	<b>2,918</b>
Percentage Change	(0.09)	0.10	0.18	Percentage Change	-	0.10	0.17
<b>Firefighters (persons)<sup>1</sup></b>				<b>Students (persons)</b>			
Existing Conditions	1,517	1,517	1,517	Existing Conditions	118,061	118,061	118,061
Direct	-	1	3	Direct	(130)	195	342
<b>Total</b>	<b>1,517</b>	<b>1,518</b>	<b>1,520</b>	<b>Total</b>	<b>117,931</b>	<b>118,256</b>	<b>118,403</b>
Percentage Change	-	0.07	0.20	Percentage Change	(0.11)	0.17	0.29
<b>Employment (jobs)<sup>2</sup></b>				Student-Teacher Ratio	16.97	16.97	16.97
Existing Conditions	520,444	520,444	520,444	Number of Potential New Teachers	-	12	20
Direct	(133)	200	351				
Induced	(47)	70	123				
<b>Total</b>	<b>520,264</b>	<b>520,714</b>	<b>520,918</b>				
Percentage Change	(0.03)	0.05	0.09				
<b>Tax Revenues (\$ million)</b>							
State and Local Taxes	\$(0.82)	\$1.24	\$2.17				
Federal Taxes	\$(2.72)	\$4.10	\$7.19				
<b>Total</b>	<b>\$(3.54)</b>	<b>\$5.34</b>	<b>\$9.36</b>				

<sup>1</sup> City of Tucson.

<sup>2</sup> Pima County.

Note: (Number) denotes a negative number.  
See EIS, Table TU 3.11-3.

**Airspace and Range Use.** F-35A training flight activities would take place in existing airspace units and ranges. No airspace modifications would be required for any of the scenarios. Tucson AGS-based F-35A training aircraft would use BMGR East for weapons training. Figure 18 presents the Tucson AGS Alternative training airspace and ranges.



**Figure 18. Airspace and Ranges for the F-35A Beddown at Tucson AGS**

With the advances in technology, the F-35A would utilize guided ordnance from a higher altitude and from longer distances than the unguided munitions often used by the A-10 or F-16. In addition to guided munitions, the F-35A is equipped with a 25-millimeter cannon. Table 53 lists munitions use for the F-35A training aircraft scenarios at Tucson AGS. The F-35A would conduct supersonic operations in authorized airspace only.

**Table 53. Tucson AGS Projected F-35A Annual Munitions Use**

Munitions Type	Projected Annual F-35A Usage			Range Permitted
	Scenario T1 24 Aircraft	Scenario T2 48 Aircraft	Scenario T3 72 Aircraft	
GBU-12 (live)	36	72	108	BMGR
GBU-12 (inert)	78	156	234	BMGR
GBU-31 (inert)	20	40	60	BMGR
GBU-32 (inert)	26	52	78	BMGR
25-millimeter Target Practice	52,000	104,000	156,000	BMGR
MJU-61/B Training Flares	26,400	52,800	79,200	Authorized Airspace

Note: See EIS, Table TU 2.2-5.

Table 54 presents the noise conditions under the training airspace associated with the Tucson AGS Alternative. Table 55 summarizes the minority, low-income, and youth populations under the training airspace.

**Table 54. Noise Environment for Tucson AGS Training Airspace,  
Baseline Conditions and F-35A Scenarios**

Airspace Name <sup>1</sup>	Baseline			T1 (24 Aircraft)			T2 (48 Aircraft)			T3 (72 Aircraft)		
	DNL <sub>mr</sub>	CDNL	Booms/Day									
Ruby MOA	53	N/A	N/A	54	N/A	N/A	57	N/A	N/A	58	N/A	N/A
Outlaw MOA	<45	N/A	N/A									
Jackal MOA	<45	N/A	N/A									
Sells MOA	<45	54	2.3	<45	49	0.8	45	49	0.7	47	49	0.8
Rustler Airspace	<45	N/A	N/A									
Tombstone MOA	<45	N/A	N/A	48	N/A	N/A	51	N/A	N/A	53	N/A	N/A
BMGR North TAC Range	61	54	2.3	60	49	0.7	62	48	0.5	64	48	0.5
BMGR South TAC Range	61	54	2.3	60	49	0.7	62	48	0.5	64	48	0.5
VR-263	<45	N/A	N/A	56	N/A	N/A	59	N/A	N/A	61	N/A	N/A

<sup>1</sup> Noise levels beneath MOAs listed also include noise generated by aircraft operating in overlying ATCAAs; airspace units in which supersonic noise levels are "N/A" are not authorized for supersonic flight.

Note: See EIS, Table TU 3.2-4.

**Table 55. Tucson AGS Populations of Concern Under the Training Airspace**

<i>Airspace Units</i>	<i>Counties Overflown</i>	<i>Affected Population (2010)</i>	<i>Minority</i>	<i>Percentage Minority</i>	<i>Low-Income</i>	<i>Percentage Low-Income</i>	<i>Youth</i>	<i>Percentage Youth</i>
Jackal MOA/ATCAA	Apache, Arizona	40,382	24,369	60.3	12,275	30.4	12,601	31.2
	Gila, Arizona							
	Graham, Arizona							
	Navajo, Arizona							
	Pinal, Arizona							
Outlaw MOA/ATCAA	Gila, Arizona	42,045	19,322	46.0	7,919	18.8	8,879	21.1
	Maricopa, Arizona							
	Pinal, Arizona							
Ruby MOA/ATCAA	Pima, Arizona	7,691	5,124	66.6	1,148	14.9	2,132	27.7
	Santa Cruz, Arizona							
Rustler Airspace	Apache, Arizona	16,972	7,946	46.8	2,374	14.0	4,695	27.7
	Catron, New Mexico							
	Graham, Arizona							
	Grant, New Mexico							
	Greenlee, Arizona							
	Hidalgo, New Mexico							
Sells MOA/ATCAA	Maricopa, Arizona	8,623	7,344	85.2	3,026	35.1	2,546	29.5
	Pima, Arizona							
	Pinal, Arizona							
Tombstone MOA/ATCAA	Cochise, Arizona	33,227	22,881	68.9	9,934	29.9	8,480	25.5
	Hidalgo, New Mexico							
	Luna, New Mexico							
VR-263	Graham, Arizona	12,324	5,063	41.1	2,031	16.5	2,782	22.6
	Pima, Arizona							
	Grant, New Mexico							
	Hidalgo, New Mexico							
	Luna, New Mexico							

Note: See EIS, Table TU 3.12-4.

Source: USCB 2010a and 2010b, as analyzed using GIS.

**Natural and Cultural Resources.** Based on the very low percentage of time spent in low-level flight by F-35A aircraft training within the airspace and the previous and ongoing exposure of wildlife to training by other aircraft in the airspace, no significant adverse effects on vegetation or wildlife from overflights or noise are anticipated. No new types of biological impacts would be introduced into these areas as a result of the beddown of the F-35A. Measures to avoid the potential for wildland fire from flare use, coupled with the initial restriction of flare use to airspace over military ranges, would result in no appreciable increase in the incidence of rangeland fires. Impacts on vegetation and wildlife would be less than significant.

No impacts on historic properties under Tucson AGS airspace are expected under any beddown scenario.

**Recreation.** Table 56 presents average noise levels over recreational use areas. These levels are relatively low and compatible with recreational activities. The overall change in recreational resources is minimal except under VR-263.

**Table 56. Tucson AGS Average Noise Levels by Airspace and Associated Recreational Use Areas**

<i>Airspace</i>	<i>Recreational Resource</i>	<i>Baseline Noise Level (DNL<sub>mr</sub>)</i>	<i>Projected Average Noise Level (DNL<sub>mr</sub>)</i>		
			<i>Scenario (Aircraft)</i>		
			<i>T1 (24)</i>	<i>T2 (48)</i>	<i>T3 (72)</i>
Ruby MOA/ATCAA	Buenos Aires NWR, Pajarita Wilderness	53	54	57	58
Outlaw MOA/ATCAA	Aravaipa Canyon Wilderness, Needles Eye Wilderness, Salt River Canyon Wilderness, Superstition Wilderness, White Canyon Wilderness	<45	<45	<45	<45
Jackal MOA/ATCAA	Galiuro Wilderness, Gila Box NCA, North Santa Teresa Wilderness, Roper Lake SP, Santa Teresa Wilderness	<45	<45	<45	<45
Sells MOA/ATCAA	Baboquivari Peak Wilderness, Cabeza Prieta NWR, Organ Pipe Cactus NM, Organ Pipe Cactus Wilderness	45	<45	45	47
Rustler Airspace	Bear Wallow Wilderness, Blue Range Wilderness, Escudilla Wilderness, Gila Box NCA and Wilderness, Mount Baldy Wilderness	<45	<45	<45	<45
Tombstone MOA/ATCAA	Chiricahua NM, Leslie Canyon NWR, San Bernardino NWR	45	48	51	53
R-2301E BMGR North TAC/ South TAC Ranges	Organ Pipe Cactus Wilderness (No public access)	61	60	62	64
VR-263	Chiricahua NM, Galiuro Wilderness, Leslie Canyon NWR, Redfield Canyon Wilderness	<45	56	59	61

Note: See EIS, Table TU 3.10-8.

Key: NCA=National Conservation Area.

**Native American Concerns.** Given the proximity and joint use of airspace units between Tucson AGS and Luke AFB, consultation efforts with Native American tribes have been conducted jointly between Tucson AGS and Luke AFB. The Air Force has contacted the following tribes to consult on a government-to-government basis regarding their concerns about potential impacts on traditional resources and TCPs under the airspace associated with Luke AFB and Tucson AGS: Campo Band of Mission Indians, Fort McDowell Yavapai Nation, Fort Sill Apache Tribe of Oklahoma, Fort Yuma-Quechan Tribe, Pascua Yaqui Tribe of Arizona, Tonto Apache Tribe, the Ak-Chin Indian Community, Chemehuevi Tribe, Cocopah Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Gila River Indian Community, Hopi Tribe, Hualapai Tribe, Kaibab Band of Paiute Indians, Mescalero Apache Tribe, Navajo Nation, Salt River Pima-Maricopa Indian Community, Pueblo of Zuni Tribe, White Mountain Apache Tribe, San Carlos Apache Tribe, Yavapai-Apache Nation, Yavapai-Prescott Indian Tribe, and the Tohono O’odham Nation. Air Force consultation with interested Native American groups did not result in the identification of any impacts on traditional cultural resources by Native American groups from any increase in subsonic noise or continued flare use within existing training airspace. More details on the consultation process to date are provided in the EIS.

### Auxiliary Airfields

The auxiliary airfield for Tucson AGS F-35A training would be the joint Sierra Vista Municipal Airport/Libby Army Airfield (Libby AAF). Figure 19 displays calculated 65 dB DNL noise contours for different aircraft scenarios training at Libby AAF. These noise contours are contained within the boundary of Fort Huachuca. Therefore, no off-installation populations or acreage are affected by noise levels of 65 dB DNL or greater.

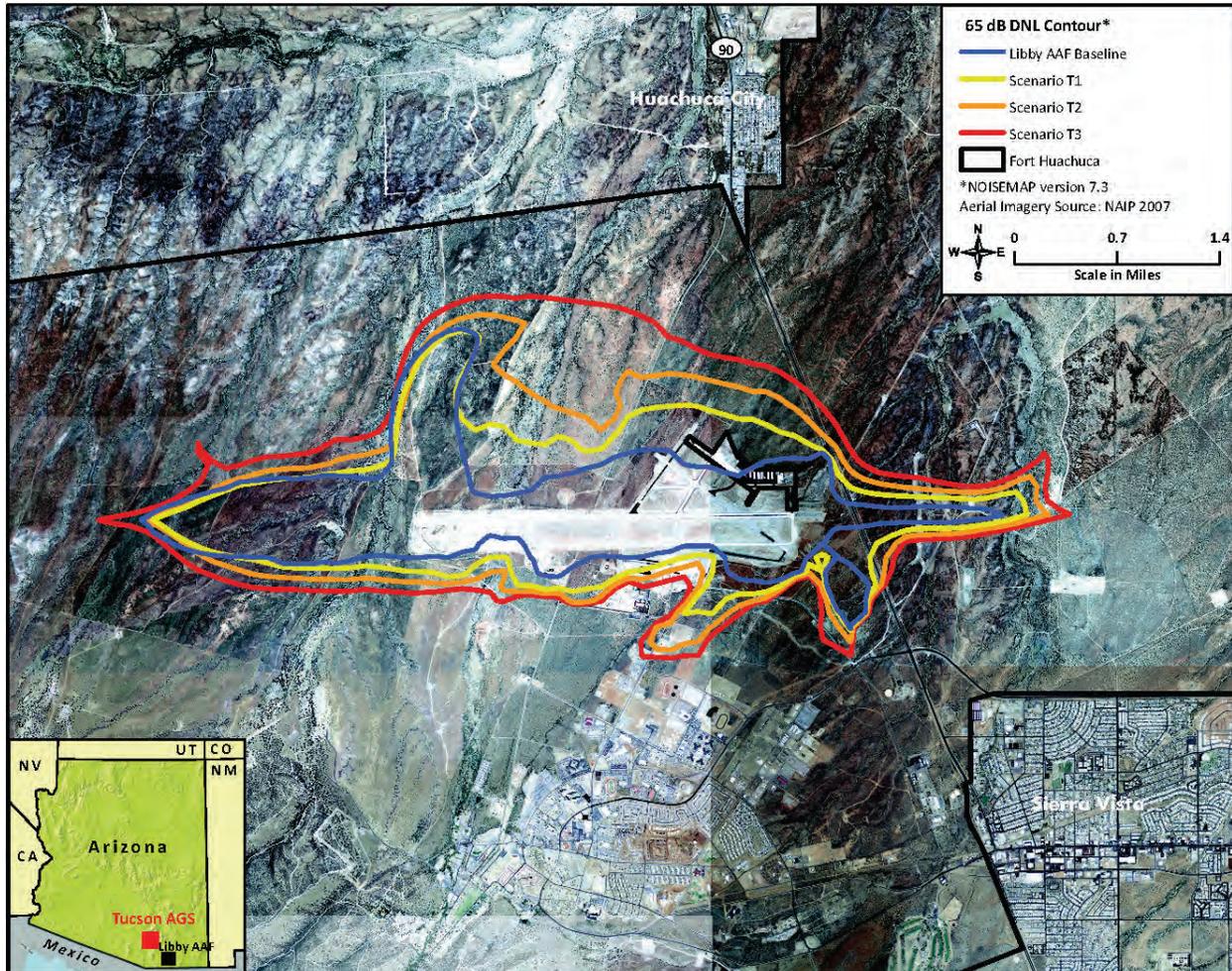


Figure 19. 65 dB DNL Noise Contours at Libby AAF

Boise AGS is an active military installation that undergoes changes in mission and in training requirements in response to defense policies, current threats, and tactical and technological advances. As a result, the installation requires new construction, facility improvements, infrastructure upgrades, and other maintenance/repairs on a nearly continuous basis.

Past, present, and reasonably foreseeable actions within the region could interact with the beddown of F-35A at Boise AGS. Mountain Home AFB is one of five locations under consideration for basing of one to three squadrons of F-35A aircraft that perform the operation mission. Proposed airspace changes for Paradise East and West MOAs were proposed to meet the 366FW requirement to train fighter aircrews in offensive and defensive operations. These airspace changes were charted in August 2011 and included in the F-35A training aircraft scenarios. Multiple mission changes at Boise AGS and at Mountain Home AFB have added and/or deleted missions over the history of the bases.

The Bureau of Land Management (BLM) has a series of resource management plans and wind power projects under review. The Boise Airport Master Plan was updated in 2009 and identifies multiple short- and long-term improvement projects to accommodate future growth. The Boise Parks and Recreation Department has proposed multiple new parks, including up to four within about 3 to 5 miles to the southeast and to the north of the airport.

## 10. Cumulative Effects Analysis

This section considers past, present, and future actions and reasonably foreseeable actions that are in the planning phase at each location at this time. Actions that have a potential to interact with the Proposed Action are included in this cumulative analysis. This approach enables decisionmakers to have the most current information available so that they can evaluate the environmental consequences of the beddown of the F-35A training aircraft.

### 10.1 Boise AGS Cumulative Effects

Recent changes in missions at the installation, projected construction for an F-35A beddown, and future expansion of the airport's runways and terminal facilities are spread over time so that construction impacts (noise, equipment emissions, dust, and potential storm water issues) would not occur all at one time. Airport expansion would require additional environmental analysis in the future. Coordination among the City of Boise, Ada County, airport operators, and the base would minimize the potential for incompatible development.

The proposal to beddown up to three increments of 24 F-35A operational aircraft and use of the airfield by the F-35A training aircraft could affect land uses on Mountain Home AFB and

expose some occupied base facilities to noise levels above 80 dB DNL. Outside the base, noise levels above 65 dB DNL could extend as far as the C.J. Strike Dam Recreation Annex and affect the quality of outdoor recreation at this facility. Mountain Home AFB is in attainment for air quality, and although combined operations would increase local air emissions at the airfield, the cumulative effect would not exceed air quality standards. The cumulative use of training airspace would result in maximum combined subsonic noise levels in the Jarbidge North MOA/ATCAA and Owyhee North MOA/ATCAA of 68 dB DNL<sub>mr</sub> and 67 dB DNL<sub>mr</sub>, respectively. The maximum combined noise level in the Saddle MOA/ATCAAs and Paradise MOA/ATCAAs would be 53 dB DNL<sub>mr</sub> and 46 dB DNL<sub>mr</sub>, respectively, and the maximum combined noise level in the Jarbidge South MOA/ATCAA and

Owyhee South MOA/ATCAA would remain at or below 45 dB DNL<sub>mr</sub>. These levels would produce perceptible changes from baseline conditions.

In addition to the F-35A operational aircraft, Mountain Home AFB is being considered for the beddown of a Foreign Military Sales squadron from the Royal Saudi Air Force with 12 F-15SA conducting flight operations at the Mountain Home AFB airfield and in the training airspace. If the Royal Saudi Air Force beddown, the F-35A beddown at Mountain Home AFB, and the F-35A beddown at Boise AGS were to all take place, the maximum combined noise levels in the Jarbidge North MOA/ATCAA and Owyhee North MOA/ATCAA would be 69 dB DNL<sub>mr</sub> and 68 dB DNL<sub>mr</sub>, respectively. The maximum combined noise level in the Saddle MOA/ATCAAs and Paradise MOA/ATCAAs would be 53 dB DNL<sub>mr</sub> and 46 dB DNL<sub>mr</sub>, respectively, and the maximum combined noise level in the Jarbidge South MOA/ATCAA and Owyhee South MOA/ATCAA would remain at or below 46 dB DNL<sub>mr</sub>. These levels would produce perceptible changes from baseline conditions.

The planning and siting of new wind farm facilities and placement of communication towers pose compatibility concerns. A military airspace regional coordinator assists with mutually compatible long-term sustainable solutions between responsible Federal agencies.

## **10.2 Holloman AFB Cumulative Effects**

Most of the recent construction on Holloman AFB is already reflected in baseline conditions. F-35A construction could overlap with ongoing implementation of programmed development projects at Holloman. Water supply is very important in this arid area, prompting Alamogordo's proposal for a desalination plant. Increased demand for potable water and the balance of surface and groundwater sources is a growing concern for this region.

Expanded ground training for Stryker wheeled brigade and infantry brigade operations on Fort Bliss and McGregor Range, with associated training operations and field training sites with new sites in Sacramento Mountains, Tularosa Basin, Otero Mesa on McGregor Range, and development within the main cantonment are not expected to result in cumulative impacts in conjunction with the F-35A mission.

RIAC is used infrequently to support Joint Training Exercises (formerly known as Roving Sands). Combined operations of the F-35A training, civilian and commercial operations, and temporary staging support for any future major exercise could cause elevated noise levels, extending to the city of Roswell's residential areas.

Holloman AFB is an active military installation that undergoes changes in mission and in training requirements in response to defense policies, current threats, and tactical and technological advances. Over the past 20 years, Holloman F-15s were replaced by F-117s, which were replaced by the F-22 Raptor. In the late 1990s, the German Air Force began training with the Tornados. Remotely piloted aircraft based at Holloman include MQ-1 and MQ-9 Predators and QF-4 drones.

The past, present, and future missions include the August 2011 decision to relocate two F-16 training squadrons to Holloman AFB, continued joint exercises with U.S. Army forces, Army and Air Force mission and airspace changes in other parts of New Mexico potentially overlap with the F-35A beddown, and consolidation of the F-22 fleet by redistributing the two F-22 squadrons at Holloman AFB to other bases.

Nonmilitary actions include BLM resource management plans and reintroduction of the Aplomado falcon (initiated in July 2007), which is jointly managed by the State of New Mexico, USFWS, BLM, DoD, and other private agencies, and the development of Spaceport America on 15,000 acres of state trust lands near Upham, New Mexico, approximately 40 miles west of Holloman AFB.

Recent development of roads and development in the vicinity of Biggs AAF and EPIA have contributed to increased human activity and traffic in and around these airfields. Increased operations by F-35A training aircraft performing patterns at either airfield would cause additional noise, affecting residential areas to the southwest of both airfields in the city of El Paso and new troop housing east of Biggs AAF.

Training airspace has supported military missions for units at Holloman AFB, Cannon AFB, WSMR, and Fort Bliss; joint exercises; and transient military users for decades. The F-35A proposal, in combination with ongoing and evolving operations at regional installations, could cause higher than usual noise levels in some underlying areas, as described in the EIS resource sections. This could cumulatively affect recreational sites, sensitive lands uses, and isolated homesteads throughout the region.

Luke AFB is an active U.S. Air Education and Training Command military installation and has been a training field for conventional fighters since its inception in 1941, using a wide range of aircraft, including the P-38, P-51 Mustang, F-84, F-104 Starfighter, F-100, F-4 Phantom, F-15 Eagle, and F-160.

Luke AFB is the largest active-duty F-16 training base in the world, with over 160 assigned F-16 aircraft composed of 25 squadrons. The installation requires construction, facility improvements, infrastructure upgrades, and other maintenance/repairs on a nearly continual basis. Known construction and upgrades are a part of the analysis contained in the EIS.

Past, present, and reasonably foreseeable actions within the region include ongoing relocation of the F-16 training mission to Holloman AFB, beddown of Marine Corps F-35B aircraft at Yuma, Arizona, enhancements at the BMGR East, and military construction projects at Luke AFB. Nonmilitary actions include BLM resource management plans and local land use plans.

### **10.3 Luke AFB Cumulative Effects**

Implementation of construction projects at Luke AFB, in combination with the F-35A construction, would somewhat increase the total amount of construction occurring at the base over the next several years. A recent reduction of assigned F-16 aircraft and operations is reflected in the current baseline for the airfield and somewhat offsets the noise increase associated with the F-35A scenarios. The town of Gila Bend is experiencing modest growth, and noise levels for the F-35A would expand the areas exposed to 65 dB and greater. This could result in approval of incompatible uses in the future and result in local encroachment on Gila Bend AFAF.

Proposals to expand the capabilities of BMGR East could increase use of restricted airspace over BMGR. The combination of operations associated with enhanced capabilities being developed on BMGR East, F-35B operations, and additional F-35A operations from Tucson AGS could increase noise levels beyond those evaluated in the EIS. Since public use of BMGR is already restricted due to incompatibility with military uses, potential to impact public uses and recreation is

relatively low. Effects on wildlife and cultural resources would be similar to those described in the EIS but potentially with a higher degree of impact.

The F-35B aircraft proposed for Marine Corps Air Station (MCAS) Yuma would use BMGR as one of the primary training ranges. Continued coordination between MCAS Yuma and the Air Force would be necessary to schedule use of BMGR East amongst the various users of the range.

In general, the resource management actions by the various Federal land managers and tribal entities in the lands underlying training airspace are implemented on the ground and would not overlap with the use of regional airspace. Several ongoing and proposed resource management plans could approve new SULMAs with conservation and recreational values. Noise impacts on these areas could be seen as inconsistent with conservation-oriented management goals.

## **10.4 Tucson AGS Cumulative Effects**

Tucson AGS proposed improvements unrelated to the F-35A would increase the amount of construction occurring at the base over the next several years. Relocating the main entry gate would benefit access and alleviate potential traffic congestion during peak arrival times. The ongoing Part 150 update for Tucson International Airport is anticipating a smaller footprint exposed to noise levels of 65 dB and greater, based on quieter engines in new aircraft and slower growth in civilian operations than previously projected. The proposed F-35A operations are an alternative in the updated Part 150 study and would provide a basis for adopting a revised footprint that ensures flexibility and compatible decisions for long-term joint use at the airfield.

The addition of pattern work by F-35A training aircraft at Libby AAF, unmanned aircraft system operations, and civilian commercial and general aviation operations are compatible, and cumulative operations would be manageable. The F-35A training aircraft would represent a major driver of the noise effects at the airfield, as described in the EIS.

Potential training in R-2301E and areas on BMGR may be higher than evaluated if Luke AFB receives F-35A aircraft, if Tucson AGS receives F-35A aircraft and Luke AFB continues baseline operations, if MCAS Yuma receives the F-35B aircraft, and/or if Operation Snowbird increases the number of operations. Combined aircraft training from the different locations and the proposed lowering of the floor of R-2301E over Cabeza Prieta National Wildlife Refuge could cause increases in noise that may not be compatible with conservation goals.

Tucson AGS is an active military installation that undergoes changes in mission and in training requirements in response to defense policies, current threats, and tactical and technological advances. Known construction and upgrades are a part of the analysis contained in the EIS. Over the past 30 years, Tucson AGS has transitioned from training U.S. Air Force pilots to adding pilot training for international allies who are training with F-16 aircraft.

Past, present, and reasonably foreseeable actions within the Tucson AGS region could interact with the F-35A proposal at the Tucson location. These actions include the United Arab Emirates pilot training program departing and the Royal Netherlands Air Force pilot training program arriving at Tucson AGS; Operation Snowbird, with 6 to 12 squadrons deploying for 2 weeks of training between the months of November and April each year; the U.S. Marine Corps F-35B west coast basing; range enhancements for BMGR East; the MQ-1C Warrior beddown at Fort Huachuca; and ongoing activities at Davis-Monthan AFB and Fort Huachuca. Other actions include renewable energy projects and Tucson International Airport plan updates.

Future flight operational levels could increase noise levels beyond those evaluated in the EIS. Public use of BMGR is already restricted due to incompatibility with military uses, and potential impact on public uses and recreation would be relatively low. Effects on wildlife and cultural resources would be similar to those described in the EIS but potentially with a higher degree of impact. Several ongoing and proposed resource management plans could approve new SULMAs with conservation and recreation values, and noise impacts on these areas may be inconsistent with conservation-oriented management goals. Impacts would be similar to those described in the EIS resource sections, such as Land Use, Recreation, Wildlife, and Cultural Resources. A military airspace regional coordinator could serve as a representative to assist with mutually compatible long-term sustainable solutions between responsible Federal agencies.

## **11. Comparison of Environmental Consequences by Alternative and Scenario**

This section presents a comparative analysis of the alternative locations and aircraft beddown scenarios presented in the EIS. The decisions to be made associated with the EIS are as follows:

- Where to base F-35A training aircraft
- How many aircraft to be bedded down at the selected alternative location or locations
- What actions to implement to avoid or reduce, to the extent practicable, significant environmental impacts

In addition to these decisions regarding the F-35A training aircraft, the dynamics of an active military base, which are occurring at each alternative location, must be considered. The most noticeable of these ongoing activities will be the retirement and/or relocation of aircraft, including legacy F-16 and A-10 aircraft; the reassignment of F-22 aircraft; and the subsequent beddown of the F-16 FTU at Holloman AFB.

Environmental consequences for each of the four basing alternatives are summarized in this section. The following comparative table (see Table 57) summarizes much of the information presented for each base in this Executive Summary. Each beddown scenario and each alternative basing location will have different environmental results, as described in the EIS and summarized in this Executive Summary.

NEPA requires focused analyses on the areas and resources, such as wildlife or socioeconomics, that would potentially be affected by the Proposed Action or an alternative. Because the F-35A is a new aircraft that is under development, some data normally used to predict noise, air quality, and safety conditions cannot be obtained at this time. The data used in this EIS represent the best available information on the aircraft components, engines, flight characteristics, training airspace, and other requirements. Comparing and differentiating among alternatives comprise a fundamental premise of NEPA process. For the basing alternatives and scenarios identified for this Proposed Action, such summaries and comparisons are presented in Table 57.

**Table 57. Comparative Summary of Environmental Consequences**

Boise AGS		Holloman AFB Scenarios H1W, H2W, H3W		Holloman AFB Scenari
(Base)	(Airspace)	(Base)	(Airspace)	(Base)
<b>Airspace Management &amp; Use</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.1)				
<ul style="list-style-type: none"> <li>Operational increases resulting from all basing scenarios could be accommodated by the current air traffic management system within existing airspace without adverse impacts.</li> </ul>	<ul style="list-style-type: none"> <li>No modifications would be required for airspace structure or airport flight patterns and procedures to accommodate the F-35A aircraft operations regardless of the scenario selected. Detailed scheduling and prioritization would continue to be required between the respective scheduling agencies to help ensure all training and other mission requirements are met.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Boise AGS.</li> </ul>	<ul style="list-style-type: none"> <li>No modifications would be required for airspace structure or airfield flight patterns and procedures to accommodate the F-35A aircraft operations regardless of the scenario selected. Procedures and processes currently being implemented to improve scheduling for this airspace to meet all test, training, and other operational needs would be used to ensure all organizational requirements are met.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Boise AGS.</li> </ul>
<b>Noise</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.2)				
<ul style="list-style-type: none"> <li><b>Additional Annoyance:</b> Off-installation/airport residents affected by <math>\geq 65</math> decibels (dB) day-night average sound level (DNL) would increase from 142 to 3,104; 5,470; and 10,119 persons, or, with mitigations, to 2,547; 3,956 and 5,886 persons, under Scenarios B1, B2, and B3, respectively. Off-installation acres affected by <math>\geq 65</math> dB DNL would increase from 89 to 3,032; 5,038; and 6,958 under Scenarios B1, B2, and B3, respectively.</li> <li><b>Speech Interference:</b> Cumulative average events per daytime hour with potential to interfere with speech would increase by a factor of 4, 8, and 11 relative to baseline conditions under Scenarios B1, B2, and B3, respectively, at locations studied with windows closed.</li> <li><b>Classroom Impacts:</b> American National Standards Institute (ANSI) standards for new school construction may not be met at 1, 2, and 4 of the 4 schools studied under Scenarios B1, B2, and B3, respectively.</li> <li><b>Sleep Disturbance:</b> Cumulative average percentage of persons awakened at least once per night among all locations studied with windows closed would increase by 33%, 17%, and 31% under Scenarios B1, B2, and B3, respectively.</li> <li><b>Potential Hearing Loss:</b> Off-installation/airport residents affected by noise levels at which the risk of hearing loss is considered to be substantial (<math>\geq 80</math> dB DNL) would increase from 0 to 68, 164, and 313 under Scenarios B1, B2, and B3, respectively. No on-installation residents would be affected at levels <math>\geq 80</math> dB DNL under any scenario.</li> </ul>	<ul style="list-style-type: none"> <li><b>Subsonic Noise:</b> The onset rate-adjusted monthly day-night average sound level (DNL<sub>nr</sub>) beneath Special Use Airspaces (SUAs) would increase by up to 5, 7, and 9 dB under Scenarios B1, B2, and B3, respectively, but would equal or exceed 65 dB only beneath Jarbidge North and Owyhee Military Operations Areas (MOAs), Restricted Area 3202 (R-3202), and R-3204 under Scenarios B1, B2, and B3.</li> <li>DNL<sub>nr</sub> beneath Military Training Routes (MTRs) would increase between 3 and 5 dB under Scenarios B1, B2, and B3, respectively, and would exceed 65 dB under Instrument Route (IR)-301/307 and IR-392/305 under all three F-35A scenarios.</li> <li>Beneath the MOA/ATCAA or MTR with the highest DNL<sub>nr</sub> under a beddown scenario, the percentage of the population highly annoyed estimated using the methods described in section 3.2 could increase from 12 to up to 17 percent with Scenario B3.</li> <li><b>Supersonic Noise:</b> The C-weighted DNL (CDNL) would increase by 1 dB or less beneath primary training SUAs in which supersonic training is allowed. Average number of sonic booms would increase by &lt;1 per day.</li> <li><b>Munitions Noise:</b> F-35A would conduct inert weapons training at Saylor Creek and Juniper Butte Ranges. Inert bombs generate minimal noise and would not result in significant impacts. Live weapons training would be conducted at Utah Test and Training Range (UTTR). Increases in munitions noise levels at UTTR would not be noticeable in the context of ongoing munitions testing and training.</li> </ul>	<ul style="list-style-type: none"> <li><b>Additional Annoyance:</b> Off-installation residents affected by <math>\geq 65</math> dB DNL would decrease by approximately 1 person under Scenarios H1W, H2W, and H3W. Off-installation acres affected by <math>\geq 65</math> dB DNL would increase from 7,307 to 9,304; 10,880; and 12,283 under Scenarios H1W, H2W, and H3W, respectively.</li> <li><b>Speech Interference:</b> Cumulative average events with potential to interfere with speech would increase by 8%, 20%, and 35% under Scenarios H1W, H2W, and H3W, respectively, at locations studied with windows closed.</li> <li><b>Classroom Impacts:</b> ANSI standards for new school construction may not be met at either of the 2 schools studied under any scenario or under baseline conditions.</li> <li><b>Sleep Disturbance:</b> Cumulative average percentage of persons awakened at least once per night among all locations studied with windows closed would decrease or remain the same under all scenarios.</li> <li><b>Potential Hearing Loss:</b> No off-installation residents would be affected by noise levels at which the risk of hearing loss is considered to be substantial (<math>\geq 80</math> dB DNL) under any scenario. No on-installation residents would be affected at levels <math>\geq 80</math> dB DNL under any scenario.</li> </ul>	<ul style="list-style-type: none"> <li><b>Subsonic Noise:</b> DNL<sub>nr</sub> beneath SUAs would increase by up to 5, 8, and 9 dB under Scenarios H1W, H2W, and H3W, respectively. DNL<sub>nr</sub> would equal or exceed 65 dB beneath Red Rio and Oscura Range airspace units under Scenarios H2W and H3W, as well as beneath Yonder airspace under Scenario H3W.</li> <li>DNL<sub>nr</sub> beneath MTRs would increase by up to 3, 4, and 5 dB under Scenarios H1W, H2W, and H3W, respectively, but would not exceed 65 dB under any scenario.</li> <li>Beneath the MOA/ATCAA or MTR with the highest DNL<sub>nr</sub> under a beddown scenario, the percentage of the population highly annoyed estimated using the methods described in section 3.2 could increase from 5 to up to 13 percent with Scenario H3W.</li> <li><b>Supersonic Noise:</b> CDNL would increase by 2 dB or less beneath primary training SUAs in which supersonic training is allowed. Average number of sonic booms would increase by &lt;1 per day.</li> <li><b>Munitions Noise:</b> F-35A would conduct munitions training with live and inert munitions at Red Rio, Centennial, and Oscura Ranges. Noise generated by live munitions usage may be audible in off-range locations, but would be relatively infrequent.</li> <li><b>Auxiliary Airfield (Roswell International Air Center [RIAC]):</b> The approximate number of residents affected by <math>\geq 65</math> dB DNL would increase from 61 to 169, 255, and 358 persons under Scenarios H1W, H2W, and H3W, respectively. The number of</li> </ul>	<ul style="list-style-type: none"> <li><b>Additional Annoyance:</b> Off-installation residents affected by <math>\geq 65</math> dB DNL would decrease by approximately 5 persons under Scenarios H1, H2, H3, H4, and H5. Off-installation acres affected by <math>\geq 65</math> dB DNL would decrease under Scenario H1. Under Scenarios H2, H3, H4, and H5, off-installation acres exposed to <math>\geq 65</math> dB DNL would increase from 7,307 to 8,025; 9,438; 10,721; and 11,833 acres, respectively.</li> <li><b>Speech Interference:</b> Cumulative average events with potential to interfere with speech would decrease under Scenarios H1 and H2, but would increase by 5%, 22%, and 39% under Scenarios H3, H4, and H5, respectively, at locations studied with windows closed.</li> <li><b>Classroom Impacts:</b> ANSI standards for new school construction may not be met at either of the 2 schools studied under any scenario or under baseline conditions.</li> <li><b>Sleep Disturbance:</b> Cumulative average percentage of persons awakened at least once per night among all locations studied with windows closed would decrease under all scenarios.</li> <li><b>Potential Hearing Loss:</b> No off-installation residents would be affected by noise levels at which the risk of hearing loss is considered to be substantial (<math>\geq 80</math> dB DNL) under any scenario. No on-installation residents would be affected at levels <math>\geq 80</math> dB DNL under any scenario.</li> </ul>

Scenarios H1, H2, H3, H4, H5	Luke AFB		Tucson AGS	
	(Airspace)	(Base)	(Airspace)	(Airspace)
<ul style="list-style-type: none"> <li>Same as Holloman AFB Scenarios H1W, H2W, and H3W.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Boise AGS.</li> </ul>	<ul style="list-style-type: none"> <li>No modifications would be required for airspace structure or airfield flight patterns and procedures to accommodate the F-35A aircraft operations regardless of the scenario selected.</li> </ul>	<ul style="list-style-type: none"> <li>Operational increases resulting from Scenarios T1 and T2 could be accommodated by the current air traffic management system within existing airspace without adverse impacts. Under Scenario T3, the projected annual military airfield operations would exceed the maximum number allowed as per agreement with the Tucson Airport Authority. The agreement would need to be renegotiated to allow for additional airfield operations.</li> </ul>	<ul style="list-style-type: none"> <li>No modifications would be required for airspace structure or airport flight patterns and procedures to accommodate the F-35A aircraft operations regardless of the scenario selected.</li> </ul>
<ul style="list-style-type: none"> <li><b>Subsonic Noise:</b> DNL<sub>tr</sub> beneath SUAs would increase by up to 4, 7, 9, 10, and 11 dB under Scenarios H1, H2, H3, H4, and H5, respectively, and would equal or exceed 65 dB under 0, 0, 3, 5, and 6 of the 11 primary use SUAs under Scenarios H1, H2, H3, H4, and H5, respectively.</li> <li>DNL<sub>tr</sub> beneath MTRs would increase by up to 3, 4, 5, 6, and 7 dB under Scenarios H1, H2, H3, H4, and H5, respectively, but would not exceed 65 dB under any scenario.</li> <li>Beneath the MOA/ATCAA or MTR with the highest DNL<sub>tr</sub> under a beddown scenario, the percentage of the population highly annoyed estimated using the methods described in section 3.2 could increase from 9 to up to 17 percent with Scenario H5.</li> <li><b>Supersonic Noise:</b> CDNL would decrease beneath all primary training SUAs in which supersonic training is allowed, except beneath McGregor Range airspace units, where it would increase by up to 3 dB. Average number of sonic booms would increase by &lt;1 per day or decrease.</li> <li>Individuals at DEIS hearings expressed annoyance with existing sonic booms and anticipated increased annoyance with additional sonic booms.</li> <li><b>Munitions Noise:</b> F-35A would conduct munitions training with live and inert munitions at Red Rio, Centennial, and Oscura Ranges. Noise generated by live munitions usage may be audible in off-range locations, but would be relatively infrequent.</li> <li><b>Auxiliary Airfield (RIAC):</b> The approximate number of residents affected by ≥65 dB DNL would increase from 61 to 66, 164, 247,</li> </ul>	<ul style="list-style-type: none"> <li><b>Additional Annoyance:</b> Off-installation residents affected by ≥65 dB DNL would decrease under Scenarios L1, L2, and L3, but would increase from 1,601 to 2,223; 3,216; and 5,340 under Scenarios L4, L5, and L6, respectively. Off-installation acres affected by ≥65 dB DNL would decrease under Scenarios L1 and L2, but would increase from 7,042 to 7,916; 9,398; 10,679; and 11,651 under Scenarios L3, L4, L5, and L6, respectively.</li> <li><b>Speech Interference:</b> Cumulative average events with potential to interfere with speech would decrease under Scenarios L1, L2, and L3, but would increase by 22%, 44%, and 71% under Scenarios L4, L5, and L6, respectively, at locations studied with windows closed.</li> <li><b>Classroom Impacts:</b> ANSI standards for new school construction may not be met at 1 of the 5 schools studied under Scenarios L1 and L2, at 2 schools under Scenario L3, and at 3 schools under Scenarios L4, L5, and L6.</li> <li><b>Sleep Disturbance:</b> Cumulative average percentage of persons awakened at least once per night averaged among all locations studied with windows closed would decrease under all scenarios.</li> <li><b>Potential Hearing Loss:</b> Off-installation/airport residents affected by noise levels at which the risk of hearing loss is considered to be substantial (≥80 dB DNL) would decrease under Scenarios L1 and L2, but would increase from 2 to 5, 8, 12, and 14 persons under Scenarios L3, L4, L5, and L6, respectively. No on-installation residents would be affected at levels ≥80 dB DNL under any scenario.</li> </ul>	<ul style="list-style-type: none"> <li><b>Subsonic Noise:</b> DNL<sub>tr</sub> beneath SUAs would increase by up to 3, 6, 7, 9, 10, and 10 dB under Scenarios L1, L2, L3, L4, L5, and L6, respectively, and would exceed 65 dB beneath 0, 2, 3, 3, 4, and 4 of the 6 primary use SUAs under Scenarios L1, L2, L3, L4, L5, and L6, respectively.</li> <li>DNL<sub>tr</sub> beneath MTRs would increase by up to 11, 14, 16, 17, 18, and 19 dB under Scenarios L1, L2, L3, L4, L5, and L6, respectively, but would not exceed 65 dB under any scenario.</li> <li>Beneath the MOA/ATCAA or MTR with the highest DNL<sub>tr</sub> under a beddown scenario, the percentage of the population highly annoyed estimated using the methods described in section 3.2 could increase from 7 to up to 21 percent with Scenario L6.</li> <li><b>Supersonic Noise:</b> CDNL would decrease beneath all primary training SUAs in which supersonic training is allowed. Average number of sonic booms per day would decrease or remain the same under all scenarios.</li> <li><b>Munitions Noise:</b> F-35A would conduct munitions training with live and inert munitions at Barry M. Goldwater Range (BMGR). Noise generated by live munitions usage may be audible in off-range locations, but would be relatively infrequent.</li> <li><b>Auxiliary Airfield (Gila Bend Air Force Auxiliary Field [Gila Bend AFAF]):</b> Off-installation residents affected by ≥65 dB DNL would decrease under Scenario L1, but would increase from 3 to 5, 9, 11, 13, and 15 persons under Scenarios L2, L3, L4, L5, and L6,</li> </ul>	<ul style="list-style-type: none"> <li><b>Additional Annoyance:</b> Off-installation/airport residents affected by ≥65 dB DNL would increase from 407 to 1,918; 4,378; and 8,534 persons under Scenarios T1, T2, and T3, respectively. Off-installation/airport acres affected by ≥65 dB DNL would increase from 500 to 1,200; 1,942; and 2,938 under Scenarios T1, T2, and T3, respectively.</li> <li><b>Speech Interference:</b> Cumulative average events per daytime hour with potential to interfere with speech would increase by 11%, 92%, and 172% under Scenarios T1, T2, and T3, respectively, at locations studied with windows closed.</li> <li><b>Classroom Impacts:</b> ANSI standards for new school construction may not be met at 1, 2, and 4 of the 5 schools studied under Scenarios T1, T2, and T3, respectively.</li> <li><b>Sleep Disturbance:</b> Cumulative average percentage of persons awakened at least once per night among all locations studied with windows closed would increase by 16% under Scenarios T1 and T2 and by 23% under Scenario T3.</li> <li><b>Potential Hearing Loss:</b> No off-installation residents would be affected by noise levels at which the risk of hearing loss is considered to be substantial (≥80 dB DNL) under any scenario. No on-installation residents would be affected at levels ≥80 dB DNL under any scenario.</li> </ul>	<ul style="list-style-type: none"> <li><b>Subsonic Noise:</b> DNL<sub>tr</sub> beneath SUAs would increase by up to 3, 6, and 8 dB under Scenarios T1, T2, and T3, respectively, but would not exceed 65 dB under any scenario.</li> <li>DNL<sub>tr</sub> beneath the primary use MTR would increase by 11, 14, and 16 dB under Scenarios T1, T2, and T3, respectively, but would not exceed 65 dB under any scenario.</li> <li>Beneath the MOA/ATCAA or MTR with the highest DNL<sub>tr</sub> under a beddown scenario, the percentage of the population highly annoyed estimated using the methods described in section 3.2 could increase from 7 to up to 11 percent with Scenario T3.</li> <li><b>Supersonic Noise:</b> CDNL would decrease beneath all primary training SUAs in which supersonic training is allowed. Average number of sonic booms per day would decrease beneath all primary training SUAs.</li> <li><b>Munitions Noise:</b> F-35A would conduct munitions training with live and inert munitions at BMGR. Noise generated by live munitions usage may be audible in off-range locations, but would be relatively infrequent.</li> <li><b>Auxiliary Airfield (Libby Army Airfield [Libby AAF]):</b> No off-installation residents would be affected by ≥65 dB DNL under any scenario. Off-installation area affected by ≥65 dB DNL would be limited to land owned by the Sierra Vista Municipal Airport.</li> </ul>

Boise AGS		Holloman AFB Scenarios H1W, H2W, H3W		Holloman AFB Scenari
(Base)	(Airspace)	(Base)	(Airspace)	(Base)
	<ul style="list-style-type: none"> <li>• <b>Auxiliary Airfield (Mountain Home Air Force Base [AFB]):</b> Off-installation/airport residents affected by <math>\geq 65</math> dB DNL would increase from 10 to 11 persons under Scenario B1 and to 12 persons under Scenarios B2 and B3.</li> <li>• Off-installation/airport acres affected by <math>\geq 65</math> dB DNL would increase from 13,658 to 14,293; 14,935; and 15,602 acres under Scenarios B1, B2, and B3, respectively.</li> </ul>		<p>acres affected by <math>\geq 65</math> dB DNL would increase from 3,703 to 4,484; 5,117; and 5,676 acres under Scenarios H1W, H2W, and H3W, respectively.</p> <ul style="list-style-type: none"> <li>• <b>Auxiliary Airfield (Biggs Army Airfield [Biggs AAF]):</b> Off-installation/airport residents affected by <math>\geq 65</math> dB DNL would increase from 638 to 667, 701, and 736 under Scenarios H1W, H2W, and H3W, respectively. Off-installation/airport acres affected by <math>\geq 65</math> dB DNL would increase by 2, 5, and 8 acres; under Scenarios H1W, H2W, and H3W, respectively.</li> <li>• <b>Auxiliary Airfield (El Paso International Airport [EPIA]):</b> Off-installation/airport residents affected by <math>\geq 65</math> dB DNL would increase from 1,295 to 1,643; 2,241; and 2,590 persons under Scenarios H1W, H2W, and H3W, respectively. Off-installation/airport acres affected by <math>\geq 65</math> dB DNL would increase from 1,201 to 1,388; 1,526; and 1,648 under Scenarios H1W, H2W, and H3W, respectively.</li> </ul>	

<b>Air Quality</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.3)				
<ul style="list-style-type: none"> <li>• Construction activities would produce annual emissions that would remain well below any conformity or Prevention of Significant Deterioration (PSD) threshold (100 or 250 tons per year, depending on the pollutant). Therefore, proposed construction emissions would produce less than significant air quality impacts.</li> <li>• The increase in emissions under Scenario B3 would exceed the applicable carbon monoxide (CO) conformity threshold. All other emission increases from the three basing scenarios would not exceed any applicable conformity or PSD significance threshold and would produce less than significant air quality impacts at Boise AGS.</li> <li>• In regard to proposed CO emissions that would exceed the conformity threshold of 100 tons per year under Scenario B3, the U.S. Air Force</li> </ul>	<ul style="list-style-type: none"> <li>• The increase in operational emissions under Scenario B3 within proposed airspaces would exceed the NO<sub>x</sub> PSD threshold of 250 tons per year. All other emission increases under the three basing scenarios would not exceed any PSD or conformity threshold and would produce less than significant impacts on NAAQS pollutant levels within the Boise AGS airspace project region. Further evaluation of the NO<sub>x</sub> emission increases under Scenario B3 determined that these emissions would not contribute to an exceedance of an ambient air quality standard within the airspace project region. As a result, emissions of NO<sub>x</sub> from F-35A operations within proposed Boise AGS airspace units would produce less than significant impacts on NAAQS pollutant levels.</li> <li>• F-35A operations within</li> </ul>	<ul style="list-style-type: none"> <li>• Construction activities would produce annual emissions that would remain well below any PSD threshold (250 tons per year). Therefore, proposed construction emissions would produce less than significant air quality impacts.</li> <li>• The increase in CO emissions under Scenario H3W would exceed the PSD threshold of 250 tons per year. All other emission increases from the three basing scenarios would not exceed any PSD significance threshold and would produce less than significant air quality impacts at Holloman AFB.</li> <li>• Further evaluation of CO emission increases under Scenario H3W determined that these emissions would not contribute to an exceedance of an ambient air quality standard within the Otero County project region. Therefore, CO emissions from the basing actions at</li> </ul>	<ul style="list-style-type: none"> <li>• The increase in operational emissions under Scenario H3W within proposed airspaces would exceed the NO<sub>x</sub> PSD threshold of 250 tons per year. All other emission increases under the three basing scenarios would not exceed any PSD threshold and would produce less than significant impacts on NAAQS pollutant levels within proposed Holloman AFB airspace units.</li> <li>• Further evaluation of the NO<sub>x</sub> emission increases under Scenario H3W determined that these emissions would not contribute to an exceedance of an ambient air quality standard within the airspace project region. As a result, emissions of NO<sub>x</sub> from F-35A operations within proposed airspace units would produce less than significant impacts on NAAQS pollutant levels.</li> <li>• F-35A operations within</li> </ul>	<ul style="list-style-type: none"> <li>• Construction activities would produce annual emissions that would remain well below any PSD threshold (250 tons per year). Therefore, proposed construction emissions would produce less than significant air quality impacts.</li> <li>• The increase in emissions under Scenarios H1 through H5 would not exceed the PSD threshold of 250 tons per year. As a result, all F-35A basing scenarios would produce less than significant air quality impacts at Holloman AFB.</li> </ul>

Scenarios H1, H2, H3, H4, H5	Luke AFB		Tucson AGS	
	(Base)	(Airspace)	(Base)	(Airspace)
<p>368, and 558 persons under Scenarios H1, H2, H3, H4, and H5, respectively. The number of acres affected by <math>\geq 65</math> dB DNL would increase from 3,703 to 3,426; 4,138; 4,745; 5,295; and 5,805 acres under Scenarios H1, H2, H3, H4, and H5, respectively.</p> <ul style="list-style-type: none"> <li><b>Auxiliary Airfield (Biggs AAF):</b> Impacts would be the same under Scenarios H1, H2, and H3 as under H1W, H2W, and H3W. Off-installation/airport residents affected by <math>\geq 65</math> dB DNL would increase from 638 to 769 and 786 persons under Scenarios H4 and H5, respectively. Off-installation/airport acres affected by <math>\geq 65</math> dB DNL would increase by 11 and 13 acres under Scenarios H4 and H5, respectively.</li> <li><b>Auxiliary Airfield (EPIA):</b> Impacts would be the same under Scenarios H1, H2, and H3 as under Scenarios H1W, H2W, and H3W. Off-installation/airport residents affected by <math>\geq 65</math> dB DNL would increase from 1,295 under Scenario H1 to 2,857 and 3,179 persons under Scenarios H4 and H5, respectively. Off-installation/airport acres affected by <math>\geq 65</math> dB DNL would increase from 1,201 under Scenario H1 to 1,768 and 1,887 under Scenarios H4 and H5, respectively.</li> </ul>		<p>respectively. Off-installation acres affected by <math>\geq 65</math> dB DNL would increase from 1,313 to 1,559; 2,497; 3,294; 3,995; 4,623; and 5,177 acres under Scenarios L1, L2, L3, L4, L5, and L6, respectively.</p> <ul style="list-style-type: none"> <li><b>Auxiliary Airfield (Luke AFB Auxiliary Airfield 1 [Aux-1]):</b> Off-installation residents affected by <math>\geq 65</math> dB DNL would decrease under Scenarios L1, L2, L3, L4, and L5, but would increase under Scenario L6 from 710 to 802 persons. Off-installation acres affected by <math>\geq 65</math> dB DNL would decrease under all scenarios. Off-installation/airport residents affected by noise levels at which the risk of hearing loss is considered to be substantial (<math>\geq 80</math> dB DNL) would increase from 4 to 10, 15, 18, 21, 23, and 26 persons under Scenarios L1, L2, L3, L4, L5, and L6, respectively.</li> </ul>		
<ul style="list-style-type: none"> <li>The increase in operational emissions under Scenarios H4 and H5 within proposed airspaces would exceed the NO<sub>x</sub> PSD threshold of 250 tons per year. All other emission increases under the five basing scenarios would not exceed any PSD threshold and would produce less than significant impacts on NAAQS pollutant levels within proposed Holloman AFB airspace units.</li> <li>Further evaluation of the NO<sub>x</sub> emission increases under Scenarios H4 and H5 determined that these emissions would not contribute to an exceedance of an ambient air quality standard within the airspaces project region. As a result, emissions of NO<sub>x</sub> from F-35A operations within proposed airspace units would produce less than significant impacts on NAAQS pollutant levels.</li> </ul>	<ul style="list-style-type: none"> <li>Construction activities would produce annual emissions that would remain well below any conformity or PSD threshold (70, 100, or 250 tons per year, depending on the pollutant). Therefore, proposed construction emissions would produce less than significant air quality impacts.</li> <li>Each F-35A basing scenario would reduce emissions of all pollutants. Since no basing scenario would exceed any applicable conformity or PSD threshold, these actions would produce less than significant air quality impacts at Luke AFB.</li> </ul>	<ul style="list-style-type: none"> <li>Operation of all F-35A aircraft basing scenarios in proposed airspaces would reduce emissions of all pollutants from current F-16 levels, except Scenario L6 would produce a nominal increase in emissions of SO<sub>2</sub>. As a result, emissions from these scenarios would not exceed any applicable conformity or PSD threshold. Therefore, F-35A operations within the proposed Luke AFB airspace units would produce less than significant impacts on NAAQS pollutant levels.</li> <li>Since the operation of F-35A aircraft within proposed airspace units would decrease emissions from current F-16 levels for all basing scenarios or would only produce a nominal increase of SO<sub>2</sub> emissions under Scenario L6, these actions would produce less than significant contributions to visibility</li> </ul>	<ul style="list-style-type: none"> <li>Construction activities would produce annual emissions that would remain well below any conformity or PSD threshold (100 or 250 tons per year, depending on the pollutant). Therefore, proposed construction emissions would produce less than significant air quality impacts.</li> <li>Each F-35A basing scenario would reduce emissions of all pollutants, except Scenarios T2 and T3 would increase emissions of nitrogen oxides (NO<sub>x</sub>). No emission increases under the three basing scenarios at Tucson AGS would exceed any applicable conformity or PSD threshold. Therefore, operation of 72 F-35A aircraft would produce less than significant air quality impacts at Tucson AGS.</li> <li>Projected F-35A operations within the Tucson AGS project region would produce less than significant contributions to visibility impairment within nearby Class I areas.</li> </ul>	<ul style="list-style-type: none"> <li>Operation of all F-35A aircraft basing scenarios within the Tucson AGS airspaces would reduce emissions of all pollutants from current F-16 levels and as a result would not exceed any applicable conformity or PSD threshold. Therefore, proposed F-35A operations within the Tucson AGS airspace units would produce less than significant impacts on NAAQS pollutant levels.</li> <li>Since the operation of F-35A aircraft within proposed airspaces would decrease emissions from current F-16 levels for all Tucson AGS basing scenarios, these actions would produce less than significant contributions to visibility impairment within the regional Class I areas.</li> </ul>

Boise AGS		Holloman AFB Scenarios H1W, H2W, H3W		Holloman AFB Scenari
(Base)	(Airspace)	(Base)	(Airspace)	(Base)
(Air Force) would apply one or more of the criteria under Title 40 of the Code of Federal Regulations (CFR), Section 93.158(a), to make a positive final general conformity determination. Therefore, this analysis would demonstrate that proposed CO emission increases under this scenario would not contribute to an exceedance of a National Ambient Air Quality Standard (NAAQS).	proposed airspace units would impact the Jarbidge Wilderness Area in northern Nevada more than any other pristine Class I area. Proposed F-35A operations would not substantially contribute to visibility impairment within the Jarbidge Wilderness Area. Therefore, proposed F-35A operations within the Boise AGS airspace units would produce less than significant contributions to visibility impairment within all Class I areas in the project region.	Holloman AFB would produce less than significant impacts.	proposed airspaces would impact the Bosque del Apache Wilderness Area (BAWA) in central New Mexico more than any other pristine Class I area. Proposed F-35A operations would not substantially contribute to visibility impairment within the BAWA. Therefore, proposed F-35A operations within the Holloman AFB airspace units would produce less than significant contributions to visibility impairment within all Class I areas in the project region.	
<b>Safety</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.4)				
<b>(All Bases)</b> No change in operations and maintenance procedures from current levels. All activities would be conducted in accordance with applicable regulations, technical ord improvements would not take place in established quantity-distance (QD) arcs and would comply with all Occupational Safety and Health Administration regulations. Ordnance v rate is not yet determined for the F-35A, and, as with any new aircraft, there are always elements of a new system that require testing. Resolution of issues discovered during th become comparable with similarly sized aircraft with a similar mission. Emergency and mishap response plans should be updated to include necessary procedures and respons				
<b>(All Airspace)</b> F-35A would operate in a similar manner as those aircraft currently using the primary use airspace using the same procedures. No increase in safety risks associ Federal Aviation Administration (FAA) requirements to dump fuel in designated areas and at designated altitudes to improve evaporation and to ensure adequate separation from risks of bird strikes. Flares are used only in approved airspace at altitudes designated for the airspace. Flares burn out in approximately 500 feet, so altitude restrictions in SUA				
• An estimated 108 flights per year would use Mountain Home AFB for live weapons loading as is currently done for Boise AGS-based A-10s.	• No changes to Mountain Home AFB airfield or airspace from F-35A training mission. Flight safety and ground safety conditions would remain unchanged.	• See (All Bases) above.	• RIAC, EPIA, and Biggs AAF have equipment to handle any potential safety issues with F-35A operations. No impacts on flight safety or ground safety are anticipated for these outlying fields.	• See (All Bases) above.
<b>Soils and Water</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.5)				
<ul style="list-style-type: none"> <li>• Scenario B1, B2, or B3 construction would disturb 36.5, 37.0, or 37.9 acres of previously disturbed areas, respectively.</li> <li>• Since more than 1 acre would be disturbed by construction, a National Pollutant Discharge Elimination System (NPDES) storm water permit would be required.</li> <li>• With proper design and implementation of the Storm Water Pollution Prevention Plan (SWPPP), impacts from erosion and offsite sedimentation would be negligible and significant impacts would not occur.</li> <li>• Implementation of any of the scenarios would not include construction within any designated 100-year floodplain.</li> <li>• The F-35A aircraft scenarios do not include groundwater withdrawals; thus, impacts on groundwater would not occur.</li> </ul>	• Not Applicable	<ul style="list-style-type: none"> <li>• Scenario H1W, H2W, or H3W construction would disturb 80, 84.4, or 88.8 acres of previously disturbed areas, respectively.</li> <li>• Since more than 1 acre would be disturbed by construction, an NPDES storm water permit would be required.</li> <li>• With proper design and implementation of the SWPPP, impacts from erosion and offsite sedimentation would be negligible. Removal of existing pavement, grading, and excavations would expose the moderately to highly erosive soil to potential wind and water erosion, which, in turn, could result in sedimentation of nearby drainages and creeks. However, these soil limitations could be mitigated through standard engineering and modern construction techniques, such that significant impacts would not occur.</li> <li>• Implementation of any of the scenarios would not include</li> </ul>	• Not Applicable	<ul style="list-style-type: none"> <li>• Scenario H1 through H5 construction would disturb between 43.1 and 98.7 acres of previously disturbed areas.</li> <li>• Since more than 1 acre would be disturbed by construction, an NPDES storm water permit would be required.</li> <li>• With proper design and implementation of the SWPPP, impacts from erosion and offsite sedimentation would be negligible. Removal of existing pavement, grading, and excavations would expose the moderately to highly erosive soil to potential wind and water erosion, which, in turn, could result in sedimentation of nearby drainages and creeks. However, these soil limitations could be mitigated through standard engineering and modern construction techniques, such that significant impacts would not occur.</li> <li>• Implementation of any of the scenarios would not include</li> </ul>

Issues H1, H2, H3, H4, H5	Luke AFB		Tucson AGS	
	(Base)	(Airspace)	(Base)	(Airspace)
<ul style="list-style-type: none"> <li>F-35A operations within proposed airspace units would impact the BAWA in central New Mexico more than any other pristine Class I area. Proposed F-35A operations would not substantially contribute to visibility impairment within the BAWA. Therefore, proposed F-35A operations within the Holloman AFB airspace units would produce less than significant contributions to visibility impairment within all Class I areas in the project region.</li> </ul>		<ul style="list-style-type: none"> <li>impairment within the regional Class I areas.</li> </ul>		
<p>ers, and Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) standards. F-35A-related construction, renovation, or infrastructure would continue to be handled in accordance with Air Force and Department of Defense Explosives Safety Board directives and carried out by trained personnel. The Class A e test and evaluation period would be accomplished before full training begins at any location. As F-35A becomes operationally mature, the aircraft mishap rate is expected to e actions specific to the F-35A. With these updates, airfield safety conditions would be similar to existing conditions.</p> <p>ated with aircraft mishaps or increase in risk of mishaps is expected. F-35A is capable of dumping fuel in emergencies. Fuel dumping would be conducted in accordance with 1 other air traffic. Use of Avian Hazard Advisory System, the Bird Avoidance Model, and pilot briefings prior to sorties would continue to identify avoidance areas and minimize are established to ensure flare burnout before a flare reaches the ground or water under the training airspace.</p>				
<ul style="list-style-type: none"> <li>RIAC, EPIA, and Biggs AAF have equipment to handle any potential safety issues with F-35A operations. No impacts on flight safety or ground safety are anticipated for these outlying fields.</li> </ul>	<ul style="list-style-type: none"> <li>See (All Bases) above.</li> </ul>	<ul style="list-style-type: none"> <li>Aux-1 does not have an active runway. Accident Potential Zones (APZs) and Clear Zones have been established, which could address any potential issues related to aircraft accidents at Aux-1. Gila Bend AFAF has adequate equipment and personnel to handle any potential safety issues. No impacts on flight safety or ground safety at Gila Bend AFAF are expected.</li> </ul>	<ul style="list-style-type: none"> <li>An estimated 108 flights per year would use Davis-Monthan AFB for live weapons loading as is currently done for Tucson AGS-based F-16 training aircraft.</li> </ul>	<ul style="list-style-type: none"> <li>Libby AAF has adequate equipment to handle any potential safety issues associated with the operations of the F-35A. No impacts on flight safety or ground safety are expected at Libby AAF.</li> </ul>
<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Scenario L1 through L6 construction would disturb between 15.6 and 22.6 acres of previously disturbed areas.</li> <li>Since more than 1 acre would be disturbed by construction, an Arizona Pollutant Discharge Elimination System (AZPDES) storm water permit would be required.</li> <li>With proper design and implementation of the SWPPP, impacts from erosion and offsite sedimentation would be negligible and significant impacts would not occur.</li> <li>Implementation of any of the scenarios may include construction within the existing designated 100-year floodplain.</li> <li>The F-35A aircraft scenarios do not include groundwater withdrawals; thus, impacts on groundwater would not occur.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Scenario T1, T2, or T3 construction would disturb 33, 33.4, or 33.6 acres of previously disturbed areas, respectively.</li> <li>Since more than 1 acre would be disturbed by construction, an AZPDES storm water permit would be required.</li> <li>With proper design and implementation of the SWPPP, impacts from erosion and offsite sedimentation would be negligible and significant impacts would not occur.</li> <li>Implementation of any of the scenarios would not include construction within the existing designated 100-year floodplain of Airport Wash.</li> <li>The F-35A aircraft scenarios do not include groundwater withdrawals; thus, impacts on groundwater would not occur.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>

Boise AGS		Holloman AFB Scenarios H1W, H2W, H3W		Holloman AFB Scenari
(Base)	(Airspace)	(Base)	(Airspace)	(Base)
		<p>construction within any designated 100-year floodplain.</p> <ul style="list-style-type: none"> <li>The F-35A aircraft scenarios do not include groundwater withdrawals; thus, impacts on groundwater would not occur.</li> </ul>		<p>construction within any designated 100-year floodplain.</p> <ul style="list-style-type: none"> <li>The F-35A aircraft scenarios do not include groundwater withdrawals; thus, impacts on groundwater would not occur.</li> </ul>
<b>Vegetation and Wildlife</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.6)				
<b>(All Airspace)</b> No new types of impact would be introduced into these areas as a result of the beddown of the F-35A. The sudden visual appearance of the aircraft and onset of the very low percentage of time spent in low-level flight by F-35As training within the airspace and the previous and ongoing exposure of wildlife to training by other aircraft in the training flight takes place at altitudes above 10,000 feet above ground level (AGL), and the generally minimal response to sonic booms observed in free ranging wildlife, the increase unlikely that flare use associated with the F-35A training will appreciably increase the incidence of wildland fires; therefore, impacts on vegetation and wildlife would be less than				
<ul style="list-style-type: none"> <li>For proposed construction and demolition activities in developed portions, no long-term effects on vegetation and wildlife are anticipated. Measures to control erosion and siltation would be included as part of the project implementation. Revegetation of temporarily disturbed areas would be conducted, as directed by the base, to minimize the potential for continued erosion and dust generation and decrease the duration of temporary habitat loss.</li> <li>To comply with the Migratory Bird Treaty Act (MBTA) and the U.S. Department of Defense (DoD) Bat Protection Memorandum of Understanding (MOU), surveys would be conducted to assure no habitation by nesting birds or bat species before buildings would be demolished, removed, or renovated.</li> <li>Noise levels expected as a result of implementing the F-35A aircraft scenarios would be qualitatively similar to the existing noise environment. Wildlife species in the vicinity of Boise AGS live in a military airfield environment and are not expected to be adversely affected by changes in aircraft overflight and noise associated with the F-35A.</li> </ul>	<ul style="list-style-type: none"> <li>Given the long history as an airfield and ongoing level of activity at Mountain Home AFB, wildlife species are not expected to be adversely affected by changes in aircraft overflight and noise associated with transformation to the F-35A aircraft.</li> </ul>	<ul style="list-style-type: none"> <li>For proposed construction and demolition activities in developed portions, no long-term effects on vegetation and wildlife are anticipated. Measures to control erosion and siltation would be included as part of the project implementation. Revegetation of temporarily disturbed areas would be conducted, as directed by the base, to minimize the potential for continued erosion and dust generation and decrease the duration of temporary habitat loss.</li> <li>To comply with the MBTA and the DoD Bat Protection MOU, surveys would be conducted to assure no habitation by nesting birds or bat species before buildings would be demolished, removed, or renovated. No effects on vegetation are expected from operations of the F-35As in the vicinity of Holloman AFB.</li> <li>Noise levels expected as a result of implementing the F-35A aircraft scenarios would be qualitatively similar to the existing noise environment. Wildlife species in the vicinity of Holloman AFB live in a military airfield environment and are not expected to be adversely affected by changes in aircraft overflight and noise associated with the F-35A.</li> </ul>	<ul style="list-style-type: none"> <li>Given the long history as an airfield and ongoing level of activity at RIAC, EPIA, and Biggs AAF, wildlife species are not expected to be adversely affected by changes in aircraft overflight and noise associated with transformation to the F-35A aircraft.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to those described for Holloman AFB Scenarios H1W, H2W, and H3W.</li> </ul>
<b>Wetlands and Aquatic Communities</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.7)				
<b>(All Bases)</b> No wetlands or aquatic habitats would be within the construction zones where they could be directly affected by construction. Measures to control erosion, siltation, biota. No adverse effects on aquatic or wetland habitats are expected from operations of the F-35A.				
<b>(All Airspace)</b> No adverse effects on aquatic or wetland habitats are expected from F-35A training operations in primary use airspace. There would be a very low probability that the auxiliary airfields are expected.				
<b>Threatened and Endangered Species</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.8)				
<b>(All Bases)</b> No known federally listed, proposed, or candidate threatened or endangered wildlife species or their habitats occur on the installations; therefore, no adverse effects the qualitatively similar nature of F-35A operations to current and historical operations at the existing airfields.				
<b>(All Airspace)</b> The potential for adverse effects of F-35A training in the airspace and at the auxiliary airfields on federally listed, proposed, or candidate threatened or endangered to a low-level overflight or sonic boom, such as assuming an alert posture, it is very unlikely that such a response would adversely affect the survival or fecundity of the affected species is so low as to be discountable. Therefore, impacts on threatened and endangered species would be less than significant.				
<ul style="list-style-type: none"> <li>Siting of facilities would be conducted to avoid direct or indirect impacts on slickspot peppergass or its critical habitat, given its proximity to the airfield.</li> </ul>	<ul style="list-style-type: none"> <li>See (All Airspace) above.</li> </ul>	<ul style="list-style-type: none"> <li>Because the proposed construction areas on Holloman AFB are located in previously disturbed areas, and no known federally listed, proposed, or</li> </ul>	<ul style="list-style-type: none"> <li>See (All Airspace) above.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to those described for Holloman AFB Scenarios H1W, H2W, and H3W.</li> </ul>

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Scenarios H1, H2, H3, H4, H5	Luke AFB		Tucson AGS	
	(Airspace)	(Base)	(Base)	(Airspace)
<p>noise from a low-level overflight have the potential to startle wildlife. Both the visual appearance and noise levels of aircraft diminish rapidly with increasing altitude. Based on the project airspace, no significant adverse effects on vegetation or wildlife from overflights or noise are anticipated. As sonic booms currently exist in the project airspace, the majority of the potential increase in sonic booms is not expected to result in a significant impact on wildlife. Because of measures to avoid the potential for wildland fire from flare use, it is not expected to be significant. Bird-aircraft collisions would occur infrequently and would not represent a substantial source of mortality for bird species.</p>				
<ul style="list-style-type: none"> <li>Impacts would be similar to those described for Holloman AFB Scenarios H1W, H2W, and H3W.</li> </ul>	<ul style="list-style-type: none"> <li>For proposed construction and demolition activities in developed portions of the installation, no long-term effects on vegetation and wildlife are anticipated. Measures to control erosion and siltation would be included as part of the project implementation. Revegetation of temporarily disturbed areas would be conducted, as directed by the base, to minimize the potential for continued erosion and dust generation and decrease the duration of temporary habitat loss.</li> <li>To comply with the MBTA and the DoD Bat Protection MOU, surveys would be conducted to assure no habitation by nesting birds or bat species before buildings would be demolished, removed, or renovated.</li> <li>Noise levels in the vicinity of Luke AFB are expected to be qualitatively similar to the existing noise environment. Wildlife species in the vicinity of Luke AFB live in a military airfield environment and are not expected to be adversely affected by changes in aircraft overflight and noise associated with the F-35A.</li> </ul>	<ul style="list-style-type: none"> <li>The increase in airfield operations at Gila Bend AFAF and Aux-1 associated with F-35A training may contribute to an incremental increase in bird-aircraft collisions. Avoidance protocols are in place to minimize risk to pilots, aircraft, and wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>For the proposed construction and demolition activities in developed portions of the installation, no long-term effects on vegetation and wildlife are expected. Measures to control erosion and siltation would be included as part of the project implementation. Revegetation of temporarily disturbed areas would be conducted, as directed by the base, to minimize the potential for continued erosion and dust generation and decrease the duration of temporary habitat loss.</li> <li>To comply with the MBTA and the DoD Bat Protection MOU, surveys would be conducted to assure no habitation by nesting birds or bats before buildings would be demolished, removed, or renovated.</li> <li>Noise levels expected as a result of implementing the F-35A aircraft scenarios would be qualitatively similar to the existing noise environment. Wildlife species in the vicinity of Tucson AGS live in a military airfield environment and are not expected to be adversely affected by changes in aircraft overflight and noise associated with the F-35A.</li> </ul>	<ul style="list-style-type: none"> <li>Under all beddown scenarios, the average number of sonic booms per day would decrease slightly beneath all primary training airspace units. Given the long history as an airfield and ongoing level of activity at Libby AAF, wildlife species in the vicinity of Libby AAF are not expected to be adversely affected by changes in aircraft overflight and noise associated with transformation to the F-35A aircraft.</li> </ul>
<p>and fugitive dust would be included as part of the project implementation, minimizing the potential for construction to indirectly affect offsite aquatic and wetland habitats and</p>				
<p>an unburned flare or material from a flare would reach an aquatic or wetland environment. No adverse effects on wetland or aquatic communities from F-35A training use of</p>				
<p>from construction are anticipated. No significant noise impacts are expected on listed, proposed, or candidate threatened or endangered wildlife that may occur on base due to</p>				
<p>and wildlife is minimal, as described above for vegetation and wildlife. Although it is possible for an individual of a federally listed wildlife species to exhibit a temporary response to an individual or reach the scale at which "take" would occur at any of the locations. The probability of a bird-aircraft strike involving injury to a listed endangered or threatened</p>				
<ul style="list-style-type: none"> <li>Impacts would be similar to those described for Holloman AFB Scenarios H1W, H2W, and H3W.</li> </ul>	<ul style="list-style-type: none"> <li>Compliance with the Arizona Native Plant Law would apply for any proposed ground-disturbing action on Luke AFB.</li> </ul>	<ul style="list-style-type: none"> <li>See (All Airspace) above.</li> </ul>	<ul style="list-style-type: none"> <li>Compliance with the Arizona Native Plant Law would apply for any proposed ground-disturbing action on Tucson AGS.</li> </ul>	<ul style="list-style-type: none"> <li>See (All Airspace) above.</li> </ul>

Boise AGS		Holloman AFB Scenarios H1W, H2W, H3W		Holloman AFB Scenari
(Base)	(Airspace)	(Base)	(Airspace)	(Base)
Therefore, no significant impacts are expected.		candidate threatened or endangered species or habitats occur on Holloman AFB, no adverse effects from construction are anticipated.		
<b>Cultural Resources</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.9)				
<b>(All Bases)</b> Impacts on traditional resources are unlikely; there are no known Native American traditional cultural properties or traditional cultural resources at the installations. <b>(All Airspace)</b> No impacts on historic properties under installation-associated airspace are expected. Increases in airspace use, subsonic noise, and/or sonic booms would not have an impact on traditional use of the area. The Air Force has completed consultations with interested Native American groups regarding airspace				
<ul style="list-style-type: none"> <li>Impacts on architectural resources could occur; prior to construction, National Historic Preservation Act (NHPA) Section 106 consultation with the Idaho State Historic Preservation Office (SHPO) would take place regarding visual and other impacts on the Historic Districts.</li> <li>Impacts on archaeological resources are not expected. Unsurveyed portions of the project area would be addressed in compliance with NHPA Section 106 prior to construction.</li> </ul>	<ul style="list-style-type: none"> <li>See (All Airspace) above.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts on architectural resources from new construction or renovation could occur if any affected building is eligible for the National Register of Historic Places (NRHP). Unevaluated, potentially NRHP-eligible buildings in the project area would be addressed in compliance with NHPA Section 106 prior to construction or renovation.</li> <li>Impacts on archaeological resources are not expected; none of the 250 known sites is within the region of influence (ROI) of proposed construction projects.</li> </ul>	<ul style="list-style-type: none"> <li>See (All Airspace) above.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts on architectural resources from new construction or renovation could occur if any affected building is NRHP eligible. Unevaluated potentially NRHP-eligible buildings in the project area would be addressed in compliance with NHPA Section 106 prior to construction or renovation.</li> <li>Impacts on archaeological resources are not expected; none of the 250 known sites is within the ROI of proposed construction projects.</li> </ul>
<b>Land Use and Recreation</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.10)				
<b>(All Bases)</b> Construction to support the beddown would be sited in accordance with current installation land use plans and applicable design standards. Noise levels at recreational use in these areas has the potential to impact visitor experience and the setting and feeling of the areas.				
<ul style="list-style-type: none"> <li>Under Scenario B1, an additional 2,944 total off-installation acres (362 of which are developed for residential use) would be affected by noise levels of at least 65 dB DNL, the noise level at which several land use types are considered to be incompatible per Air Force land use guidelines.</li> <li>Under Scenarios B2 and B3, an additional 4,999 total acres (754 residential) and 6,872 total acres (1,422 residential), respectively, would be affected by noise levels of at least 65 dB DNL.</li> <li>New personnel would increase city-wide demand for public recreational amenities by about 1% under Scenario B1 and 2% under Scenarios B2 and B3, with minimal impact.</li> </ul>	<ul style="list-style-type: none"> <li>Ninety-five SULMAs are located fully or partially underneath F-35A primary training airspace; F-35A aircraft would comply with all existing restrictions on supersonic and subsonic flight.</li> <li>Noise levels in the vicinity of Mountain Home AFB would increase under all scenarios, potentially increasing incompatible land use. While the acreage in the area exposed to 65 dB DNL or greater would increase, the number of persons affected would be negligible.</li> </ul>	<ul style="list-style-type: none"> <li>Under Scenario H1W, an additional 1,998 total off-installation acres (4 of which are designated for residential use) would be affected by noise levels of at least 65 dB DNL, the noise level at which several land use types are considered to be incompatible per Air Force land use guidelines.</li> <li>Under Scenarios H2W and H3W, an additional 3,572 total acres (9 residential) and 4,975 total acres (16 residential), respectively, would be affected by noise levels of at least 65 dB DNL.</li> <li>Recreational demands of additional personnel and dependents are expected to be met primarily by on-base facilities; excess recreational capacity is expected to exist in Alamogordo as Holloman AFB population has decreased recently.</li> </ul>	<ul style="list-style-type: none"> <li>Thirty-four SULMAs are located fully or partially underneath F-35A primary training airspace; F-35A aircraft would comply with all existing restrictions on supersonic and subsonic flight.</li> <li>Noise levels in the vicinity of RIAC, EPIA, and Biggs AAF would increase under all scenarios, potentially increasing incompatible land use.</li> <li>Residents from communities near recreation areas in the Sacramento mountains expressed annoyance with the existing overflights on the MTRs and sonic booms from the ATCAAs and anticipated greater annoyance with any future missions.</li> </ul>	<ul style="list-style-type: none"> <li>Total area and residential area affected by noise levels of 65 dB DNL or greater would decrease under Scenario H1. Under Scenarios H2, H3, H4, and H5, the total area affected by noise levels of 65 dB DNL or greater would increase between 717 and 4,526 acres, but the residential area affected would decrease by 32 acres.</li> <li>Recreational demands of additional personnel and dependents are expected to be met primarily by on-base facilities; excess recreational capacity is expected to exist in Alamogordo as Holloman AFB population has decreased recently.</li> </ul>

**Final  
June 2012**

Scenarios H1, H2, H3, H4, H5 (Airspace)	Luke AFB		Tucson AGS	
	(Base)	(Airspace)	(Base)	(Airspace)

Unadvertent discovery of previously unrecorded cultural resources during construction would be managed in compliance with Federal and state laws and Air Force regulations. Impacts of sufficient magnitude to impact historic properties under the airspace. Increases in subsonic noise and sonic booms and continued flare use are likely to be considered by the Air Force.

<ul style="list-style-type: none"> <li>See (All Airspace) above.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts on architectural resources from new construction or renovation could occur if any affected building is NRHP eligible. One of nine potentially significant Cold War era buildings (958) would be affected. Section 106 consultation with the Arizona SHPO has been completed and the Air Force received concurrence on no effects on historic properties.</li> <li>Impacts on archaeological resources are not expected. Construction would occur within the previously disturbed Luke AFB cantonment area, which has a very low probability of having intact cultural deposits. All of the known archaeological sites eligible for listing in the NRHP are well outside the area within which proposed construction would occur.</li> </ul>	<ul style="list-style-type: none"> <li>See (All Airspace) above.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts on architectural resources would not occur. The Air Force has completed Section 106 consultation with the Arizona SHPO and received concurrence on no effects on historic properties.</li> <li>Impacts on archaeological resources are not expected.</li> </ul>	<ul style="list-style-type: none"> <li>See (All Airspace) above.</li> </ul>
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Additional locations would increase but would remain generally compatible with recreational land use under all scenarios. Disturbed Special Use Land Management Areas (SULMAs) through disturbance of the natural setting. SULMAs potentially affected include National Park Service units. Increased

<ul style="list-style-type: none"> <li>Thirty-four SULMAs are located fully or partially underneath F-35A primary training airspace; F-35A aircraft would comply with all existing restrictions on supersonic and subsonic flight.</li> <li>Areas exposed to noise levels of at least 65 dB DNL in the vicinity of RIAC, EPIA, and Biggs AAF would increase under all scenarios, except for under Scenario H1 at RIAC, potentially increasing incompatible land use. Under all five scenarios, additional residents would be affected by noise levels of at least 65 dB DNL.</li> <li>Residents from communities near recreation areas in the Sacramento mountains expressed annoyance with the existing overflights on the MTR, and sonic booms from the ATCAAs and anticipated greater annoyance with any future missions.</li> </ul>	<ul style="list-style-type: none"> <li>Total area and residential area affected by noise levels of 65 dB DNL or greater would decrease under Scenarios L1 and L2.</li> <li>Under Scenario L3, an additional 874 total off-installation acres (247 of which are developed for residential use) would be affected by noise levels of at least 65 dB DNL, the noise level at which several land use types are considered to be incompatible per Air Force land use guidelines.</li> <li>Under Scenarios L4, L5, and L6, an additional 2,357 total acres (478 residential), 3,636 total acres (656 residential), and 4,608 acres (819 residential), respectively, would be affected by noise levels of at least 65 dB DNL.</li> <li>Approximately 97.8 to 99.6 percent of the off-installation acreage is currently identified as within the state designated JLUS high noise area.</li> <li>Under Scenarios L3, L4, L5, and L6, a total of 7 acres</li> </ul>	<ul style="list-style-type: none"> <li>Fifty-one SULMAs are located fully or partially underneath F-35A primary training airspace; F-35A aircraft would comply with all existing restrictions on supersonic and subsonic flight.</li> <li>Noise levels in the vicinity of Gila Bend AFAF would increase under all scenarios. Noise levels in the vicinity of Aux-1 would decrease under all scenarios except Scenario L6, under which there would be a decrease in acres affected by noise levels of at least 65 dB DNL but an increase in population affected of 92.</li> </ul>	<ul style="list-style-type: none"> <li>Under Scenario T1, an additional 701 total off-installation acres (0 of which are developed for residential use) would be affected by noise levels of at least 65 dB DNL, the noise level at which several land use types are considered to be incompatible per Air Force land use guidelines.</li> <li>Under Scenarios T2 and T3, an additional 1,551 total acres (153 residential) and 2,439 total acres (308 residential), respectively, would be affected by noise levels of at least 65 dB DNL.</li> <li>Additional personnel and dependents would make up a small fraction of Tucson metropolitan area population; no problems with meeting recreational demands are expected.</li> </ul>	<ul style="list-style-type: none"> <li>Forty-six SULMAs are located fully or partially underneath F-35A primary training airspace; F-35A aircraft would comply with all existing restrictions on supersonic and subsonic flight.</li> <li>Noise levels of at least 65 dB DNL in the vicinity of Libby AAF are entirely on Fort Huachuca or Sierra Vista Municipal Airport; no additional incompatible development is expected.</li> </ul>
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Boise AGS		Holloman AFB Scenarios H1W, H2W, H3W		Holloman AFB Scenari
(Base)	(Airspace)	(Base)	(Airspace)	(Base)
<p><b>Socioeconomics</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.11)</p> <p><b>(All Bases)</b> Additional teachers may be needed, but would be dependent on tax revenues. Schools are anticipated to have capacity to accommodate new students. Changes in under all F-35A scenarios.</p>				
<ul style="list-style-type: none"> <li>Construction expenditures would generate between 2,188 and 2,635 new jobs under Scenarios B1 through B3. Jobs would likely be filled by unemployed persons in Ada County without generating migration to area.</li> <li>Population would increase between 1 and 2.6%, including personnel and dependents, under Scenarios B1 through B3.</li> <li>Changes in personnel would create between 188 and 487 induced jobs under Scenarios B1 through B3. The increased personnel and induced employment would increase total employment in Ada County by between 0.3 and 0.8%.</li> <li>Housing market would not be adversely impacted as the number of vacant housing units would be capable of providing housing for new personnel under all Boise AGS scenarios.</li> <li>Estimated increase in school-aged students would range from 661 to 1,715 students under Scenarios B1 through B3.</li> <li>New personnel and related induced jobs would increase local, state, and Federal tax revenues by between \$10.22 million and \$26.53 million under Scenarios B1 through B3.</li> <li>Noise generated by F-35A flight operations has the potential to adversely impact property values for those properties and residents newly exposed to noise levels &gt;65 dB DNL and particularly for properties newly exposed to noise levels &gt;75 dB DNL.</li> <li>Studies have calculated a property value discount of 0.5 to 0.6 percent discount per dB between 65 dB and 75 dB DNL with higher discounts above 75 dB DNL.</li> </ul>	<ul style="list-style-type: none"> <li>Residents living under the Jarbidge North MOA/Air Traffic Control Assigned Airspace (ATCAA), Owyhee North MOA/ATCAA, IR-302/305, and IR-301/307 may notice the increase in noise levels and be annoyed. Noise levels under these airspace units are not expected to adversely impact economic decisions, property values, or other socioeconomic resources underlying the airspace.</li> <li>Elmore County provides zoning for a two mile noise and safety buffer for Mountain Home AFB to reduce any potential development and avoid the potential for military operations to adversely affect property values.</li> </ul>	<ul style="list-style-type: none"> <li>Construction expenditures would generate between 3,447 and 4,737 new jobs under Scenarios H1W through H3W. Jobs would likely be filled by unemployed persons in Otero County and may encourage migration to the area from nearby communities for new employment.</li> <li>Population would increase between 7.4 and 18.4%, including personnel and dependents, under Scenarios H1W through H3W.</li> <li>Changes in personnel would create between 123 and 306 induced jobs under Scenarios H1W through H3W. The increased personnel and induced employment would increase total employment in Otero County by between 3 and 7.5%.</li> <li>Combination of jobs created by construction expenditures and personnel changes may result in migration from surrounding communities. Additional housing demand may result in a shortage of available housing in the short term. Housing development would be encouraged in the long term.</li> <li>Estimated increase in school-aged students would range from 709 to 1,763 students under Scenarios H1W through H3W.</li> <li>New personnel and related induced jobs would increase local, state, and Federal tax revenues by between \$14.66 million and \$36.47 million under Scenarios H1W through H3W.</li> <li>Noise generated by F-35A flight operations would not change the number of residents affected by noise levels &gt;65 dB DNL; therefore, no impacts on off-base residents or property values are anticipated.</li> <li>Studies have calculated a property value discount of 0.5 to 0.6 percent discount per dB between 65 dB and 75 dB DNL with higher discounts above 75 dB DNL.</li> </ul>	<ul style="list-style-type: none"> <li>Residents under the Beak, Talon, Cato, and Pecos airspace units would likely notice the increase in noise levels and be annoyed. Noise levels under these airspace units are not expected to adversely impact economic decisions, property values, or other socioeconomic resources in the areas underlying the airspace, although the percentage of annoyed residents could increase. Residents living under R-5107, R-5103, and the overlap of MTRs could be adversely impacted by the increased noise from 56 dB up to 62 dB DNL with Scenario H3W.</li> <li>Noise generated from F-35A training at RIAC, EPIA, and Biggs AAF has the potential to adversely affect property values, as described for noise levels in the vicinity of Holloman AFB.</li> </ul>	<ul style="list-style-type: none"> <li>Construction expenditures would generate between 718 and 4,415 new jobs under Scenarios H1 through H5. Jobs would likely be filled by unemployed persons in Otero County and may encourage migration to the area from nearby communities for new employment.</li> <li>Population would change from a decrease of 3.8% to an increase of 18.1%, including personnel and dependents, under Scenarios H1 through H5.</li> <li>Changes in personnel would range from the loss of an estimated 58 induced jobs under Scenario H1 to creating 308 jobs under Scenario H5. The change in personnel and induced employment would change total employment in Otero County from a decrease of 1.4% to an increase of 7.5% under Scenarios H1 through H5.</li> <li>Combination of jobs created by construction expenditures and personnel changes may result in migration from surrounding communities. Additional housing demand may result in a shortage of available housing in the short term. Housing development would be encouraged in the long term.</li> <li>Estimated increase in school-aged students would range from the loss of 332 students under Scenario H1 to an increase of 1,775 students under Scenario Scenario H5.</li> <li>New personnel and related induced jobs would change local, state, and Federal tax revenues from a decrease of \$6.88 million to an increase of \$36.71 million under Scenarios H1 through H5.</li> <li>Residents and properties affected by noise levels &gt;65 dB DNL would decrease. No impacts on residents or property values are anticipated.</li> <li>Studies have calculated a property value discount of 0.5 to 0.6 percent discount per dB between 65 dB and 75 dB DNL.</li> </ul>

Scenarios H1, H2, H3, H4, H5 (Airspace)	Luke AFB		Tucson AGS	
	(Base)	(Airspace)	(Base)	(Airspace)
	(0 residential), 34 acres (4 residential), 117 acres (36 residential), and 252 acres (78 residential) would be affected by noise levels of 65 dB DNL or greater outside of the 65 dB DNL line established in the Luke AFB 1988 Joint Land Use Study.			
law enforcement, firefighters, and medical professionals would be generated by population changes, but would be dependent on tax revenues and budgetary requirements				
<ul style="list-style-type: none"> <li>Residents under the Beak, Talon, Cato, and Pecos airspace units would likely notice the increase in noise levels and be annoyed. Noise levels under these airspace units are not expected to adversely impact economic decisions, property values, or other socioeconomic resources in the areas underlying the airspace although the percentage of annoyed residents could increase. Residents living under R-5107, R-5103, and the overlapping MTRs could be adversely impacted by the increased noise from 56 up to 65 dB DNL with Scenario H5.</li> <li>Noise generated from F-35A training at RIAC, EPIA, and Biggs AAF has the potential to adversely affect property values, as described for noise levels in the vicinity of Holloman AFB.</li> </ul>	<ul style="list-style-type: none"> <li>Construction expenditures would generate between 1,532 and 2,657 new jobs under Scenarios L1 through L6. Jobs would likely be filled by unemployed persons in Maricopa County and the ROI cities.</li> <li>Population would change from a decrease of 0.06% to an increase of 0.32%, including personnel and dependents, under Scenarios L1 through L6.</li> <li>Changes in personnel would range from the loss of an estimated 161 induced jobs under Scenario L1 to creating 989 jobs under Scenario L6. The change in personnel and induced employment would change total employment in Maricopa County from a decrease of 0.02% to an increase of 0.14% under Scenarios L1 through L6.</li> <li>Housing market would not be adversely impacted as the number of vacant housing units would be capable of providing housing for new personnel under all Luke AFB scenarios.</li> <li>Estimated increase in school-aged students would range from the loss of 369 students under Scenario L1 to an increase of 2,265 students under Scenario L6.</li> <li>New personnel and related induced jobs would change local, state, and Federal tax revenues from a decrease of \$9.17 million to an increase of \$56.23 million under Scenarios L1 through L6.</li> <li>Because Luke AFB is located in a major metropolitan area, the number of medical professionals is anticipated to be adequate for the personnel change under all scenarios.</li> <li>Noise generated by F-35A flight operations has the potential to adversely impact property values for those properties and residents outside the JLUS high noise area but newly exposed to noise levels &gt;65 dB DNL and</li> </ul>	<ul style="list-style-type: none"> <li>Noise levels would remain &lt;65 dB DNL<sub>max</sub>. Change in noise would be noticed and may cause annoyance, but no impacts on property values or other socioeconomic resources are expected.</li> <li>Noise generated from F-35A training at Aux-1 and Gila Bend AFAF has the potential to adversely affect property values, as described for noise levels in the vicinity of Luke AFB.</li> </ul>	<ul style="list-style-type: none"> <li>Construction expenditures would generate between 1,815 and 2,089 new jobs under Scenarios T1 through T3. Jobs would likely be filled by unemployed persons in Pima County.</li> <li>Population would change from a decrease of 0.09% to an increase of 0.18%, including personnel and dependents, under Scenarios T1 through T3.</li> <li>Changes in personnel would range from the loss of an estimated 47 induced jobs under Scenario T1 to creating 123 jobs under Scenario T3. The change in personnel and induced employment would change total employment in Pima County from a decrease of 0.03% to an increase of 0.09% under Scenarios T1 through T3.</li> <li>Housing market would not be adversely impacted as the number of vacant housing units would be capable of providing housing for new personnel under all Tucson AGS scenarios.</li> <li>Estimated increase in school-aged students would range from the loss of 130 students under Scenario T1 to an increase of 342 students under Scenario T3.</li> <li>New personnel and related induced jobs would change local, state, and Federal tax revenues from a decrease of \$3.54 million to an increase of \$9.36 million under Scenarios T1 through T3.</li> <li>Because Tucson AGS is located in a major metropolitan area, the number of medical professionals is anticipated to be adequate for the personnel change under all F-35A scenarios.</li> <li>Noise generated by F-35A flight operations has the potential to adversely impact property values for those properties and residents newly exposed to noise levels &gt;65 dB DNL, and particularly for properties newly exposed to noise levels &gt;75 dB DNL.</li> <li>Studies have calculated a property value discount of 0.5 to</li> </ul>	<ul style="list-style-type: none"> <li>Noise levels would remain below 55 dB DNL in the primary airspace units. Change in noise would be noticed and may cause annoyance, but no impacts on property values or other socioeconomic resources are expected.</li> <li>Noise generated from F-35A training at Libby AAF would not impact off-base residents.</li> </ul>

Boise AGS		Holloman AFB Scenarios H1W, H2W, H3W		Holloman AFB Scenari
(Base)	(Airspace)	(Base)	(Airspace)	(Base)
				with higher discounts above 75 dB DNL.
<b>Environmental Justice and Protection of Children</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.12)				
<b>(All Bases)</b> Construction would occur within the installations' cantonment areas and would not impact off-base populations. Schools and child care centers affected by noise levels >				
<ul style="list-style-type: none"> <li>No disproportionately high and adverse impacts on minority or low-income populations are expected under all F-35A scenarios at Boise AGS. Minority and low-income populations affected by noise levels &gt;65 dB DNL would be comparable to the minority and low-income populations in Ada County, the community of comparison.</li> <li>Between 1 and 2 schools under Scenarios B1 through B3 would be affected by noise levels &gt;65 dB DNL. Between 3 and 13 child care centers would be affected by noise levels &gt;65 dB DNL.</li> </ul>	<ul style="list-style-type: none"> <li>Current flight restrictions over the Duck Valley Reservation would be followed. There is the potential for disproportionately high and adverse impacts on minority and low-income populations beneath the Jarbidge North MOA/ATCAA because noise levels would exceed 65 dB DNL, and the total share of affected minority and low-income populations overflowed is greater than the communities of comparison.</li> <li>Minority and low-income populations affected by noise at Mountain Home AFB would be comparable to the community of comparison. The on-base school and child care center at Mountain Home AFB would be affected by noise levels &gt;65 dB DNL.</li> </ul>	<ul style="list-style-type: none"> <li>No disproportionately high and adverse impacts on minority or low-income populations are expected under Scenario H1W, H2W, or H3W. Minority and low-income populations affected by noise levels &gt;65 dB DNL would be comparable to the minority and low-income populations in Otero County, the community of comparison.</li> <li>Under Scenarios H1W through H3W, the 2 on-base schools and 2 on-base child care centers would be affected by noise levels &gt;65 dB DNL.</li> </ul>	<ul style="list-style-type: none"> <li>There is the potential for disproportionately high and adverse impacts on minority and low-income populations overflowed by IR-134/195. Noise levels would increase substantially between baseline conditions and Scenario H3W, and there is a higher proportion of minority and low-income populations under IR-134/195 as compared to the communities of comparison. No disproportionately high and adverse impacts on populations beneath the remaining airspace units are expected because the minority and low-income populations are comparable to the communities of comparison.</li> <li>Minority and low-income populations in the vicinity of EPIA and Biggs AAF affected by noise levels &gt;65 dB DNL would be comparable to or lower than the minority and low-income populations in El Paso County, the community of comparison.</li> <li>Between 5 and 7 schools and between 3 and 4 child care centers in the vicinity of EPIA would be affected by noise levels &gt;65 dB DNL. No schools or child care centers near Biggs AAF would be affected by noise levels &gt;65 dB DNL.</li> <li>There is the potential for disproportionately high and adverse impacts on minority populations from the F-35A training at RIAC. The minority populations affected by noise levels &gt;65 dB DNL are greater than the minority population in Chaves County. The low-income population affected by F-35A training is comparable to the low-income population in Chaves County.</li> <li>Between 3 and 4 schools and 1 child care center near RIAC would be affected by noise levels &gt;65 dB DNL.</li> </ul>	<ul style="list-style-type: none"> <li>No disproportionately high and adverse impacts on minority or low-income populations are expected under Scenario H1, H2, H3, H4, or H5. Noise levels &gt;65 dB DNL would affect fewer residents as compared to baseline noise levels.</li> <li>Under Scenarios H1 through H5, 2 on-base schools and 2 on-base child care centers would be affected by noise levels between 70 and 74 dB DNL.</li> </ul>

Areas H1, H2, H3, H4, H5 (Airspace)	Luke AFB		Tucson AGS	
	(Base)	(Airspace)	(Base)	(Airspace)
	particularly for properties newly exposed to noise levels >75 dB DNL. Existing properties within the JLUS have a discount due to being designated as within a high noise area. Since properties within the JLUS already reflect noise-related discount values, new impacts upon most properties would not be expected to occur.		0.6 percent discount per dB between 65 dB and 75 dB DNL with higher discounts above 75 dB DNL.	

35 dB DNL are compatible with educational services with additional noise attenuation and incompatible with noise levels >75 dB DNL.

<ul style="list-style-type: none"> <li>There is the potential for disproportionately high and adverse impacts on minority and low-income populations overflowed by IR-134/195. Noise levels would increase substantially between baseline conditions and Scenario H5, and there is a higher proportion of minority and low-income populations under IR-134/195 as compared to the communities of comparison. No disproportionately high and adverse impacts on populations beneath the remaining airspace units are expected because the minority and low-income populations are comparable to the communities of comparison.</li> <li>Minority and low-income populations in the vicinity of EPIA and Biggs AAF affected by noise levels &gt;65 dB DNL would be lower than or comparable to the minority and low-income populations in El Paso County, the community of comparison.</li> <li>Between 5 and 7 schools and between 3 and 4 child care centers in the vicinity of EPIA would be affected by noise levels &gt;65 dB DNL. No schools or child care centers near Biggs AAF would be affected by noise levels &gt;65 dB DNL.</li> <li>There is the potential for disproportionately high and adverse impacts on minority populations from the F-35A training at RIAC. The minority populations affected by noise levels &gt;65 dB DNL are greater than the minority population in Chaves County. The low-income population affected by F-35A training is comparable to the low-income population in Chaves County.</li> <li>Between 3 and 4 schools and 1 child care center near RIAC would be affected by noise levels &gt;65 dB DNL.</li> </ul>	<ul style="list-style-type: none"> <li>There is the potential for disproportionately high and adverse impacts on minority populations under Scenarios L1 and L2 due to a higher share of minority populations affected by noise levels &gt;65 dB DNL as compared to the community of comparison, Maricopa County. No disproportionately high and adverse impacts on minority populations are expected under Scenarios L3 through L6. No disproportionately high and adverse impacts on low-income populations are expected under all F-35A scenarios at Luke AFB.</li> <li>Under Scenario L1, no schools or child care centers would be impacted by noise levels &gt;65 dB DNL. Under Scenarios L2 through L4, 1 school, and under Scenarios L5 and L6, 2 schools would be affected by noise levels &gt;65 dB DNL. The on-base child care centers would be affected under Scenarios L3 through L6, and 2 off-base child care centers would be affected under Scenarios L5 and L6 by noise levels &gt;65 dB DNL.</li> </ul>	<ul style="list-style-type: none"> <li>There is the potential for disproportionately high and adverse impacts on minority and low-income populations overflowed by Visual Route (VR)-223. Noise levels would increase substantially between baseline conditions and Scenario L6, and there is a higher proportion of minority and low-income populations under VR-223 as compared to the communities of comparison. Noise would remain &lt;65 dB DNL<sub>avg</sub> in the other airspace units overlying population centers.</li> <li>No disproportionately high and adverse impacts on populations in areas surrounding Aux-1 or Gila Bend AAF are expected. Affected minority and low-income populations are comparable to Maricopa County, the community of comparison. No schools in the vicinity of Aux-1 or Gila Bend AAF would be affected.</li> </ul>	<ul style="list-style-type: none"> <li>The F-35A aircraft scenarios would present a disproportionately high and adverse impact on low-income populations. The share of low-income persons affected by noise levels &gt;65 dB DNL is higher as compared to the community of comparison, Pima County. The share of minority populations affected by noise levels &gt;65 dB DNL under baseline and all F-35A scenarios is substantially higher than the share of minority populations in Pima County.</li> <li>Under Scenarios T1 through T3, between 1 and 2 schools and up to 1 child care center would be affected by noise levels &gt;65 dB DNL.</li> </ul>	<ul style="list-style-type: none"> <li>No disproportionately high and adverse impacts on minority or low-income populations are expected beneath the primary use airspace or Libby AAF. Minority and low-income populations beneath the airspace are comparable to the communities of comparison. No residents would be affected by noise at Libby AAF.</li> </ul>
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Boise AGS		Holloman AFB Scenarios H1W, H2W, H3W		Holloman AFB Scenari
(Base)	(Airspace)	(Base)	(Airspace)	(Base)
<b>Infrastructure</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.13)				
<ul style="list-style-type: none"> <li>Scenarios B1, B2, and B3 would result in less than a 1% increase in potable water demand and wastewater generation. Existing capacity would meet these increases. No adverse impacts on water or wastewater facilities are expected.</li> <li>Storm water would continue to be managed under the existing NPDES Multi-Sector General Permit.</li> <li>Solid waste generated during construction and increased operations under Scenarios B1, B2, and B3 would be disposed of at existing facilities without adverse effects on the capacity of those facilities.</li> <li>Increases in electrical use and natural gas associated with new facilities and increases in personnel and dependents are anticipated to be less than 1% up to 1.6% of community electrical/natural gas usage.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Scenarios H1W, H2W, and H3W would increase potable water demand by up to 6.95% over existing demand.</li> <li>Currently, the city is developing new conservation measures and is trying to secure additional water supplies to meet current and projected demands. Adverse impacts associated with increased water usage in the area may be mitigated by implementing water conservation measures for on-base housing or for personnel residing off base (e.g., water conservation directives for off-base personnel, utility compensation incentives).</li> <li>Increases in off-base wastewater generation would be between 1 and 13% of current treatment levels under Scenarios H1W through H3W. Adequate off-base capacity is available to process these flows.</li> <li>If all personnel were to locate on base, then operating burdens would occur with increases of up to 39.1% under Scenario H3W.</li> <li>Solid waste generated by the additional personnel associated with F-35A aircraft scenarios would be transported off site. Only minor impacts are anticipated on the solid waste management system at Holloman AFB due to the proposed demolition and construction.</li> <li>The electrical energy and natural gas supply system at Holloman AFB is adequate and would not be affected by an increase of less than 1%. The Air Force expects increases in electrical use and natural gas associated with new facilities to be minimal given LEED [Leadership in Energy and Environmental Design] requirements for energy efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Scenarios H3 through H5 would increase potable water demand by up to 6.8% over existing demand.</li> <li>Currently, the city is developing new conservation measures and is trying to secure additional water supplies to meet current and projected demands. Adverse impacts associated with increased water usage in the area may be mitigated by implementing water conservation measures for on-base housing or for personnel residing off base (e.g., water conservation directives for off-base personnel, utility compensation incentives).</li> <li>Increases in off-base wastewater generation would be between 1.2 and 12.8% above current treatment levels under Scenarios H2 through H5. Adequate off-base capacity is available to process these flows.</li> <li>If all personnel were to locate on base, then operating burdens would occur with increases of up to 38.4% under Scenario H5.</li> <li>Solid waste generated by the additional personnel associated with F-35A aircraft scenarios would be transported off site. Only minor impacts are anticipated on the solid waste management system at Holloman AFB due to the proposed demolition and construction.</li> <li>The electrical energy and natural gas supply system at Holloman AFB is adequate and would not be affected by an increase of approximately 1%. The Air Force expects increases in electrical use and natural gas associated with new facilities to be minimal given LEED requirements for energy efficiency.</li> </ul>
<b>Transportation</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.14)				
<b>(All Bases)</b> Construction traffic would result in short-term increases to on-base roads and possible degradation of road surfaces.				
<ul style="list-style-type: none"> <li>Under Scenario B1, vehicle trips would increase by 38%, requiring daily use of the Ellsworth Street Gate for peak morning and evening traffic.</li> <li>Under Scenario B2 vehicle trips would increase by 78%; this increase would require synchronization of the current signalization at the Main Gate access for peak traffic, full-time use of the Ellsworth Street Gate, and instituting flextime.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Under Scenario H1W, vehicle trips would increase by 10%; the base's three gates have recently been upgraded, and multiple lanes and adequate cueing area are available to handle this increase.</li> <li>Under Scenario H2W, vehicle trips would increase by 16%; the base could adjust the schedule of operations to accommodate this increase or provide additional personnel at the gate</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Under Scenario H1, vehicle trips would decrease slightly; under Scenarios H2 and H3, vehicle trips would increase by up to 10%. The base's three gates have recently been upgraded, and multiple lanes and adequate cueing area are available to handle this increase.</li> <li>Under Scenarios H4 and H5, vehicle trips would increase by between 16 and 21%. In addition to adjusting the work schedule to</li> </ul>

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ios H1, H2, H3, H4, H5 (Airspace)	Luke AFB		Tucson AGS	
	(Base)	(Airspace)	(Base)	(Airspace)
<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Scenarios L2 through L6 would result in less than a 1% increase in potable water demand in the region. Existing capacity would meet this increase, and this increase would be less than significant. No adverse impacts on water facilities are expected.</li> <li>• Increases in off-base wastewater generation would be less than 1% of current regional treatment capacity.</li> <li>• The on-base wastewater treatment plant would experience an 8.7% to 158% increase if all personnel and their dependents associated with Scenarios L2, L3, L4, L5, and L6 were to live on base. Even with these increases, the base wastewater treatment plant would be able to meet these demands with its current capacity. It is unknown whether the majority of personnel would reside on or off base; it is likely that personnel would be distributed in both locations and thereby reduce the potential impact on the on-base treatment plant.</li> <li>• Solid waste generated by the proposed demolition and construction and additional personnel associated with Scenarios L2 through L6 would be transported off site to the Glendale Municipal Landfill.</li> <li>• Increases in electrical use and natural gas associated with new facilities and the increases in personnel and dependents are anticipated to be less than 1% of community electrical/natural gas usage.</li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Scenario T1 would result in a slight decrease in potable water demand and wastewater generation.</li> <li>• Scenarios T2 and T3 would result in less than a 1% increase in potable water demand and wastewater generation. Existing capacity would meet these increases. No adverse impacts on water or wastewater facilities are expected.</li> <li>• Storm water would continue to be managed under the existing SWPPP.</li> <li>• Solid waste generated during construction and increased operations under Scenarios T1, T2, and T3 would be disposed of at existing offsite facilities without adverse effects on the capacity of those facilities.</li> <li>• Increases in electrical use and natural gas associated with new facilities at the 162nd Fighter Wing (162 FW) and increases in personnel and dependents are anticipated to be less than 1% of community electrical/natural gas usage.</li> <li>• Solid waste generated during construction and increased operations under Scenarios T1, T2, and T3 would be disposed of at existing offsite facilities without adverse effects on the capacity of those facilities.</li> <li>• Increases in electrical use and natural gas associated with new facilities at the 162 FW and the increases in personnel and dependents are anticipated to be less than 1% of community electrical/natural gas usage.</li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>
<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Under Scenario L1, there would be a decrease in personnel and in vehicle trips; under Scenario L2, vehicle trips would increase by 2%. No adverse effects on traffic flow are expected.</li> <li>• Under Scenario L3, vehicle trips would increase by 10%; the three gates at the base would be able to accommodate this increase.</li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Under Scenario T1, vehicle trips would increase by 3%; no noticeable effect on gate congestion is anticipated.</li> <li>• Under Scenario T2, vehicle trips would increase by 10%; the installation may adjust the schedule of operations to accommodate this increase or provide additional personnel at the gate to process security checks during the peak hours.</li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>

Boise AGS		Holloman AFB Scenarios H1W, H2W, H3W		Holloman AFB Scenari
(Base)	(Airspace)	(Base)	(Airspace)	(Base)
<ul style="list-style-type: none"> <li>Under Scenario B3, vehicle trips would increase by 135%; this increase would require planned signalization at the Main Gate access, full-time use of the Ellsworth Street Gate, instituting flextime, and an additional gate to reduce the potential effects at the Main Gate.</li> </ul>		<ul style="list-style-type: none"> <li>to process security checks during the peak hours.</li> <li>Under Scenario H3W, vehicle trips would increase by 16%; the base may have to construct additional lanes and provide additional personnel to conduct security checks to reduce congestion at the Main Gate.</li> </ul>		<ul style="list-style-type: none"> <li>accommodate this increase or providing additional personnel at the gate to process security checks during the peak hours, the base may need to construct additional lanes at the gates to reduce congestion during times of peak traffic.</li> </ul>
<b>Hazardous Materials and Waste</b> (Corresponds with Final EIS Chapter 4, Base-Specific Sections 3.15)				
<b>(All Bases)</b> Any new hazardous waste generation points would be managed in accordance with the installations' Hazardous Waste Management Plans. If F-35A facilities were c would be inspected for asbestos-containing material (ACM) or lead-based paint (LBP). If found, ACM and LBP would be disposed of and managed in accordance with applicable				
<ul style="list-style-type: none"> <li>Quantities of hazardous materials and wastes would increase in conjunction with the aircraft increases under Scenarios B1, B2, and B3.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Quantities of hazardous materials and waste would increase in conjunction with the aircraft increases under Scenarios H1W, H2W, and H3W.</li> <li>Project area is located near or within ERP site SS-56, and construction excavations have the potential for encountering contaminated soil.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Quantities of hazardous materials and wastes would decrease under Scenario H1. Quantities of hazardous materials and wastes would increase in conjunction with the aircraft increases under Scenarios H2 through H5.</li> <li>Project area is located near or within ERP site SS-56, and construction excavations have the potential for encountering contaminated soil.</li> </ul>

**Note:** Not Applicable under Airspace indicates the environmental resource does not discuss the areas under the associated airspace because no element of the proposal would i

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Issues H1, H2, H3, H4, H5	Luke AFB		Tucson AGS	
	(Base)	(Airspace)	(Base)	(Airspace)
	<ul style="list-style-type: none"> <li>Under Scenarios L4 through L6, vehicle trips would increase by 18 to 34%; congestion at the three base gates during the morning and evening workday peak hours would increase. The base would adjust the schedule of operations or provide additional personnel at the gate to process security checks during the peak hours to accommodate this increase.</li> </ul>		<ul style="list-style-type: none"> <li>Under Scenario T3, vehicle trips would increase by 18%; the base would adjust the schedule of operations to accommodate this increase and provide additional personnel at the gate to process security checks during the peak hours.</li> </ul>	
<p>constructed in an Environmental Restoration Program (ERP) site, there is potential for encountering contaminated soil. Prior to construction, upgrade, or demolition, facilities must comply with Federal, state, and local regulations.</p>				
<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Quantities of hazardous materials and wastes would not change significantly in the long term. Luke AFB would remain a Large Quantity Generator, pursuant to the Resource Conservation and Recovery Act.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>Quantities of hazardous materials and wastes would not change significantly in the long term. Tucson AGS would remain a Small Quantity Generator, pursuant to the Resource Conservation and Recovery Act.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable</li> </ul>

result in impacts on these resources under the airspace or ranges.

## **ACRONYMS**

<b>AAF</b>	Army Airfield
<b>AATC</b>	Air Force Reserve Command Test Center
<b>AFAF</b>	Air Force Auxiliary Field
<b>AFB</b>	Air Force Base
<b>AFI</b>	Air Force Instruction
<b>AGE</b>	aerospace ground equipment
<b>AGL</b>	above ground level
<b>AGS</b>	Air Guard Station
<b>Air Force</b>	U.S. Air Force
<b>ANG</b>	Air National Guard
<b>ATCAA</b>	Air Traffic Control Assigned Airspace
<b>Aux-1</b>	Luke AFB Auxiliary Airfield 1
<b>BMGR</b>	Barry M. Goldwater Range
<b>CDNL</b>	C-weighted day-night average sound level
<b>CFR</b>	<i>Code of Federal Regulations</i>
<b>CO</b>	carbon monoxide
<b>CO<sub>2e</sub></b>	carbon dioxide equivalent
<b>dB</b>	decibel
<b>DNL</b>	day-night average sound level
<b>DNL<sub>mr</sub></b>	onset rate-adjusted day-night average sound level
<b>EIS</b>	Environmental Impact Statement
<b>FTU</b>	Formal Training Unit
<b>GBU</b>	Guided Bomb Unit
<b>GOV</b>	government-owned vehicle
<b>GPS</b>	global positioning system
<b>IR</b>	Instrument Route
<b>MOA</b>	Military Operations Area
<b>MTR</b>	Military Training Route
<b>N/A</b>	not applicable
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NCA</b>	National Conservation Area
<b>NEPA</b>	National Environmental Policy Act
<b>NF</b>	National Forest
<b>NM</b>	National Monument
<b>NO<sub>x</sub></b>	nitrogen oxides
<b>NWR</b>	National Wildlife Refuge
<b>PAA</b>	Primary Aircraft Authorized
<b>PM<sub>n</sub></b>	particulate matter less than or equal to <i>n</i> microns
<b>POV</b>	personally owned vehicle
<b>PSD</b>	Prevention of Significant Deterioration
<b>PTC</b>	Pilot Training Center
<b>ROD</b>	Record of Decision
<b>RP</b>	Regional Park
<b>RPA</b>	remotely piloted aircraft
<b>SO<sub>2</sub></b>	sulfur dioxide
<b>SP</b>	State Park
<b>TCP</b>	traditional cultural property
<b>U.S.C.</b>	<i>United States Code</i>
<b>UTTR</b>	Utah Test and Training Range
<b>VOC</b>	volatile organic compound
<b>VR</b>	Visual Route
<b>WSR</b>	Wild and Scenic River

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The Executive Summary of the *F-35A Training Basing Environmental Impact Statement (F-35A Training EIS)* the entire EIS, all comments received, and responses to comments are included on the CDs in the pocket below.

To view the 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).

To review the *F-35A Training EIS*:

- 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 EIS.

The CD files are read-only, which means you may view and/or print them from the CD. A printed copy of the *F-35A Training EIS* is available at each of the public libraries in Boise, Grand View, Meridian, Mountain Home, and Marsing (Idaho); Alamogordo, Fort Sumner, Cloudcroft, Roswell, and Ruidoso (New Mexico); El Paso (Texas); and El Mirage, Gila Bend, Glendale, Litchfield Park, Sun City, Surprise, Wickenburg, Bisbee, Safford, San Carlos, Sierra Vista, and Tucson (Arizona). The EIS is also available online at <http://www.F-35Atrainingeis.com>.

To request  
further information  
on this Final EIS,  
contact:

Kim Fornof  
HQ AETC/A7CPP  
266 F Street West,  
Building 901  
Randolph AFB, TX 78150-4319

Phone: (210) 652-1961

Fax: (210) 652-5649;

E-mail:  
[Aetc.a7cp.inbox@us.af.mil](mailto:Aetc.a7cp.inbox@us.af.mil)

Questions were raised during public scoping about the type of F-35 projected for the Air Force. Three variants of the new F-35 aircraft will be training at locations nationwide. The three F-35 aircraft are described below.

The **F-35A** is the Air Force's Conventional Takeoff and Landing (CTOL) fighter, which will replace the F-16 and other aircraft and is expected to be used by many U.S. allies. The beddown of the F-35A training aircraft is addressed in this EIS, prepared by Air Education and Training Command. The beddown of operational F-35A aircraft is addressed in a separate EIS, prepared by Air Combat Command.



The **F-35B** is the Short Takeoff and Vertical Landing (STOVL) fighter, which will be used by the U.S. Marine Corps (USMC). The beddown of F-35B training and operational aircraft is addressed in environmental documentation prepared by the USMC.

The **F-35C** is the U.S. Navy's (USN's) first carrier fighter designed with low observability and supersonic capabilities. The beddown of F-35C training and operational aircraft is addressed in environmental documentation prepared by the USN.

