INTERIM RELOCATION OF TWO F-16 SQUADRONS

ENVIRONMENTAL ASSESSMENT

U.S. AIR FORCE

DRAFT

April 2017

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FOR THE
INTERIM RELOCATION OF TWO F-16 SQUADRONS

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Privacy Advisory

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

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

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 Personal home addresses and phone numbers will not be published in the Final EA.

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LIST OF ACRONYMS/ABBREVIATIONS

°F	degrees Fahrenheit
$\mu g/m^3$	micrograms per cubic meter
47 FTW	47th Flying Training Wing
49 WG	49th Wing
54 FG	54th Fighter Group
56 FW	56th Fighter Wing
56 OG	56th Operations Group
68 AS	68th Airlift Squadron
149 FW	149th Fighter Wing
162 WG	162nd Wing
301 OG	301st Operations Group
AAF	Army Air Field
ACC	Air Combat Command
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ADNL	A-weighted impulsive noise
AFB	Air Force Base
AETC	Air Education and Training Command
AFCEC	Air Force Civil Engineer Center
AFI	Air Force Instruction
AGE	aerospace ground equipment
AGL	above ground level
AICUZ	Air Installation Compatible Use Zone
AIRFA	American Indian Religious Freedom Act
AMARG	Aerospace Maintenance and Regeneration Group
AMU	Aircraft Maintenance Unit
ANG	Air National Guard
APE	Area of Potential Effect
AQCR	Air Quality Control Region
ATCAA	Air Traffic Control Assigned Airspace
BAI	Backup Aircraft Inventory
BASH	Bird-Animal Aircraft Strike Hazard
BCC	Bird of Conservation Concern
BLM	Bureau of Land Management
CAA	Clean Air Act
CDNL	C-weighted impulsive noise
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
dB	decibel
dBA	A-weighted sound level
dBC	C-weighted sound level
DNL	Day-Night Average Sound Level
DoD	Department of Defense
EA	environmental assessment

LIST OF ACRONYMS/ABBREVIATIONS
(Continued)

EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FL	Flight Level
FOD	foreign object debris
FONSI	Finding of No Significant Impact
FR	*Federal Register*
FTC	Flying Training Center
FTU	Formal Training Unit
FY	fiscal year
ga	gallons
GAF	German Air Force
GAF FTC	German Air Force Flying Training Center
GHG	greenhouse gas
gpd	gallons per day
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant
HEF	high expansion foam
HQ	Headquarters
IAP	International Airport
IDP	Installation Development Plan
INRMP	Integrated Natural Resource Management Plan
IPAC	Information, Planning, and Conservation
IQT	Initial Qualification Training
IR	Instrument Route
JBSA	Joint Base San Antonio
JO	Joint Order
JRB	Joint Reserve Base
LBP	lead-based paint
lf	linear feet
MBTA	Migratory Bird Treaty Act
MILCON	military construction
MOA	Military Operating Area
MSL	mean sea level
MTR	Military Training Route
NA	not applicable
NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NDI	Non-Destructive Inspection
NEPA	National Environmental Policy Act
NGB	National Guard Bureau

LIST OF ACRONYMS/ABBREVIATIONS
(Continued)

NO_X	oxides of nitrogen
NO_2	nitrogen dioxide
NHPA	National Historic Preservation Act
NMCRIS	New Mexico Cultural Resource Information System
NMDGF	New Mexico Department of Game and Fish
NMTRI	New Mexico Training Range Initiative
NOA	Notice of Availability
NOTAM	Notice to Airmen
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
P&RA	Preferred and Reasonable Alternatives
PA	Programmatic Agreement
PAA	Primary Aircraft Assigned
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in aerodynamic diameter
PM_{10}	particulate matter equal to or less than 10 microns in aerodynamic diameter
PME	Precision Measurement Equipment
POI	Point of Interest
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	Pilot Training Center
ROD	Record of Decision
ROI	Region of Influence
SAWS	San Antonio Water System
sf	square feet
sy	square yards
SFC	Surface
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SUA	Special Use Airspace
TASA	Texas Archeological Sites Atlas
tpy	tons per year
TPWD	Texas Parks and Wildlife Department
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
VR	Visual Route
WSMR	White Sands Missile Range
Z	Zulu Time, aka Greenwich Mean Time (GMT)

A glossary of terms used in this EA is provided in Chapter 9.

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

The Air Force proposes to relocate two squadrons of operational F-16 Fighting Falcon fighter aircraft currently based at Hill Air Force Base (AFB), Utah, to a location currently hosting an F-16 Formal Training Unit (FTU) and reassign the squadrons into FTUs to increase fighter pilot production. This relocation action is also required to best utilize the F-16 squadrons departing from Hill AFB to make room for delivery and support of F-35 aircraft. The relocation would be to an existing F-16 FTU installation and would be temporary in nature (approximately 5 years). The temporary relocation would allow for continuity in F-16 pilot training and maintenance, pending a corporate Air Force decision on the permanent F-16 FTU beddown installation(s).

This Environmental Assessment (EA) was prepared to evaluate the potential environmental impacts of this proposed action in compliance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] 4331 et seq.), the regulations of the President's Council on Environmental Quality (CEQ) that implement NEPA procedures (40 Code of Federal Regulations [CFR] Parts 1500-1508), and the Air Force Environmental Impact Analysis Process (EIAP), as promulgated at 32 CFR §989. This EA was completed through the Air Force Civil Engineer Center (AFCEC) NEPA Division in coordination with the Headquarters (HQ) Air Education and Training Command (AETC).

1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

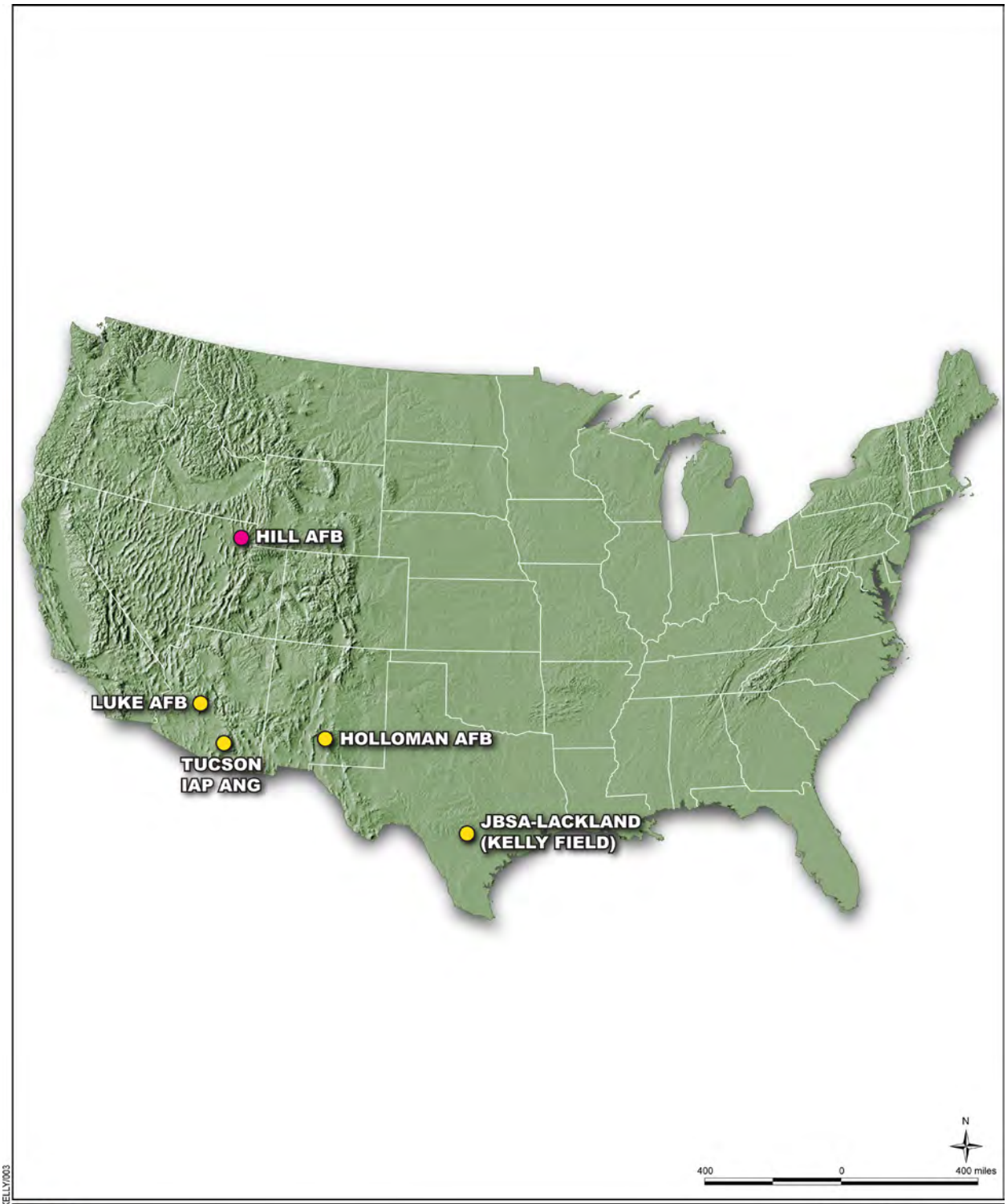
The purpose of the Proposed Action is to temporarily relocate two F-16 squadrons currently based at Hill AFB to an existing F-16 FTU installation to support increased production of F-16 fighter pilots.

The need for the Proposed Action is to produce more F-16 fighter pilots. The Air Force is currently short 700 fighter pilots, with the shortage projected to increase to 1,000 within 5 years. Additionally, as the F-35 mission stands up at Hill AFB requiring more resources and support, the F-16 mission must depart because there is insufficient capacity at Hill AFB to host both F-35 and F-16 operations. The operational F-16s currently used at Hill AFB can be reassigned to a training mission upon relocation to a suitable installation, allowing for an increase in fighter pilot production. As stated by the Secretary of the Air Force in the Preferred and Reasonable Alternatives (P&RA), due to the urgent need for additional fighter pilot production and extended time (5 years) it could take to establish a permanent FTU location, the F-16 aircraft must be quickly and temporarily relocated while a permanent location is selected. The Air Force will consider potential permanent relocation of the F-16 squadrons as an independent action that will be addressed in the future.

1.3 LOCATION OF ALTERNATIVES CONSIDERED

Hill AFB is located just south of the city of Ogden in Davis County, Utah. The installation encompasses 1,000,000 acres at an elevation of approximately 4,800 feet. Hill AFB hosts two F-16 operational squadrons, but no F-16 FTUs.

The four potential interim relocation installations considered by the Air Force for the F-16 mission are Holloman AFB, NM; Joint Base San Antonio (JBSA)-Lackland (Kelly Field), TX; Luke AFB, AZ; and Tucson International Airport (IAP) Air National Guard (ANG), AZ (Figure 1-1).



Installation Locations

Figure 1-1

Holloman AFB is in Otero County, in south-central New Mexico, near the city of Alamogordo. The installation covers 59,639 acres at an elevation of approximately 4,093 feet.

JBSA-Lackland (Kelly Field) is in Bexar County, in the south-central portion of Texas, approximately 8 miles southwest of downtown San Antonio. The installation encompasses approximately 8,856 acres at an elevation of approximately 680 feet.

Luke AFB is approximately 25 miles west of downtown Phoenix in Maricopa County, Arizona. The installation encompasses approximately 4,200 acres at an elevation of approximately 1,090 feet.

Tucson IAP ANG is within the Tucson city limits in Pima County, Arizona. The installation encompasses approximately 84 acres at an elevation of approximately 2,650 feet.

1.4 INTERAGENCY AND INTERGOVERNMENTAL COORDINATION, NATIVE AMERICAN CONSULTATION, AND PUBLIC INVOLVEMENT

Interagency and Intergovernmental Coordination. AETC, as the responsible agency, has implemented the Interagency and Intergovernmental Coordination process. Through this process, the Air Force notifies relevant federal, state, and local agencies about the Proposed Action and alternatives. This coordination process provides the Air Force the opportunity to cooperate with and consider state and local views in implementing the Proposed Action or alternatives. During development of this EA, a description of the Proposed Action and Alternatives was provided to federal, state, and local agencies and other stakeholders, along with an invitation to provide comments to assist in developing the final scope of the EA. This scoping comment period lasted for 30 days, and agency responses were considered in developing the scope of the work proposed in this document. Interagency and Intergovernmental Coordination materials for this EA are included in Appendix A.

Native American Tribal Consultation. EO 13175, *Consultation and Coordination with Indian Tribal Governments*, directs federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with legal mandates, federally recognized tribes that are affiliated historically with the region in which the installations being considered are located are invited to consult on proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. Effective consultation requires identification of tribes based on ethnographic and historical data, and not simply a tribe's current proximity to a project area. The goal of the tribal consultation process is not to simply consult on a particular undertaking, but rather to build constructive relationships with appropriate Native American tribes. Consultation should lead to constructive dialogues in which the Native American tribes are active participants in the planning process. Tribal groups identified as having occupied the Holloman AFB vicinity and having an interest with activities that occur at the base are the Mescalero Apache and Fort Sill Apache. Tribal groups identified as having occupied the JBSA-Lackland (Kelly Field) vicinity and having an interest with activities that occur at the installation include the Mescalero Apache, the Wichita and Affiliated Tribes, the Tonkawa, and the Comanche Nation.

Public Involvement. A Notice of Availability (NOA) for the Draft EA and Draft Finding of No Significant Impact (FONSI) was published in the *Las Cruces Sun News* and *San Antonio Express News* on April 9, 2017. The NOA briefly described the Proposed Action, solicited public comments on the Draft EA, provided the dates of the 30-day public comment period, and announced that a copy of the EA is available for review at public libraries. Copies of the Draft EA and Draft FONSI were made available to individuals and agencies listed in Chapter 8.0 of this EA, as well as at public libraries, for a 30-day review and comment period (April 10 to May 9).

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2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 INTRODUCTION

This chapter describes details of the Proposed Action, alternatives considered to meet the purpose and need of the Proposed Action, and how the alternatives were screened against the selection standards.

2.2 PROPOSED ACTION

The Proposed Action is to relocate two squadrons of F-16 aircraft, one 18 Primary Aircraft Assigned (PAA) with two Backup Aircraft Inventory (BAI) aircraft and another 24 PAA with one BAI (overall 45 total aircraft), currently based at Hill AFB, Utah, to one location currently hosting an F-16 FTU. To quickly stand up new F-16 pilot training, both squadrons would be moved to a single interim location to avoid the time, effort, and expense that would be required to prepare multiple locations. F-16 aircraft are scheduled to begin departing Hill AFB in August 2017 with all 45 F-16 aircraft planned to arrive at the interim relocation installation by October 2018 (first squadron arrival complete by October 2017; second squadron complete by October 2018). The staggered arrival dates are a result of fourteen F-16 aircraft being on loan to other installations through September 2018. This relocation action is intended to be temporary (approximately 5 years) in order to increase F-16 pilot training during selection and preparation of the permanent F-16 FTU beddown location(s).

The Air Force will consider potential permanent relocation of the F-16 squadrons as an independent action that will be addressed after interim beddown decisions are made.

The Proposed Action would expand the capacity and/or throughput of existing F-16 FTU training. The two F-16 FTU squadrons would typically conduct a total of 9,480 sorties (e.g., an operational flight conducted by a single military aircraft) each year including transition, advanced handling, air-to-air, and air-to-ground training. The beddown action would utilize existing apron, maintenance, and administrative/ instructional facilities, plus existing airspace and ranges at the selected installation.

The Proposed Action would augment the current installation personnel with additional instructor pilots and contractor logistics support maintainers. Personnel associated with the interim relocation would include approximately 175 active duty Air Force personnel and the contractor equivalent of approximately 700 maintenance personnel (total of 875 personnel).

The required timeline for the relocation does not allow for major construction or renovation projects to be completed prior to the arrival of additional F-16 aircraft. Therefore, no Military Construction (MILCON) projects are authorized for the interim beddown and no significant construction would occur as part of the interim relocation; the relocation would make use of existing facilities with minor renovations as required. Facilities to be used and actions specific for each alternative are discussed in Section 2.6, Detailed Descriptions of Alternatives Carried Forward for Analysis.

2.3 SELECTION STANDARDS

NEPA and the CEQ regulations mandate the consideration of reasonable alternatives for the Proposed Action. “Reasonable alternatives” are those that could be utilized to meet the purpose of and need for the Proposed Action. Per the requirements of 32 CFR 989, the Air Force EIAP regulations, selection standards are used to identify alternatives for meeting the purpose of and need for the Proposed Action.

In accordance with the Secretary of the Air Force directive, only those installations currently hosting an F-16 FTU are being considered as candidates for the interim relocation because those locations already have F-16 training simulators; operations, maintenance, and academic training facilities; access to airspace and ranges, including the ability to drop live ordnance; a hydrazine response area on the airfield; live ordnance loading area(s) on the airfield; and barriers compatible with F-16 operations. Installations considered would be expected to quickly and fully support the existing pilot production syllabus as they already host F-16 FTUs. Four locations meet the requirement of already hosting an F-16 FTU: Holloman AFB, NM; JBSA-Lackland (Kelly Field), TX; Luke AFB, AZ; and Tucson IAP ANG, AZ.

The Air Force has developed the following set of selection standards to screen the alternative locations and determine which alternatives could meet the project requirements:

A. Availability. The interim beddown installation must be ready to accept F-16s relocating from Hill AFB starting no later than August 2017, with 31 aircraft relocated by October 2017. Fourteen F-16 aircraft based at Hill AFB are currently loaned to other installations. Once their loan agreements end, the loaned aircraft would join the rest of their squadron at the interim location no later than 1 October 2018.
Rationale: Starting October 1, 2017, the F-16 facilities and maintenance staff at Hill AFB will transition to F-35 support. F-16s cannot remain on an installation where facilities and maintenance are not available.

B. Construction. The interim beddown installation must not require MILCON (construction or renovation greater than $1 million) to temporarily host additional F-16s; limited/minor construction and renovations are acceptable.
Rationale: No MILCON projects are authorized for the interim beddown, nor does the required timeline allow for MILCON projects to be completed in time for the scheduled arrival of additional F-16s.

C. Capacity. The interim beddown installation must have the apron, maintenance, and administrative/ instructional facility capacity to support F-16 pilot training for a minimum of five years starting October 1, 2017 for 45 F-16s (two squadrons including backup aircraft).
Rationale: A minimum of five years is required to select and prepare a permanent F-16 FTU location.

2.4 DESCRIPTION AND SCREENING OF ALTERNATIVES

Alternatives consist of those installations already hosting an F-16 FTU: Holloman AFB, NM; JBSA-Lackland (Kelly Field), TX; Luke AFB, AZ; and Tucson IAP ANG, AZ. The alternatives were screened against the selection standards described in Section 2.3, Selection Standards, to determine which alternative(s) could serve the purpose of and need for the Proposed Action.

2.4.1 Alternative 1: Holloman AFB

Holloman AFB is located in south-central New Mexico, 6 miles due west of the city of Alamogordo. Holloman is home to the 49th Wing (49 WG) under Air Combat Command (ACC). AETC is responsible for the 54th Fighter Group (54 FG), aligned under the 56th Fighter Wing (56 FW) at Luke AFB, AZ. The 54 FG is a tenant unit at Holloman AFB conducting Initial Qualification Training (IQT) for new F-16 pilots and requalification training for experienced fighter pilots in the F-16.

The results of screening Holloman AFB against the selection standards are presented below:

A. Availability: Current and planned Holloman AFB operations allow for relocation of aircraft on the desired schedule. Therefore, Holloman AFB meets this selection standard.

B. Construction: Because acceptable aircraft parking aprons, training simulators, and maintenance, administrative, and academic facilities are available, MILCON would not be required. Therefore, Holloman AFB meets this selection standard.

C. Capacity: Holloman AFB currently has the capacity to support 45 F-16 aircraft for the interim beddown period. The German Air Force (GAF) has approved the U.S. Air Force to use three hangarette facilities (18 covered spaces) and open apron parking for 27 aircraft within their current area of operations in 2017. The GAF aircraft would be reduced to three jets by October 2017 and all GAF aircraft and operations are expected to fully depart Holloman AFB no later than December 2019. No other missions are planned to move into these facilities at Holloman AFB during the required five-year residence time of this interim action. Therefore, Holloman AFB meets this selection standard.

2.4.2 Alternative 2: JBSA-Lackland (Kelly Field)

JBSA-Lackland (Kelly Field) is located in San Antonio, Texas, and is home to the 149th Fighter Wing (149 FW) of the Texas ANG. The 149 FW is a National Guard Bureau (NGB) unit that conducts F-16 IQT for new pilots and requalification training for experienced pilots.

The results of screening JBSA-Lackland (Kelly Field) against the selection standards are presented below:

A. Availability: Current and planned operations at JBSA-Lackland (Kelly Field) allow for relocation of aircraft on the desired schedule. Apron space plus leased facilities on the east side of the runway would provide sufficient capacity for 45 F-16 aircraft. Therefore, JBSA-Lackland (Kelly Field) meets this selection standard.

B. Construction: Because acceptable aircraft parking aprons, training simulators, and maintenance, administrative, and academic facilities are available, MILCON would not be required. Therefore, JBSA-Lackland (Kelly Field) meets this selection standard.

C. Capacity: No other missions are planned to move to the east side facilities at JBSA-Lackland (Kelly Field) during the required five-year residence time of this interim action. Therefore, JBSA-Lackland (Kelly Field) meets this selection standard.

2.4.3 Alternative 3: Luke AFB

Luke AFB is located in Glendale, Arizona, west of Phoenix, and is home to the 56 FW under AETC. The 56th Operations Group (56 OG) conducts IQT for new pilots and requalification training for experienced fighter pilots in the F-16. Luke AFB has been designated as an F-35 Pilot Training Center (PTC) with 72 PAA and has been authorized to receive up to 144 PAA F-35As. Luke AFB currently flies 26 Foreign Military Sales F-16s as well as 46 PAA U.S. Air Force F-16s. In combination with these existing F-16s, the additional F-35 beddown flow would bring Luke AFB up to a total of 170 aircraft by 2019.

The results of screening Luke AFB against the selection standards are presented below:

A. Availability: Current and planned operations would not allow for the relocation of aircraft by October 2017 due to limited apron space and ongoing F-35 beddown construction. Therefore, Luke AFB does not meet this selection standard.

B. Construction: Current F-16 facilities are either at capacity or are being converted to F-35 support facilities. Consequently, adding F-16s at Luke AFB would require MILCON to expand parking and accommodate additional F-16 FTU operations. MILCON projects have not been authorized for this interim F-16 relocation. Therefore, Luke AFB does not meet this selection standard.

C. Capacity: Luke AFB cannot support additional F-16 FTU squadrons for the required five year period due to restrictions of no more than 170 total aircraft on the airfield. The 170 limit would be reached in 2019 according to current projections for aircraft arrivals at Luke AFB. If additional F-16s from Hill AFB are added in FY 2017, the 170 aircraft limit would be reached by 2018, which would force the F-16 FTU squadron to relocate again prior to 2019. Therefore, Luke AFB does not meet this selection standard.

2.4.4 Alternative 4: Tucson IAP ANG

Tucson IAP ANG is located in Tucson, Arizona, and is home to the 162nd Wing (162 WG) of the Arizona ANG. The 162 WG is a NGB unit that conducts F-16 IQT for new pilots and requalification training for experienced pilots. Tucson IAP ANG currently flies 18 Foreign Military Sales F-16s for two different countries, plus the ANG's 62 PAA aircraft, for a total of 80 F-16s.

The results of screening Tucson IAP ANG against the selection standards are presented below:

A. Availability: Tucson IAP ANG is limited to 85 total aircraft (Tucson ANG, 2016) and currently hosts 80 F-16s. Eight F-16s are scheduled to depart in June 2019, which would create space for a total of 13 additional F-16s. Tucson IAP ANG could not accommodate 31 additional F-16s by October 2017 or 45 additional F-16s by October 2018. Therefore, Tucson IAP ANG does not meet this selection standard.

B. Construction: Because MILCON would be required to expand apron space and construct simulator facilities to accommodate the additional F-16 FTU squadrons, Tucson IAP ANG does not meet this selection standard.

C. Capacity: Because Tucson IAP ANG is limited to 85 total aircraft and currently hosts 80 F-16s, Tucson IAP ANG would not have the capacity to host additional F-16 FTU squadrons during the required five-year residence time of this interim action. Therefore, Tucson IAP ANG does not meet this selection standard.

2.4.5 Screening Summary

Of the four alternatives considered, Luke AFB and Tucson IAP ANG are considered unreasonable alternatives due to their failure to meet one or more of the selection standards (Table 2-1). The alternatives that met all selection standards will be carried forward for analysis in this EA. Eliminated and retained alternatives are discussed in the following sections.

Table 2-1. Screening Summary

Alternative	Selection Standards		
	A: Availability	B: Construction	C: Capacity
1: Holloman AFB	Meets	Meets	Meets
2: JBSA-Lackland (Kelly Field)	Meets	Meets	Meets
3: Luke AFB	Does not meet	Does not meet	Does not meet
4: Tucson IAP ANG	Does not meet	Does not meet	Does not meet

AFB = Air Force Base
ANG = Air National Guard
IAP = International Airport
JBSA = Joint Base San Antonio

2.5 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

By failing to meet one or more of the selection standards, the Luke AFB and Tucson IAP ANG alternatives were eliminated from consideration for the Proposed Action and will not be carried forward for environmental impacts analysis in this EA.

Luke AFB did not meet the availability requirement due to space limitations of 170 aircraft (which is anticipated to be reached by 2019), the construction requirement because MILCON would be needed to expand parking and accommodate additional F-16 FTU operations, or the capacity requirement because the base would not be able to support all 45 F-16 aircraft over a period of five years. Therefore, Luke AFB is not discussed further in this EA.

Tucson IAP ANG did not meet the availability requirement due to inadequate room to accept additional aircraft on the required schedule, the construction requirement because MILCON would be needed for parking and simulator facilities, or the capacity requirement because the base would not be able to host additional F-16 squadrons due to lack of space. Therefore, Tucson IAP ANG is not discussed further in this EA.

The F-16 mission at Hill AFB is operational, not a training mission, so Hill AFB does not currently host an F-16 FTU, nor could it easily adjust to support additional F-16 pilot production due to the ramp up of F-35 operations. Consequently, Hill AFB was not considered by the Air Force to be a candidate for F-16 FTU. As discussed in the Final EIS for the F-35A Operational Basing, F-35As and F-16s cannot operate simultaneously at Hill AFB (U.S. Air Force, 2013a). Furthermore, Hill AFB does not meet the selection standards discussed above in Section 2.3. Therefore, Hill AFB as an F-16 FTU alternative is not discussed further in this EA.

2.6 DETAILED DESCRIPTIONS OF ALTERNATIVES CARRIED FORWARD FOR ANALYSIS

Based on the screening of available alternatives against the selection standards, the Holloman AFB and JBSA-Lackland (Kelly Field) alternatives met all the standards and are therefore considered reasonable and retained for analysis. On November 15, 2016, the Secretary of the Air Force announced the selection of Holloman AFB as the Preferred Alternative and JBSA-Lackland (Kelly Field) as the Reasonable Alternative for the interim F-16 mission relocation. Congress was notified of the Preferred and Reasonable Alternative (P&RA) decision and that Luke AFB and Tucson IAP ANG were considered unreasonable alternatives.

The No-Action Alternative is also included for analysis. The No-Action Alternative will substantively analyze the consequences of not undertaking the Proposed Action, not simply conclude no impact, and will serve to establish a comparative baseline for analysis.

2.6.1 Alternative 1: Holloman AFB

2.6.1.1 Existing Facilities to Support Interim Relocation of F-16 Squadrons to Holloman AFB

Existing facilities at Holloman AFB that would support the interim relocation of two F-16 squadrons include the runways, taxiways, aprons, and structures listed in Table 2-2, which provides a description of the facilities and proposed renovations that would be required to support the mission. Figures 2-1, 2-2, and 2-3 illustrate the locations of facilities on Holloman AFB that would support the F-16 interim relocation.

Use of three German-owned facilities and ramp space within Holloman AFB would be required for the F-16 interim relocation and would require a lease agreement with the German government. On October 11, 2016, the German government officially approved the U.S. Air Force to use three "Tornado" shelters (hangarettes) in 2017. Two hangarettes (Facilities 21296 and 21297) would be available in June 2017, while the third hangarette (Facility 285) would be available in November 2017. Each hangarette has space for six F-16s (18 total). These 18 spaces plus 27 open apron parking spaces being made available by the GAF would allow for parking of 45 F-16s. Negotiations are ongoing and anticipated to be completed prior to May 2017 to define the parking, taxiing, and maintenance procedures to ensure the F-16 maintenance operations do not interrupt the GAF operations. All GAF aircraft and personnel are scheduled to depart Holloman AFB no later than December 2019.

2.6.1.2 Construction to Support Interim Relocation of F-16 Squadrons to Holloman AFB

Limited construction would be required to support the interim relocation of two F-16 squadrons to Holloman AFB. No ground disturbance would occur as this limited construction would involve renovations at existing facilities in Table 2-2, re-striping of the existing apron, construction of aircraft sunshades with associated lighting, and installation of anchor points into the concrete apron for F-16 parking and sunshades. Two sun shades would be constructed on the apron, one adjacent to Facility 21296 and one adjacent to Facility 285 (see Figure 2-2). The sun shades would provide cover for 27 F-16 aircraft. Prior to initiation of construction activities, appropriate construction and design plans and drawings would be developed detailing the specific construction and renovation actions.

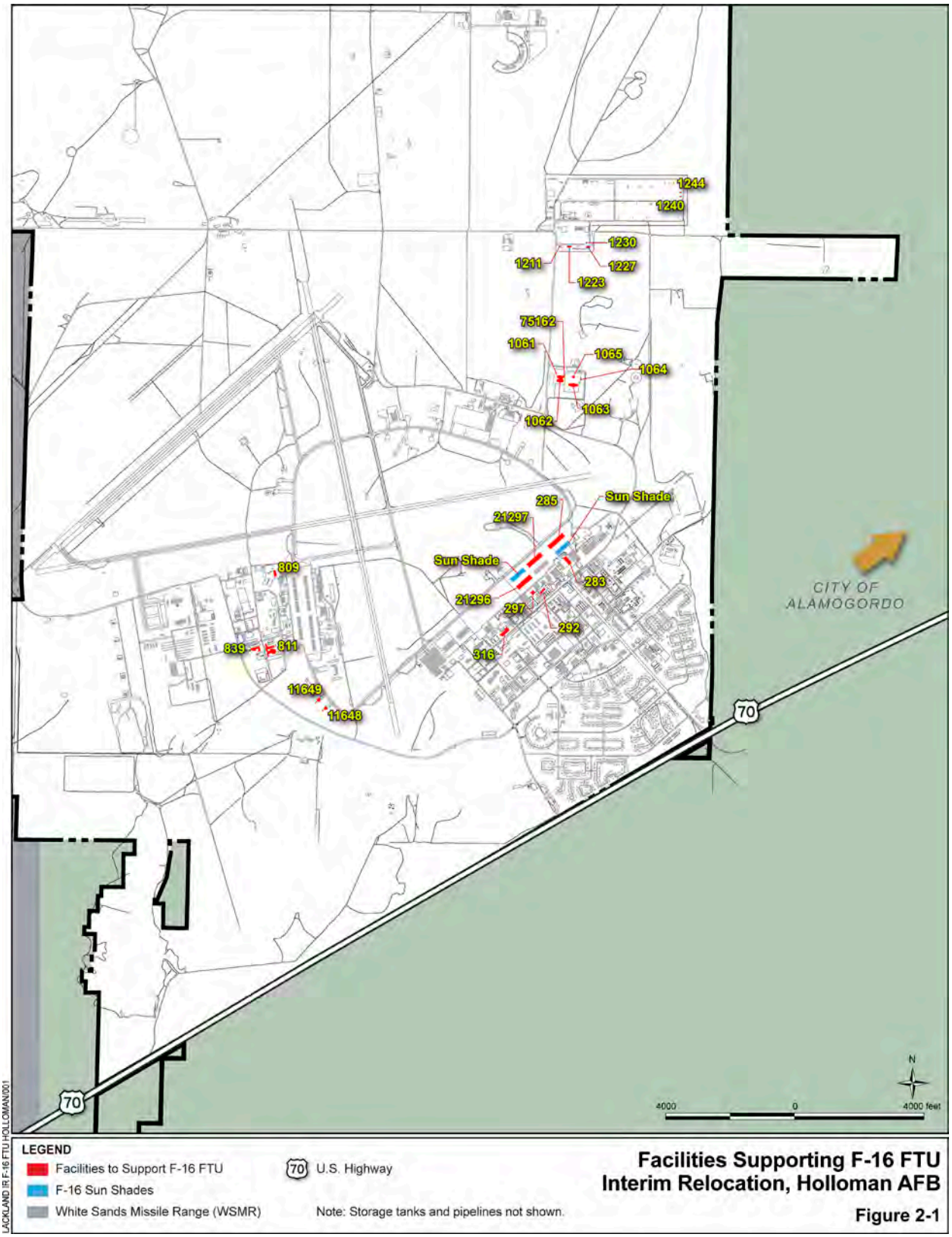
Table 2-2. Facilities to Support F-16 FTU Squadrons at Holloman AFB

Building No.	Year Constructed	Square Feet	Support of Interim Relocation/*Renovation*
283	1971	24,822	**Base Supply and Equipment Warehouse** To be used for warehousing/storage. *No renovation.*
285	1996	42,000	**Maintenance Dock** To be used to support aircraft maintenance and parking. Facility would be available to support the FTU in October 2017. *No renovation.*
292	1982	10,000	**T-38 Aircraft Parts Storage** To be used as a parts warehouse. *Renovation for use as AGE and egress back shops.*
297	1981	11,051	**Non-Destruction Inspection (NDI) Laboratory** To be used as an AMU facility. *Renovation to convert facility from an NDI laboratory to an AMU.*

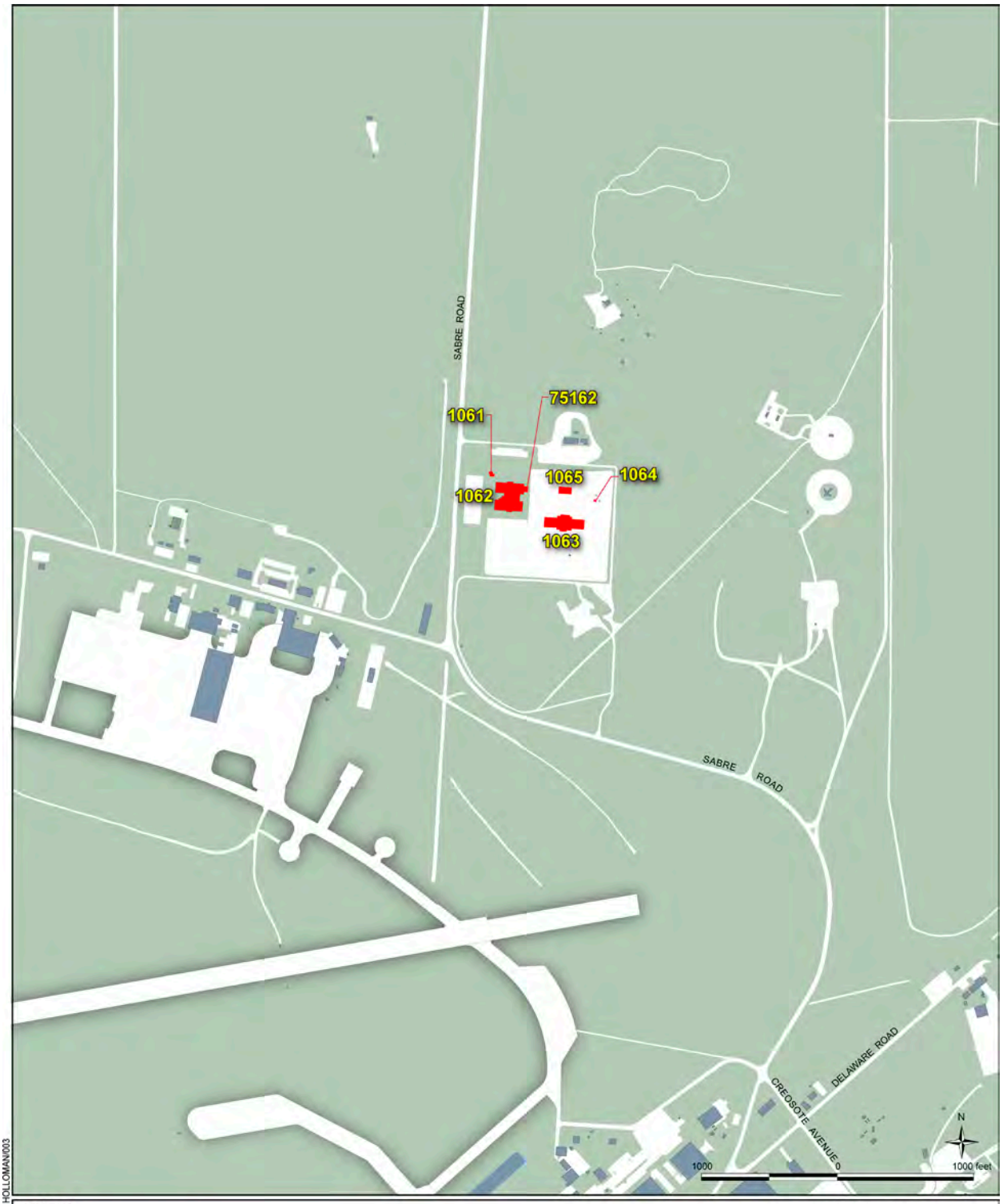
Building No.	Year Constructed	Square Feet	Support of Interim Relocation/*Renovation*
316	1977	45,607	**F-16 Simulator Training Facility** To be used as a simulator facility. *No renovation.*
809	1956	12,810	**F-16 Parts Store** To be used for armaments. *Renovation for use as an armaments shop.*
811	1956	56,908	**54th Fighter Group Command Post/Communications** To be used as a backup Squadron Operations building. *Renovation to include secured mission briefing areas.*
839	1953	26,965	**Precision Measurement Equipment Laboratory** To be used as a PME laboratory. *No renovation.*
919	2013	996	**Hydrazine Facility** To be used as a hydrazine facility. *No renovation.*
1061	1992	748	**4th Space Guard Shack** To be used as a guard shack. *No renovation.*
1062	1992	37,485	**4th Space Operations Building** To be used as Squadron Operations building. *Renovation would include creating two 4,000-square-foot mission planning vaults and one secure briefing room with classified storage, and installing an intrusion detection system.*
1063	1992	24,863	**4th Space Maintenance Building** To be used as multiple contractor maintenance back shops. *Renovation for the armaments back shop.*
1064	1993	40	**4th Space Water Fire Pumping Station** To be used as a water pump station for firefighting. *No renovation.*
1065	2001	4,600	**4th Space Storage Facility** To be used as a simulator facility. *Renovation to convert the building from a warehouse to a simulator facility and install an intrusion detection system.*
1211	2000	1,961	**Munitions Administration** To be used as an administrative building for munitions storage. *No renovation.*
1223	2000	5,157	**Missile Assembly Shop** To be used as a missile assembly shop. *No renovation.*
1227	2000	6,562	**Conventional Munitions Shop** To be used as a conventional munitions shop. *No renovation.*
1230	2000	1,350	**Inert Munitions Storage** To be used for storage of inert munitions. *No renovation.*
1240	1999	1,560	**Munitions Storage Igloo** To be used for munitions storage. *No renovation.*
1244	1999	1,350	**Munitions Storage Igloo** To be used for munitions storage. *No renovation.*
11285	1995	1,098	**Pad, Power Check** To be used as a trim pad after existing hush house demolition performed under a project separate from this EA. *No renovation.* The hush house on-site is scheduled for demolition.

Building No.	Year Constructed	Square Feet	Support of Interim Relocation/*Renovation*
11648	1989	338	**South Hush House** To be used as a hush house. *No renovation.*
11649	1989	367	**North Hush House** To be used as a hush house. *No renovation.*
12245	1996	6,319 lf	**Liquid Fuels Pipeline** To be used to refuel aircraft. *No renovation.*
12285	1996	25,000 ga	**Jet Fuel Tank 24** To be used to store fuel in support of refueling aircraft. *No renovation.*
12286	1996	25,000 ga	**Jet Fuel Tank 25** To be used to store fuel in support of refueling aircraft. *No renovation.*
12287	2001	25,000 ga	**Jet Fuel Tank 26** To be used to store fuel in support of refueling aircraft. *No renovation.*
12288	2001	25,000 ga	**Jet Fuel Tank 27** To be used to store fuel in support of refueling aircraft. *No renovation.*
21296	2000	52,774	**Maintenance Dock** To be used to support aircraft maintenance and parking. Facility would be available to support the FTU in June 2017. *No renovation.*
21297	2000	52,774	**Maintenance Dock** To be used to support aircraft maintenance and parking. Facility would be available to support the FTU in June 2017. *No renovation.*
75162	2003	NA	**4th Space Recreation Facility** To be used to support the recreational needs of personnel. *No renovation.*

AFB = Air Force Base
AGE = Aerospace Ground Equipment
AMU = Aircraft Maintenance Unit
FTU = Flying Training Unit
ga = gallons
lf = linear feet
NA = not applicable
NDI = Non-Destruction Inspection
PME = Precision Measurement Equipment


1244
1240
1230
1211
1227
1223
75162
1061
1065
1064
1063
1062
285
Sun Shade
21297
Sun Shade
809
283
21296
297
292
839
811
316
11649
11648
CITY OF
ALAMOGORDO
70
70
N
4000
0
4000 feet
LEGEND
Facilities to Support F-16 FTU
F-16 Sun Shades
White Sands Missile Range (WSMR)
70 U.S. Highway
Note: Storage tanks and pipelines not shown.
Facilities Supporting F-16 FTU
Interim Relocation, Holloman AFB
Figure 2-1
LACKLAND IR F-16 FTU HOLLOMAN001


SABRE ROAD
Sun Shade
(13 aircraft)
285
21297
Sun Shade
(14 aircraft)
21296
292
297
CREOSOTE AVENUE
DELAWARE AVENUE
OCOTILLO AVENUE
YUCCA AVENUE
TABOSA AVENUE
1ST STREET
CONNECTICUT AVENUE
ARIZONA AVENUE
SANTA FE DRIVE
DELAWARE AVENUE
IDAHO AVENUE
NEW MEXICO AVENUE
ARIZONA AVENUE
ARNOLD AVENUE
1ST STREET
11TH STREET
N
1000
0
1000 feet
LEGEND
Facilities to Support F-16 FTU
F-16 Sun Shades
New Security Fence
Facilities Supporting F-16 FTU Interim Relocation, German Air Force Area
Figure 2-2
LACKLAND IR F-16 FTU HOLLOMAN\002



Facilities Supporting F-16 FTU Interim Relocation, Space Command Area

Figure 2-3

2.6.1.3 Airspace and Ranges to Support Interim Relocation of F-16 Squadrons to Holloman AFB

Training airspace used by aircraft at Holloman AFB includes Restricted Areas associated with White Sands Missile Range (WSMR) (including R5107B, 5107C/H, R5107C/J, R5107D, R5107E, R5107F/G, R5111A/B, and R-5111C/D), the McGregor Range of Fort Bliss (R5103A, R5103B, and R5103C), and large overland Military Operating Areas (MOAs). MOAs are airspaces established to separate certain nonhazardous military flight activities from non-military flight traffic. The following MOAs would be available: Beak A-C and Talon Low/High East/High West. Bombing ranges include Oscura and Red Rio Ranges at WSMR and the Centennial Range at McGregor Range (Figure 2-4). Ground impact training, which accounts for approximately 30 percent of F-16 training activities, would occur within Army-controlled airspace.

The Red Rio Training Range is in a mountain valley, Red Canyon, which runs southeasterly from the divide between the south end of Chupadera Mesa and the Oscura Mountains in Socorro County. The range is located between 5,500 and 6,500 feet in elevation. It is an active gunnery and bombing range with one live drop area for explosive ordnance and 2 miles of gunnery and inert-bomb targets. The Weapons Impact Area is 2.3 square nautical miles, roughly equal to 1,950 acres, and the total Range Safety Zone is 55,680 acres.

The Oscura Training Range is on open terrain that slopes very slightly down to the east between 4,000 and 4,100 feet in elevation. The range is an active Combat Air Support, small arms, helicopter gunnery, and GAF academic inert bombing range in Lincoln County, NM. The Weapons Impact Area of 5 square nautical miles is approximately 4,240 acres. The Range Safety Zone is 57,210 acres.

The Centennial Training Range is on rolling uplands east of and above the basin, near the western edge of Otero Mesa, between 5,000 and 5,500 feet in elevation. The range is an active gunnery and inert-bombing range in Otero County, NM. The Weapons Impact Area of 6 square nautical miles is 5,120 acres. The Range Safety Zone is 94,730 acres.

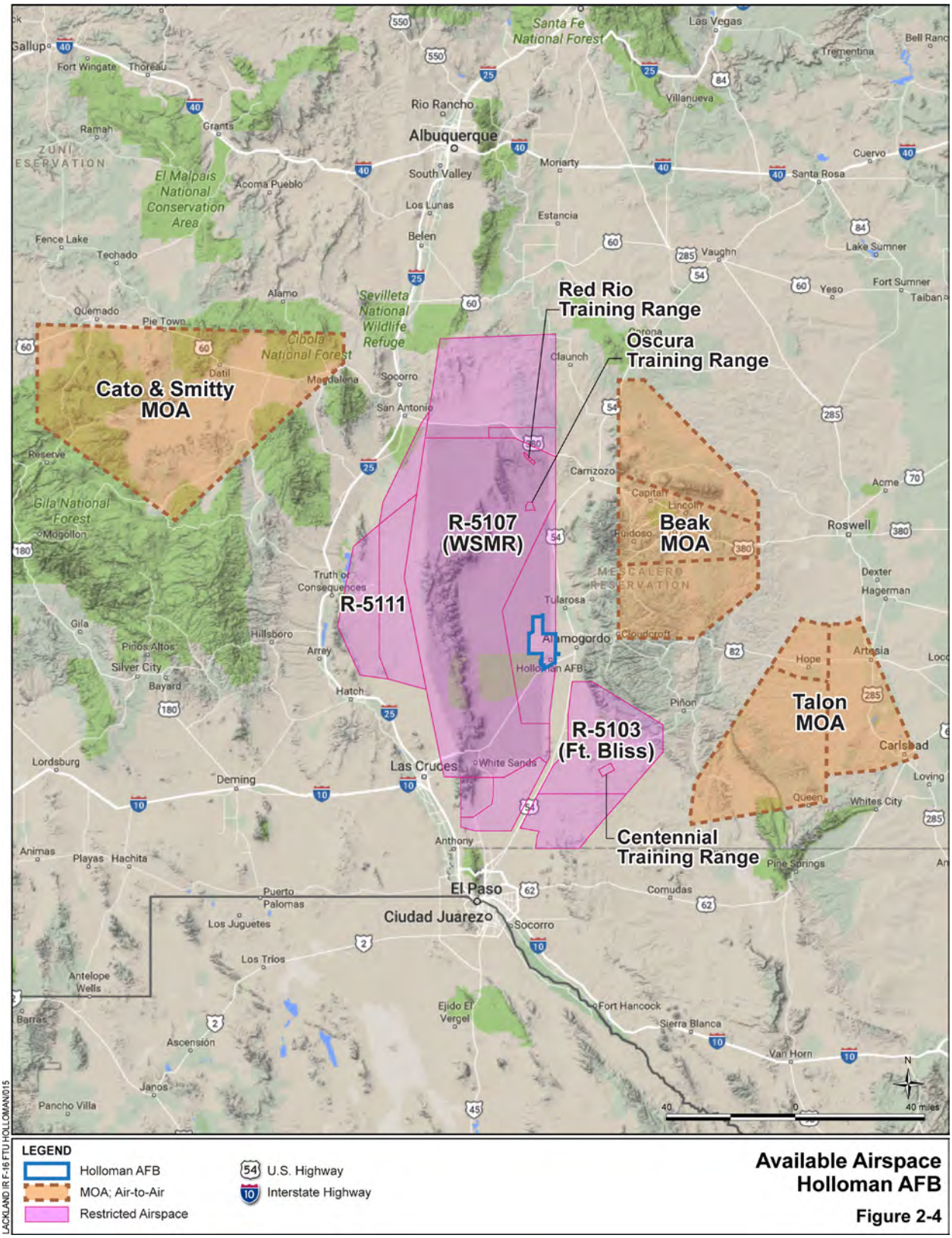
Table 2-3 presents estimated annual air-to-ground munitions that would be used at the ranges (current mission plus the proposed new F-16 FTU mission).

Table 2-3. Estimated F-16 Annual Air-to-Ground Munitions Use, Holloman AFB

Munitions Type	Current Total Rounds	Proposed Future Total Rounds
BDU-33 (25 pound)	3,456	5,715
GBU-12/38 (inert, 500 pound)	576	860
MK-82 (500 pound)	630	1,200
20 millimeter	204,800	746,300

AFB = Air Force Base

The F-16 aircraft would fly at subsonic and supersonic speeds depending on the training requirement. Frequency of airspace use would not be continuous; however, some or all parts would be active during the F-16 FTU flying operations windows. Periods of use would be primarily from 7:00 am to 10:00 pm. A certain percentage of training operations must be conducted after dark so that pilots can maintain proficiency in nighttime flying. F-16s operating from Holloman try to fulfill the annual night flying requirements without flying during environmental night (10:00pm to 7:00am). During interim basing, all F-16s training at Holloman could potentially require approximately ten (10) percent of total training sortie operations to occur (at least partially) during environmental night to meet syllabus objectives.


Red Rio
Training Range
Oscura
Training Range
Cato & Smitty
MOA
R-5107
(WSMR)
R-5111
Beak
MOA
R-5103
(Ft. Bliss)
Talon
MOA
Centennial
Training Range
Holloman AFB
Albuquerque
El Paso
Ciudad Juarez
Las Cruces
Roswell
Alamogordo
Santa Fe
National Forest
Cibola
National Forest
Gila National
Forest
El Malpais
National
Conservation
Area
Sevilleta
National
Wildlife
Refuge
LEGEND
Holloman AFB
MOA; Air-to-Air
Restricted Airspace
U.S. Highway
Interstate Highway
Available Airspace
Holloman AFB
Figure 2-4
LACKLAND IR F-16 FTU HOLLOMAN015

Training within high altitude restricted airspace would include supersonic at or above 10,000 feet mean sea level (MSL) within WSMR and Fort Bliss, and at or above 23,000 MSL within Wiley East Air Traffic Control Assigned Airspace (ATCAA). Training would also include the use of RR188 training chaff in accordance with the Training Chaff Permit, and use of MJU-7 flares. (Chaff and flares are defensive mechanisms employed from military aircraft to avoid detection and/or attack by adversary air defense systems.). MJU-7 flares would not be deployed during periods of "Very High" or "Extreme" fire danger. During periods of "High" fire danger, aircraft would not flare below FL180 [18,000 feet]. If fire danger is less than "High" the minimum altitude for flare release would be 2,000 feet above ground level (AGL).

Training within low altitude airspace (below 10,000 MSL) would include no supersonic operations. Deployment of chaff and flares would be as described above.

2.6.2 Alternative 2: JBSA-Lackland (Kelly Field)

2.6.2.1 Existing Facilities to Support Interim Relocation of F-16 Squadrons to JBSA-Lackland (Kelly Field)

Existing facilities at JBSA-Lackland (Kelly Field) that would support the interim relocation of two F-16 squadrons include the runway, taxiways, aprons, and structures listed in Table 2-4, which provides a description of the facilities and proposed renovations that would be required to support the mission. Figures 2-5, 2-6, and 2-7 illustrate the locations of facilities on JBSA-Lackland (Kelly Field) that would support the F-16 interim relocation.

Ownership of Facilities 1502, 1530, 1610, 1612, and 1614 was transferred to the Greater Kelly Development Corporation (now Port San Antonio) in 1995 during Base Realignment and Closure; however, the Air Force retains exclusive use of these facilities through the year 2045 under a lease agreement. Use of Facilities 1470, 1600, and 1618 to support the interim relocation of the F-16 squadrons would require a new lease agreement with Port San Antonio.

2.6.2.2 Construction to Support Interim Relocation of F-16 Squadrons to JBSA-Lackland (Kelly Field)

Limited construction would be required to support the interim relocation of two F-16 squadrons to JBSA-Lackland (Kelly Field). No ground disturbance would occur as this limited construction would involve renovations at existing facilities in Table 2-4, re-striping of the existing apron, construction of aircraft sunshades with associated lighting, and installation of anchor points into the concrete apron for F-16 parking and sunshades. Four sun shades would be constructed on the apron from Facility 1470 to Facility 1600 (see Figure 2-5). Each sun shade would provide cover for 11 F-16 aircraft.

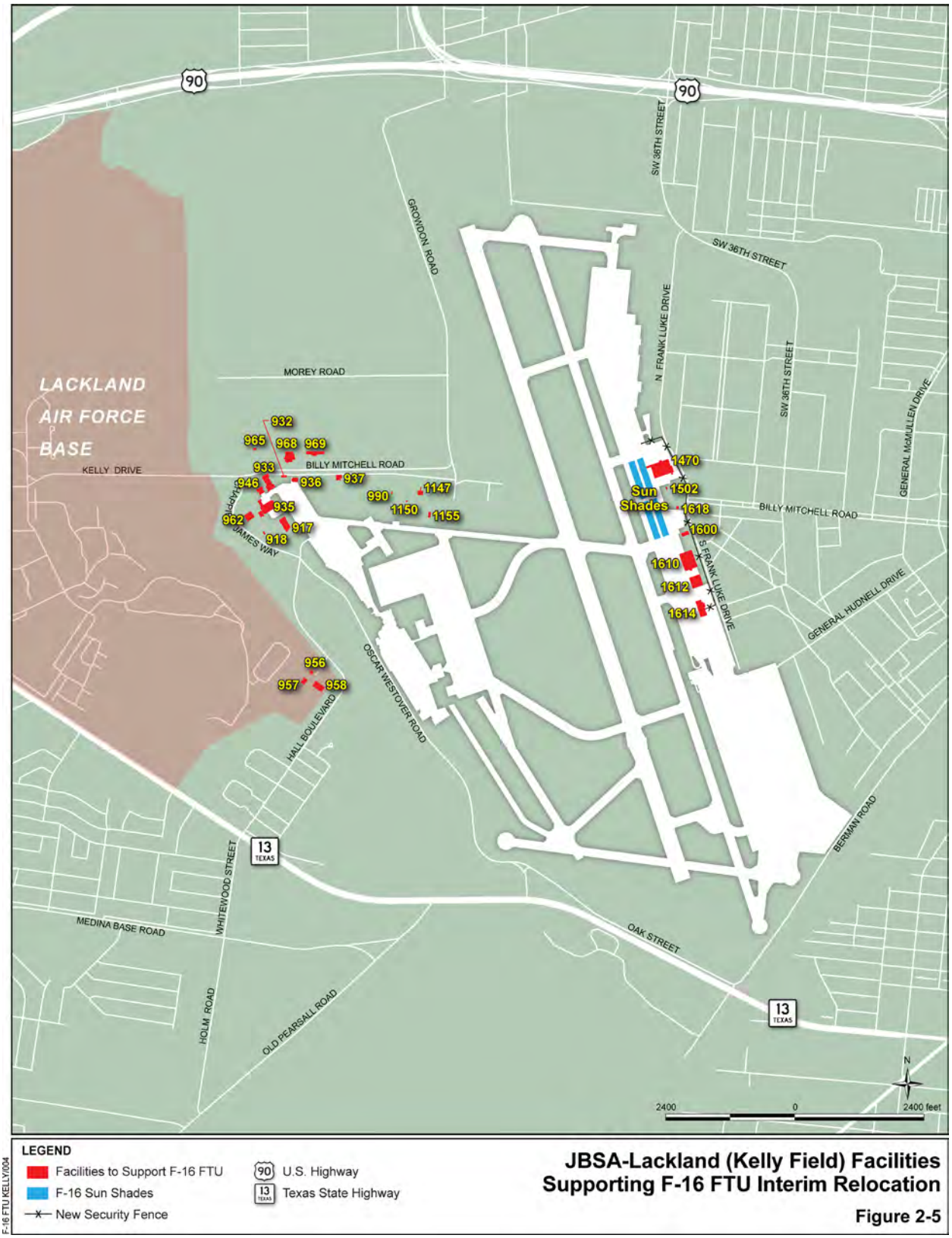
Approximately 4,500 linear feet (lf) of security fencing would be installed from Facility 1470 to Facility 1614 (see Figure 2-7). The security fence would replace portions of the existing security fence in the area and would be approximately 6 feet in height consisting of chain-link fencing with three strands of barbed wire along the top and support posts placed approximately 20 feet apart. Limited ground disturbance would occur during fence post installation. Prior to initiation of construction activities, appropriate construction and design plans and drawings would be developed detailing the specific construction and renovation actions.

Table 2-4. Facilities to Support F-16 FTU Squadrons at JBSA-Lackland (Kelly Field)

Building No.	Year Constructed	Square Feet	Support of Interim Relocation/*Renovation*
917	2003	31.045	**Squadron Operations/F-16 Simulator/Flying Training Classroom** An F-16 Simulator Facility containing three F-16 simulators. *No renovation.*
918	1983	1,400	**Base Supply and Equipment Warehouse** To support warehousing for the F-16 FTU squadrons. *No renovation.*
932	1987	4,000	**Maintenance Office** To be used for offices. *Interior renovation to support office space.*
933	1980	40,800	**Avionics and Weapons** One covered space for aircraft. *No renovation.*
935	1958	80,562	**Aircraft Maintenance Hangar** To be used to support aircraft maintenance with space for eight aircraft. Facility can be used to shelter 14 aircraft during bad weather. *No renovation.*
936	2004	930	**Pad, Aircraft Wash Rack** To be used as an aircraft wash rack. *No renovation.*
937	1987	9,704	**F-16 Simulator Facility** An F-16 Simulator Facility containing four F-16 simulators. *No renovation.*
946	1985	11,650	**Fuels Cell Maintenance** To be used to support aircraft maintenance; hangar has two spots for aircraft (can hold three aircraft during bad weather). Spot 11 on parking apron to be used as an outside fuel cell maintenance location. *No renovation.*
956	1964	1,263	**Less Explosive Munitions Storage/Missile Buildup** To be used for munitions storage. *No renovation.*
957	1962	3,938	**Munitions Storage** To be used for munitions storage. *No renovation.*
958	1962	6,175	**Munitions Storage** To be used for munitions storage. *No renovation.*
962	1971	18,304	**Reserve Forces Operational Training** To be used for administrative space and classroom training. *No renovation.*
965	1977	1,750	**Liquid Oxygen Storage Area** To be used for storage of liquid oxygen. *No renovation.*
968	1997	32,673	**Logistics Readiness Squadron and Base Supply/Contracting Squadron** To be used for administrative space. *No renovation.*
969	2004	18,578	**Logistics Readiness Squadron and Vehicle Maintenance** To be used for administrative space and vehicle maintenance. *No renovation.*
985	2002	208	**Vehicle Operations Administration** To be used for administrative space. *No renovation.*
990	2002	1,500	**Vehicle Service Rack** To be used as a vehicle service rack. *No renovation.*

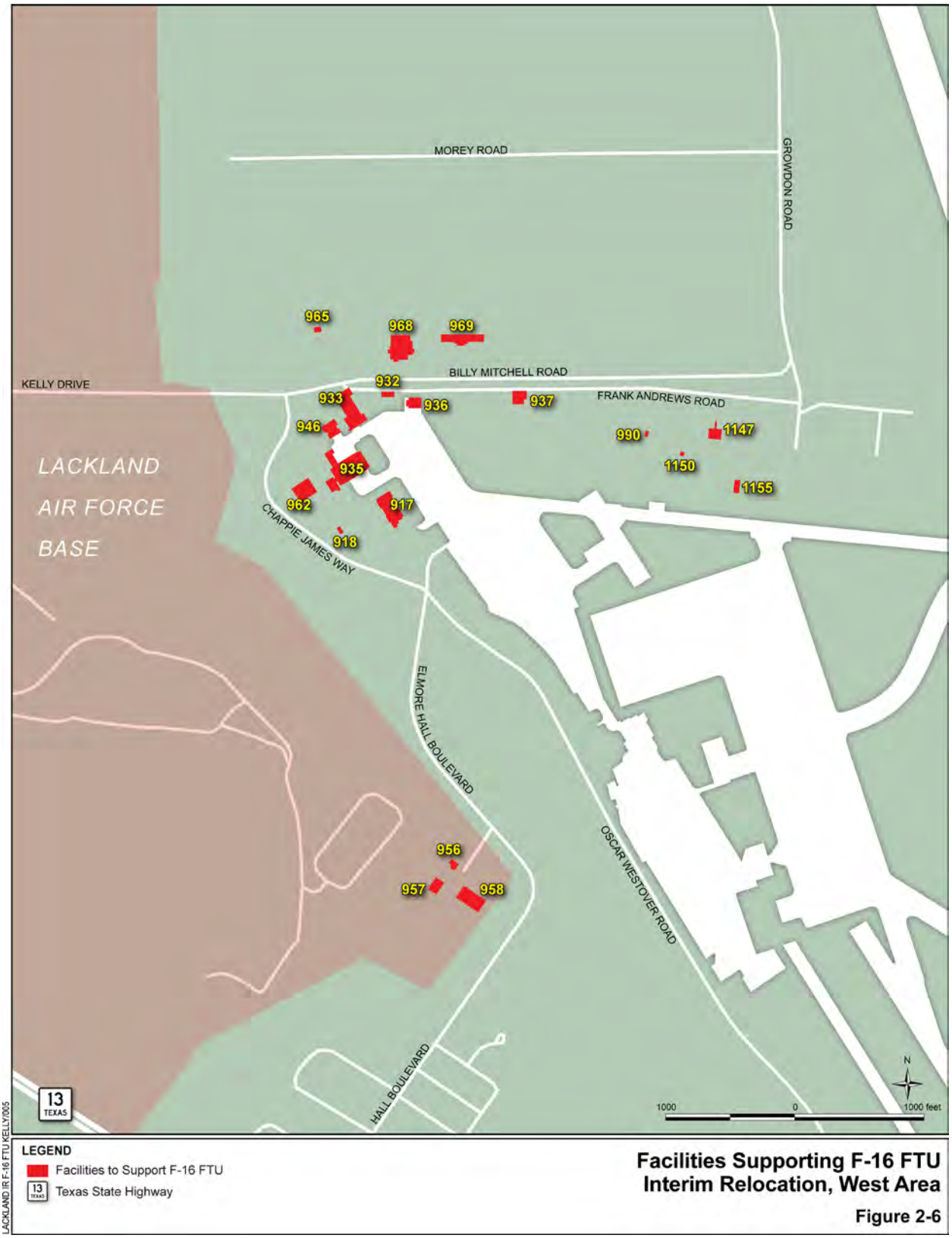
Building No.	Year Constructed	Square Feet	Support of Interim Relocation/*Renovation*
1147	1981	867	**Hush House/Pad, Power Check with Suppressor** To be used as a hush house. *No renovation.*
1150	1987	773	**Hydrazine Servicing Area** To be used for hydrazine services. *No renovation.*
1151	1976	12,210	**Jet Engine Intermediate Maintenance Shop** To be used as a jet engine maintenance shop. *No renovation.*
1155	1963	4,200	**Non-Destructive Inspection (NDI)** Has one bay that would continue to be used for NDI. *No renovation.* A new NDI facility is programmed to be constructed in FY 2019.
1470	1958	40,000	**Cargo Facility** To be leased from Port San Antonio. Facility would be used to support storage requirements. *Interior renovations to support storage.*
1502	NA	1,500	**Fire Extinguisher Storage** To be leased from Port San Antonio. Facility to be used as a flight shack. *Interior renovations to convert to use as a flight shack.*
1530	ca. 1970	413,264	**Warehouse** Air Force retains exclusive use until 2045 under lease from Port San Antonio. Facility could be used to support storage requirements. *Interior renovations to support storage*.
1600	1940	8,377	**Port San Antonio Operations Facility** To be leased from Port San Antonio. Facility would be used for administrative office space. *Interior renovations to support administrative offices.*
1610	1940	81,641	**Hangar** Air Force retains exclusive use until 2045 under lease from Port San Antonio. Hangar to be used to support aircraft maintenance. *Renovation required to provide back shop areas. Addition of a metal roof storage building on the concrete apron either in front of the hangar or area beside the hangar.*
1612	1942	54,410	**Hangar** Air Force retains exclusive use until 2045 under lease from Port San Antonio. Hangar would support squadron operations office requirements and AGE shop needs. North side of the hangar could be used as a phase dock with the south side used for AGE storage, or vice versa. *Renovation of interior to support maintenance administrative needs.*
1614	1943	36,858	**Passenger Terminal** Air Force retains exclusive use until 2045 under lease from Port San Antonio. Facility would support administrative and maintenance shop requirements. *Renovation to be an alternate maintenance equipment shop.*
1618	1943	8,000	**Offices** To be leased from Port San Antonio. Facility would support office space. *Interior renovation to support office space.*
10792	1990	9,439	**Pad, Aircraft Wash Rack** To be used as an aircraft wash rack. *No renovation.*

AGE = Aerospace Ground Equipment
FTU = Flying Training Unit
FY = fiscal year
HEF = High Expansion Foam
JBSA = Joint Base San Antonio
NDI = Non-Destructive Inspection



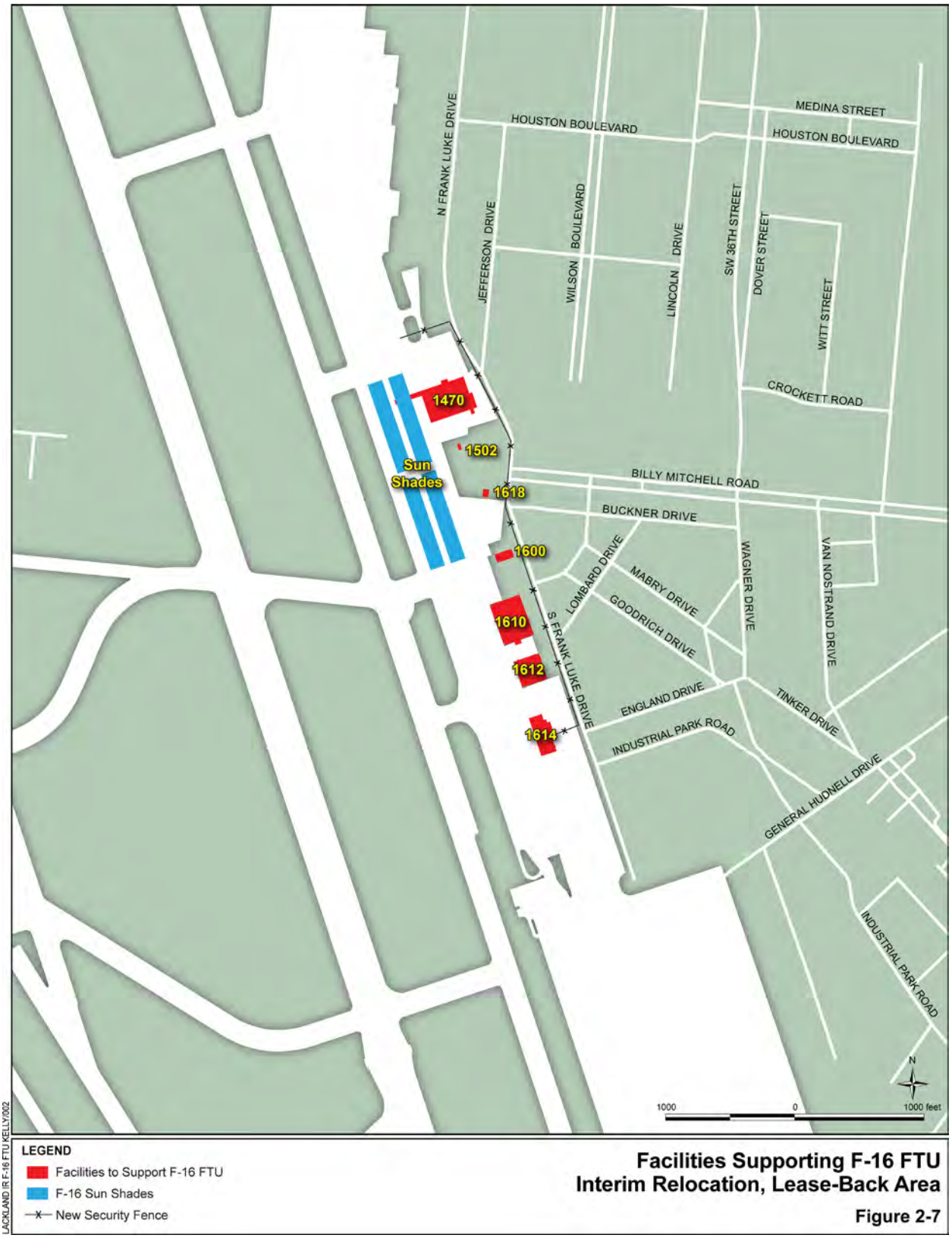
JBSA-Lackland (Kelly Field) Facilities Supporting F-16 FTU Interim Relocation

Figure 2-5



Facilities Supporting F-16 FTU Interim Relocation, West Area

Figure 2-6


N FRANK LUKE DRIVE
HOUSTON BOULEVARD
MEDINA STREET
HOUSTON BOULEVARD
JEFFERSON DRIVE
WILSON BOULEVARD
LINCOLN DRIVE
SW 36TH STREET
DOVER STREET
WITT STREET
CROCKETT ROAD
1470
1502
Sun Shades
1618
BILLY MITCHELL ROAD
BUCKNER DRIVE
1600
LOMBARD DRIVE
MABRY DRIVE
WAGNER DRIVE
VAN NOSTRAND DRIVE
1610
GOODRICH DRIVE
S FRANK LUKE DRIVE
1612
ENGLAND DRIVE
TINKER DRIVE
1614
INDUSTRIAL PARK ROAD
GENERAL HUDNELL DRIVE
INDUSTRIAL PARK ROAD
N
1000
0
1000 feet
LEGEND
Facilities to Support F-16 FTU
F-16 Sun Shades
New Security Fence
Facilities Supporting F-16 FTU
Interim Relocation, Lease-Back Area
Figure 2-7
LACKLAND IR F-16 FTU KELLY/002

2.6.2.3 Airspace and Ranges to Support Interim Relocation of F-16 Squadrons to JBSA-Lackland (Kelly Field)

The following MOAs would accommodate training that does not require use of an impact range and would allow multiple F-16 flights to conduct simultaneous operations at both low and high altitude: Crystal, Brady, Kingsville 3/4, Texon, Randolph, Laughlin, Brownwood, and Hood. In addition, Warning Areas W-228 and W-147 C/D/E would accommodate training.

Non-live ground impact training would occur on the Yankee/Dixie bombing range (Figure 2-8). For live ordnance delivery and training, the F-16 FTU would utilize the Fort Hood live drop range.

The F-16 aircraft would fly at subsonic and supersonic speeds depending on the training requirement. The frequency of airspace use would not be continuous; however, some or all parts would be active during the F-16 FTU flying operations windows. Periods of use would be primarily from 7:00 am to 10:00 pm, with up to ten percent of use occurring during environmental night when required for syllabus completion, with Saturday/Sunday training taking place one weekend per month to meet ANG training requirements. Supersonic operations would occur in the Pecos MOA (see Figure 2-4) and in the Warning Areas over the Gulf of Mexico (typically everyday in January – February for approximately 1 minute per sortie).

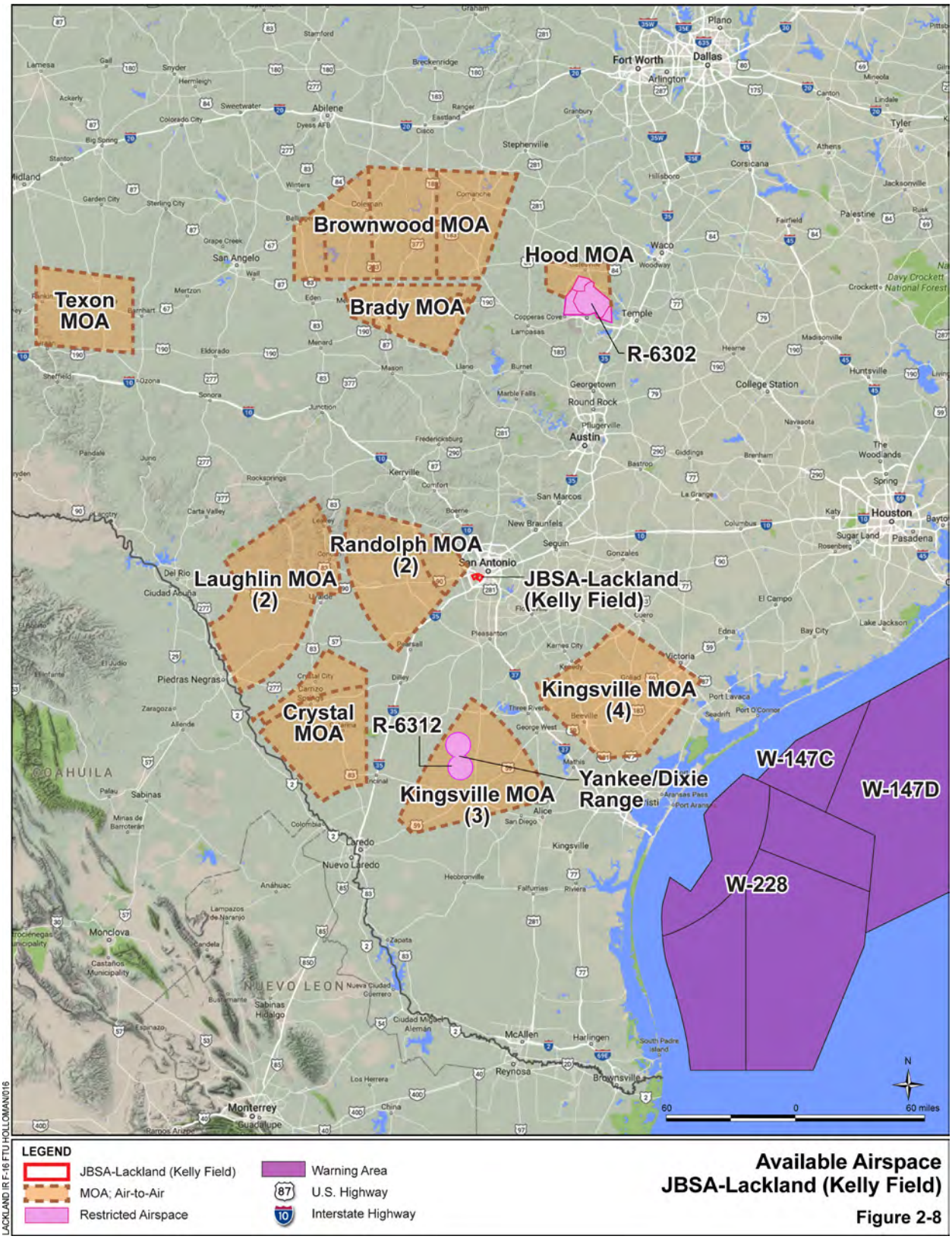
Yankee Range comprises the northern half of two ranges that make up the McMullen Target Complex (Yankee/Dixie Range), which is part of Naval Air Station (NAS) Kingsville. The nearly 3,000-acre range is at an elevation of 259 feet in McMullen County, Texas, situated between San Antonio and the Rio Grande Valley. The Texas ANG uses and maintains the Yankee Range for air-to-ground ordnance delivery (inert) under agreement with the Navy, who leases the land from a private land owner. About 360 acres of the range are impacted directly by bombing and strafing operations in the target area. The remaining acreage (about 3,000 acres) is considered a restricted access area for safety reasons and acts as a buffer for bombing and strafing operations. Yankee Range is primarily used for practice bomb and gun-strafing operations to enable the ANG to train combat-ready F-16 pilots.

Table 2-5 presents estimated annual air-to-ground munitions that would be used at the range (current mission plus the proposed new F-16 FTU mission).

Table 2-5. Estimated F-16 Annual Air-to-Ground Munitions Use, JBSA-Lackland (Kelly Field)

Munitions Type	Current Total Rounds	Proposed Future Total Rounds
BDU-33 (25 pound)	642	4,128
MK-82 (500 pound)	77	168
MK-84/84I (live/inert 2,000 pound)	28	56
GBU-10I (inert, 2,000 pound)	14	28
GBU-31I (inert, 2,000 pound)	14	28
GBU-12/12I (inert/live, 500 pound)	192	384
GBU-38/38I (inert/live, 500 pound)	67	134
20 millimeter	172,040	344,080

JBSA = Joint Base San Antonio


Brownwood MOA
Hood MOA
Texon MOA
Brady MOA
R-6302
Randolph MOA (2)
Laughlin MOA (2)
JBSA-Lackland (Kelly Field)
Kingsville MOA (4)
Crystal MOA
R-6312
Yankee/Dixie Range
Kingsville MOA (3)
W-147C
W-147D
W-228
COAHUILA
NUEVO LEON
Fort Worth
Dallas
Arlington
Austin
San Antonio
Houston
Waco
Temple
College Station
Corpus Christi
Laredo
Nuevo Laredo
Monterrey
Reynosa
McAllen
Brownsville
Piedras Negras
Del Rio
Abilene
San Angelo
Midland
Lubbock
60
0
60 miles
N
LEGEND
JBSA-Lackland (Kelly Field)
MOA; Air-to-Air
Restricted Airspace
Warning Area
U.S. Highway
Interstate Highway
Available Airspace
JBSA-Lackland (Kelly Field)
Figure 2-8
LACKLAND IR F-16 FTU HOLLOMAN016

2.6.3 No-Action Alternative

Under the No-Action Alternative, the interim relocation of two F 16 squadrons and additional training of fighter pilots would not occur. The fighter pilot shortage would be expected to increase. The F 16s would remain at Hill AFB and be placed into temporary storage until a permanent location could be selected and prepared. Hill AFB would temporarily park the aircraft on the 388 FW apron between the sunshade shelters and the open ramp. The aircraft would require periodic contract maintenance; however, the aircraft would not be flown. In the event the F-16 aircraft would be parked for 6 months or longer, the aircraft may be moved to the Aerospace Maintenance and Regeneration Group (AMARG) at Davis-Monthan AFB, AZ, where preservation storage is accomplished until the aircraft are ready to return to service.

2.7 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

Consistent with the CEQ regulations, the scope of analysis presented in this EA is defined by the potential range of environmental impacts that would result from implementation of the Proposed Action or alternatives. CEQ regulations (40 CFR Part 1501.7) state that an agency shall identify and eliminate from detailed study those issues that are not likely to be relevant or that have been covered by prior environmental review. This document is “issue driven” in that it concentrates on those resources that may be affected by implementation of the Proposed Action or alternatives.

Based on the nature of the activities that would occur under the Proposed Action and alternatives, it was determined that the potential exists for the following resources to be affected or to create environmental effects: air quality, noise, biological resources, cultural resources, and airspace. The affected environment and the potential environmental consequences relative to these resources are described in Chapter 3.0, Affected Environment, and Chapter 4.0, Environmental Consequences.

The proposed activities at either Holloman AFB or JBSA-Lackland (Kelly Field) and the no action alternative at Hill AFB would not result in significant impacts related to socioeconomics, environmental justice, land use and aesthetics, transportation, utilities, hazardous materials and hazardous waste management, soils and geology, or water resources. The reasons for not addressing these resources in detail are discussed briefly below.

Socioeconomics. The use of local construction workers during renovation activities would produce limited, temporary increases in local sales volumes, payroll taxes, and the purchases of goods and services, resulting in beneficial but insignificant increases in the local economy at Holloman AFB or JBSA-Lackland (Kelly Field). The cessation of the F-16 mission at Hill AFB would be offset by the ramp up of the F-35 beddown there, including transition of existing F-16 personnel to the F-35 mission, resulting in no significant impacts.

The number of personnel assigned to Holloman AFB or JBSA-Lackland (Kelly Field) due to the F-16 FTUs would increase by an estimated 875 personnel (175 Air Force and 700 maintenance/support). As the number of personnel increase at Holloman AFB, the number of German Air Force (GAF) personnel (approximately 600) at the installation would be decreasing as their mission downsizes and returns to Germany in 2019. As a result, the net increase in personnel assigned to Holloman AFB would be approximately 275 personnel. This change in personnel would increase the total population in the city of Alamogordo by less than 1 percent, representing a negligible change in population. It is anticipated that the City of Alamogordo and Otero County would have the resources to accommodate the population change and continue to provide public services such as schools, law enforcement, firefighting, and medical services with no significant impacts.

As discussed above, the number of personnel assigned to the JBSA-Lackland (Kelly Field) due to the F-16 FTUs would increase by an estimated 875 personnel (175 Air Force and 700 maintenance/support). This change in personnel would increase the total population in the city of San Antonio by less than 1 percent, representing a negligible change in population. It is anticipated that the City of San Antonio and Bexar County would have the resources to accommodate the population change and continue to provide public services such as schools, law enforcement, firefighting, and medical services with no significant impacts. Therefore, significant impacts on socioeconomics are not expected and are not analyzed further in this EA.

Environmental Justice. Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued by the President on February 11, 1994. Objectives of the EO, as it pertains to this EA, include development of federal agency implementation strategies, and identification of low-income and minority populations potentially affected because of proposed federal actions. In addition to environmental justice issues are concerns pursuant to EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This EO directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children. Potential environmental impacts identified for resource areas in this EA would occur primarily on Holloman AFB and JBSA-Lackland (Kelly Field). Air quality impacts are regional and do not affect a specific population. Because flight training would be conducted within existing controlled airspace (e.g., MOAs) and over existing unpopulated test/training ranges not open to the general public, no foreseeable impacts are expected. Noise from flying operations at Holloman AFB would not result in a substantial increase in noise contours around the installation and no off-installation populations would be affected. Significant impacts from noise to off-installation populations at JBSA-Lackland (Kelly Field) would occur; however, these impacts would be mitigated and reduced to less than significant by reducing the number of aircraft operations. Based on these findings, disproportional impacts to low-income, minority, and child populations are not expected and are not analyzed further in this EA.

Land Use and Aesthetics. Proposed F-16 FTU activities would occur within developed areas of Holloman AFB or JBSA-Lackland (Kelly Field) with only renovation of some existing buildings and installation of a fence to support the two squadrons. Training flights would occur within existing airspace and over existing test/training ranges. As a result, no land use changes or changes to the aesthetic quality of the installations would occur. Therefore, significant impacts to land use and aesthetics are not expected, and are not further analyzed in this EA.

Transportation. Proposed building renovation activities would result in a temporary increase in traffic during the construction period. Renovation activities would result in increased traffic associated with contractor vehicles and transporting construction equipment/materials to the project area. The use of commercial access gates at each base would reduce the potential for congestion at the main gate or other access gates. The minimal traffic generated during renovation activities would not substantially increase traffic or affect the existing level of service on any roads.

The net increase of 275 personnel at Holloman AFB and 875 personnel at JBSA-Lackland (Kelly Field) for the F-16 FTU mission would increase the daytime population of each base by approximately 2 percent with a possible proportional increase in daily commuting. The gates that provide access to Holloman AFB and JBSA-Lackland (Kelly Field) have multiple lanes and/or adequate queuing area available to handle traffic during morning and evening rush hours (Holloman AFB, 2016 pg. 7-10; Texas ANG, 2015 pg. 23). The opening of a new vehicle access gate at Kelly Field (at the existing gate at the intersection of Billy Mitchell Boulevard/N. Frank Luke Drive) would improve vehicle access to work areas east of the airfield. Assuming each of the new personnel made one round trip to and from the base each day, the increase in vehicles passing through the gates would not have a discernible impact on traffic flow. Because

renovation and operational activities would not substantially increase traffic or affect vehicle access around Holloman AFB or JBSA-Lackland (Kelly Field), significant impacts to transportation would not be expected and are not analyzed further in this EA.

Utilities. The two F-16 FTU squadrons are anticipated to result in a net increase of 275 personnel at Holloman AFB and 875 personnel at JBSA-Lackland (Kelly Field). Although a minimal increase in utility service may occur due to the increase in personnel, the Proposed Action would not result in a substantial increase in demand for electrical, natural gas, potable water, or wastewater services. Solid waste/debris generated during renovation activities would be recycled or disposed at an approved landfill in accordance with Air Force Instruction (AFI) 32-7001, *Environmental Management*, and applicable federal, state, and local laws and regulations. Proposed renovation projects would be implemented using sustainable design concepts that emphasize state-of-the-art strategies for efficient water and energy use, minimizing utility usage to the extent possible. Based on recent utility capacity analysis for each installation (Holloman AFB, 2016 pg. 7-12; Texas ANG, 2015 pg. 27), there is currently sufficient existing electrical, natural gas, water, and wastewater service capacity at Holloman AFB and JBSA-Lackland (Kelly Field) to support the F-16 FTU squadrons. Therefore, significant impacts to utilities are not expected and are not analyzed further in this EA.

Hazardous Materials and Hazardous Waste Management.

Hazardous Materials Management. During renovation activities, small amounts of hazardous materials are expected to be utilized by the contractor. Storage, handling, and transportation of hazardous materials during renovation activities would be conducted in accordance with applicable regulations and established procedures. Any spills or releases of hazardous materials would be cleaned up by the contractor. The contractor would prepare a manifest for signature by the base Hazardous Waste Manager, and then the contractor would dispose of the waste at an approved off-base treatment, storage, or disposal facility.

The interim relocation of F-16 aircraft to Holloman AFB or JBSA-Lackland (Kelly Field) would increase the quantities of hazardous materials and petroleum substances used at the installations. The number of locations storing, using, and handling hazardous materials may change slightly with the addition of the F-16 aircraft; however, the current authorization process for the acquisition of these materials would ensure that only the specific types and quantities necessary to carry out the mission would be brought to the installations. The existing hydrazine storage/servicing facility at each base has the capacity to handle the needs of the FTUs.

At Holloman AFB and JBSA-Lackland (Kelly Field), sampling for asbestos-containing material (ACM) and lead-based paint (LBP) would be conducted prior to initiating building renovations to confirm the presence/absence of ACM or LBP and to inform the contractor of any ACM or LBP present. The Air Force has a policy of managing ACM and LBP in place and systematically eliminating it from facilities as modifications/renovations are conducted. Renovation activities would be subject to applicable federal, state, and local regulations to minimize the potential risk to human health and the environment. Any ACM or LBP waste generated as a result of renovation activities would be disposed in accordance with applicable regulations at an off-site landfill permitted to accept this type of material.

Because hazardous materials (including ACM and LBP) would be managed in accordance with applicable regulations, rules, and processes, and because these procedures were developed to prevent and mitigate foreseeable, potentially significant impacts based on rigorous analysis, significant impacts to hazardous materials management are not anticipated and are not analyzed further in this EA.

Hazardous Waste Management. Small quantities of hazardous waste could be generated during renovation activities. The construction contractor would be responsible for following applicable regulations (including the bases' Hazardous Waste Management Plan) for management of any hazardous waste generated during renovation activities. Any spills or releases of fuel or oil from construction equipment would be cleaned up by the contractor. The contractor would be responsible for any required sampling and off-base disposal of any hazardous waste generated during renovation, and would be required to present a manifest for base Hazardous Waste Manager signature prior to off-base disposal of any hazardous wastes. As discussed above, any ACM or LBP waste generated as a result of renovation activities would be disposed in accordance with applicable regulations at an off-site landfill permitted to accept this type of material.

The quantity of hazardous waste generated would increase with the interim relocation of F-16 aircraft to the base; however, this would not change the status of Holloman AFB and JBSA-Lackland as large quantity generators. A new hazardous waste accumulation point would be established on the eastern side of Kelly Field to support aircraft maintenance activities that occur on that side of the runway. A U.S. Environmental Protection Agency (EPA) ID/Texas Council on Environmental Quality State ID would be obtained for the new accumulation point. The hydrazine storage/servicing facility and any other hazardous waste generation or handling areas (e.g., initial accumulation points) that support the F-16 FTUs would continue to be managed in accordance with the installations' Hazardous Waste Management Plan.

Because hazardous waste (including ACM and LBP waste) would be managed in accordance with applicable regulations, rules, and processes, and because these procedures were developed to prevent and mitigate foreseeable, potentially significant impacts based on rigorous analysis, significant impacts to hazardous waste management are not anticipated and are not analyzed further in this EA.

Environmental Restoration Program Sites. An Environmental Restoration Program (ERP) site is a location where a hazardous substance(s) has been released and has been identified for site characterization and remediation. At Holloman AFB, there is one ERP site (Site SS-18) situated south of facilities that would support the F-16 FTU mission. This site is not within an area to be used to support the interim relocation of F-16 aircraft. Because this site is not within the area to support the F-16 FTU mission and has been recommended for no further action, no impact from this ERP site is anticipated.

At JBSA-Lackland (Kelly Field), there is one ERP site (spill site within infield area of apron, no specific ID established). This site is not within an area to be used to support the interim relocation of F-16 aircraft; however, it is adjacent to the apron where aircraft would be parked. Because this site is not within the area to support the F-16 FTU mission, no impact from this ERP site is anticipated.

Because ERP sites are not within the area to support the F-16 interim relocation and/or have been recommended for no further action, significant impacts from ERP sites are not anticipated and are not analyzed further in this EA.

Safety. Overall, the safety impacts of the Proposed Action would be characteristically similar to those described in the 2011 *Environmental Assessment for the Recapitalization of the 49th WG Combat Capabilities and Capacities* (Holloman AFB, 2011a; pg 4-7) and the *Environmental Assessment for the Conversion of the 149th Fighter Wing of the Texas Air National Guard* (Texas ANG, 2000, pg 4-9), which describe the environmental consequences of the establishment of the F-16 training mission at the installations. The findings of these reports are incorporated by reference and updated in the analysis of potential safety impacts for the interim relocation of two squadrons (U.S. Air Force, 2017a).

Additional F-16 operations would be similar in character and impact to existing operations at both installations. Safety mishap and incident rates would not be expected to change; however, due to the increase in overall operations, the Air Force would plan for a commensurate increase in total mishaps and incidents. At Holloman AFB, it is estimated that an additional five flight and flight-related mishaps would be expected to occur annually. At JBSA-Lackland (Kelly Field), approximately two additional mishaps would be anticipated per year. Similarly, the rate of Bird-Animal Aircraft Strike Hazard (BASH) incidents would remain unchanged; however, absolute incidents would likely increase. Ground safety concern rates would not be expected to increase, but the number of incidents would increase commensurate with additional operations. These increases would not require additional management measures at either installation.

Holloman AFB and JBSA-Lackland (Kelly Field) have the occupational safety and emergency response capacity to support the additional F-16 squadrons. No additional weapons storage areas would be required to store F-16-related weapons or munitions at either installation. At JBSA-Lackland (Kelly Field), additional security fencing would be required to meet Anti-Terrorism/Force Protection requirements. Otherwise, ground safety impacts would be negligible at both installations.

Because the potential safety effects at both installations would be similar in character to those described in previous studies, and because incident and mishap rates are not anticipated to increase relative to current conditions, significant safety impacts are not expected. Therefore, this resource area is not analyzed further in this EA.

Soils and Geology. Because only building renovation, concrete apron re-striping, anchor point installation, and security fence replacement/installation (at JBSA-Lackland [Kelly Field]) are proposed to support the F-16 FTUs, no substantial ground disturbance would occur. Although some minor soil disturbance would be expected during security fence installation, standard construction practices would be implemented to minimize any potential soil erosion. Therefore, significant impacts to soils and geology are not expected, and are not analyzed further in this EA.

Water Resources. No activities would occur that could potentially affect surface water at either installation. Washdown activities of the F 16 aircraft would be conducted in accordance with applicable Air Force plans and procedures, which include the use of controls such as contaminant dikes, curbs, drainage ditches, evaporation ponds, and oil/water separators. Some minor soil disturbance would be expected during security fence installation; however, no surface water is near the proposed security fence area and standard construction practices would be implemented to minimize any potential sediment transport. Therefore, no significant impacts to surface water quality are expected.

The net increase in 275 personnel at Holloman AFB to support the two squadrons is estimated to increase water usage by approximately 4,496,000 gallons per year (12,400 gallons per day [gpd]). The current Holloman AFB water demand is approximately 1,000,000 gpd. The Holloman AFB potable water system currently operates at well below half of the systems design capacity (6,480,000 gpd) (Holloman AFB, 2016); therefore, no significant impacts to water availability or handling are anticipated.

The increase in 875 personnel at JBSA-Lackland (Kelly Field) to support the two squadrons is estimated to increase water usage by approximately 43.8 acre-feet per year. Currently, JBSA withdraws approximately 4,840 acre-feet of water per year from the Edwards Aquifer. Assuming all water is received from the Edwards Aquifer, the increase in water usage would result in approximately 4,884 acre-feet of water being pumped by JBSA, which is well within the allowable pumping limit of 12,012 acre-feet per year from the Edwards Aquifer. However, Kelly Field and Port San Antonio obtain their water supplies from the city-owned utility San Antonio Water System (SAWS), which has diversified its sources of water supplies

away from the Edwards Aquifer. SAWS' reliance on the Edwards Aquifer was down to 45 percent in 2012 and will continue to decrease to 33 percent by 2030. This decrease in use of the Edwards Aquifer would further lessen potential impacts on water resources.

Because proposed renovation and operational activities would not result in substantial ground disturbance that could potentially affect surface water at Holloman AFB or JBSA-Lackland (Kelly Field) or result in increased water usage that adversely affects regional water supplies, significant impacts to water resources would not be expected and are not analyzed further in this EA.

2.8 COMPARISON OF ENVIRONMENTAL IMPACTS

Detailed analyses of existing conditions and potential effects of the Proposed Action at each alternative location are discussed in Chapter 3.0, Affected Environment, and Chapter 4.0, Environmental Consequences. A comparative analysis summary of the alternatives for each resource area evaluated (air quality, noise, biological resources, cultural resources, and airspace) is presented in Table 2-6.

Table 2-6. Summary of Influencing Factors and Environmental Impacts
Page 1 of 5

Resource	Existing Conditions at Holloman AFB and JBSA-Lackland (Kelly Field)	Alternative 1 (Holloman AFB)	Alternative 2 (JBSA-Lackland [Kelly Field])	No-Action Alternative
Air Quality	Air pollutant emissions generated from mission activities Regional air quality in attainment of the NAAQS	Impacts • Renovation activities would result in short-term, minor air quality impacts • Emissions from aircraft operations would not exceed the 250 tpy threshold of significance for any pollutant • Increased emissions from F-16 training activities would not hinder maintenance of the NAAQS Mitigation Measures • Standard construction practices would be used to reduce emissions of dust and particulate matter	Impacts • Renovation activities would result in short-term, minor air quality impacts • Emissions from aircraft operations would not exceed the 250 tpy threshold of significance for any pollutant • Increased emissions from F-16 training activities would not hinder maintenance of the NAAQS Mitigation Measures • Standard construction practices would be used to reduce emissions of dust and particulate matter	Impacts • There would be no change from existing conditions at Holloman AFB or JBSA-Lackland (Kelly Field) • Two F-16 squadrons would no longer be flying operational missions, resulting in an overall decrease in air pollutant emissions at Hill AFB Mitigation Measures • None

Table 2-6. Summary of Influencing Factors and Environmental Impacts
Page 2 of 5

Resource	Existing Conditions at Holloman AFB and JBSA-Lackland (Kelly Field)	Alternative 1 (Holloman AFB)	Alternative 2 (JBSA-Lackland [Kelly Field])	No-Action Alternative
Noise	At Holloman AFB, no off-base residential areas exposed to noise levels of DNL 65 dB or greater due to current mission activities At JBSA-Lackland (Kelly Field), an estimated 5,289 off-base residents exposed to noise levels of DNL 65 dB or greater due to current mission activities	Impacts • Increased F-16 operations would increase the area affected by noise levels greater than 65 dBA DNL by 1,666 acres • No off-base residential areas exposed to noise levels of DNL 65 dBA or greater due to F-16 training activities; however, 976 on-base residents would be exposed to DNL 65 dBA or greater • Noise increase at on-base noise sensitive receptors would increase by up to 3 dBA DNL; this would not be considered a significant impact Mitigation Measures • None	Impacts • Increased F-16 operations would increase the area affected by noise levels greater than 65 dBA DNL by 2,143 acres • An estimated 41 additional on-base and 7,645 additional off-base residents would be exposed to noise levels greater than 65 dBA DNL • Noise increase at noise sensitive receptors would increase by up to 5 dBA DNL; this would be considered a significant impact Mitigation Measures • In order to keep noise increases to 3 dBA or below, which is considered an insignificant impact, the number of additional F-16s flown on the desired sortie schedule would need to decrease so that no more than 40,436 annual operations are performed.	Impacts • There would be no change from existing conditions at Holloman AFB or JBSA-Lackland (Kelly Field) • Two F-16 squadrons would no longer be flying operational missions, resulting in an overall decrease in noise at Hill AFB Mitigation Measures • None

Table 2-6. Summary of Influencing Factors and Environmental Impacts
Page 3 of 5

Resource	Existing Conditions at Holloman AFB and JBSA-Lackland (Kelly Field)	Alternative 1 (Holloman AFB)	Alternative 2 (JBSA-Lackland [Kelly Field])	No-Action Alternative
Biological Resources	No federally threatened and endangered species are known to occur Wildlife species on and near the airfield have been exposed to military aircraft noise for many years Sensitive habitats (e.g., wetlands) are present at the installations; however, proposed activities would occur in developed areas, away from any sensitive habitats	Impacts • Renovation activities would occur within developed areas and would not cause impacts to wildlife • Renovation and operations around the airfield would affect previously altered habitats. The project area does not support any federally listed species or sensitive habitats • Wildlife species on and near the airfield have been exposed to military aircraft noise for many years; continuation of military aircraft noise is not anticipated to result in impacts to wildlife or habitat Mitigation Measures • F 16 training activities would adhere to formal guidance and regulations that exist to protect and preserve biological resources • Current conservation practices focusing on avoidance and minimization of impacts to breeding, wintering, and migratory birds as detailed in the INRMP would be implemented during renovation activities	Impacts • Renovation activities would occur within developed areas and would not cause impacts to wildlife • Renovation and operations around the airfield would affect previously altered habitats. The project area does not support any federally listed species or sensitive habitats • Wildlife species on and near the airfield have been exposed to military aircraft noise for many years; continuation of military aircraft noise is not anticipated to result in impacts to wildlife or habitat Mitigation Measures • F 16 training activities would adhere to formal guidance and regulations that exist to protect and preserve biological resources • Current conservation practices focusing on avoidance and minimization of impacts to breeding, wintering, and migratory birds as detailed in the INRMP would be implemented during renovation activities	Impacts • There would be no change from existing conditions at Holloman AFB or JBSA-Lackland (Kelly Field) • Two F-16 squadrons would no longer be flying operational missions, resulting in no significant impacts to biological resources at Hill AFB Mitigation Measures • None

Table 2-6. Summary of Influencing Factors and Environmental Impacts
Page 4 of 5

Resource	Existing Conditions at Holloman AFB and JBSA-Lackland (Kelly Field)	Alternative 1 (Holloman AFB)	Alternative 2 (JBSA-Lackland [Kelly Field])	No-Action Alternative
Cultural Resources	Archaeological sites and historic structures are present on Holloman AFB; however, none are situated near proposed F-16 FTU mission activities Facilities 935, 956, 957, 958, 1155, 1470, 1530, 1600, 1610, 1612, 1614, and 1618 are 50 years old or older and the construction date of Facility 1502 is unknown. The proposed renovations of historic facilities are exempted by the Programmatic Agreement among the Air Force and the Texas SHPO No known traditional cultural properties have been identified in the vicinity of facilities that would support the F-16 FTU mission at either installation	Impacts • Building renovation activities would not adversely affect any structures that are eligible for the NRHP • Because no ground disturbance would occur, no archaeological impacts are anticipated • No traditional cultural resources, sacred areas, or traditional use areas have been identified Mitigation Measures • None	Impacts • Building renovations would be conducted in accordance with the existing PA • Because no substantial ground disturbance would occur, no archaeological impacts are anticipated • No traditional cultural resources, sacred areas, or traditional use areas have been identified Mitigation Measures • None	Impacts • There would be no change from existing conditions at Holloman AFB or JBSA-Lackland (Kelly Field) • Two F-16 squadrons would no longer be flying operational missions, resulting in no significant impacts to cultural resources at Hill AFB Mitigation Measures • None

Table 2-6. Summary of Influencing Factors and Environmental Impacts
Page 5 of 5

Resource	Existing Conditions at Holloman AFB and JBSA-Lackland (Kelly Field)	Alternative 1 (Holloman AFB)	Alternative 2 (JBSA-Lackland [Kelly Field])	No-Action Alternative
Airspace	Airspace supporting operations at Holloman AFB and JBSA-Lackland (Kelly Field) are managed by various entities Aircraft operations require ongoing efforts to optimize access to and use of surrounding airspace and ranges in conjunction with other military activities Aircraft at Holloman AFB have flown in this airspace for more than 74 years, currently averaging approximately 90,500 operations per year JBSA-Lackland (Kelly Field) based aircraft have flown in this airspace for more than 73 years, currently averaging approximately 62,400 operations per year	Impacts • The Holloman AFB airfield would experience an approximate doubling of operations • More frequent use of airspace resulting in more operations using the same volume of airspace and same time periods • Significant impacts to the environment from airspace use are not anticipated based on previous analyses of available airspaces Mitigation Measures • Regional airspace restrictions continue due to F-16 training activities • Airspace operational capacity to increase through ongoing optimization efforts	Impacts • Operations at JBSA-Lackland (Kelly Field) would triple • More frequent use of airspace resulting in more operations using the same volume of airspace and same time periods • Significant impacts to the environment from airspace use are not anticipated based on previous analyses of available airspaces Mitigation Measures • Regional airspace restrictions continue due to F-16 training activities • Airspace operational capacity to increase through ongoing optimization efforts	Impacts • Two F-16 squadrons would no longer be flying operational missions, resulting in an overall decrease in airspace use at Hill AFB Mitigation Measures • Regional airspace restrictions would continue due to ongoing mission activities at Holloman AFB and JBSA-Lackland (Kelly Field)

AFB = Air Force Base
dB = decibels
dBA = A-weighted decibels
DNL = day-night average sound level
INRMP = Integrated Natural Resources Management Plan
JBSA = Joint Base San Antonio
NAAQS = National Ambient Air Quality Standards
NRHP = National Register of Historic Places
PA = Programmatic Agreement
tpy = tons per year

3.0 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter describes the existing environmental conditions at Holloman AFB and JBSA-Lackland (Kelly Field) to serve as a baseline from which to identify and evaluate environmental changes resulting from implementing the interim relocation of two F-16 squadrons to either Holloman AFB or JBSA-Lackland (Kelly Field). The environmental components addressed include relevant natural or human environments likely to be affected by the Proposed Action and alternatives.

In the following discussions, the region of influence (ROI) to be studied is defined for each resource area affected by the Proposed Action. The ROI determines the area addressed as the Affected Environment.

3.2 AIR QUALITY

The primary ROI for the air quality analysis includes the existing Air Quality Control Regions (AQCRs) that surround Holloman AFB and JBSA-Lackland (Kelly Field).

3.2.1 Regulatory Context

Criteria Pollutants and National Ambient Air Quality Standards. Air quality in any given location is defined by the concentration of various pollutants in the atmosphere, generally expressed in units of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The significance of a pollutant's concentration is determined by comparing it to federal and/or state ambient air quality standards. The federal Clean Air Act (CAA), 42 U.S.C. Sections 7401-7671(q) provides that emission sources must comply with the air quality standards and regulations that have been established by federal, state, and county regulatory agencies. These standards and regulations focus on (1) the maximum allowable ambient pollutant concentrations, and (2) the maximum allowable emissions from individual sources.

The U.S. EPA established the federal standards for the permissible levels of certain pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) have been established for six criteria pollutants: ozone; nitrogen dioxide (NO_2); particulate matter equal to or less than 10 microns in aerodynamic diameter (PM_{10}) and particulate matter equal to or less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$); carbon monoxide (CO); sulfur dioxide (SO_2); and lead. Ozone is a secondary pollutant formed in the atmosphere by photochemical reactions of previously emitted pollutants, or precursors. The ozone precursors are oxides of nitrogen (NO_X) and volatile organic compounds (VOCs). States may either adopt the NAAQS or establish their own more stringent standards. New Mexico and Texas have adopted the NAAQS to regulate air pollution levels. Table 3-1 outlines the NAAQS and state ambient air quality standards.

Areas that meet the NAAQS standard for a criteria pollutant are designated as being "in attainment" while areas where criteria pollutant levels exceed the NAAQS are designated as "nonattainment." A maintenance area is a former nonattainment area that has recently been redesignated as an attainment area. However, during the maintenance period, most of the CAA rules for a nonattainment area are still applicable to a maintenance area.

Table 3-1. National, New Mexico, and Texas Ambient Air Quality Standards

Pollutant		Primary/Secondary	Averaging Time	Level	New Mexico and Texas
Carbon Monoxide		Primary	8-hour	9 ppm	Same as Federal
			1-hour	35 ppm	Same as Federal
Lead		Primary and Secondary	Rolling 3- month average	0.15 µg/m$^{(1)}$	Same as Federal
Nitrogen Dioxide		Primary	1-hour	100 ppb	Same as Federal
		Primary and Secondary	Annual	53 ppb$^{(2)}$	Same as Federal
Ozone		Primary and Secondary	8-hour	0.070 ppm	Same as Federal
Particulate Matter	$PM_{2.5}$	Primary	Annual	12 µg/m$^{3(3)}$	Same as Federal
		Secondary	Annual	15 µg/m^3	Same as Federal
		Primary and Secondary	24-hour	35 µg/m^3	Same as Federal
	PM_{10}	Primary and Secondary	24-hour	150 µg/m^3	Same as Federal
Sulfur Dioxide		Primary	Annual	None	Same as Federal
		Primary	1-hour	75 ppb$^{(4)}$	Same as Federal
		Secondary	3-hour	0.5 ppm	Same as Federal

Source: U.S. EPA, 2016.

Notes:

(1) Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

(2) The official level of the annual nitrogen dioxide standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of a clearer comparison to the 1-hour standard.

(3) Final rule signed January 15, 2013. The primary annual fine particle ($PM_{2.5}$) standard was lowered from 15 to 12 µg/m^3.

(4) Final rule signed June 2, 2010. The 1971 annual and 24-hour SO_2 standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

µg/m^3 = micrograms per cubic meter
$PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in diameter
PM_{10} = particulate matter equal to or less than 10 microns in diameter
ppb = parts per billion
ppm = parts per million

Clean Air Act Conformity. Title 40 CFR Part 93, *General Conformity*, requires federal actions to conform to any State Implementation Plan approved or promulgated under Section 110 of the CAA.

Hazardous Air Pollutants. In addition to the criteria pollutants discussed above, non-criteria toxic pollutants, called hazardous air pollutants (HAPs), are also regulated under the CAA. The U.S. EPA has identified a total 187 HAPs that are known or suspected to cause health effects in small doses. HAPs are emitted by a wide range of man-made and naturally occurring sources including combustion mobile and stationary sources. However, unlike the NAAQS for criteria pollutants, federal ambient air quality standards do not exist for non-criteria pollutants.

The HAPs emitted from mobile sources such as F-16 operations under the Proposed Action are called Mobile Source Air Toxics, which include benzene, aldehydes, 1,3-butadiene, and a class of compounds known as polycyclic aromatic hydrocarbons. According to findings from *Select Source Materials and Annotated Bibliography on the Topic of Hazardous Air Pollutants (HAPs) Associated with Aircraft, Airports, and Aviation* (FAA, 2003), the Federal Aviation Administration (FAA) concluded that neither aircraft nor airports meet the definitions of the source types that are regulated under CAA Section 112, "Hazardous Air Pollutants."

Therefore, for this EA, HAPs were not evaluated further in the document. This is justified because aircraft emissions of HAPs are unlikely to reach levels considered adverse below the mixing height and would not

create health risks to humans living adjacent to airfields or underneath airspace in which these aircraft operate.

Greenhouse Gas Emissions. Greenhouse gases (GHGs) are compounds that contribute to the greenhouse effect. The greenhouse effect is a natural phenomenon where gases trap heat within the surface-troposphere (lowest portion of the earth's atmosphere) system, causing heating at the surface of the earth. The primary long-lived GHGs directly emitted by human activities are carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

To estimate global warming potential (GWP), all GHGs are expressed relative to a reference gas, CO_2, which is assigned a GWP equal to 1. All six GHGs are multiplied by their GWP and the results are added to calculate the total equivalent emissions of CO_2 (CO_2e). However, the dominant GHG gas emitted is CO_2, mostly from combustion of fossil fuels (85.4 percent). Moreover, CO_2 contributes approximately 99 percent of the GHGs during the fossil fuel combustion process. This EA considers CO_2 as the representative GHG emission.

Stationary and Mobile Source Emissions. The U.S. EPA oversees programs for stationary source operating permits (Title V) and for new or modified major stationary source construction and operation. Mobile sources are regulated under the CAA Title II through enforcing emissions standards on sources manufactured.

3.2.2 Existing Air Quality Conditions

3.2.2.1 Holloman AFB

Holloman AFB is located within Otero County, New Mexico, and falls within the El Paso-Las Cruces-Alamogordo Interstate Air Quality Control Region (AQCR) (40 CFR Part 81.82). Air quality in Otero County has been designated as either in "attainment" or "unclassifiable/attainment" with the NAAQS for all criteria pollutants (40 CFR 81.332). Because Otero County is not located in a nonattainment or maintenance area, the general conformity requirements do not apply to the proposed action and a general conformity determination is not required.

Table 3-2 summarizes (1) the base-wide anticipated mobile and stationary source emissions after Holloman AFB transitioned from the F-22 to the F-16 training mission in 2012 and (2) the 2014 emissions (stationary and mobile) of criteria pollutants and precursor emissions in Otero County, one of 10 counties in the same AQCR.

3.2.2.2 JBSA-Lackland (Kelly Field).

JBSA-Lackland (Kelly Field) is located in Bexar County, Texas, which is within the Metropolitan San Antonio Intrastate AQCR 217 (40 CFR 81.40). As defined in 40 CFR 81.344, Bexar County is designated as in attainment/unclassifiable for all criteria pollutants. Therefore, the general conformity requirements do not apply to the proposed action and a general conformity determination is not required. However, Bexar County has been proposed for redesignation to nonattainment for ozone under the 2015 ozone standard, and it is anticipated by law that this redesignation will become effective before 1 October 2017. Accordingly, a general conformity applicability analysis and/or determination will be required for federal actions that are not completed before 1 October 2018 per 40 CFR 93.153(k). Because the F-16 FTU interim beddown actions would be initiated prior to October 2017 and completed before October 1, 2018, no general conformity applicability analysis and/or determination would be required for this project if JBSA-Lackland (Kelly Field) were selected.

Table 3-2. Baseline Emission Inventory – Holloman AFB

	Annual Emissions (tons)						
	VOC	**NO_X**	**CO**	**$PM_{2.5}$**	**PM_{10}**	**SO_2**	**CO_2[1]**
2012 Baseline Stationary and Mobile Source Emissions at Holloman AFB[2]	96.7	179.4	431.1	27.6	27.7	14.5	81,504
2014 Otero County Emissions Inventory[3]	89,278	3,665	30,800	2,859	22,511	50	535,527

Note:
[1] CO_2 is a greenhouse gas (not a criteria pollutant) and is presented in metric tons converted from short tons.
Sources:
[2] Predicted 2012 on-installation mobile and stationary source emissions from *Final Environmental Assessment of Recapitalization of the 49th WG Combat Capabilities and Capacities at Holloman AFB*, July 2011 (Holloman AFB, 2011a).
[3] U.S. EPA, 2014.

AFB = Air Force Base
CO = carbon monoxide
CO_2 = carbon dioxide (as a greenhouse gas indicator)
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in aerodynamic diameter
PM_{10} = particulate matter equal to or less than 10 microns in aerodynamic diameter
SO_2 = sulfur dioxide
VOC = *volatile organic compounds*

JBSA-Lackland is classified as a major source of emissions and holds a CAA Title V permit to operate. There are various sources on-installation that emit criteria pollutants, including generators, boilers, hot water heaters, fuel storage tanks, gasoline service stations, surface coating/paint booths, and miscellaneous chemical usage.

Table 3-3 shows the recent emissions inventories from both mobile and stationary sources at JBSA-Lackland and in Bexar County. Bexar County, one of 21 counties in the same Metropolitan San Antonio Intrastate AQCR, is considered the local area of influence for the proposed action for the air quality analysis.

Table 3-3. Baseline Emission Inventory – JBSA-Lackland (Kelly Field)

	Annual Emissions (tons)						
	VOC	**NO_X**	**CO**	**$PM_{2.5}$**	**PM_{10}**	**SO_2**	**CO_2[1]**
Baseline Stationary and Mobile Source Emissions at JBSA-Lackland[2]	90.24	944.14	928.17	74.16	102.44	93.38	--
2014 Bexar County Emissions Inventory[3]	58,208	38,456	163,161	8,369	47,217	18,656	8,857,238

Note: [1] CO_2 is a GHG (not a criteria pollutant) and is presented in metric tons converted from short tons.
Sources:
[2] *Final Environmental Assessment of Installation Development at Joint Base San Antonio-Lackland*, February 2013 (JBSA, 2013).
[3] U.S. EPA, 2014.

CO = carbon monoxide
CO_2 = carbon dioxide (as a greenhouse gas indicator)
JBSA = Joint Base San Antonio
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in aerodynamic diameter
PM_{10} = particulate matter equal to or less than 10 microns in aerodynamic diameter
SO_2 = sulfur dioxide
VOC = volatile organic compounds

3.3 NOISE

3.3.1 Noise Fundamentals and Methodology

Noise Fundamentals

Noise is defined as sound that is undesirable because it interferes with speech, communication, and hearing; is intense enough to damage hearing; or is otherwise annoying. The decibel (dB), a logarithmic unit that accounts for the large variations in amplitude, is the accepted standard unit for the measurement of sound. A-weighted sound levels (dBA) are commonly used to account for the frequency response to the human ear. The term "A-weighted" refers to a filtering of the sound signal to emphasize frequencies in the middle of the audible spectrum and to deemphasize low and high frequencies in a manner corresponding to the way the human ear perceives sound. In addition to the hearing-related A-weighted noise scale, C-weighting scale in dBC is typically applied to impulsive sounds such as a sonic boom or ordnance detonation.

The day-night average sound level (DNL) is defined as the A-weighted average sound level during a 24-hour period and is the most commonly used measurement for evaluating community noise impacts. DNL takes into account noise intensity, duration, frequency, and time of occurrence, including the difference in perception and response between daylight, waking hours and nighttime, sleeping hours. Because noises at night are more perceptible due to lesser background noise levels, DNL applies a 10-dBA penalty to noise occurring during nighttime (10:00 pm to 7:00 am).

To address the potential impacts of aircraft operations on land use, the Air Force has defined certain noise zones and provided associated recommendations regarding compatible land uses in Air Installation Compatible Use Zone (AICUZ) program instructions as described in AFI 32-7070, *Air Force Noise Program*.

Military Aircraft Noise

Noise from military aircraft can be categorized into two types, subsonic and supersonic.

Subsonic noise refers to noise from aircraft traveling at less than the speed of sound. It is first audible as the aircraft approaches, increases to a maximum when the aircraft is at its closest point, and then decreases as it departs. The noise level depends on the aircraft's speed and power setting and its flight track. Subsonic noise levels from flight operations occur beneath main approach and departure corridors and are typical around the airfield, and in areas immediately adjacent to aircraft parking ramps and staging areas.

Supersonic noise refers to noise from aircraft exceeding the speed of sound and generating an air pressure wave in airspace. When such a pressure wave reaches the ground, it is heard as a sonic boom. A sonic boom is characterized by a rapid increase in pressure, followed by a decrease before a second rapid return to normal atmospheric levels. This change occurs very quickly, usually within a few tenths of a second. It is usually perceived as a "bang-bang" sound. The amplitude of a sonic boom is measured by its peak overpressure, in pounds per square foot. Sonic booms can be annoying and cause startle reaction in humans and animals. On occasion, sonic booms could cause physical damage (e.g., to a window) depending on the boom pressure level. When booms occur frequently, it may be useful to estimate the overall 24-hour exposure of the booms to relate it to land use compatibility and annoyance in terms of DNL in dBC (CDNL) in a similar way as done for DNL in dBA (ADNL). CDNLs of 62 dB or more can potentially cause significantly high levels of annoyance.

Annoyance accounts for the negative aspects of noise effects such as being awakened at night by aircraft and interference with everyday conversation. Numerous studies and field surveys have been conducted to measure annoyance and to account for a number of variables, many of which are dependent on a person's individual circumstances and preferences. These studies of individual response to noise have helped isolate a number of the factors contributing to annoyance, such as the intensity level and spectral characteristics of the noise, duration, presence of impulses, the degree of interference with activity, etc. The scientific community has adopted the use of long-term annoyance as a primary indicator of community response, and the most useful metric for assessing peoples' responses to noise is the percentage of the population expected to be "highly annoyed." The concept of "percent highly annoyed" (%HA) has provided the most consistent response of a community to a particular noise environment and it has been correlated to cumulative aircraft noise in terms of DNL. The surveyed data show likely %HA could be 19, 28, 37, and 48 percent under 60, 65, 70, 75 DNL in dBA, respectively, an approximately 10 percent change in %HA per 5-dBA difference in DNL.

Methodology

Subsonic noise modeling - In accordance with the Air Force Noise Program (AFI 32-7070), subsonic noise ADNL contours were generated by NOISEMAP, a computerized program used for producing fixed-wing aircraft DNL contour maps.

Flight operation input data to predict contours using the DoD NOISEMAP model required a range of data from many sources providing descriptions of the types, frequency, and location of noise-generating operations occurring at and around airfields. For this EA, the data sources included interviews with pilots, maintenance personnel, planners, schedulers, and air traffic controllers. The data from these sources were compiled and integrated into a description of the noise generating activities. The operational description included the frequency of flight operations from various aircraft types, airfield layout, runway utilization, flight tracks and flight profiles. Flight operations involved a variety of departure, arrival, and closed pattern procedures.

The modeled aircraft operations are defined by the number of takeoffs and landings; therefore, patterns were counted as two aircraft operations as each pattern flight includes a landing and takeoff. Tabular aircraft operations data for each airfield was organized by flying unit, aircraft, operation type, and sortie type, where a sortie described the specific flight mission of one aircraft. These compiled operational input parameters were returned to each squadron and validated before commencing the model development.

The flight operations from each aircraft were distributed along each runway based on runway usages adopted at a base. These specific runway associated operations were further spread to dominant flight tracks for each aircraft. Flight tracks represent predominant flight paths of aircraft. Noise modeling is based on the use of predominant flight paths because these paths dominate the noise environment around an airfield. Flight paths are represented as single lines; however, actual flight paths may vary because of aircraft performance, pilot technique, wind, and other weather conditions. Therefore, an actual flight path (track) is better thought of as a band rather than a single line.

Pilots and maintenance personnel conduct static engine run-ups as part of maintenance procedures or as part of standard pre-flight/post-flight procedures. The modeled maintenance run-up activities for the included the aircraft type, the engine type, location, magnetic heading, the number of annual operations by acoustical day and night, the power setting, and duration in minutes at each power setting.

Supersonic noise modeling - BooMap is a program that computes CDNL contours for flight training in airspaces. CDNL contours follow an elliptical pattern which depends on the size of the airspace and the

sortie rate. BooMap utilizes sonic boom data gathered during three measurement programs conducted on the sonic boom environment in the Elgin MOA, a subsection of the Nellis Range Complex, WSMR, and Barry Goldwater Range East (R-2301E).

3.3.2 Noise Guidelines and Criteria

Federal agencies have adopted various guidelines for assessing noise impacts that provide both a characterization of the quality of the existing noise environment and a measure of project-induced impacts when applicable.

In June 1980, the Federal Interagency Committee on Urban Noise (FICUN) published guidelines relating DNL to compatible land uses. This committee was composed of representatives of DoD, the Department of Transportation, the Department of Housing and Urban Development, the U.S. EPA, and the Veterans Administration. Since the issuance of these guidelines, federal agencies have generally incorporated the discussion of compatibility into their comprehensive planning in analysis of noise effects.

The land use compatibility guidelines that the Air Force uses are consistent with FICUN guidelines. In general, residential land uses are not compatible with an outdoor DNL above 65 dBA, and the extent of land areas and populations exposed to a change in DNL level of 65 dBA or higher provides one of the criteria to assess and compare the noise impacts of alternative aircraft actions.

3.3.3 Existing 2017 Noise Conditions

The noise analysis updated the 2014 noise contours at both installations, and in applicable ranges and airspace applicable to Holloman AFB and JBSA-Lackland (Kelly Field), to reflect the most recent flying conditions and aircraft including aircraft engine maintenance run-ups. Intensive on-base interviews with the airfield manager, air traffic controller, pilots, and engine maintenance personnel were conducted during the weeks of October 24, 2016, at Holloman AFB and October 31, 2016, at JBSA-Lackland (Kelly Field), respectively.

Holloman AFB

Much of the land south and east of Holloman AFB is administered by the Bureau of Land Management (BLM) or the New Mexico State Land Office and is out-leased for very low density livestock grazing. Private lands east and south of Holloman AFB are also open grazing land. White Sands National Monument (designated for recreational land use) is one to two miles west of Holloman AFB, except for one mile of common boundary at the northeast corner of the Monument. WSMR surrounds all, except that one mile, of the Monument and surrounds Holloman AFB on the west, north, and the northern 6 miles of the Holloman AFB east boundary. WSMR is undeveloped open land with isolated sites occupied only during DoD research, development, test, and evaluation missions.

The major updates under existing 2017 conditions at Holloman AFB include:

- Update the number of flight operations
- Redistribute runway usage
- Update flight tracks and profiles including amending C-12 pattern operations
- Add MQ-9 operational element and tracks
- Remove German Air Force Tornado flight operations that would be terminated in late 2017
- Update engine maintenance run-ups.

Airfield Noise Condition

Table 3-4 provides the existing 2017 aircraft annual flight operations at Holloman AFB, and Table 3-5 divides the annual operations numbers by 365 to determine the average operations per day. Average operations per day were input to the model to produce average annual day and night DNL noise contours.

Table 3-6 summarizes the runway usages considered in the noise modeling. Flight paths (i.e., tracks) and flight profiles (e.g., flight altitude, power setting) mostly remained the same as established in the 2014 model used as the basis for this update. However, several major updates, including specific profiles for those added flight tracks such as MQ-9, were developed based on interviews with pilots. These interviews required an iterative process as the pilots and modelers translated the flying parameters into the parameters utilized by the noise model (aircraft power settings, altitudes above runway level, and airspeeds along each flight track). This iterative process ensured that the modeled flight profiles provided an accurate description of the pilots' nominal flight procedures throughout the year. Additionally, the maintenance run-up activities were also considered with updated parameters obtained through interviews with maintenance crews including the aircraft type, the engine type, location, magnetic heading, the number of annual operations by acoustical day and night, the power setting, and duration in minutes at each power setting.

The 2017 noise contours for existing conditions were modeled using the methodologies described previously. As expected, the highest noise levels are concentrated over the airfield and along the runways. The contours align with the runways and follow the dominant flight tracks for arrivals, departures, and patterns at Holloman AFB. Pattern flights and departures have the greatest effect on the shape of the noise contours. Departures and the descending portion of pattern operations require a greater power setting, which generates greater noise and influences the shape of the contours. Figure 3-1 presents 2017 noise contours for existing conditions. The off-base ADNL exposure is approximately 65 dBA DNL near the southern boundary along U.S. Highway 70. The 65 dBA DNL contour extends nearly 1.5 miles beyond the base's western boundary.

Tables 3-7 and 3-8 present the on- and off-installation land acreage and estimated population in the existing 2017 incompatible noise zones at Holloman AFB. The population estimates were based on 2010 census block-level data. A geometric proportion method was used to determine the estimated population within the contour bands. This method assigns population based on the portion of a census block that falls within the contour. No off-base population is in incompatible noise zones. However, a population of 710 in on-base housing areas is located within the incompatible noise zones (Figure 3-1). It should be noted that the on-base housing units and two child care centers currently located within the incompatible noise zones due west of First Street and south of Arnold Avenue were constructed with added sound attenuation to meet indoor noise compatibility requirements when exterior noise levels were between 70 and 75 dBA DNL based on the results of the 2004 AICUZ study. Therefore, on-installation housing areas are actually considered compatible for residential use under the existing 2017 condition.

Points of Interest (POIs) within contour zones are all on base. No off-base residential POIs are present in the vicinity of Holloman AFB. On-base POIs consist of two child care centers, two schools, and a chapel (Figure 3-1). Table 3-9 lists the DNL at each POI under the existing 2017 condition. Noise exposure for on-base POIs ranges from 63 to 65 dBA DNL.

Table 3-4. Existing 2017 Annual Flight Operations at Holloman AFB

Unit	Aircraft	Departures	Arrivals	Closed Patterns	Total Annual Ops
54 FG	F-16C	8,640	8,640	27,648	44,928
49 WG	MQ-9	3,000	3,000	29,250	35,250
586 FTS	T-38	305	305	1,647	2,257
	C-12	155	155	465	775
Army	C-12	200	200	40	440
	UH-60	750	750	0	1,500
82 ATRS	QF-16C	400	400	2,280	3,080
AeroClub	Cessna 441 Turboprop	328	328	0	657
	Compos 1985 Piston	402	402	0	803
Transient	All	424	424	0	848
All Units	**All**	**14,604**	**14,604**	**61,330**	**90,538**

49 WG = 49th Wing
54 FG = 54th Fighter Group
82 ATRS = 82nd Aerial Targets Squadron
586 FTS = 586th Flight Test Squadron
AFB = Air Force Base
Ops = operations

Table 3-5. Existing 2017 Average Daily Flight Operations at Holloman AFB

Unit	Aircraft	Departures	Arrivals	Closed Patterns	Total Daily Ops
54 FG	F-16C	23.7	23.7	75.7	123.1
49 WG	MQ-9	8.2	8.2	80.1	96.6
586 FTS	T-38	0.8	0.8	4.5	6.2
	C-12	0.4	0.4	1.3	2.1
Army	C-12	0.5	0.5	0.1	1.2
	UH-60	2.1	2.1	0.0	4.1
82 ATRS	QF-16C	1.1	1.1	6.2	8.4
AeroClub	Cessna 441 Turboprop	0.9	0.9	0.0	1.8
	Compos 1985 Piston	1.1	1.1	0.0	2.2
Transient	All	1.2	1.2	0.0	2.3
All Units	**All**	**40.0**	**40.0**	**168.0**	**248.0**

49 WG = 49th Wing
54 FG = 54th Fighter Group
82 ATRS = 82nd Aerial Targets Squadron
586 FTS = 586th Flight Test Squadron
AFB = Air Force Base
Ops = operations

Table 3-6. Holloman AFB Runway Usage by Operations Type Combined

Runway	Aircraft Using Runway	Departure	Arrival	Closed Pattern	Notes
04	QF-16	-	1.0%	1%	QF-16 only
07	MQ-9	0.4%	0.4%	1%	MQ-9 only
16	C-12, F-16C, MQ-9, QF-16, T-38A, Transients	8.4%	63.1%	27%	Fixed Wing
22	C-12, F-16C, MQ-9, QF-16, T-38A, Civilians	7.8%	4.9%	17%	Fixed Wing
25	C-12, F-16C, MQ-9, QF-16, T-38A, Civilians, Transients	67.1%	14.9%	26%	Fixed Wing
34	C-12, F-16C, MQ-9, QF-16, T-38A	16.3%	15.7%	28%	Fixed Wing
1HP	UH-60 and Transients	33%	67%	-	UH-60 only
2HP	UH-60 and Transients	67%	33%	-	UH-60 only

Table 3-7. On-Installation Land Area and Population within Existing 2017 ADNL Contours for Holloman AFB

Noise Zones	Acres	Population
65-70 DNL	2,809	710
70-75 DNL	1,422	0
75+ DNL	2,057	0
TOTAL	**6,288**	**710**

ADNL = A-weighted impulsive noise
AFB = Air Force Base
DNL = day-night average sound level

Table 3-8. Off-Installation Land Area and Population within Existing 2017 ADNL Contours for Holloman AFB

Noise Zones	Acres	Population
65-70 DNL	849	0
70-75 DNL	228	0
75+ DNL	12	0
TOTAL AREA and POPULATION	**1,089**	**0**

ADNL = A-weighted impulsive noise
AFB = Air Force Base
DNL = day-night average sound level

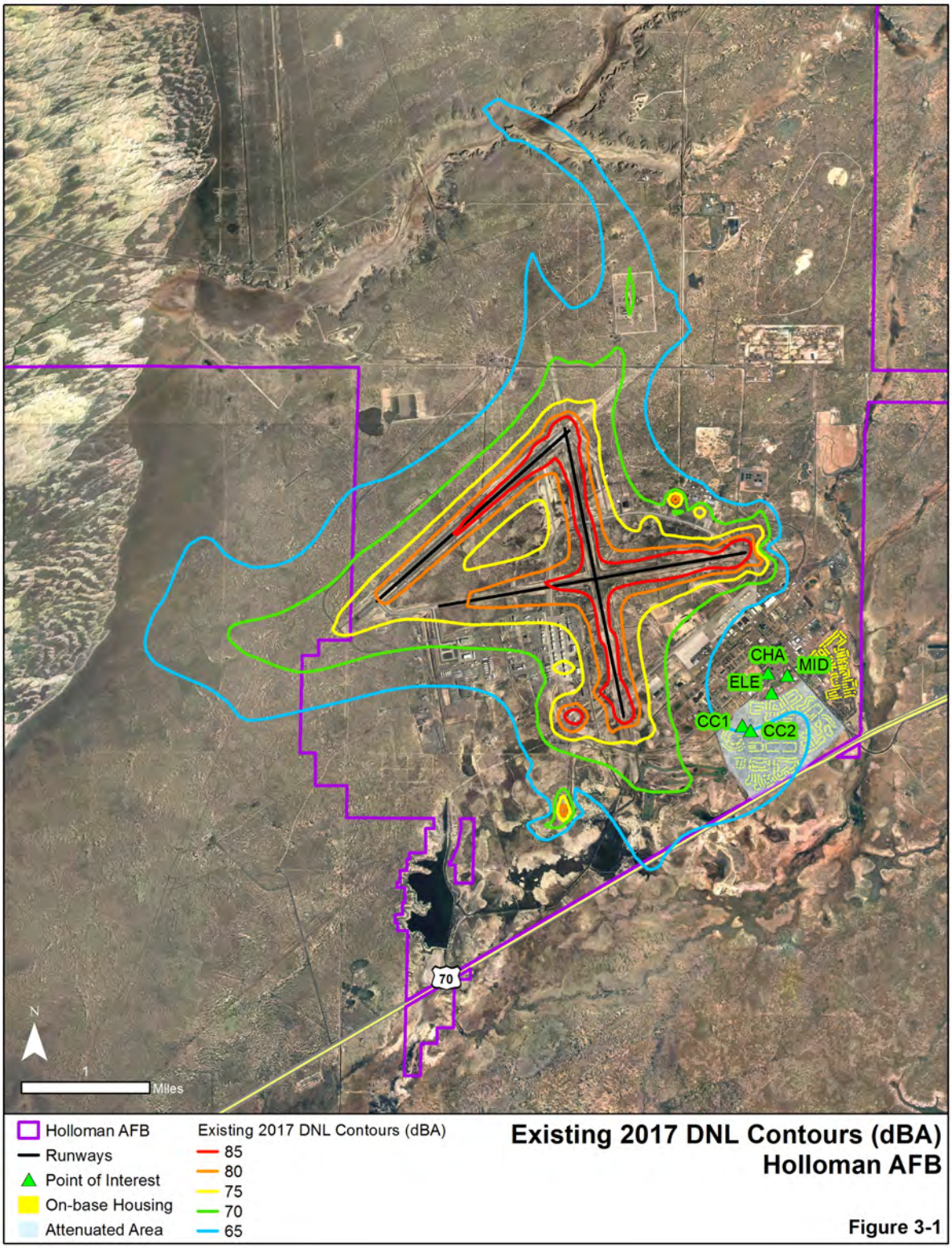

CHA
MID
ELE
CC1
CC2
70
N
1
Miles
Holloman AFB
Runways
Point of Interest
On-base Housing
Attenuated Area
Existing 2017 DNL Contours (dBA)
85
80
75
70
65
Existing 2017 DNL Contours (dBA)
Holloman AFB
Figure 3-1

Table 3-9. Existing DNLs at Holloman AFB Points of Interest

Point of Interest	Description	Existing DNL
CHA	Chapel	63
MID	Middle School	63
ELE	Elementary School	64
CC1	Child Care 1	65
CC2	Child Care 2	65

AFB = Air Force Base
DNL = day-night average sound level

Airspace Subsonic Noise Conditions

An analysis of airspace noise from subsonic noise within MOAs was conducted as part of the Recapitalization of the 49th WG Combat Capabilities and Capacities EA. The highest cumulative noise level resulting from subsonic activity associated with F-16 operations, in terms of the CDNL level, was predicted to be 53 dBC in R5107 (Holloman AFB, 2011a). This level is well below the 62 dBC DNL annoyance threshold and the land uses beneath the airspace where subsonic activity occurs are considered compatible.

Airspace Supersonic Noise Conditions

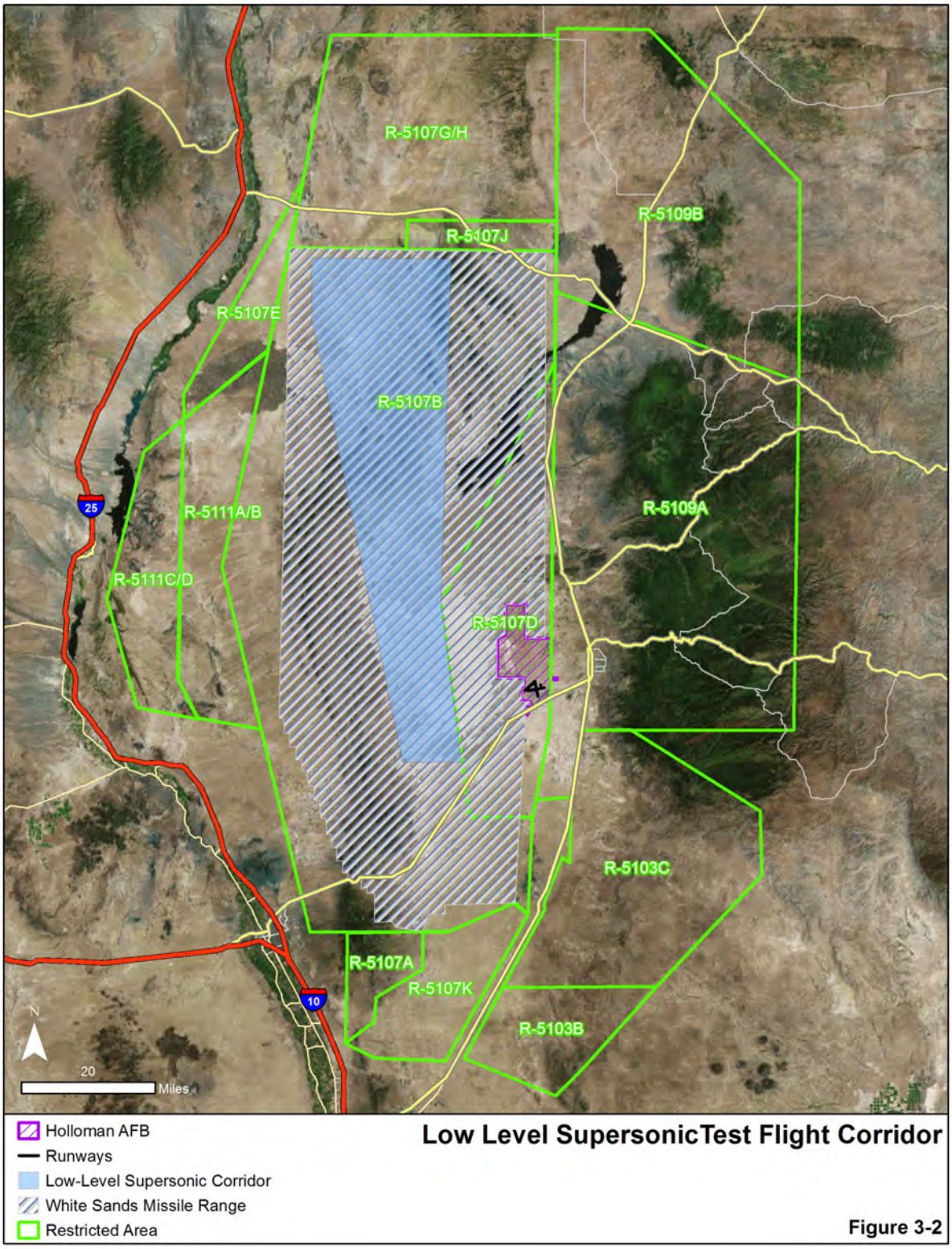
In 2014, an analysis of airspace noise from supersonic booms was conducted as part of the QF Replacement EA. Currently, Holloman AFB maintains two waivers for supersonic activity below 30,000 feet MSL in the vicinity of WSMR. Supersonic activity is approved within WSMR by waiver between 10,000 feet and 30,000 feet MSL, and above 30,000 feet MSL in all other airspace by AFI 13-201, *Airspace Management* (U.S. Air Force, 2013b). Additionally, a waiver is maintained for supersonic activity at WSMR within the low-level test flight corridor depicted in Figure 3-2 between 300 feet AGL and 10,000 feet MSL (approximately 5,000 feet AGL).

The high altitude supersonic activity within the airspace as shown in Figure 3-2 was modeled using BooMap. The highest cumulative noise level resulting from supersonic activity, in terms of the CDNL level, was predicted to be 47.3 dBC in R5107. This level is well below the 62 dBC DNL annoyance threshold and the land use beneath the airspace where supersonic activity occurs is considered compatible.

In addition to the cumulative CDNL level, the potential for human physical and/or structural damage resulting from a low level sonic boom overpressure event along a low level test flight corridor was analyzed. Because the closest sensitive receptor/structure, the White Sands National Monument visitor center, is approximately 8 miles due east of the eastern edge of the corridor and 14 miles from the corridor centerline, the low level sonic boom event does not result in any potential for human physical and/or structural damage.

JBSA-Lackland (Kelly Field)

Land uses in off-base areas surrounding JBSA-Lackland (Kelly Field) are generally described as mixed use. Beyond the north end of the base, land uses include residential, commercial, industrial, ranchland, and vacant parcels. Areas northeast of the base are mixed use but primarily residential. Beyond the south end of the base are several types of land use that are similar to those at the north end; however, the primary land use category appears to be residential to the southeast and ranchland to the southwest.


R-5107G/H
R-5109B
R-5107J
R-5107E
R-5107B
R-5109A
R-5111A/B
R-5111C/D
R-5107D
R-5103C
R-5107A
R-5107K
R-5103B
25
10
N
20
Miles
Holloman AFB
Runways
Low-Level Supersonic Corridor
White Sands Missile Range
Restricted Area
Low Level SupersonicTest Flight Corridor
Figure 3-2

Airfield Noise Condition

Major updates to input parameters for the noise analysis at JBSA-Lackland (Kelly Field) included:

- Update of the number of flight operations, runway usage, flight tracks, and profiles, where applicable
- Replace C-5A engine with much quieter C-5M engine model
- Add departure and pattern operations from the south for C-5M
- Add nighttime C-5M operations for refueling missions
- Update engine maintenance run-ups and locations.

The same data collection process, updates to modeling input data, and subsequent NOISEMAP modeling as discussed for Holloman AFB were implemented at JBSA-Lackland (Kelly Field). Tables 3-10 and 3-11 present the existing 2017 annual and daily flight operations. Table 3-12 summarizes the runway usages considered in the noise modeling.

Table 3-10. Existing 2017 Annual Flight Operations at JBSA-Lackland (Kelly Field)

Unit	Aircraft	Departures	Arrivals	Closed Patterns	Total Annual Operations
ANG	F-16C	3,888	3,888	12,442	20,218
68 AS	C-5M	1,040	1,040	33,280	35,360
Boeing	C-17	120	120	240	480
	KC-135	2	2	0	4
	747-200	2	2	0	4
	747-8	16	16	0	32
	F-15	22	22	0	44
	C-40	3	3	0	6
	C-32	3	3	0	6
Other Civilian	-	1,857	1,857	0	3,714
Transient	-	1,250	1,250	0	2,500
All Units	**All**	**8,203**	**8,203**	**45,962**	**62,368**

68 AS = 68th Airlift Squadron
ANG = Air National Guard
JBSA = Joint Base San Antonio
Ops = operations

Table 3-11. Existing 2017 Average Daily Flight Operations at JBSA-Lackland (Kelly Field)

Unit	Aircraft	Departures	Arrivals	Closed Patterns	Total Daily Operations
ANG	F-16C	10.7	10.7	34.1	55.4
68 AS	C-5M	2.8	2.8	91.2	96.9
Boeing	C-17	0.3	0.3	0.7	1.3
	KC-135	0.0	0.0	0.0	0.0
	747-200	0.0	0.0	0.0	0.0
	747-8	0.0	0.0	0.0	0.1
	F-15	0.1	0.1	0.0	0.1
	C-40	0.0	0.0	0.0	0.0
	C-32	0.0	0.0	0.0	0.0
Other Civilian	-	5.1	5.1	0.0	10.2
Transient	-	3.4	3.4	0.0	6.8
All Units	**All**	**22.5**	**22.5**	**125.9**	**170.9**

68 AS = 68th Airlift Squadron
ANG = Air National Guard
JBSA = Joint Base San Antonio
Ops = operations

Table 3-12. JBSA-Lackland (Kelly Field) Runway Usage by Operations Type Combined

Runway	Aircraft Using Runway	Departure	Arrival	Closed Pattern
15	C-5M, F-16C, Boeing, Civilian, Transients	80%	80%	80%
33	C-5M, F-16C, Boeing, Civilian, Transients	20%	20%	20%

Tables 3-13 and 3-14 show the modeled on- and off-installation areas in acres and the population in each incompatible noise zone in 5-dB increments between 65 and 85 dBA DNL as depicted in Figure 3-3.

The 65 dB DNL contour extends nearly 1 mile southeast of the base's boundary into the Quintana community and 1.5 miles north and south of the base's boundary. The edge of the Quintana community closest to Runway 33 is predicted to be exposed to the highest DNL, approaching 75 dBA, primarily because of its close proximity to the runway and Boeing engine testing pads, and because of F-16 pattern flight operations over the area. The potential for hearing loss is considered negligible because the closest residential places in the Quintana community are not exposed to DNLs greater than or equal to 80 dBA.

As shown in Figure 3-3 and Table 3-14, residential land areas in the Quintana community located due south and southeast of the runway and in the Community Workers Council located due north of the runway are exposed to 65 dBA DNL or above and considered incompatible for residential use.

POIs within noise contour zones are all off base. Figure 3-3 shows off-base POIs including six schools and 10 places of worship that are within or close to the 65 dBA or greater DNL contours. Table 3-15 lists

the DNL at each POI under the existing 2017 condition. Noise exposure for off-base POIs ranges from 64 to 68 dBA DNL.

Table 3-13. On-Installation Land Area and Population within Existing 2017 DNL Contours for JBSA-Lackland (Kelly Field)

Noise Zones	Acres	Population
65-70 DNL	723	13
70-75 DNL	644	12
75+ DNL	1,141	21
TOTAL	**2,508**	**46**

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Table 3-14. Off-Installation Land Area and Population within Existing 2017 DNL Contours for JBSA-Lackland (Kelly Field)

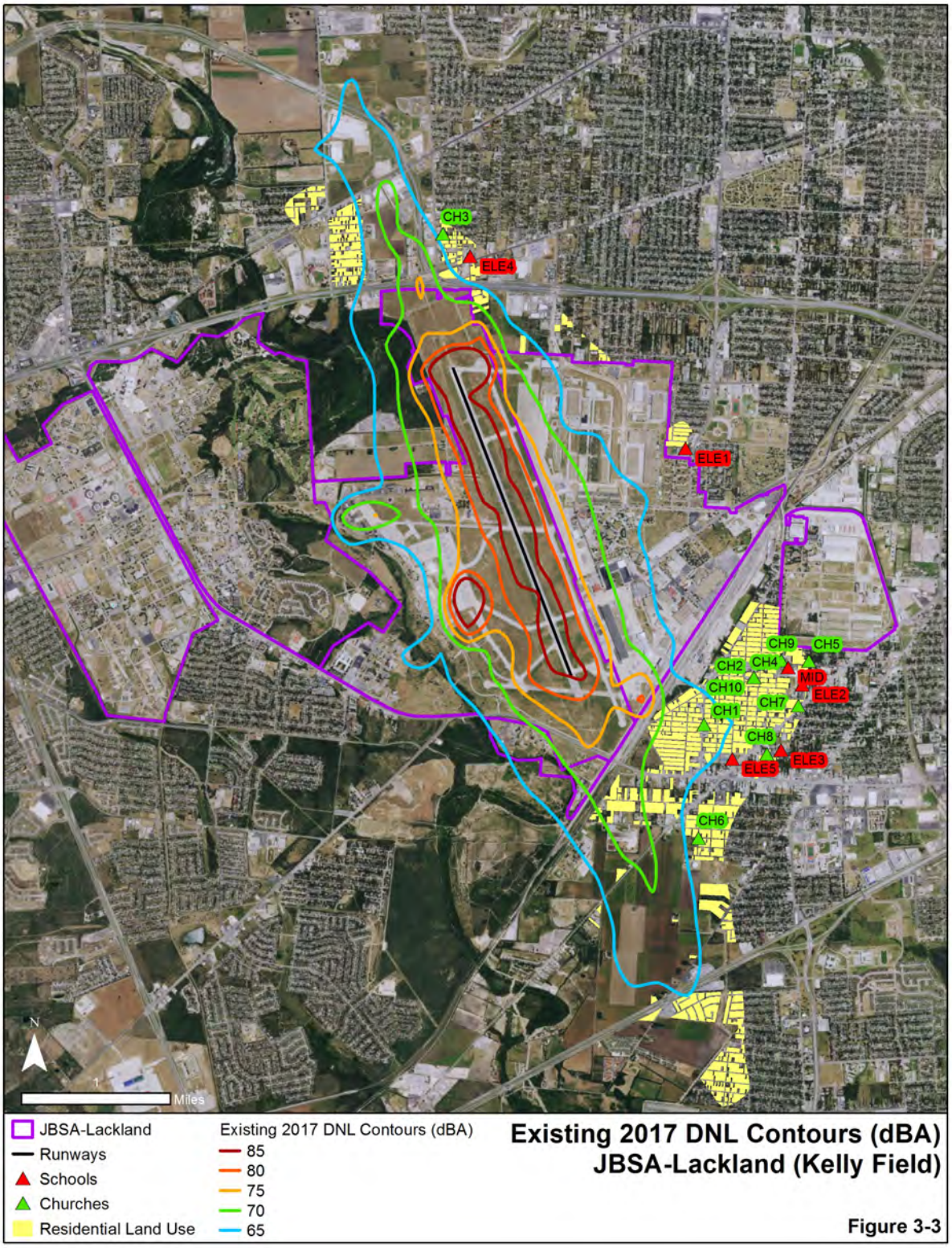
Noise Zones	Acres	Population
65-70 DNL	1,172	3,827
70-75 DNL	345	1,291
75+ DNL	74	171
TOTAL AREA and POPULATION	**1,591**	**5,289**

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Table 3-15. Existing DNLs at JBSA-Lackland (Kelly Field) Points of Interest

Point of Interest	Description	Existing DNL
ELE1	Winston Elementary School	64
ELE2	Athens Elementary School	61
ELE3	Price Elementary School	62
ELE4	H. B. Gonzalez Elementary School	63
ELE5	Miguel Carrillo Jr. Elementary School	65
MID	Dwight Middle School	62
CH1	San Antonio Bynum Seventh-Day Adventist Church	68
CH2	Browning United Methodist Church	65
CH3	Saint Mark Independent Methodist Church	63
CH4	Centro Cristiano Nueva Vida	63
CH5	First Baptist Church	61
CH6	Iglesia Bautista Monte de la Olivas	63
CH7	Iglesia El Calvario	62
CH8	Kingdom Hall of Jehovah's Witnesses	63
CH9	South San Antonio Baptist Church	62
CH10	Templo Amor y Gracia	64

DNL = day-night average sound level
JBSA = Joint Base San Antonio


CH3
ELE4
ELE1
CH9
CH5
CH2
CH4
MID
CH10
ELE2
CH1
CH7
CH8
ELE3
ELE5
CH6
N
1
Miles
JBSA-Lackland
Runways
Schools
Churches
Residential Land Use
Existing 2017 DNL Contours (dBA)
85
80
75
70
65
Existing 2017 DNL Contours (dBA)
JBSA-Lackland (Kelly Field)
Figure 3-3

Airspace Subsonic Noise Conditions

Previous analyses of subsonic flight operations along the training routes in the airspace away from JBSA-Lackland (Kelly Field) are not available; however, subsonic operations in these areas are expected to have similar but lower cumulative CDNL noise levels as compared to the predicted levels at Holloman AFB given the smaller size of the flying unit and the lower number of sorties conducted at JBSA-Lackland (Kelly Field).

Airspace Supersonic Noise Conditions

Supersonic flight training occurs in MOAs at long distances from JBSA-Lackland (Kelly Field). These MOAs include the Warning Areas over the Gulf of Mexico and the Rio-Pecos MOA west of San Antonio. Operations are conducted during the daytime hours over the water in the Warning Areas and above 30,000 feet in the Rio-Pecos MOA essentially every day in January and February and occasionally in summer. Given the location at the Warning Areas and the restricted altitude at the Rio-Pecos MOA, noise and vibration effects from F-16 supersonic flight operations are minimal causing no complaints from local areas where the Warning Areas and MOA are located. The land area and open waters beneath the airspace where supersonic activity occurs is considered compatible.

3.4 BIOLOGICAL RESOURCES

Biological resources include both native and nonnative species of plants and animals in the project areas. For discussion purposes, these are divided into vegetation, wildlife, threatened and endangered species, and sensitive habitats. Human activity has altered portions of the natural environment at both Holloman AFB and JBSA-Lackland (Kelly Field) through grading, paving, and construction of roads and buildings. Data sources for biological resources include information provided by Holloman AFB, JBSA-Lackland, the U.S. Fish and Wildlife Service (USFWS), New Mexico Department of Game and Fish (NMDGF), and Texas Parks and Wildlife Department (TPWD).

The ROI used for discussion of biological resources is Holloman AFB and JBSA-Lackland (Kelly Field), with a focus on the areas proposed to support the F-16 FTU mission consisting mostly of areas that have been altered or disturbed with existing facilities and vehicle parking lots. This ROI includes the area within which potential impacts could occur and provides a basis for evaluating the level of impact.

3.4.1 Holloman AFB

3.4.1.1 Vegetation

Holloman AFB is located in the Chihuahuan Desert Province (Bailey, 1995 pg. 58-60). Within the cantonment on Holloman AFB, much of the original vegetation has been disturbed or removed in support of Air Force aviation activities (e.g., runway, taxiway, and apron), administrative facilities, and other base-related uses such as residential development. Where vegetation has been replaced, ornamental plants (both native and introduced) have been established. These vegetation species include desert willow (*Chilopsis linearis*), ocotillo (*Fouquieria splendens*), yuccas (*Yucca* spp.), pines (*Pinus* spp.), and mulberry (*Morus* sp.). The installation includes a golf course with introduced grasses and lawns. Native vegetation in the cantonment is composed principally of shrublands dominated by four-wing saltbush (*Atriplex canescens*); sometimes accompanied by alkali sacaton (*Sporobolus airoides*), a large perennial grass; and grasslands dominated by alkali sacaton (Holloman AFB, 2011a pg. 3-23 to 3-24).

Holloman AFB consists of 45 percent upland; 33 percent dune land; 6 percent arroyo/riparian; 4 percent playa; less than 1 percent constructed/enhanced wetland; and 11 percent miscellaneous, which includes developed areas (Holloman AFB, 2011b pg. 157). Uplands are often dominated by native vegetation including four-wing saltbush (*Atriplex canescens*) and creosote bush (*Larrea tridentata*), interspersed with lowlands and swales supporting sacaton (*Sporobolus* spp.) and saltgrass (*Distichlis spicata*). Dune lands support two primary community types: hoary rosemary mint/sandhill muhly (*Poliomintha incana/ Muhlenbergia pungens*) and hoary rosemary mint/mesa dropseed (*Poliomintha incana/Sporobolus flexuosus*) (Holloman AFB, 2011b pg. 158-159).

Nine drainages cross Holloman AFB from east to west. These are dominated by semi-riparian honey mesquite shrublands, semi-riparian alkali sacaton grasslands, salt cedar woodlands, and pickleweed shrublands. The latter occurs especially in the more playa-like portions along some of the arroyos where the topography flattens out (Holloman AFB, 2011a pg. 3-23 to 3-24).

3.4.1.2 Wildlife

Birds. Nesting and breeding migratory bird species protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act have the potential to occur within Holloman AFB. The USFWS Information, Planning, and Conservation (IPAC) System lists all of the following species as potentially present at Holloman AFB, if suitable habitat is present (USFWS, 2016a):

- **Wintering:** Short-eared owl (*Asio flammeus*), McCown's longspur (*Calcarius mccownii*), chestnut-collared longspur (*C. ornatus*), bald eagle (*Haliaeetus leucocephalus*), Lewis's woodpecker (*Melanerpes lewis*), and Brewer's sparrow (*Spizella breweri*).
- **Breeding:** Cassin sparrow (*Aimophila cassinii*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), snowy plover (*Charadrius nivosus*), Grace's warbler (*Dendroica graciae*), black-chinned sparrow (*Spizella atrogularis*), Virginia's warbler (*Vermivora virginiae*), Bell's vireo (*Vireo bellii*), and gray vireo (*V. vicinior*).
- **Year-round residents:** Rufous-crowned sparrow (*Aimophila ruficeps*), golden eagle (*Aquila chrysaetos*), peregrine falcon (*Falco peregrinus*), pinyon jay (*Gymnorhinus cyanocephalus*), loggerhead shrike (*Lanius ludovicianus*), and Bendire's thrasher (*Toxostoma bendirei*).
- **Migrating:** Sonoran yellow warbler (*Dendroica petechial* ssp. *sonorana*).

All 22 bird species listed above are Birds of Conservation Concern (BCC). BCCs are identified by the USFWS and are migratory and non-migratory bird species (beyond those already federally listed as threatened or endangered) that represent the highest conservation priorities.

Mammals. Several mammal species are present on or near Holloman AFB. Common rodents may include desert pocket mouse (*Chaetodipus penicillatus*), Merriam's kangaroo rat (*Dipodomys merriami*), Ord's kangaroo rat (*D. ordii*), house mouse (*Mus musculus*), long-tailed weasel (*Mustela frenata*), White Sands woodrat (*Neotoma micropus leucophaea*), Mearn's grasshopper mouse (*Onychomys arenicola*), plains pocket mouse (*Perognathus flavescens gypsi*), silky pocket mouse (*P. flavus*), cactus mouse (*Peromyscus eremicus*), white-footed mouse (*P. leucopus*), deer mouse (*P. maniculatus*), western harvest mouse (*Reithrodontomys megalotis*), and spotted ground squirrel (*Spermophilus spilosoma*) (Holloman AFB, 2011b pg. 96-103).

Large mammals present on or near Holloman AFB include ringtail (*Bassariscus astutus*), coyote (*Canis latrans*), mountain lion (*Felis concolor*), black-tailed jackrabbit (*Lepus californicus*), oryx (*Oryx gazella*),

raccoon (*Procyon lotor*), desert cottontail (*Sylvilagus auduboni*), and kit fox (*Vulpes macrotis neomexicanus*) (Holloman AFB, 2011b pg. 96-103).

3.4.1.3 Threatened and Endangered Species

The Holloman AFB Integrated Natural Resource Management Plan (INRMP) (Holloman AFB, 2011b), the USFWS website's IPAC System, and the NMDGF website (NMDGF, 2016) were reviewed for the most up-to-date information regarding federally listed and state-listed threatened and endangered species that have the potential to occur within Holloman AFB (Table 3-16).

Table 3-16. Federally Listed and State-Listed Threatened and Endangered Species Potentially Present at Holloman AFB

Common Name	Scientific Name	Federal Status	State Status
Plants			
Sacramento prickly poppy	*Argemone pleiacantha* ssp. *pinnatisecta*	Endangered	Endangered
Sacramento Mountains thistle	*Cirsium vinaceum*	Threatened	Endangered
Wright's marsh thistle	*Cirsium wrightii*	Candidate	Endangered
Kuenzler hedgehog cactus	*Echinocereus fendleri* var. *kuenzleri*	Endangered	Endangered
Todsen's pennyroyal	*Hedeoma todsenii*	Endangered	Endangered
Fish			
White Sands pupfish	*Cyprinodon tularosa*	--	Threatened
Birds			
Baird's sparrow	*Ammodramus bairdii*	--	Threatened
Burrowing owl	*Athene cunicularia*	--	SGCN
Ferruginous hawk	*Buteo regalis*	--	SGCN
Scaled quail	*Callipepla squamata*	--	SGCN
Costa's hummingbird	*Calypte costae*	--	Threatened
Mountain plover	*Charadrius montanus*	--	SGCN
Snowy plover	*Charadrius nivosus*	Threatened	SGCN
Yellow-billed cuckoo	*Coccyzus americanus*	Threatened	SGCN
Northern aplomado falcon	*Falco femoralis*	Experimental Population, Non-Essential	Endangered
Peregrine falcon	*Falco peregrinus*	--	Threatened
Bald eagle	*Haliaeetus leucocephalus*	Delisted	Threatened
Brown pelican	*Pelecanus occidentalis*	Delisted	Endangered
Neotropic cormorant	*Phalacrocorax brasilianus*	--	Threatened
White-faced ibis	*Plegadis chihi*	--	SGCN
Least tern	*Sternula antillarum*	Endangered	Endangered
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	SGCN
Mammals			
Spotted bat	*Euderma maculatum*	--	Threatened
Mule deer	*Odocoileus hemionus*	--	SGCN
Penasco least chipmunk	*Tamias minimus atristriatus*	Candidate	Endangered
Meadow jumping mouse	*Zapus hudsonius luteus*	Endangered	Endangered

Notes:
AFB = Air Force Base
Candidate = Any species that is under consideration for official listing as Endangered or Threatened for which there is sufficient information to support listing.

Endangered = Any species that is in danger of extinction throughout all or a significant portion of its range.
Threatened = Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
SGCN = Species of Greatest Conservation Need

The federally listed and state-listed endangered Sacramento prickly poppy (*Argemone pleiacantha* ssp. *pinnatisecta*) is a robust, herbaceous perennial found from 4,200 to 7,100 feet MSL on loose, gravelly soils in open disturbed areas, canyon bottoms and slopes, and sometimes along roadsides (University of New Mexico, 2016). Although the Sacramento prickly poppy has the potential to occur within Holloman AFB, the proposed activities would occur within developed areas of the base; therefore, this species is not likely to occur in areas that would support the F-16 FTU mission.

The federal candidate and state-listed endangered Wright's marsh thistle (*Cirsium wrightii*) is a robust biennial or monocarpic perennial that occurs from 3,450 to 8,500 feet MSL in wet, alkaline soils in spring seeps and marshy edges of streams and ponds (University of New Mexico, 2016). Wright's marsh thistle has the potential to occur within Holloman AFB; however, proposed activities would occur within developed areas of the base; therefore, this species is not likely to occur in areas that would support the F-16 FTU mission.

Sacramento Mountains thistle (*C. vinaceum*), Kuenzler hedgehog cactus (*Echinocereus fendleri* var. *kuenzleri*), Todsen's pennyroyal (*Hedeoma todsenii*), and Penasco least chipmunk (*Tamias minimus atristriatus*) occur within an elevation range that does not occur at Holloman AFB; therefore, these species are not likely to occur on the installation.

Several other threatened and endangered species are also known to occur at Holloman AFB (Holloman AFB 2011b:K-1 to K-4):

- least tern (*Sternula antillarum*), federally listed and state-listed as endangered;
- snowy plover, federally listed as threatened;
- brown pelican (*Pelecanus occidentalis*), federally delisted but state-listed as endangered;
- bald eagle, federally delisted but state-listed as threatened;
- northern aplomado falcon (*Falco femoralis*), state-listed as endangered;
- White Sands pupfish (*Cyprinodon tularosa*), Baird's sparrow (*Ammodramus bairdii*), Costa's hummingbird (*Calypte costae*), peregrine falcon, neotropic cormorant (*Phalacrocorax brasilianus*), and spotted bat (*Euderma maculatum*), all state-listed as threatened; and
- burrowing owl, ferruginous hawk (*Buteo regalis*), scaled quail (*Callipepla squamata*), mountain plover (*Charadrius montanus*), white-faced ibis (*Plegadis chihi*), and mule deer (*Odocoileus hemionus*), all state species of greatest conservation need.

However, proposed activities would occur within developed areas of the base; therefore, these species are not likely to occur in areas that would support the F-16 FTU mission.

The federally listed and state-listed endangered meadow jumping mouse (*Zapus hudsonius luteus*) and the federally listed threatened yellow-billed cuckoo (*Coccyzus americanus*) and Mexican spotted owl (*Strix occidentalis lucida*) have the potential to occur within Holloman AFB; however, proposed activities would occur within developed areas of the base; therefore, these species are not likely to occur in areas that would support the F-16 FTU mission.

3.4.1.4 Sensitive Habitats

Sensitive habitats are areas that are considered for protection because of their ecological value. They include wetlands, critical habitat for protected species, plant communities of limited or unusual distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer/ winter habitat). Proposed activities in support of the F-16 FTU mission would occur within developed areas of the base, away from any sensitive habitats.

In 2015, the U.S. Army Corps of Engineers (USACE) performed a jurisdictional determination of Holloman AFB and found that the base contains isolated intrastate waters without a connection to the nearest Traditional Navigable Water, the Rio Grande. Based on this finding, the USACE determined that waters on Holloman AFB are not jurisdictional or subject to regulation under Section 404 of the Clean Water Act (USACE, 2015).

3.4.2 JBSA-Lackland (Kelly Field)

3.4.2.1 Vegetation

JBSA-Lackland (Kelly Field) is located within the Outer Coastal Plain Mixed Province of the U.S. lowland ecoregion. The vast majority of JBSA-Lackland (Kelly Field) has been developed. There are small undeveloped areas associated with shrub and woodland habitat, composed predominantly of invasive species such as chinaberry (*Melia azedarach*) and ragweed (*Ambrosia* spp.). Riparian woodlands are located around creeks and wetlands and are dominated by native pecan (*Carya illinoisensis*), cedar elm (*Ulmus crassifolia*), hackberry (*Celtis occidentalis*), and live oak (*Quercus virginiana*), with wetter areas also supporting cottonwood (*Populus deltoides*) and black willow (*Salix nigra*) (JBSA, 2014b pg. 5-3 to 5-6).

3.4.2.2 Wildlife

Reptiles and Amphibians. Approximately 91 species of reptiles and amphibians have been reported in the vicinity of JBSA-Lackland (Kelly Field), including six species of salamanders, 19 species of toads and frogs, seven species of turtles, 21 species of lizards, and 38 species of snakes. Common herpetofauna species observed include cricket frog (*Acris crepitans*), red-spotted toad (*Bufo punctatus*), gulf coast toad (*B. valliceps*), the southern leopard frog (*Rana utricularia*), six-lined racerunner (*Cnemidophorus sexlineatus*), yellow mud turtle (*Kinosternon flavescens*), red-eared turtle (*Chrysemys scripta elegans*), bullsnake (*Pituophis melanoleucus*), western coachwhip (*Masticophis flagellum testaceus*), checkered garter (*Thamnophis marcianus*), Texas coral snake (*Micrurus fulvius tenere*), Texas ratsnake (*Elaphe obsoleta lindheimeri*), Great Plains ratsnake (*Elaphe guttata emoryi*), Texas patchnose (*Salvadora grahamiae lineata*), rough greensnake (*Opheodrys aestivus*), broad-banded copperhead (*Agkistrodon contortrix laticinctus*), and western diamondback (*Crotalus atrox*) (JBSA, 2014b pg. 5-11).

Birds. Nesting and breeding migratory bird species protected under the MBTA and the Bald and Golden Eagle Protection Act have the potential to occur within JBSA-Lackland (Kelly Field). The USFWS IPAC System lists all of the following species as potentially present at JBSA-Lackland (Kelly Field), if suitable habitat is present (USFWS, 2016b):

- **Wintering:** Le Conte's sparrow (*Ammodramus leconteii*), Sprague's pipit (*Anthus spragueii*), short-eared owl, burrowing owl, lark bunting (*Calamospiza melanocorys*), chestnut-collared longspur (*Calcarius ornatus*), peregrine falcon, bald eagle, red-headed woodpecker (*Melanerpes*

erythrocephalus), fox sparrow (*Passerella iliaca*), lesser yellowlegs (*Tringa flavipes*), and Harris's sparrow (*Zonotrichia querula*).

- **Breeding:** Little blue heron (*Egretta caerulea*), orchard oriole (*Icterus spurius*), least bittern (*Ixobrychus exilis*), painted bunting (*Passerina ciris*), dickcissel (*Spiza americana*), scissor-tailed flycatcher (*Tyrannus forficatus*), and Bell's vireo.
- **Year-round residents:** Rufous-crowned sparrow, Audubon's oriole (*Icterus graduacauda*), and loggerhead shrike.
- **Migrating:** Hudsonian godwit (*Limosa haemastica*).

The bird species listed above are BCCs. BCCs are identified by the USFWS and are migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the highest conservation priorities.

Mammals. The diverse habitat types found throughout the different JBSA ecoregions support a wide variety of native mammalian species (JBSA, 2014b pg. 3-19 to 3-20):

- **Herbivores** include white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), black tailed jackrabbit, and porcupine (*Hystricomorph hystricidae*). Smaller herbivores include rock squirrel (*Spermophilus variegatus*), white-ankled mouse (*Peromyscus pectoralis*), plains pocket gopher (*Geomys bursarius*), southern plains woodrat (*Neotoma micropus*), eastern woodrat (*N. floridana*), hispid cottonrat (*Sigmondon hispidus*), fulvous harvest mouse (*Reithrodontomys fulvescens*), and northern pygmy mouse (*Baiomys taylori)*.
- **Omnivores** include nine-banded armadillo (*Dasypus novemcinctus*), ringtail, striped skunk (*Mephitis mephitis*), raccoon, opossum (*Didelphis virginiana*), collared peccary (*Pecari tajacu*), fox squirrel (*Sciurus niger*), and Mexican ground squirrel (*Ictidomys mexicanus*).
- **Carnivores** include coyote, bobcat (*Lynx rufus*), and grey fox (*Urocyon cinereoargenteus*); however, like most predators, these species are opportunistic.

Bat species found throughout JBSA-Lackland (Kelly Field) include cave myotis (*Myotis velifer*), eastern pipistrelle (*Pipistrellus subflavus*), and Mexican free-tail bat (*Tadarida brasiliensis*). Mexican free-tail bats have been observed hunting throughout JBSA; however, this species typically roosts in large colonies, up to the millions, and no caves large enough to support a colony have been identified on JBSA-Lackland (Kelly Field) (JBSA, 2014b pg. 3-19 to 3-20).

Non-native mammals that have been identified on JBSA locations include axis deer (*Axis axis*), Catalina goat (*Capra* spp.), feral hog (*Sus scrofa*), nutria (*Mayocastor coypus*), roof rat (*Rattus rattus*), and house mouse. These species were unintentionally introduced to JBSA from surrounding areas or escaped from private ranches and are now proliferating in the wild. In addition, feral dogs and cats are present throughout JBSA (JBSA, 2014b pg. 3-19 to 3-20).

3.4.2.3 Threatened and Endangered Species

The 2014 JBSA INRMP, the USFWS website's IPAC System, and the TPWD website (TPWD, 2016) were reviewed for the most up-to-date information regarding federally listed and state-listed threatened and endangered species that have the potential to occur at JBSA-Lackland (Kelly Field) (Table 3-17).

Based on information included in the 2014 JBSA INRMP, no federally listed species are known to occur at JBSA-Lackland (Kelly Field).

Table 3-17. Federally Listed and State-Listed Threatened and Endangered Species Potentially Present at JBSA-Lackland (Kelly Field)

Common Name	Scientific Name	Federal Status	State Status
Plants			
Bracted twistflower	*Streptanthus bracteatus*	Candidate	--
Texas wild-rice	*Zizania texana*	Endangered	Endangered
Insects			
Helotes mold beetle	*Batrisodes venyivi*	Endangered	--
Comal Springs riffle beetle	*Heterelmis comalensis*	Endangered	Endangered
Beetle (no common name)	*Rhadine exilis*	Endangered	--
Beetle (no common name)	*Rhadine infernalis*	Endangered	--
Comal Springs dryopid beetle	*Stygoparnus comalensis*	Endangered	Endangered
Arachnids			
Robber Baron Cave meshweaver	*Cicurina baronia*	Endangered	--
Madla's Cave meshweaver	*Cicurina madla*	Endangered	--
Braken Bat Cave meshweaver	*Cicurina venii*	Endangered	--
Government Canyon Bat Cave meshweaver	*Cicurina vespera*	Endangered	--
Government Canyon Bat Cave spider	*Neoleptoneta microps*	Endangered	--
Cokendolpher Cave harvestman	*Texella cokendolpheri*	Endangered	--
Crustaceans			
Peck's Cave amphipod	*Stygobromus pecki*	Endangered	Endangered
Clams			
Texas fatmucket	*Lampsilis bracteata*	Candidate	Threatened
Golden orb	*Quadrula aurea*	Candidate	Threatened
Texas pimpleback	*Quadrula petrina*	Candidate	Threatened
Fish			
Fountain darter	*Etheostoma fonticola*	Endangered	Endangered
Amphibians			
San Marcos salamander	*Eurycea nana*	Threatened	Threatened
Texas blind salamander	*Typhlomolge rathbuni*	Endangered	Endangered
Reptiles			
Timber/canebrake rattlesnake	*Crotalus horridus*	--	Threatened
Texas indigo snake	*Drymarchon melanurus erebennus*	--	Threatened
Texas tortoise	*Gopherus berlandieri*	--	Threatened
Texas horned lizard	*Phrynosoma cornutum*	--	Threatened
Birds			
Zone-tailed hawk	*Buteo albonotatus*	--	Threatened
Red knot	*Calidris cantus rufa*	Threatened	--
Piping plover	*Charadrius melodus*	Threatened	Threatened

Table 3-17. Federally Listed and State-Listed Threatened and Endangered Species Potentially Present at JBSA-Lackland (Kelly Field)

Common Name	Scientific Name	Federal Status	State Status
Golden-cheeked warbler	*Dendroica chrysoparia*	Endangered	Endangered
Peregrine falcon	*Falco peregrinus*	Delisted	Threatened
Whooping crane	*Grus americana*	Endangered	Endangered
Bald eagle	*Haliaeetus leucocephalus*	Delisted	Threatened
Least tern	*Sternula antillarum*	Endangered	Endangered
Black-capped vireo	*Vireo atricapilla*	Endangered	Endangered

Notes:
JBSA = Joint Base San Antonio
Candidate = Any species that is under consideration for official listing as endangered or threatened for which there is sufficient information to support listing.
Endangered = Any species that is in danger of extinction throughout all or a significant portion of its range.
Threatened = Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

The federal candidate species bracted twistflower (*Streptanthus bracteatus*) is an annual herb that is found in oak-juniper woodlands and associated openings on slopes and in canyon bottoms with shallow, well-drained, gravelly clays and clay loams over limestone (NatureServe, 2015). This type of habitat does not exist within JBSA-Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

Texas wild-rice (*Zizania texana*), which is federally listed and state-listed as endangered, is an aquatic perennial grass found in clear, flowing waters of spring origin with gravelly, sandy to silty clay soils (NatureServe, 2015). This type of habitat does not exist within JBSA-Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

Several threatened and endangered species are not known to occur in Bexar County:

- Comal Springs riffle beetle (*Heterelmis comalensis*), Comal Springs dryopid beetle (*Stygoparnus comalensis*), Peck's Cave amphipod (*Stygobromus pecki*), fountain darter (*Etheostoma fonticola*), and Texas blind salamander (*Typhlomolge rathbuni*), all federally listed and state-listed as endangered;
- San Marcos salamander (*Eurycea nana*), federally listed and state-listed as threatened; and
- Texas fatmucket (*Lampsilis bracteata*), golden orb (*Quadrula aurea*), and Texas pimpleback (*Q. petrina*), all federal candidate species that are state-listed as threatened.

Therefore, these species are not likely to occur on the installation.

In addition, several species that are federally listed as endangered inhabit caves and mesocaverns: Helotes mold beetle (*Batrisodes venyivi*), Beetle (*Rhadine exilis*), Beetle (*R. infernalis*), Robber Baron Cave meshweaver (*Cicurina baronia*), Madla's Cave meshweaver (*C. madla*), Braken Bat Cave meshweaver (*C. venii*), Government Canyon Bat Cave meshweaver (*C. vespera*), Government Canyon Bat Cave spider (*Neoleptoneta microps*), and Cokendolpher Cave harvestman (*Texella cokendolpheri*). These species are known to occur only in karst landforms in northwest Bexar County. This type of habitat does not exist within JBSA-Lackland (Kelly Field); therefore, these species are not likely to occur on the installation.

Timber/canebrake rattlesnake (*Crotalus horridus*), which is state-listed as threatened, typically occurs within or near woodland habitats. The rattlesnake prefers rocky areas where underground crevices provide retreats for overwintering, such as a fissure in a ledge, a crevice between ledge and ground, talus

below a cliff, open scree slope, or fallen rock partly covered by soil (NatureServe, 2015). Timber/canebrake rattlesnake has the potential to occur within JBSA-Lackland (Kelly Field); however, proposed activities would occur within developed areas of the base; therefore, this species is not likely to occur in areas that would support the F-16 FTU mission.

The state-listed threatened Texas indigo snake (*Drymarchon melanurus erebennus*) can be found in mesquite savanna, thorn brush woodlands, grassy plains, and coastal sand hills, utilizing underground burrows with high humidity for molting and permanent dens. Indigo snakes require large areas of suitable habitats as the species has a large home range size of up to 565 acres during the summer months (JBSA, 2014b). Texas indigo snake has the potential to occur within JBSA-Lackland (Kelly Field); however, proposed activities would occur within developed areas of the base; therefore, this species is not likely to occur in areas that would support the F-16 FTU mission.

The state-listed threatened Texas tortoise (*Gopherus berlandieri*) occurs in open scrub woods, arid brush, lomas, and grass-cactus association; often in areas with sandy well-drained soils. When inactive, it occupies shallow depressions dug at the base of bushes or cacti; sometimes in an underground burrow, or under an object (NatureServe, 2015). Texas tortoise has the potential to occur within JBSA-Lackland (Kelly Field); however, proposed activities would occur within developed areas of the base; therefore, this species is not likely to occur in areas that would support the F-16 FTU mission.

The state-listed threatened Texas horned lizard (*Phrynosoma cornutum*) can be found in arid and semi-arid habitats in open areas with sparse grass cover (JBSA, 2014b). Texas horned lizard has the potential to occur within JBSA-Lackland (Kelly Field); however, proposed activities would occur within developed areas of the base; therefore, this species is not likely to occur in areas that would support the F-16 FTU mission.

Possible transient visitors to JBSA-Lackland (Kelly Field) include whooping crane (*Grus americana*), which is federally listed and state-listed as endangered; red knot (*Calidris cantus rufa*), federally listed as threatened; peregrine falcon (*Falco peregrinus*) and bald eagle (*Haliaeetus leucocephalus*), both federally delisted but state-listed as threatened; and zone-tailed hawk (*Buteo albonotatus*), state-listed as threatened. However, the proposed activities would occur in developed areas of the base; therefore, these species are not likely to occur in areas that would support the F-16 FTU mission.

Piping plover (*Charadrius melodus*), which is federally listed and state-listed as threatened, nests on shorelines around small alkaline lakes, large reservoir beaches, river islands and adjacent sand pits, beaches on large lakes, and industrial pond shorelines. Suitable breeding habitats are wide beaches with highly clumped vegetation, having less than 5 percent overall vegetation cover and/or with extensive gravel (NatureServe, 2015). This type of habitat does not exist within JBSA-Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

Golden-cheeked warbler (*Dendroica chrysoparia*), which is federally listed and state-listed as endangered, is found in juniper-oak woodlands and depends on Ashe juniper (*Juniperus ashei*) for peeling bark from mature trees to use in nest construction (JBSA, 2014b pg. 5-14 to 5-19). This type of habitat does not exist within JBSA-Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

Least tern (*Sternula antillarum*), which is federally listed and state-listed as endangered, nests along sand and gravel bars in braided streams and rivers and is known to nest on human-made structures such as inland beaches, wastewater treatment plants, and gravel mines (JBSA, 2014b pg. 5-14 to 5-19). This type of habitat does not exist within JBSA-Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

Black-capped vireo (*Vireo atricapilla*), which is federally listed and state-listed as endangered, is found in oak-juniper woodlands with a distinctive patchy, two-layered aspect of a shrub and tree layer with open, grassy spaces (JBSA, 2014b pg. 5-14 to 5-19). This type of habitat does not exist within JBSA-Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

3.4.2.4 Sensitive Habitats

Sensitive habitats are areas that are considered for protection because of their ecological value. They include wetlands, critical habitat for protected species, plant communities of limited or unusual distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer/winter habitat). The proposed activities in support of the F-16 FTU mission would occur in developed areas of the base, away from any sensitive habitats.

A total of 18.09 acres of U.S. jurisdictional waters have been identified within JBSA-Lackland (JBSA, 2014b pg. 5-26 to 5-27). None of these wetlands are situated in the vicinity of the areas or facilities identified to support the F-16 FTU mission.

3.5 CULTURAL RESOURCES

Cultural resources consist of the subset of prehistoric or historic archaeological sites, buildings, structures, districts (a collection of related cultural resources), artifacts, landscapes, or natural features significant to a particular group of people traditionally associated with it or other physical resources that provide evidence of past human activity. For this project, cultural resources have been divided into prehistoric and historic archaeological resources; historic buildings, structures, and objects; and traditional cultural resources (e.g., sacred or ceremonial sites).

For the purposes of this analysis, the term ROI is synonymous with the "area of potential effect" (APE) as defined under cultural resources legislation. The ROI for the analysis of cultural resources within this EA is the spatial limits of potential ground-disturbing activities and encompasses the facilities supporting the F-16 FTU mission, staging areas, utility relocations, and any additional project-specific locations designated by the Air Force. The ROI at Holloman AFB includes 30 facilities (see Table 2-2) and two F-16 parking apron areas, which occupy a combined total of approximately 75 acres. The ROI at JBSA-Lackland (Kelly Field) includes 30 facilities (see Table 2-4) and one F-16 parking apron area, and occupies a combined 140 acres.

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, is the primary federal law that protects cultural resources. Under Section 106 of the NHPA, and in accordance with the Advisory Council on Historic Preservation (ACHP) regulations pertaining to the protection of historic properties, federal agencies are required to locate, evaluate, and assess the effects of their undertaking on historic properties. Additionally, for projects at JBSA-Lackland (Kelly Field), compliance with Section 106 of the NHPA is implemented under *Programmatic Agreement Among the U.S. Air Force and the Texas State Historic Preservation Officer for the Operation, Maintenance, and Development of Joint Base San Antonio, Texas* dated May 2016 (JBSA, 2016).

Under applicable cultural resources laws, not all cultural resources are considered equally significant. For a cultural resource to be considered significant, it must possess characteristics that qualify the resource as a historic property. The NHPA defines "historic property" as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term also includes properties of traditional

religious and cultural importance to any Indian tribe or Native Hawaiian organization and that meet the NRHP criteria. Eligible properties receive the same level of protection as properties listed in the NRHP.

In compliance with the NHPA, the Air Force has completed the Section 106 review process with the New Mexico State Historic Preservation Officer (SHPO) (SHPO concurrence received on February 2, 2017) and the Texas SHPO (SHPO concurrence received on January 13, 2017) (see Appendix A). Consultation was conducted in an effort to determine the appropriate APE for each installation and to identify any archaeological sites and historic properties within the ROI that may be affected by the Proposed Action.

3.5.1 Holloman AFB

3.5.1.1 Prehistoric and Historic Archaeological Resources

Previous archaeological investigations at Holloman AFB have located 262 archaeological sites on the Main Base. Of these, 94 are considered NRHP-eligible, 86 have yet to be evaluated, and 82 are determined not eligible (Holloman AFB, 2015a pg. 41). A review of the New Mexico Cultural Resource Information System (NMCRIS) and Holloman AFB records found three previously recorded archaeological sites within the vicinity of the APE for the Proposed Action, although all are farther than 500 feet from any buildings that would be renovated.

The three sites (LA99789/HAR-010, LA99790/HAR-011, and LA105442/HAR-040) are foundations and artifact scatters of demolished military facilities. HAR-010 and HAR-011 were determined not eligible for the NRHP on March 8, 1993 (HPD Log #39099). HAR-040 has been recommended as not eligible for listing in the NRHP, but eligibility has not yet been determined. No other known archaeological sites are located near facilities that would support the F-16 FTU mission.

3.5.1.2 Historic Buildings, Structures, and Objects

Previous investigations have identified 23 NRHP-eligible architectural resources at Holloman AFB, none of which are within the APE for the Proposed Action. Of the 30 facilities included in the APE, three are 50 years or older; however, the facilities have been previously determined (809 in 2011, 811 in 2009, and 839 in 1997) not eligible for listing in the NRHP (Holloman AFB, 2015a pg. 52).

White Sands National Monument is located directly southwest of Holloman AFB. The White Sands National Monument Historic District, located just over 5 miles southwest of the Holloman AFB airfield, is a complex of ten buildings including residences and the park Visitor Center. Designed by architect Lyle Bennett and built between 1936 and 1940, these buildings are listed on the NRHP (Holloman AFB, 2015b pg. 3-36).

In addition to the National Monument Historic District, the National Park Service has identified hearth mounds as sensitive historic resources/properties. Hundreds of hearth mounds exist throughout the parabolic dunes of the White Sands National Monument, and in dunes lying outside the boundaries of the National Monument. The confirmed hearth mounds are from 2 to 40 feet tall and range in age from 1400 to 6000 years old. They contain artifacts and charcoal and plant fibers that can provide scientific information on earlier human and natural history, as well as on the natural progression/ recession of the dunes over time (Holloman AFB, 2015b pg. 3-36).

3.5.1.3 Traditional Cultural Resources

The Air Force has initiated consultation with representatives of the Mescalero Tribe and the Fort Sill Apache Tribe. The purpose of these consultations is to determine NHPA-related and American Indian Religious Freedom Act (AIRFA)-related concerns such as sites of past cultural activity, landforms, and components of the natural environment that may occur at the project site and are important to traditional practices of Native Americans. Based on responses from the tribes during previous consultations at Holloman AFB, no known traditional cultural properties or sacred places have been identified in the vicinity of facilities that would support the F-16 FTU mission (see Appendix A).

3.5.2 JBSA-Lackland (Kelly Field)

3.5.2.1 Prehistoric and Historic Archaeological Resources

Previous archaeological investigations at JBSA-Lackland (Kelly Field) have located 76 archaeological sites. Of these, five are NRHP-eligible and nine are potentially NRHP-eligible; 12 are prehistoric and two are multicomponent sites (JBSA, 2014a pg. 3-32). A review of the Texas Archeological Sites Atlas (TASA) and JBSA-Lackland records found that none of the 76 previously recorded archaeological sites are within 100 feet of facilities that would support the F-16 FTU mission.

3.5.2.2 Historic Buildings, Structures, and Objects

Previous investigations have identified 137 NRHP-eligible or contributing historic buildings, structures, or objects at JBSA-Lackland, including two NRHP-eligible historic districts (JBSA, 2014a pg. 3-46). A review of the TASA and JBSA-Lackland records found that of the 30 facilities included in the APE, 12 are or will be 50 years or older by 2017 (Facilities 935, 956, 957, 958, 1155, 1470, 1530, 1600, 1610, 1612, 1614, and 1618). The construction date of one facility in the APE (Facility 1502) is unknown. Facilities 1600, 1610, and 1618 are within the NRHP-eligible Kelly Field Historic District, although Facilities 1600 and 1618 are non-contributing elements to the historic district. Facility 1610 was previously determined eligible for listing in the NRHP and is a contributing resource to the NRHP-eligible Kelly Field Historic District.

3.5.2.3 Traditional Cultural Resources

The Air Force has initiated consultation with representatives of the Mescalero Apache Tribe, the Comanche Nation, the Wichita and Affiliated Tribes, and the Tonkawa Tribe. The purpose of these consultations is to determine NHPA- and AIRFA-related concerns such as sites of past cultural activity, landforms, and components of the natural environment that may occur at the project site and are important to traditional practices of Native Americans. Based on responses from the tribes during previous consultations at JBSA-Lackland, no known traditional cultural properties or sacred places have been identified in the vicinity of facilities that would support the F-16 FTU mission (see Appendix A).

3.6 AIRSPACE MANAGEMENT AND AIR TRAFFIC CONTROL

The ROI for F-16 aircraft operations at Holloman AFB and JBSA-Lackland (Kelly Field) includes the airfield; airspace surrounding the airfield; and regional airspace used for military test, training, and operations.

3.6.1 Base Airfield and Vicinity Existing Conditions

Holloman AFB and the 49 WG manage airspace in accordance with processes and procedures detailed in AFI 13-201, *Airspace Management*. AFI 13-201 implements Air Force Policy Directive 13-2, *Air Traffic, Airspace, Airfield, and Range Management*, and DoD Directive 5030.19, *DoD Responsibilities on Federal Aviation*. This AFI addresses the aeronautical matters governing the efficient planning, acquisition, use, and management of airspace required to support Air Force flight operations.

FAA Joint Order (JO) 7400.2K, Procedures for Handling Airspace Matters, tasks military Special Use Airspace (SUA) using agencies with annual utilization reporting requirements. This FAA requirement is implemented by the Air Force through AFI 13-201, and by other military components through Service-specific guidance. FAA JO 7400.2K, 21-7-4, Utilization Report Terms, defines utilized as the amount of time (hours or days) that activities were actually conducted in the SUA. Air Force installations and Major Commands all document and report utilization in terms of the time the airspace was scheduled and utilized but do not uniformly report the number of sorties conducted annually in each defined SUA complex. For example, the TEXON MOA which is within the JBSA-Lackland (Kelly Field) ROI, is reported to have a 2016 annual scheduled and utilization rate of 1,969.25 hours, 200 days of utilization, but a sortie count of zero since individual sorties were not tracked. Block scheduling protocols used by some installations simply track the number of hours the airspace was scheduled, activated, and utilized.

Airspace utilization rates, whether hours or days or sorties, are dependent on a number of factors beyond the SUA times-of-use published in FAA JO 7400.8Z, Special Use Airspace, and reproduced in Tables 3-18 and 3-19 in Section 3.6.2. In November 2015, NAS Corpus Christi submitted a FAA utilization report for Warning Area 228A which is within the JBSA-Lackland (Kelly Field) ROI. The airspace was scheduled for 3,643 annual hours and activated/ utilized for 1,823 hours. This Warning Area has 15-hours of published availability each day, Monday to Friday, which means it could be scheduled for almost 3,900 hours annually. Availability versus utilization can define underutilized capacity. Aircraft maintainers' sortie-generation capabilities, the availability of weapons systems, aircrew duty-day and crew rest requirements, weather, and additional operational requirements all contribute to defining what an achievable utilization rate is with reference to potential scheduling capacity.

3.6.1.1 Holloman AFB

Airspace supporting operations at Holloman AFB are managed by various entities, including tenant units at Holloman AFB, Fort Bliss, and WSMR. Holloman Approach manages arrivals and departures at Holloman AFB, and the tower controls the landing pattern. Holloman AFB aircraft operations require ongoing efforts to optimize access to and use of surrounding airspace and ranges in conjunction with other military activities. Aircraft at the base have flown in this relatively uncongested, but very subdivided, airspace for more than 74 years, currently averaging approximately 90,500 operations per year, an average of 248 operations per day (see Tables 3-4 and 3-5).

3.6.1.2 JBSA-Lackland (Kelly Field)

Airspace supporting operations at JBSA-Lackland (Kelly Field) are managed by 149 FW (Kelly Field), 47th Flying Training Wing (47 FTW, Laughlin AFB), III Corps (Fort Hood), 301st Operations Group (301 OG, NAS Joint Reserve Base [JRB] Fort Worth), 12 FTW (Randolph AFB) and COMTRAWING TWO (NAS Kingsville) (DoD, 2017). San Antonio Approach (FAA) manages arrivals and departures at JBSA-Lackland (Kelly Field), and the tower controls the landing pattern. JBSA-Lackland (Kelly Field) based aircraft have flown in this airspace for more than 73 years, currently averaging approximately 62,400 operations per year, an average of 171 operations per day (see Tables 3-10 and 3-11).

3.6.2 Training Airspace and Range Existing Conditions

Training airspaces and ranges available for jet fighter aircraft sorties have been evaluated in the following previous EIAP documents:

- Environmental Assessment Recapitalization of the 49th WG Combat Capabilities and Capacities Holloman Air Force Base, New Mexico, July. (Holloman AFB, 2011a)
- Environmental Assessment Transforming the 49th Fighter Wing's Combat Capability (Holloman AFB, 2006)
- Final Draft Environmental Assessment for the Conversion of the 149th and 147th Fighter Wings and associated Airspace Actions, August. (Texas ANG, 1999)
- Environmental Impact Statement New Mexico Training Range Initiative (NMTRI), October. (Cannon AFB, 2006).

The airspace scheduled and managed to support the F-16 flying mission at Holloman AFB and JBSA-Lackland (Kelly Field) is primarily used for F-16 Initial Qualification Training (IQT). The volume, proximity to the installation, and attributes of the airspace must support the sorties and tasks prescribed by the IQT syllabus. A pilot completing IQT must demonstrate proficiency in different tactics, techniques, and procedures including:

1. basic surface attack
2. air combat tactics
3. surface attack tactics
4. close air support
5. basic fighter maneuvers
6. fundamental flying requirements, e.g., air refueling, simulated flame-out approaches, instrument approach proficiency

If a sortie is scheduled and briefed to include air combat tactics, the available airspace must have a volume (floor, ceiling, span) that would allow the formation to accomplish the required maneuvers. The availability of targets and the ability to maneuver the aircraft within weapons employment parameters or in accordance with tactics, techniques, and procedures is necessary for surface attack training.

Supersonic flight is conducted in airspace specifically authorized for this activity and is discussed in Section 3.3.3, Existing 2017 Noise Conditions, Airspace Supersonic Noise Condition. Absent unique circumstances, supersonic flight is permitted above 30,000 feet MSL and above 10,000 feet MSL if over water and more than 15 nautical miles from land. Air Traffic Control Assigned Airspace overlying MOAs and Restricted Areas with maximum altitudes above 30,000 feet MSL, and offshore Warning Areas are examples of airspace that routinely support supersonic flight. Some SUA used by Holloman AFB-based aircraft has been approved for supersonic flight at altitudes above 10,000 feet MSL and in the R-5107-B test corridor at altitudes as low as 300 feet AGL (see Sections 2.6.1.3 and 3.3.3).

Tables 3-18 and 3-19 describe training airspaces and ranges as used by Holloman AFB and JBSA-Lackland (Kelly Field) tenants.

Table 3-18. Description of Special Use Airspace and Military Training Routes Used by F-16 Aircraft at Holloman AFB

Airspace	Altitudes		Time of Use	Scheduled By	Current Number of Annual Operations
	Minimum	Maximum			
MOAs					
Beak A, B, C	12,500 MSL	FL 180	1300-0100Z Mon-Fri	Holloman AFB	3,637
Bronco 1	8,000 MSL	FL 180	0700-2000 local Mon-Fri	Cannon AFB	9
Bronco 2	10,000 MSL	FL 180	By NOTAM	Cannon AFB	0
Bronco 3, 4	10,000 MSL	FL 180	0700-2000 local Mon-Fri	Cannon AFB	19
Cato	13,500 MSL	FL180	1500-0500Z Mon-Sat	Kirtland AFB	1
Pecos South	500 AGL	FL 180	1500-0300Z Mon-Fri	Cannon AFB	1,140
Pecos North Low	500 AGL	10,999 MSL	0800-2000 local Mon-Fri	Cannon AFB	1,259
Pecos North High	11,000 MSL	FL 180	0800-2000 local Mon-Fri	Cannon AFB	903
Smitty	500 AGL	13,500 MSL	1500-0500Z	Kirtland AFB	15
Talon High East, West	12,500 MSL	FL180	Sunrise-sunset Mon-Fri (other times by NOTAM)	Holloman AFB	3,326
Talon Low	300 AGL	12,499 MSL	Sunrise-sunset Mon-Fri (other times by NOTAM)_	Holloman AFB	1,771
Valentine	15,000 MSL	FL 180	By NOTAM	Holloman AFB	1
Restricted Areas					
R-5103-A	SFC	17,999 MSL	1400-0300Z Mon-Fri	Army Fort Bliss	65
R-5103 B, C	SFC	Unlimited	1400-0300Z Mon-Fri	Army Fort Bliss	5,090
R-5107 A	SFC	Unlimited	Continuous	Army Fort Bliss	2,399
R-5107 B	SFC	Unlimited	Continuous	WSMR	8.792
R-5107 C	9,000 MSL	Unlimited	Continuous Mon-Fri	WSMR	6,337
R-5107 D	SFC	FL 220	Continuous	WSMR	187
R-5107 E	SFC	Unlimited	By NOTAM	WSMR	5,762
R-5107 H	SFC	9,000 MSL	By NOTAM	WSMR	6,333
R-5107 J	SFC	9,000 MSL	Continuous Mon-Fri	WSMR	6,325
R-5107 K	SFC	Unlimited	0700-2000 local	Army Fort Bliss	2,399
R-5111 A	13,000 MSL	Unlimited	By NOTAM	WSMR	5,978
R-5111 B	SFC	13,000 MSL	By NOTAM	WSMR	5,856
R-5111 C	13,000 MSL	Unlimited	By NOTAM	WSMR	229
R-5111 D	SFC	12,999 MSL	By NOTAM	WSMR	161
MTRs & AR Tracks					
VR-176	100 AGL	5,000 AGL	1500-2400Z daily	Holloman AFB	212
IR-133	100 AGL	12,000 MSL	0700-2300 local	Holloman AFB	330
IR-134	100 AGL	12,500 MSL	Sunrise-0600Z	Holloman AFB	21
IR-142	100 AGL	12,000 MSL	0700-2300 local	Holloman AFB	0

Airspace	Altitudes		Time of Use	Scheduled By	Current Number of Annual Operations
	Minimum	Maximum			
MOAs					
IR-192	100 AGL	12,500 MSL	Sunrise-0600Z	Holloman AFB	97
IR-194	100 AGL	12,500 MSL	Sunrise-0600Z	Holloman AFB	81
IR-195	100 AGL	12,500 MSL	Sunrise-0600Z	Holloman AFB	29
AR121	15,000 MSL	FL 290	By NOTAM	Holloman AFB	0
AR310	FL 210	FL 290	By NOTAM	Holloman AFB	82
AR644	FL 200	FL260	By NOTAM	Holloman AFB	439

Sources: DoD, 2016 and 2017. Current Number of Annual Operations were provided through a Center Scheduling Enterprise (CSE) query or installation airspace managers. CSE is the Air Force wide web-based tool for the scheduling, management, and recording the utilization of airspace and ranges.

AFB = Air Force Base
AGL = above ground level
AR = Air Refueling Route
FL = Flight Level
IR = Instrument Route
MOA = Military Operating Area
MSL = mean sea level
MTR = Military Training Route
NOTAM = Notice to Airmen
SFC = Surface
VR = Visual Route
WSMR = White Sands Missile Range
Z = Zulu Time, aka, Greenwich Mean Time (GMT)

Table 3-19. Description of Special Use Airspace and Military Training Routes used by F-16 Aircraft at JBSA-Lackland (Kelly Field)

Airspace	Altitudes		Time of Use	Scheduled By	Current Number of Annual Operations
	Minimum	Maximum			
MOAs					
Brady High	6,000 MSL	FL 180	Sunrise-0400Z Mon-Fri	NAS Fort Worth JRB	980
Brady Low	500 AGL	5,999 MSL	Sunrise-0400Z Mon-Fri	NAS Fort Worth JRB	982
Crystal	6,000 MSL	FL 180	1300-2400Z	149 FW Kelly	3494
Crystal North	6,000 MSL	FL 180	1400-1530Z & 1900-2030Z Tue-Fri	149 FW Kelly	3494
Laughlin 1	9,000 MSL	FL 180	1200-0200Z Mon-Fri	Laughlin AFB	9,237
Laughlin 2	7,000 MSL	FL 180	1200-0200Z Mon-Fri	Laughlin AFB	19,983
Laughlin 3 Low	7,000 MSL	14,999 MSL	1200-0200Z Mon-Fri	Laughlin AFB	1,319
Laughlin 3 High	15,000 MSL	FL 180	1200-0200Z Mon-Fri	Laughlin AFB	1,319
Randolph 1A	8,000 MSL	FL 180	Sunrise-sunset Mon-Fri	Randolph AFB	No CSE Data
Randolph 1B	7,000 MSL	FL 180	Sunrise-sunset Mon-Fri	Randolph AFB	No CSE Data
Randolph 2A	9,000 MSL	FL 180	Sunrise-sunset Mon-Fri	Randolph AFB	No CSE Data
Randolph 2B	14,000 MSL	FL 180	Sunrise-sunset Mon-Fri	Randolph AFB	No CSE Data
Kingsville 1	8,000 MSL	FL 180	Sunrise-0600Z Mon-Fri Sunrise-sunset Sat	NAS Kingsville	No CSE Data
Kingsville 2	13,000 MSL	FL 180	Sunrise-0600Z Mon-Fri Sunrise-sunset Sat	NAS Kingsville	No CSE Data
Kingsville 3	8,000 MSL	FL 180	Sunrise-0600Z Mon-Fri 2000-0600Z Sun	NAS Kingsville	No CSE Data
Kingsville 4	9,000 MSL	FL 180	Sunrise-2400 local Mon-Fri, 1400-2400 local Sun	NAS Kingsville	No CSE Data
Kingsville 5	9,000 MSL	FL 180	Sunrise-0600Z Mon-Fri 2000-0600Z Sun	Randolph AFB	No CSE Data
Brownwood 1	7,000 MSL	FL 180	1300-0400Z	NAS Fort Worth JRB	810
Brownwood 2	7,000 MSL	FL 180	1300-0400Z	NAS Fort Worth JRB	810
Brownwood 3, 4	13,000 MSL	FL 180	1300-0400Z	NAS Fort Worth JRB	808
Hood	2,000 MSL	10,000 MSL	1300-0100Z Mon-Fri	Army Fort Hood	268
Hood High	10,000 MSL	FL 180	By NOTAM 48 hours in advance	Army Fort Hood	86
Texon	6,000 MSL	FL 180	Sunrise-sunset Mon-Fri	Randolph AFB	No CSE Data
Restricted Areas					
R-6302 A	SFC	FL 300	Continuous	Army Fort Hood	No CSE Data
R-6302 B	SFC	11,000 MSL	1800-0600 local Mon-Sat	Army Fort Hood	No CSE Data
R-6302 C, D	SFC	FL 300	0700-1900 local Mon-Fri	Army Fort Hood	No CSE Data
R-6312	SFC	FL 230	Sunrise-sunset	NAS Kingsville	1,067
Warning Areas					
W-147 C, D	SFC	FL 500	0800-2200 local	Ellington JRB	No CSE Data
W-228	SFC	FL 450	1300-0400Z Mon-Fri	NAS Corpus Christi	1,799
MTRs & AR Tracks					
VR-156	SFC	6,000 MSL	0830-1830 local	149 FW Kelly	No CSE Data

Airspace	Altitudes		Time of Use	Scheduled By	Current Number of Annual Operations
	Minimum	Maximum			
MOAs					
VR-1105	SFC	1,500 AGL	0830-1830 local	149 FW Kelly	No CSE Data
VR-1106	SFC	1,500 AGL	0800-1830 local	149 FW Kelly	No CSE Data
VR-1120	100 AGL	1,500 AGL	Sunrise-sunset	149 FW Kelly	No CSE Data
VR-1121	100 AGL	1,500 AGL	Sunrise-sunset	149 FW Kelly	No CSE Data
VR-1122	100 AGL	1,500 AGL	Sunrise-sunset	149 FW Kelly	No CSE Data
VR-1123	100 AGL	1,500 AGL	Sunrise-sunset	149 FW Kelly	No CSE Data
AR614	FL 250	FL 270	Unlimited	Randolph AFB	No CSE Data

Sources: DoD, 2016 and 2017. Current Number of Annual Operations were provided through a Center Scheduling Enterprise (CSE) query or installation airspace managers. CSE is the Air Force wide web-based tool for the scheduling, management, and recording the utilization of airspace and ranges.

AFB = Air Force Base
AGL = above ground level
AR = Air Refueling Route
FL = Flight Level
JRB = Joint Reserve Base
MOA = Military Operating Area
MSL = mean sea level
MTR = Military Training Route
NAS = Naval Air Station
SFC = Surface
VR = Visual Route
Z = Zulu Time, aka, Greenwich Mean Time (GMT)

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4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter presents the results of the analysis of potential environmental effects associated with the temporary (approximately 5 years) relocation of two squadrons of F-16 aircraft to either Holloman AFB or JBSA-Lackland (Kelly Field). It is assumed that both squadrons (45 aircraft) would move to a single installation. Two alternatives and the No-Action Alternative are analyzed. Changes to the natural and human environments that may result from implementation of the projects were evaluated relative to the existing environment as described in Chapter 3.0. The potential for significant environmental consequences was evaluated utilizing the context and intensity considerations as defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR Part 1508.27).

4.2 AIR QUALITY

This section discusses the potential effects of the Proposed Action and alternatives on air quality within the ROI. Since the project areas are in attainment or unclassified for all NAAQS, the analysis used the Prevention of Significant Deterioration (PSD) threshold for new major sources (i.e., 250 tons per year [tpy] of a criteria pollutant) as an indicator of potential impact significance as a result of implementing the proposed action or alternatives. Aircraft emissions were compared to the relevant county emissions inventory to determine potential regional effects within the ROI.

4.2.1 Alternative 1 – Holloman AFB

Under Alternative 1, several of the buildings that would be used require no renovation or other construction work, while several other buildings would require work varying from minor interior modifications to larger-scale interior demolition and reconstruction. Thus, potential temporary air quality impacts are expected to result from the anticipated increase in renovation/construction emissions.

4.2.1.1 Construction Activity Impacts

Construction Activities. Various project-related renovation activities would occur under Alternative 1. These activities can be expected to cause the following short-term, minor air quality impacts:

- Fugitive dust would be generated by demolition and construction operations.
- Emissions of criteria pollutants (VOC and NO_X, as precursors of ozone; CO; PM_{10}; $PM_{2.5}$ including its precursor SO_2), and GHG emissions of CO_2 would result from demolition and construction activities such as:
    - Use of diesel-powered and gas-powered demolition and construction equipment and
    - Construction workers' commutes.

Construction Emissions. Criteria pollutant emissions and GHG emissions in terms of CO_2 generated by temporary construction activities, including building renovations, were calculated using the U.S. EPA-developed MOVES2014a emission factor model. The model was used for both nonroad equipment and on-road vehicles in association with Otero County default input parameters and equipment usage hours and the number of trips from trucks and commuter vehicles, respectively. Equipment types, hours of operation, and vehicle trips were estimated based on guidance from the *RSMeans Estimating Handbook*.

Construction activities would be completed in 2017. Table 4-1 presents the total emissions from construction activities at Holloman AFB calculated for Alternative 1. Because construction emissions would be less than *de minimis* levels, construction activities under Alternative 1 would not result in significant air quality impacts.

Table 4-1. Total Net and Net Percent Increase in Emissions – Holloman AFB

	Annual Emissions (tons)						
Alternative	**VOC**	**NO_X**	**CO**	**$PM_{2.5}$**	**PM_{10}**	**SO_2**	**CO_2[1]**
Alternative 1, Construction Year	0.1	0.8	0.7	0.1	0.4	0.0	201.3
Alternative 1, Operational Year	39.28	101.59	87.46	14.16	15.74	7.59	21,123
2014 Otero County Emissions Inventory[2]	89,278	3,665	30,800	2,859	22,511	50	535,527
Maximum Worst-Case Year Net Percent Increase over Baseline Otero County Emissions (%)	0.04	2.77	0.28	0.50	0.07	15.13	3.94

Note:
[1] The unit is in metric tons converted from short tons.
Source: [2] U.S. EPA, 2014.
AFB = Air Force Base
CO = carbon monoxide
CO_2 = carbon dioxide (as a greenhouse gas indicator)
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in aerodynamic diameter
PM_{10} = particulate matter equal to or less than 10 microns in aerodynamic diameter
SO_2 = sulfur dioxide
VOC = volatile organic compound

4.2.1.2 Operational Activity Impacts

Operational Activities. After the completion of renovation activities, two additional F-16 squadrons would be relocated from Hill AFB to Holloman AFB. The additional F-16 aircraft would operate in a similar manner as the currently based F-16 squadrons, and result in additional aircraft flight operational emissions and associated engine maintenance run-up emissions at Holloman AFB.

The operational impact analysis for air quality for the Proposed Action is based upon the net increase of F-16 operations over the baseline conditions. Both baseline and proposed aircraft flight and engine maintenance run-up operational conditions were established through intensive interviews with the airfield manager, air traffic controller, pilots, and engine maintenance personnel. It was determined that, given the number of currently based F-16 aircraft and hush house engine testing and paint booth use, the baseline F-16 flight sorties and associated pattern flights and engine maintenance run-ups are anticipated to be approximately doubled under Alternative 1 due to the addition of two new F-16 squadrons.

Operational Emissions. Although air pollutant emissions occur during all phases of aircraft operation (parking, idling, and in-flight), only those emissions emitted in the lower atmosphere's mixing layer have the potential to result in ground-level ambient air quality impacts. The mixing layer is the air layer extending from ground level up to the point at which the vertical mixing of pollutants decreases significantly. The U.S. EPA recommends that a default mixing layer of 3,000 feet be used in aircraft emission calculations (U.S. EPA, 1992 pg. 145). Consistent with this recommendation, aircraft emissions released above 3,000 feet were not included in the estimate.

Aircraft engines operational types include arrival, departures, climb out, pattern flight that includes touch and go operations, and engine maintenance run-ups. The methodology for estimating F-16 aircraft emissions follows the procedures established by the Air Force as provided in *Air Emissions Guide for Air Force Mobile Sources* (Air Force Civil Engineer Center, 2016). The applicable emissions factors under various F-16 engine operational modes and associated times in modes were obtained from the same guide. Detailed emissions estimates can be found in the air quality Technical Memorandum for relocation of two F-16 squadrons (U.S. Air Force, 2017b).

Table 4-1 presents total increases in annual operational emissions under Alternative 1. Operational emissions increases would all be less than the 250-tpy PSD threshold. Therefore, the annual increases in criteria pollutant emissions are not considered significant under Alternative 1. Increased emissions from F-16 training activities would not hinder maintenance of the NAAQS.

Additionally, the EA follows AFI 32-7040, *Air Quality Compliance and Resource Management*, (November 4, 2014 Incorporating Change 1, October 14, 2016, *and* Certified Current October 14, 2016) and compares these quantified operational emissions on a regional or county level with the relevant county emissions inventory for the purpose of informing the public and decision makers about the relative air quality impacts from implementation of Alternative 1. According to 40 CFR 93.152, "regionally significant action means a Federal action for which the direct and indirect emissions of any pollutant represent 10 percent or more of a nonattainment or maintenance area's emission inventory for that pollutant". Although, the project area is not in a nonattainment or maintenance area, this 10 percent regional significance threshold is used as an indicator of potential regional emission significance. Since the percentages of increase over corresponding Otero County emission inventories alone are below 10 percent with an exception of SO_2, these increases would not be considered significant on a regional level. By further comparing with the total SO_2 emission inventory including additional counties that are within the same AQCR in New Mexico (i.e., Lincoln, Sierra, and Doña Ana counties), the SO_2 emission increase under Alternative 1 would be three percent. Therefore, Alternative 1 would result in less than significant regional air quality impacts.

Clean Air Act General Conformity Rule Applicability. The general conformity rule does not apply to Alternative 1 since Holloman AFB is located within an area designated as in attainment or unclassified for all criteria pollutants.

Greenhouse Gas Emissions. Given the increases on a global scale predicted for construction activities (201 metric tons of CO_2) and operational activities (21,123 metric tons of CO_2), Alternative 1 is considered to have a minimal impact on overall global or U.S. cumulative GHG emissions and global climate change. Moreover, on a global scale, the net effect would be minimal since the increase in operational GHG emissions would be somewhat offset by the reduction in emissions at Hill AFB, from which the two F-16 squadrons would be relocated. No specific GHG emission mitigation measures are warranted.

The Holloman AFB climate is warm during the summer (average July high is around 96 degrees Fahrenheit [°F]) and cool during the winter (average January low of 22°F). The annual average precipitation at Holloman AFB is approximately 15 inches as compared to the U.S. average of 39 inches. Since the proposed construction and operational activities would only involve interior building renovation and additional F-16 flight operations, global climate change and resulting warmer temperatures and possible sea level rise are not anticipated to affect Alternative 1, which would be implemented at approximately 4,100 feet above mean sea level.

4.2.1.3 Mitigation Measures

No mitigation measures would be required. However, during the construction period, application of water or dust-control agents could be implemented to clearing and grading surfaces and unpaved traffic areas as dust control measures. Exhaust emissions from diesel-fueled construction equipment and vehicle engines could be controlled by minimizing idling time on site.

4.2.2 Alternative 2 – JBSA-Lackland (Kelly Field)

4.2.2.1 Construction Activity Impacts

Project-related renovation activities under Alternative 1 would be expected to cause short-term, minor air quality impacts. Under Alternative 2, more buildings would require modifications involving interior demolition and reconstruction as compared to Alternative 1, plus approximately 4,500 lf of security fencing would be installed. Additionally, approximately 4,500 lf of security fencing would be installed. Thus, potential temporary air quality impacts are expected to be slightly greater than Alternative 1; however, because construction emissions would be below *de minimis* levels, construction activities associated with Alternative 2 would not result in significant air quality impacts. The same procedures as described previously under Alternative 1 were implemented in assessing renovation activities as summarized in Table 4-2.

Table 4-2. Total Net and Net Percent Increase in Emissions – JBSA-Lackland (Kelly Field)

	Annual Emissions (tons)						
Alternative	**VOC**	**NO_X**	**CO**	**$PM_{2.5}$**	**PM_{10}**	**SO_2**	**CO_2[1]**
Alternative 2, Construction Year	0.3	2.6	1.6	0.4	0.9	0.0	728.4
Alternative 2, Operational Year	31.83	63.77	86.22	11.49	12.77	6.04	15,887
2014 Bexar County Emissions Inventory[2]	58,208	38,456	163,161	8,369	47,217	18,656	8,857,238
Maximum Worst-Case Year Net Percent Increase over Bexar County Emissions Inventory (%)	0.05	0.17	0.05	0.14	0.03	0.03	0.19

Note: [1] The unit is in metric tons converted from short tons.
Source: [2] U.S. EPA, 2014.
CO = carbon monoxide
CO_2 = carbon dioxide (as a greenhouse gas indicator)
JBSA = Joint Base San Antonio
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in aerodynamic diameter
PM_{10} = particulate matter equal to or less than 10 microns in aerodynamic diameter
SO_2 = sulfur dioxide
VOC = volatile organic compound

4.2.2.2 Operational Activity Impacts

Operational Activities. Activities similar to those of Alternative 1 would occur under Alternative 2, with the exception of slight differences in actual annual sorties and engine maintenance run-ups.

Because the training missions and operational procedures at each installation vary, it was determined that, given the number of currently based F-16 aircraft, the baseline F-16 flight sorties and associated pattern flights and engine maintenance run-ups would triple under Alternative 2 due to the addition of two F-16 squadrons.

Operational Emissions. The same procedures as described previously under Alternative 1 were implemented in predicting potential operational emissions as summarized in Table 4-2. Table 4-2 presents total increases in annual operational emissions under Alternative 2. Operational emissions increases would all be less than the 250-tpy PSD threshold. Therefore, the annual increases in criteria pollutant emissions under Alternative 2 are not considered significant. Increased emissions from F-16 training activities would not hinder maintenance of the NAAQS.

Additionally, the EA follows AFI 32-7040 (November 4, 2014 Incorporating Change 1, October 14, 2016, and Certified Current October 14, 2016) and compares these quantified operational emissions on a regional level with the relevant county emissions inventory for the purpose of informing the public and decision makers about the relative air quality impacts from implementation of Alternative 2. Since the percentages of increase over corresponding Bexar County emission inventories are well below 10 percent, these increases would not be considered significant on a regional level.

Clean Air Act General Conformity Rule Applicability. The general conformity rule does not apply to Alternative 2 since JBSA-Lackland (Kelly Field) is located within an area designated as in attainment or unclassified for all criteria pollutants.

Greenhouse Gas Emissions. Given the increases on a global scale predicted for construction activities (728 metric tons of CO_2) and operational activities (15,887 metric tons of CO_2), Alternative 2 would result in an insignificant impact on overall global or U.S. cumulative GHG emissions and global climate change. Moreover, on a global scale, the net effect is minimal since the increase in operational GHG emissions is somewhat offset by the reduction in emissions at Hill AFB from which the two F-16 squadrons are being relocated. No specific GHG emission mitigation measures are warranted.

JBSA-Lackland (Kelly Field) has a warm, humid, temperate climate with hot summers and no dry season. Over the course of a year, the temperature typically varies from 40°F to 95°F and is rarely below 29°F or above 100°F. The annual average precipitation in San Antonio where the base is located is approximately 33 inches, compared to the U.S. average of 39 inches. Since the proposed construction or operational activities would only involve building renovation and additional F-16 flight operations, global climate change and resulting warmer temperatures and possible sea level rise are not anticipated to affect Alternative 2, which would occur at approximately 700 feet above mean sea level.

4.2.2.3 Mitigation Measures

No mitigation measures for air quality impacts are required under Alternative 2. However, during the construction period, application of water or dust-control agents could be implemented to clearing and grading surfaces and unpaved traffic areas as dust control measures. Exhaust emissions from diesel-fueled construction equipment and vehicle engines could be controlled by minimizing idling time on site.

4.2.3 No-Action Alternative

Under the No-Action Alternative, the interim relocation of two F-16 squadrons to Holloman AFB or JBSA-Lackland (Kelly Field) would not occur. No construction activities would occur and no increase in operational activities would occur; therefore, air quality conditions would remain the same as the existing

conditions resulting in no significant air quality impacts. Additionally, since the aircraft would not be operated, Hill AFB would experience reduced F-16 operational emissions.

4.2.3.1 Mitigation Measures

No mitigation measures would be required under the No-Action Alternative.

4.3 NOISE

With implementation of the Proposed Action, two F-16 squadrons currently operating at Hill AFB would temporarily relocate to Holloman AFB under Alternative 1 or to JBSA-Lackland (Kelly Field) under Alternative 2.

The DNL contours for the proposed action at each installation were developed based on the information collected from on-site interviews and using the same modeling procedures described previously in Section 3.3.1, "Noise Fundamentals and Methodology," by adding additional F-16 flight operations and associated engine maintenance run-ups to the existing condition. The additional F-16 flight operations were proportionally distributed following the existing 2017 flight patterns, runway usage, and day/night operations in developing proposed condition noise contours. Detailed noise calculations can be found in the noise Technical Memorandum for relocation of two F-16 squadrons (U.S. Air Force, 2017c).

A change of 3 dB of noise is considered barely perceptible by the average human ear (Table 4-3). Such a change is equivalent to a doubling of flight operations people around the airfield would likely hear. In this EA, a 3 dB increase is used as the threshold above which a further discussion on the location, annoyance, and frequency would be warranted. Moreover, if the predicted DNL shows an increase exceeding 3 dBA, the EA evaluates alternative measures to be implemented to reduce such a noise increase below 3 dBA.

Table 4-3. Subjective Responses to Changes in A-weighted Decibels

Change	Change in Perceived Loudness
1 dB	Requires close attention to notice
3 dB	Barely perceptible
5 dB	Quite noticeable
10 dB	Dramatic, twice or half as loud
20 dB	Striking, fourfold change

dB = decibels
Source: Wyle Laboratories, 2004.

4.3.1 Alternative 1 – Holloman AFB

4.3.1.1 Construction Activity Impacts

Construction activities would include mobilization, site preparation, and equipment movement and use. Construction activities would occur intermittently several months at a time at various locations on the installations. During construction activities, noise would increase due to the operation of equipment, increases in traffic from waste hauling activities, and other construction-related sources. Construction noise would be short term, ceasing after activities are completed. In an effort to minimize effects to base occupants, construction activities would primarily occur over the course of a daytime shift, although it is possible that extensions of the basic workday or moderate amounts of evening or weekend work could

occur. The project would generate little, if any, construction noise at night. Additionally, equipment would be properly maintained and operated to reduce noise levels, including use of appropriate vehicle mufflers.

Noise from construction activities would decrease with distance through divergence, atmospheric absorption, shielding by intervening structures, and absorption and shielding by ground cover. Noise exposure levels attenuate (reduce) about 6 dB for every doubling of distance assuming flat terrain and no trees or buildings. The closest sensitive receptor, on-base housing, is approximately 7,200 feet away from the nearest renovation site. Since typical earth movement equipment produces an average of 85 dB measured at 50 feet, the anticipated noise at the closest receptor from operation of this equipment would be 42 dB resulting in minimal temporary construction noise impacts.

Enforcement of the Occupational Safety and Health Administration (OSHA) guidelines for hearing protection for workers on construction sites would be the responsibility of the construction contractor. Signs warning of high noise levels would be posted at construction sites by the contractor, if noise levels warrant this measure.

Noise generated from proposed construction activities would be intermittent and short term, and would primarily occur at the construction sites. Once construction activities are completed, proposed activities at the facilities are not expected to generate a substantial amount of noise. Therefore, no significant impacts from construction noise are anticipated at Holloman AFB under Alternative 1.

4.3.1.2 Operational Activity Impacts

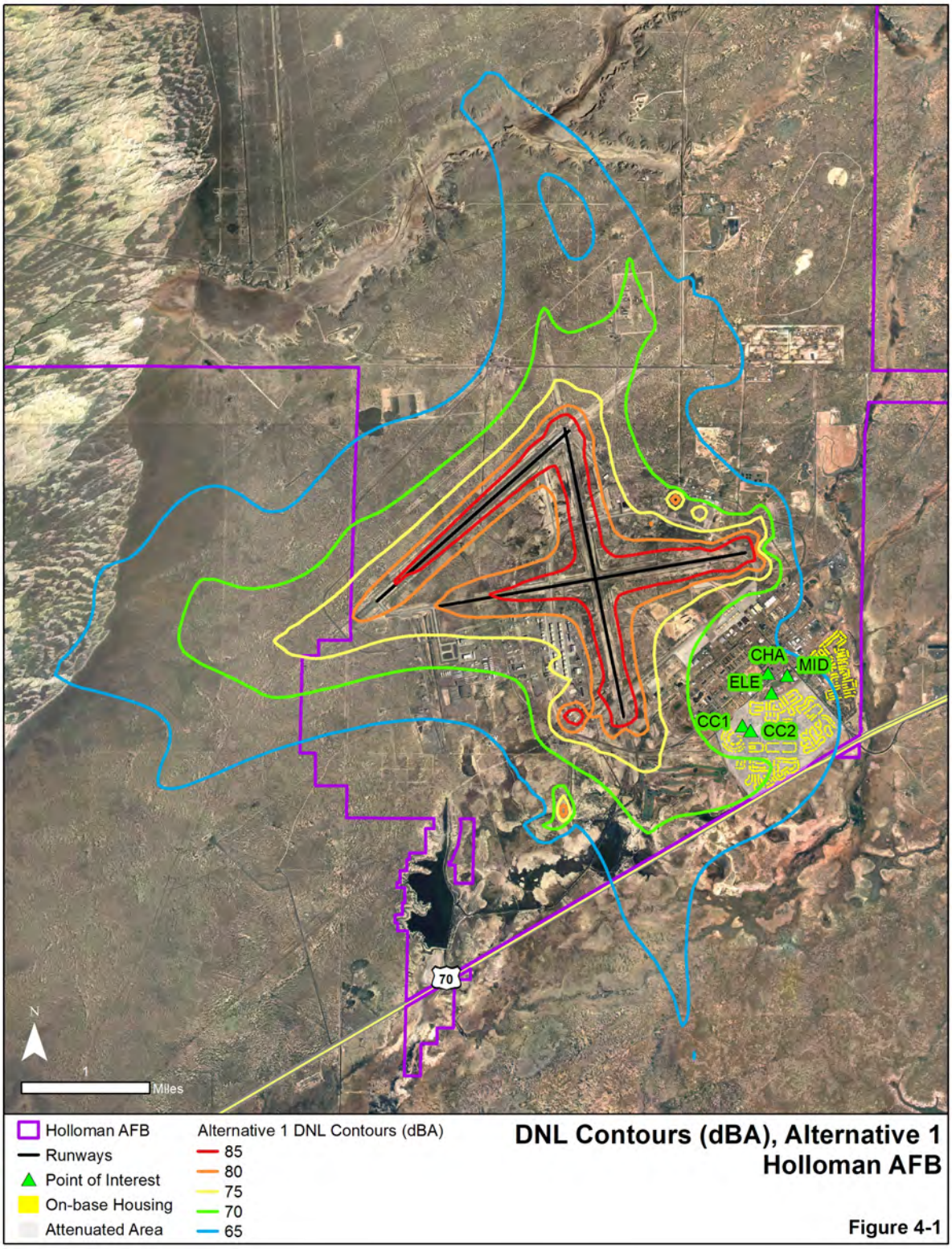
Airfield Noise Conditions. As determined in interviews with the airfield manager, F-16 training officers, and pilots from squadrons currently based at Holloman AFB, the proposed two new F-16 squadrons would operate at the installation in a similar manner and training capacity proportional to the current level. Table 4-4 compares F-16 flight operations between existing (2017) and Alternative 1 conditions and shows the projected net operations increase under Alternative 1. The engine run-ups would also increase proportionally as compared to the existing (2017) condition.

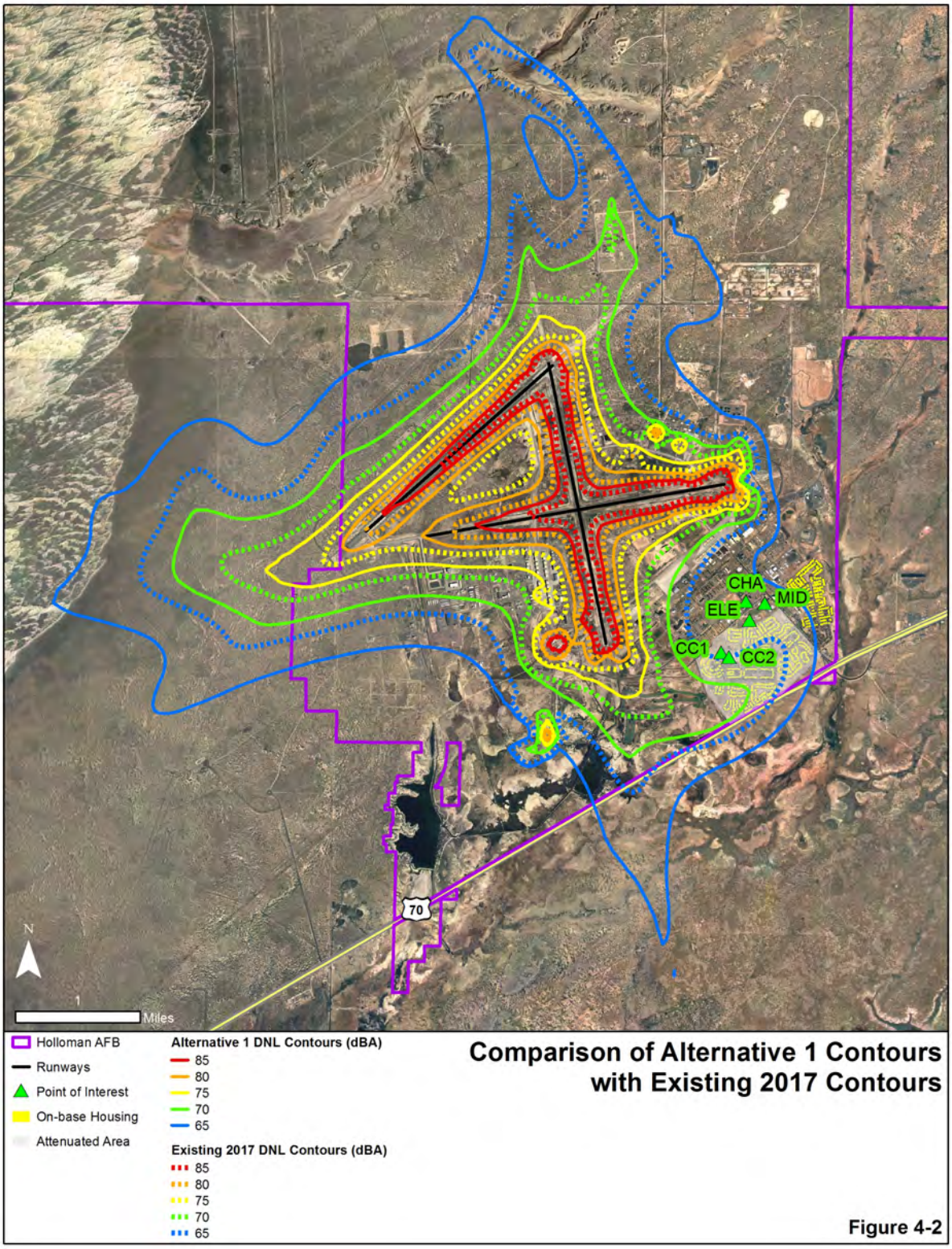
Table 4-4. Proposed Net Increase in F-16 Flight Operations at Holloman AFB

Scenario	Unit	Aircraft	Annual Departures	Annual Arrivals	Annual Closed Patterns	Total Annual Operations	Total Daily Operations
Existing 2017/No-Action Condition	54 FG	F-16C	8,640	8,640	27,648	44,928	123
Total Operations Under Alternative 1	54 FG	F-16C	18,240	18,240	58,368	94,848	260
Net Increase under Alternative 1			9,600	9,600	30,720	49,920	137

54 FG = 54th Fighter Group
AFB = Air Force Base

The Alternative 1 noise contours were predicted using the same methodologies as described in Section 3.3 and are depicted in Figure 4-1. Figure 4-2 compares the noise contours under the existing (2017) conditions with the noise contours predicted for Alternative 1; note that under Alternative 1, contours would expand overall.


CHA
MID
ELE
CC1
CC2
70
N
1
Miles
Holloman AFB
Runways
Point of Interest
On-base Housing
Attenuated Area
Alternative 1 DNL Contours (dBA)
85
80
75
70
65
DNL Contours (dBA), Alternative 1
Holloman AFB
Figure 4-1


CHA
MID
ELE
CC1
CC2
70
N
1
Miles
Holloman AFB
Runways
Point of Interest
On-base Housing
Attenuated Area
Alternative 1 DNL Contours (dBA)
85
80
75
70
65
Existing 2017 DNL Contours (dBA)
85
80
75
70
65
Comparison of Alternative 1 Contours with Existing 2017 Contours
Figure 4-2

As indicated in Section 3.3, the updated noise analysis does not include flight operations from the currently based German Air Force Tornado aircraft since Tornado flight operations would end in September 2017.

The expanded noise contours under Alternative 1 would encompass more land area and population than current noise contours; however, no off-base population would be present in incompatible noise zones (within the 65+ dBA contour) because the lands off base are vacant. Table 4-5 and Table 4-6 present the off-installation land acreages and population, respectively, that would be located within the Holloman AFB incompatible noise zones under Alternative 1. No off-base residential POIs are located in the vicinity of Holloman AFB.

On the installation, more housing units, one church, and two schools would be added to the incompatible noise zone under Alternative 1 (Figure 4-2). Table 4-7 and Table 4-8 present the on-installation land areas and estimated population, respectively that would be located within the new 65+ dBA noise contour. It should be noted that the actual noise level heard at these on-base noise sensitive receptor locations would remain the same; however, the frequency of flight noise events would double as a result of the proposed project.

On-base housing units within the Alternative 1 65+ dBA contour (consisting of several units east of First Street) were built with noise insulation features to meet indoor noise compatibility requirements when exterior noise levels are between 70 and 75 dBA DNL, based on the results of the 2004 AICUZ study. As such, these units are expected to meet indoor noise compatibility requirements despite being located within the incompatible use noise zone.

On-base POIs within the Alternative 1 incompatible use zone consist of two child care centers, two schools, and a chapel. Table 4-9 shows that the net increases in DNL levels for these POIs from the existing (2017) condition to the Alternative 1 condition would not exceed 3 dBA, a barely perceptible change in perceived noise level.

Although more land area, more on-base population, and more POIs would be affected by the increased size of the incompatible zone under Alternative 1, overall noise increases not exceeding 3 dBA mean that operational noise impacts under Alternative 1 would not be significant.

Table 4-5. Net Increase in Off-Installation Land Area within Holloman AFB DNL Contours from Alternative 1

Noise Zones	Existing/No-Action Conditions Land Area (acres)	Proposed Condition Land Area (acres)	Net Increase in Land Area (acres)
65-70 DNL	849	2,130	1,281
70-75 DNL	228	519	291
75+ DNL	12	106	94
TOTAL	**1,088**	**2,755**	**1,666**

AFB = Air Force Base
DNL = day-night average sound level

Table 4-6. Net Increase in Off-Installation Population within Holloman AFB DNL Contours from Alternative 1

Noise Zones	Existing/No-Action Conditions Population	Proposed Condition Population	Net Increase in Population
65-70 DNL	0	0	0
70-75 DNL	0	0	0
75+ DNL	0	0	0
TOTAL	**0**	**0**	**0**

AFB = Air Force Base
DNL = day-night average sound level

Table 4-7. Net Increase in On-Installation Land Area within Holloman AFB DNL Contours from Alternative 1

Noise Zones	Existing/No-Action Conditions Land Area (acres)	Proposed Condition Land Area (acres)	Net Increase in Land Area (acres)
65-70 DNL	2,810	3,848	1,038
70-75 DNL	1,422	1,921	499
75+ DNL	2,057	2,800	743
TOTAL	**6,289**	**8,569**	**2,280**

AFB = Air Force Base
DNL = day-night average sound level

Table 4-8. Net Increase in On-Installation Population within Holloman AFB DNL Contours from Alternative 1

Noise Zones	Existing/No-Action Conditions Population	Proposed Condition Population	Net Increase in Population
65-70 DNL	714	1,526	812
70-75 DNL	2	165	163
75+ DNL	3	4	1
TOTAL	**719**	**1,695**	**976**

AFB = Air Force Base
DNL = day-night average sound level

Table 4-9. DNL Increases at Holloman AFB Points of Interest

Point of Interest	Description	Existing/No-Action DNL	Alternative 1 Proposed DNL	DNL Net Increase
CHA	Chapel	63	66	3
MID	Middle School	63	66	3
ELE	Elementary School	64	67	3
CC1	Child Care 1	65	68	3
CC2	Child Care 2	65	68	3

AFB = Air Force Base
DNL = day-night average sound level

Airspace Supersonic Noise Conditions. Supersonic activity noise in MOAs associated with Holloman AFB and predicted as part of the Recapitalization of the 49 WG Combat Capabilities and Capacities EA shows that the highest cumulative noise level would be 53 dBC within R5107. The cumulative CDNL level in R5107 would become 56 dBC as a result of implementing Alternative 1. This level is still well below the 62 dB CDNL annoyance threshold. The land area beneath the airspace where supersonic activity occurs is considered compatible.

Under Alternative 1, the number of sonic boom events along the low level supersonic test flight corridor would likely double as compared to the existing (2017) condition. However, the overpressure level from sonic boom events would remain the same despite this increase in event frequency. Therefore, the potential for either human or building structural damage (or both) would remain low because the closest sensitive receptor/structure, the White Sands National Monument visitor center 8 miles away from the corridor, is not located in the zone affected by the boom effect. Supersonic boom impacts would not be significant under Alternative 1.

4.3.1.3 Mitigation Measures

No mitigation measures would be required under Alternative 1.

4.3.2 Alternative 2 – JBSA-Lackland (Kelly Field)

4.3.2.1 Construction Activity Impacts

Potential noise impacts from renovation activities at JBSA-Lackland (Kelly Field) under Alternative 2 would be similar to those described in Section 4.2.1.1 for Alternative 1 at Holloman AFB. Noise generated by proposed construction activities would be intermittent and short term, and would occur primarily at the construction sites. The closest sensitive receptor, an on-installation housing area, is approximately 1,750 feet away, and would likely be exposed to 54 dB noise levels during temporary operation of construction equipment. Once construction activities are completed, proposed activities at the facilities are not expected to generate a substantial amount of noise. Therefore, no significant impacts from construction noise are anticipated under Alternative 2.

4.3.2.2 Operational Activity Impacts

Table 4-10 summarizes the projected net increase in flight operations at JBSA-Lackland (Kelly Field) that would occur under Alternative 2, established using the same methodologies as described in Section 3.3 and the same procedures as described for Alternative 1.

Table 4-10. Proposed Net Increase in F-16 Flight Operations at JBSA-Lackland (Kelly Field)

Scenario	Unit	Aircraft	Annual Departures	Annual Arrivals	Annual Closed Patterns	Total Annual Operations	Total Daily Operations
Existing 2017/No-Action Condition	ANG	F-16C	3,888	3,888	12,442	20,218	55.4
Total Operations Under Alternative 2	ANG	F-16C	11,664	11,664	37,326	60,654	166.2
Net Increase under Alternative 2			7,776	7,776	24,884	40,436	110.8

ANG = Air National Guard
JBSA = Joint Base San Antonio

Alternative 2 noise contours are depicted in Figure 4-3. Figure 4-4 compares the noise contours under the existing (2017) conditions with the noise contours predicted for Alternative 2.

The expanded noise contours under Alternative 2 would encompass more land area and population than current noise contours, particularly within the following areas:

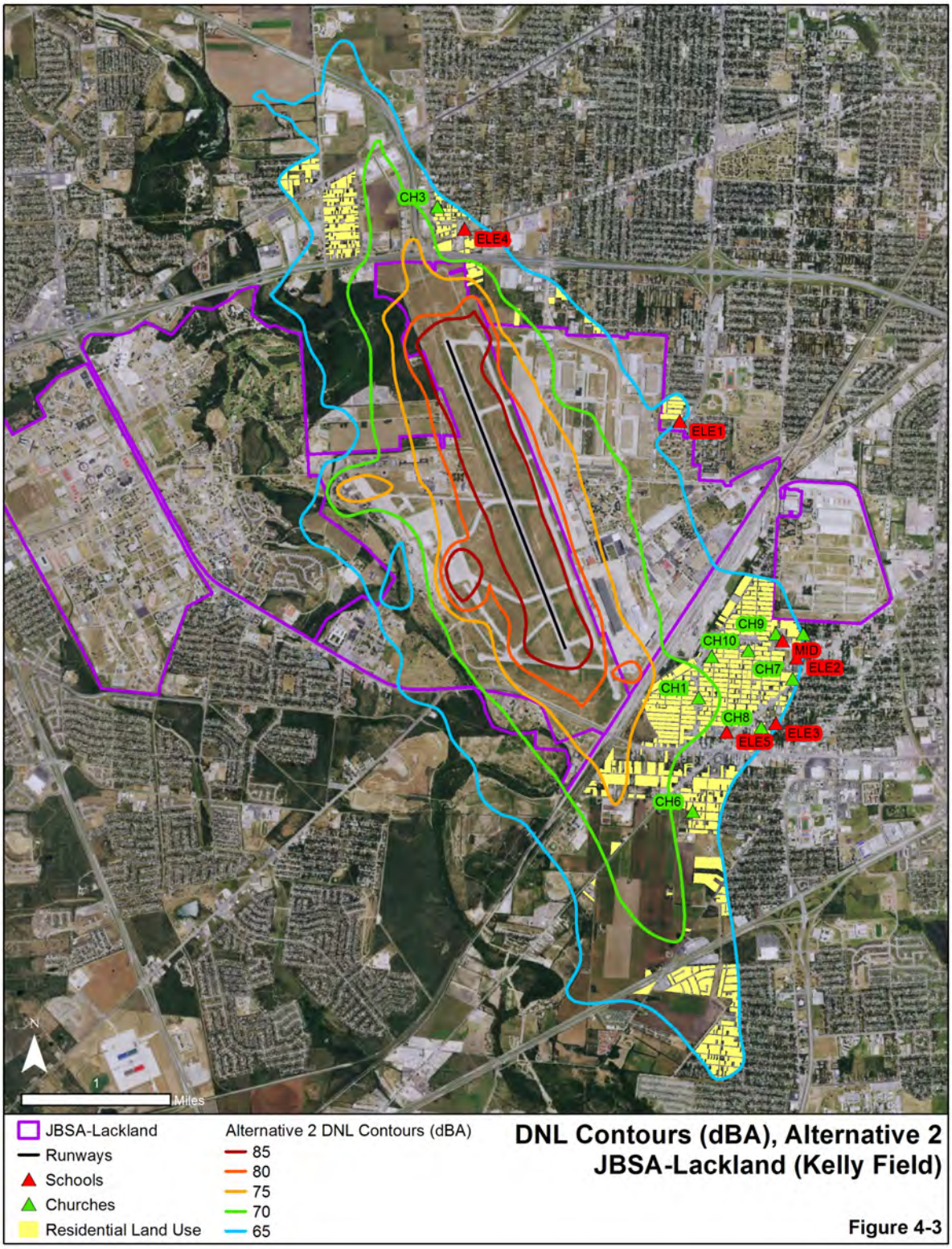
- To the southeast of Runway 33 in Quintana Community area where the 65 dBA noise zone extends close to one mile further to the east primarily due to dominant F-16 pattern flight operations over the area.
- To the south of Runway 33 where the Alternative 2 noise contours extend close to one mile farther.
- To the north of Runway 15 in the Community Workers Council area where the incompatible zones extend slightly farther.

Table 4-11 and Table 4-12 present the off-installation land acreages and population, respectively, that would be located within the JBSA-Lackland (Kelly Field) incompatible noise zones under Alternative 2. Table 4-13 and Table 4-14 present the on-installation land acreages and estimated population, respectively, that would be located within the JBSA-Lackland (Kelly Field) incompatible noise zones under Alternative 2. These tables also summarize the net increases in both land area and population off- or on-installation.

Table 4-11. Net Increase in Off-Installation Land Area within JBSA-Lackland (Kelly Field) DNL Contours from Alternative 2

Noise Zones	Existing/No-Action Conditions Land Area (acres)	Proposed Condition Land Area (acres)	Net Increase in Land Area (acres)
65-70 DNL	1,172	2,587	1,415
70-75 DNL	345	898	553
75+ DNL	74	249	175
TOTAL	**1,591**	**3,734**	**2,143**

DNL = day-night average sound level
JBSA = Joint Base San Antonio


CH3
ELE4
ELE1
CH9
CH10
MID
ELE2
CH7
CH1
CH8
ELE3
ELE5
CH6
N
1
Miles
JBSA-Lackland
Runways
Schools
Churches
Residential Land Use
Alternative 2 DNL Contours (dBA)
85
80
75
70
65
DNL Contours (dBA), Alternative 2
JBSA-Lackland (Kelly Field)
Figure 4-3

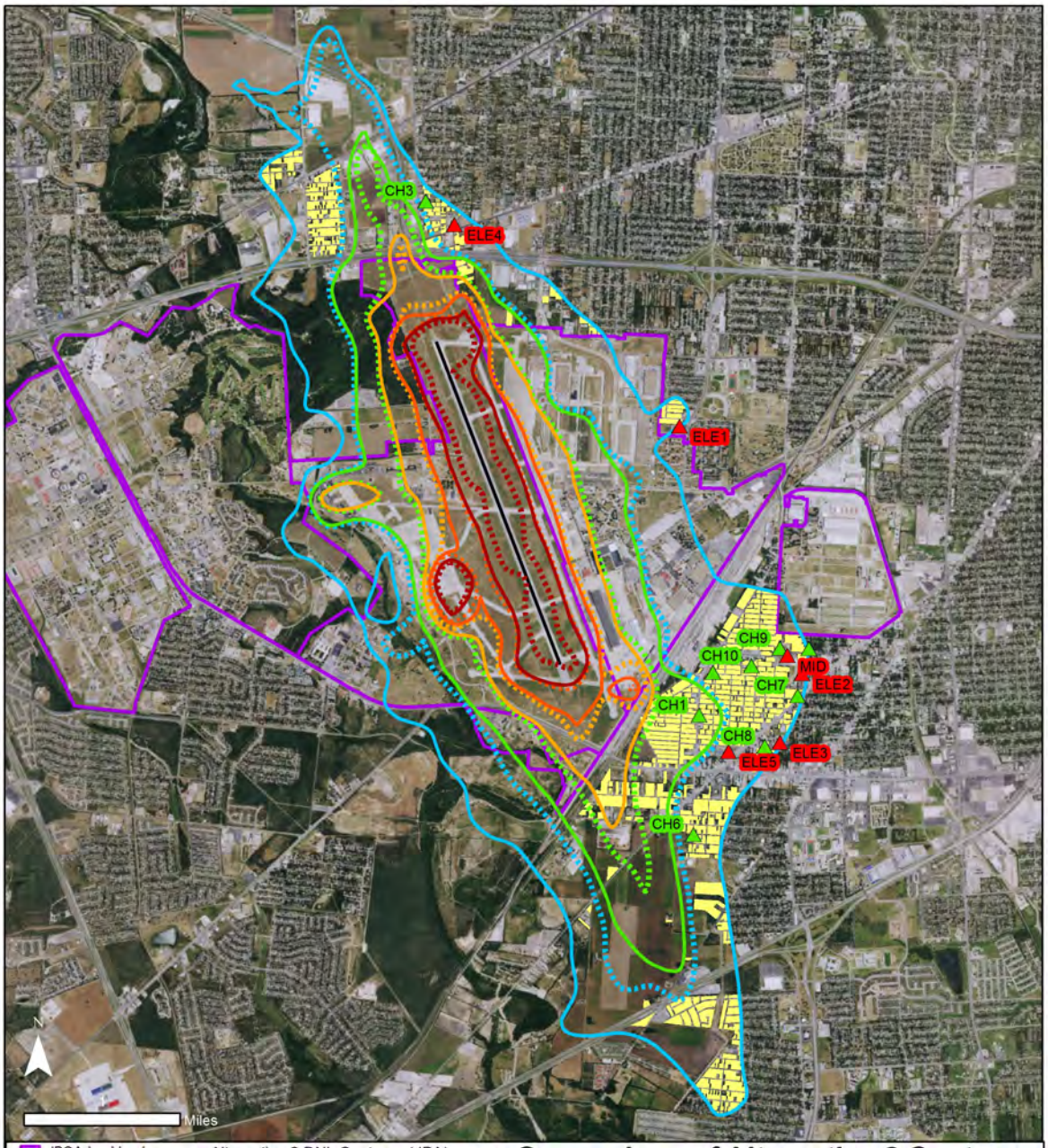

CH3
ELE4
ELE1
CH9
CH10
MID
ELE2
CH7
CH1
CH8
ELE3
ELE5
CH6
N
Miles
JBSA-Lackland
Runways
Schools
Churches
Residential Land Use
Alternative 2 DNL Contours (dBA)
85
80
75
70
65
Existing 2017 DNL Contours (dBA)
85
80
75
70
65
Comparison of Alternative 2 Contours with Existing 2017 Contours
Figure 4-4

Table 4-12. Net Increase in Off-Installation Population within JBSA-Lackland (Kelly Field) DNL Contours under Alternative 2

Noise Zones	Existing/No-Action Conditions Population	Proposed Condition Population	Net Increase in Population
65-70 DNL	3,827	8,781	4,954
70-75 DNL	1,291	3,237	1,946
75+ DNL	171	916	745
TOTAL	**5,289**	**12,934**	**7,645**

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Table 4-13. Net Increase in On-Installation Land Area within JBSA-Lackland (Kelly Field) DNL Contours under Alternative 2

Noise Zones	Existing/No-Action Conditions Land Area (acres)	Proposed Condition Land Area (acres)	Net Increase in Land Area (acres)
65-70 DNL	723	913	190
70-75 DNL	644	703	59
75+ DNL	1,141	1,682	541
TOTAL	**2,508**	**3,298**	**790**

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Table 4-14. Net Increase in On-Installation Population within JBSA-Lackland (Kelly Field) DNL Contours under Alternative 2

Noise Zones	Existing/No-Action Conditions Population	Proposed Condition Population	Net Increase in Population
65-70 DNL	13	43	30
70-75 DNL	12	13	1
75+ DNL	21	31	10
TOTAL	**46**	**87**	**41**

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Table 4-15 compares the DNL at each POI under Alternative 2 to the existing (2017) condition. The net increase in the DNL level would range from 1 to 5 dBA, with the maximum increase occurring in the Quintana Community, given its close proximity to Runway 33 and F-16 pattern flight paths. The actual intermittent noise level from flight operations that would be heard in the affected communities including schools and residences would remain the same, so the impacts on potential hearing loss and speech interference are not likely to change or increase. However, the frequency of flight noise events as a result of Alternative 2 would triple during the 5-year duration of the additional F-16 FTU operations.

Since a 5-dBA increase is a noticeable noise change as defined in Table 4-3, it is anticipated that implementing Alternative 2 would result in an approximately 10 percent increase in %HA in the Quintana and other affected communities as shown in Figure 4-4. The predicted increase of 3+ dBA DNL and 10 %HA represent a significant impact. A limited operations scenario would be required to mitigate impacts to below significance; otherwise, JBSA-Lackland (Kelly Field) would require an Environmental Impact

Statement (EIS) to be considered as an interim relocation installation for the proposed F-16 FTU mission at the full operational level. A limited operations scenario is presented and analyzed in subsection 4.3.2.3, Mitigation Measures.

Airspace Supersonic and Subsonic Noise Conditions. Supersonic flight training currently conducted at the Warning Areas in the Gulf of Mexico and the Rio-Pecos MOA west of San Antonio would be tripled under Alternative 2. Given the remote locations and height restrictions for such operations, plus the short duration of supersonic activities each year, the increase in supersonic and subsonic operation frequency in these airspaces as a result of Alternative 2 would be unlikely to increase %HA. No significant impacts are expected.

Table 4-15. DNL Increases at JBSA-Lackland (Kelly Field) Points of Interest

Point of Interest	Description	Existing/No-Action DNL	Alternative 2 Proposed DNL	DNL Net Increase
ELE1	Winston Elementary School	64	66	2
ELE2	Athens Elementary School	61	66	5
ELE3	Price Elementary School	62	65	3
ELE4	H. B. Gonzalez Elementary School	63	66	3
ELE5	Miguel Carrillo Jr. Elementary School	65	68	3
MID	Dwight Middle School	62	67	5
CH1	San Antonio Bynum Seventh-Day Adventist Church	68	71	3
CH2	Browning United Methodist Church	65	68	3
CH3	Saint Mark Independent Methodist Church	63	66	3
CH4	Centro Cristiano Nueva Vida	63	67	4
CH5	First Baptist Church	61	65	4
CH6	Iglesia Bautista Monte de la Olivas	63	68	5
CH7	Iglesia El Calvario	62	66	4
CH8	Kingdom Hall of Jehovah's Witnesses	63	66	3
CH9	South San Antonio Baptist Church	62	67	5
CH10	Templo Amor y Gracia	64	68	4

DNL = day-night average sound level
JBSA = Joint Base San Antonio

4.3.2.3 Mitigation Measures

Under Alternative 2, which includes operating two additional F-16 squadrons for FTU activities on the same schedule as the current F-16 FTU syllabus, a noticeable 5 dBA DNL increase and a potential 10 percent increase in highly annoyed population would occur in certain neighborhoods, particularly in the Quintana Community area immediately adjacent to the south end of the runway. In order to reduce noise impacts to insignificance, mitigation in the form of limiting flight operations was considered. Limiting the flight operations means reducing the number of flight operations, sorties, and flying hours to reduce noise increases to no more than 3 dBA DNL from current conditions. The existing flight tracks and modes of operation would continue as currently conducted, only the number of operations would be reduced. Analysis showed that an increase of no more than 3 dBA DNL could be achieved by halving the number of additional F-16 FTU operations.

Table 4-16 summarizes the projected net increase in flight operations under the limited scenario. The limited operations mitigation results in a net increase of 20,218 operations compared to the existing 2017 conditions, which reduces the number of operations outlined under Alternative 2 from 60,654 to 40,436 operations. This represents the operations that would likely occur should only one F-16 FTU Squadron (approximately 24 aircraft) be operating at JBSA-Lackland (Kelly Field) on an interim basis.

Figure 4-5 depicts the mitigated noise contours. Figure 4-6 compares the mitigated noise contours to the existing (2017) noise contours.

The noise contours under the limited operations mitigation would encompass more land area and population than current noise contours, particularly within the following areas:

- To the southeast of Runway 33 in the Quintana Community area where the mitigated 65 dBA noise contours would extend approximately half a mile farther to the east and southeast, primarily due to dominant F-16 pattern flight operations over the area.

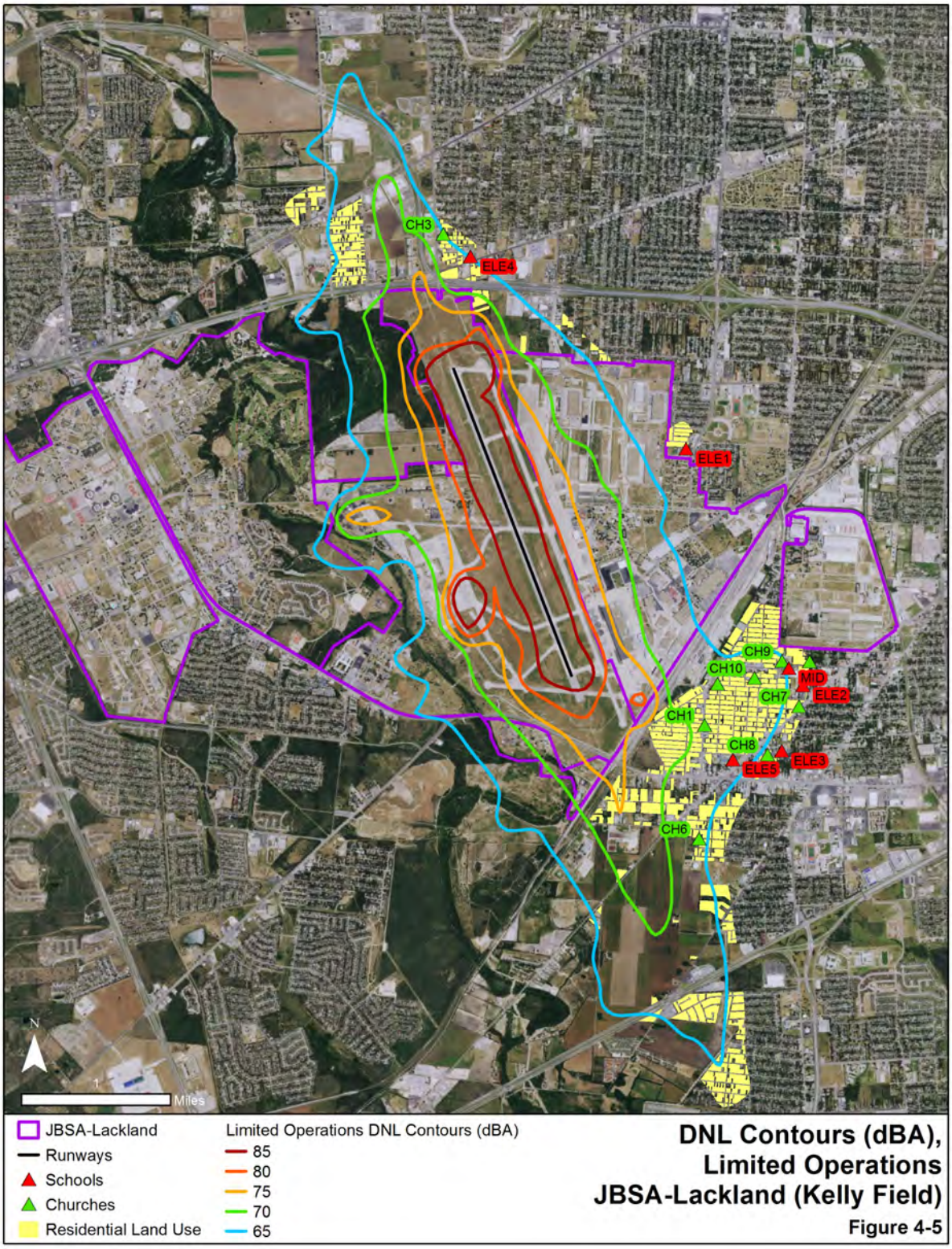
- To the south of Runway 33 where the mitigated noise contours would extend approximately half a mile farther.

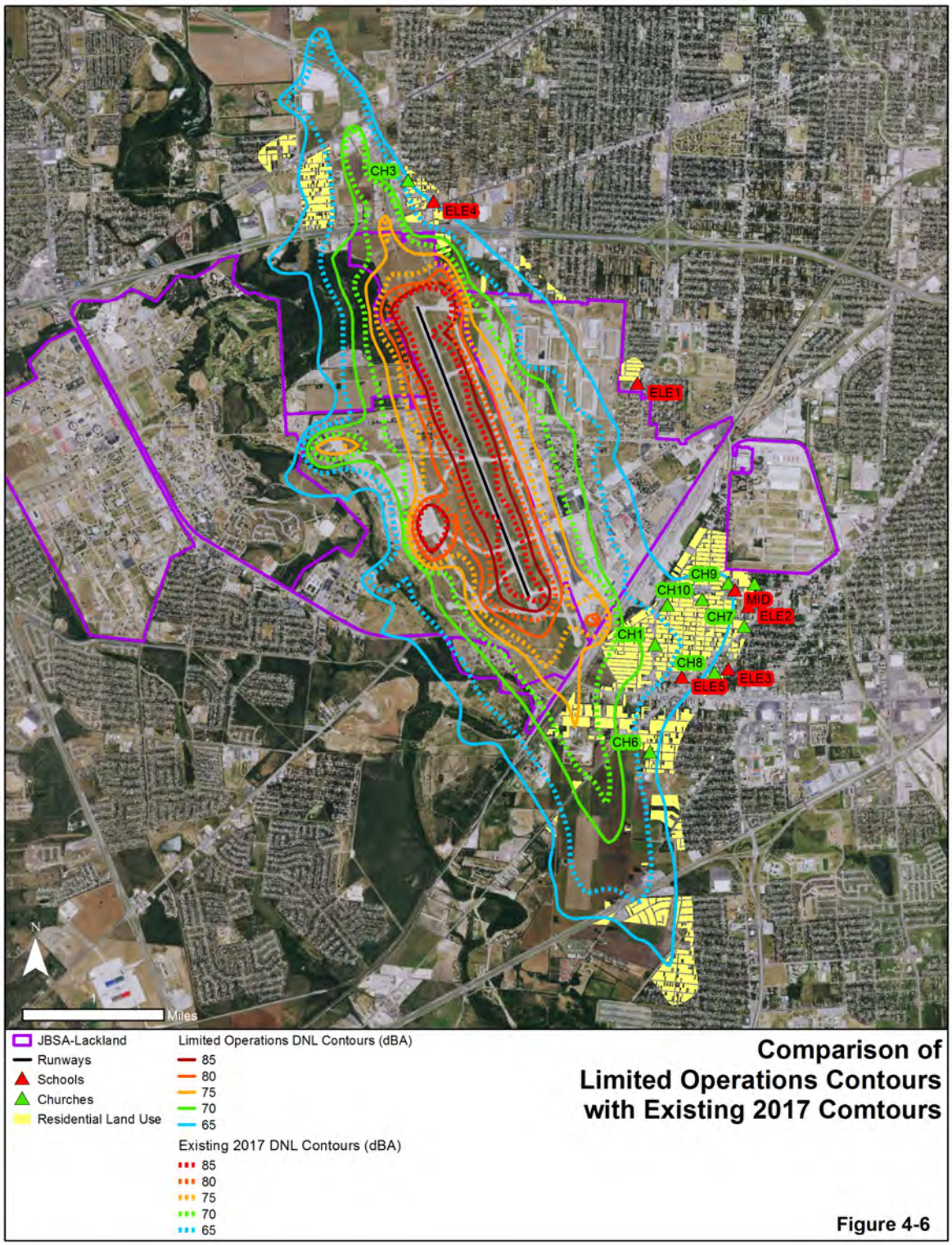
- To the north of Runway 15 in the Community Workers Council area where the mitigated noise contours would be slightly expanded.

Table 4-16. Proposed Net Increase in F-16 Flight Operations at JBSA-Lackland (Kelly Field) (Limited Operations)

Scenario	Unit	Aircraft	Annual Departures	Annual Arrivals	Annual Closed Patterns	*Total Annual Operations*	Total Daily Operations
Existing 2017/No-Action Condition	ANG	F-16C	3,888	3,888	12,442	*20,218*	55.4
Total Operations Under Limited Scenario	ANG	F-16C	7,776	7,776	24,884	*40,436*	10.8
Net Increase			**3,888**	**3,888**	**12,442**	***20,218***	**55.4**

ANG = Air National Guard
JBSA = Joint Base San Antonio


CH3
ELE4
ELE1
CH9
CH10
MID
ELE2
CH7
CH1
CH8
ELE5
ELE3
CH6
N
1
Miles
JBSA-Lackland
Runways
Schools
Churches
Residential Land Use
Limited Operations DNL Contours (dBA)
85
80
75
70
65
DNL Contours (dBA),
Limited Operations
JBSA-Lackland (Kelly Field)
Figure 4-5


CH3
ELE4
ELE1
CH9
CH10
MID
ELE2
CH7
CH1
CH8
ELE5
ELE3
CH6
N
Miles
JBSA-Lackland
Runways
Schools
Churches
Residential Land Use
Limited Operations DNL Contours (dBA)
85
80
75
70
65
Existing 2017 DNL Contours (dBA)
85
80
75
70
65
Comparison of Limited Operations Contours with Existing 2017 Comtours
Figure 4-6

The noise contours under the limited operations mitigation would encompass more land area and population than current 2017 noise contours (net increase of 1,147 acres and 3,861 residents compared to existing conditions), but less land area and population than the Alternative 2 noise contours as shown in Tables 4-17 through 4-20. The percent of high annoyance would likely be reduced from approximately 10 percent under Alternative 2 to roughly 5 percent under the limited operations scenario according to the nonlinear community response curve.

Table 4-17. Net Increase in Off-Installation Land Area within JBSA-Lackland (Kelly Field) DNL Contours from Mitigation (Limited Operations)

Noise Zones	Existing/No-Action Conditions Land Area (acres)	*Alternative 2 Land Area (acres)*	Limited Operations Land Area (acres)	Net Increase in Land Area (acres) From No-Action
65-70 DNL	1,172	*2,587*	1,972	800
70-75 DNL	345	*898*	614	269
75+ DNL	74	*249*	152	78
TOTAL	**1,591**	***3,734***	**2,738**	**1,147**

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Table 4-18. Net Increase in Off-Installation Population within JBSA-Lackland (Kelly Field) DNL Contours from Mitigation (Limited Operations)

Noise Zones	Existing/No-Action Conditions Population	*Alternative 2 Population*	Limited Operations Population	Net Increase in Population From No-Action
65-70 DNL	3,827	*8,781*	6,444	2,617
70-75 DNL	1,291	*3,237*	2,267	976
75+ DNL	171	*916*	439	268
TOTAL	**5,289**	***12,934***	**9,150**	**3,861**

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Table 4-19. Net Increase in On-Installation Land Area within JBSA-Lackland (Kelly Field) DNL Contours from Mitigation (Limited Operations)

Noise Zones	Existing/No-Action Conditions Land Area (acres)	*Alternative 2 Land Area (acres)*	Limited Operations Land Area (acres)	Net Increase in Land Area (acres) From No-Action
65-70 DNL	723	*913*	809	86
70-75 DNL	644	*703*	671	27
75+ DNL	1,141	*1,682*	1,486	345
TOTAL	**2,508**	***3,298***	**2,966**	**458**

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Table 4-20. Net Increase in On-Installation Population within JBSA-Lackland (Kelly Field) DNL Contours from Mitigation (Limited Operations)

Noise Zones	Existing/No-Action Conditions Population	*Alternative 2 Population*	Limited Operations Population	Net Increase in Population From No-Action
65-70 DNL	13	*43*	24	11
70-75 DNL	12	*13*	12	0
75+ DNL	21	*31*	27	6
TOTAL	**46**	***87***	**63**	**17**

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Table 4-21 compares the DNL at each POI under the limited operations mitigation to the existing (2017) condition and Alternative 2. Under the limited operations scenario, the net increases in DNL levels from the existing 2017 conditions would range from 1 to 3 dBA, with the maximum increase occurring in the Quintana Community given its close proximity to Runway 33 and F-16 pattern flight paths. Compared to Alternative 2, the limited operations mitigation would reduce the DNL at each POI by 1 to 2 dBA DNL. Since a maximum 3 dBA increase, a barely noticeable noise change in general, would result from the limited operations mitigation and would cut the increase in percent of high annoyance by half, it is anticipated that implementing the limited operations mitigation would result in less than significant noise impacts that would last for approximately five years during the interim relocation.

Table 4-21. DNL Increases at JBSA-Lackland (Kelly Field) Points of Interest (Limited Operations)

Point of Interest	Description	Existing/No-Action DNL	Alternative 2 DNL	Mitigated Alternative 2 DNL	DNL Net Increase from No-Action
ELE1	Winston Elementary School	64	66	65	1
ELE2	Athens Elementary School	61	66	64	3
ELE3	Price Elementary School	62	65	64	2
ELE4	H. B. Gonzalez Elementary School	63	66	65	2
ELE5	Miguel Carrillo Jr. Elementary School	65	68	67	2
MID	Dwight Middle School	62	67	65	3
CH1	San Antonio Bynum Seventh-Day Adventist Church	68	71	69	1
CH2	Browning United Methodist Church	65	68	67	2
CH3	Saint Mark Independent Methodist Church	63	66	65	2
CH4	Centro Cristiano Nueva Vida	63	67	66	3
CH5	First Baptist Church	61	65	63	2
CH6	Iglesia Bautista Monte de la Olivas	63	68	66	3
CH7	Iglesia El Calvario	62	66	64	2
CH8	Kingdom Hall of Jehovah's Witnesses	63	66	65	2
CH9	South San Antonio Baptist Church	62	67	65	3
CH10	Templo Amor y Gracia	64	68	66	2

DNL = day-night average sound level
JBSA = Joint Base San Antonio

Mitigation Summary. The limited operations mitigation reduces the number of operations outlined under Alternative 2 from 60,654 to 40,436; this represents operating approximately 24 aircraft according to the F-16 FTU syllabus schedule. In comparison to Alternative 2 noise contours, the off-installation land area and population exposed to 65+ dBA would be reduced by 996 acres and 3,784 residents, respectively. On-installation land area and population exposed to 65+ dBA would be reduced by 332 acres and 24 residents, respectively. The estimated on- and off-installation land area and residents exposed to 65+ dBA under the limited operations mitigation include:

- 2,966 acres on-installation exposed to 65+ dBA
- 63 on-installation residents exposed to 65+ dBA
- 2,738 acres off-installation exposed to 65+ dBA
- 9,150 off-installation residents exposed to 65+ dBA.

Compared to Alternative 2, the limited operations mitigation would reduce the DNL at identified POIs by 1 to 2 dBA DNL, resulting in the POIs likely experiencing a 1 to 3 dBA DNL increase (a 3 dBA increase is considered barely noticeable). The percent of the population experiencing high annoyance under the limited operations mitigation would be cut by roughly half compared to Alternative 2. Based on these reductions, it is anticipated that implementing the limited operations mitigation would likely result in less than significant noise impacts that would last for approximately five years during the interim relocation.

4.3.3 No-Action Alternative

Under the No-Action Alternative, the interim relocation of two F-16 squadrons to Holloman AFB or JBSA-Lackland (Kelly Field) would not occur. No construction activities would occur and no increase in operational activities would occur; therefore, noise conditions would remain the same as under the existing (2017) conditions described in Section 3.3.3, resulting in no significant noise impacts at Holloman AFB or JBSA-Lackland (Kelly Field). At Hill AFB, operations of the two F-16 squadrons would cease, reducing the overall noise impacts on the airfield and in the airspaces used for F-16 operations. Due to the ramp up of F-35 operations at Hill AFB, and because F-35s are much louder than F-16s, reductions in noise impacts are not expected to be significant.

4.3.3.1 Mitigation Measures

No mitigation measures would be required.

4.4 BIOLOGICAL RESOURCES

This section presents the potential effects of the two action alternatives and the No-Action Alternative on biological resources (e.g., vegetation, wildlife, threatened and endangered species, and sensitive habitats) within the ROI. Biological resources were evaluated in terms of compliance with Section 7 of the federal Endangered Species Act (ESA) and related laws and authorities. The assessment of potential impacts focused on the proposed location of the facilities and the existing habitat in these areas. Biological resources might be affected directly by ground disturbance or indirectly through such changes as increased noise. Impact significance on biological resources was assessed by evaluating:

- Potential for loss or alteration of suitable habitat and the proximity of similar habitat
- Proportion of the resource that would be affected relative to its occurrence in the region
- Sensitivity of the resource to proposed activities
- Duration of ecological impacts.

4.4.1 Alternative 1 – Holloman AFB

4.4.1.1 Renovation Activity Impacts

Vegetation. Under Alternative 1, no construction or ground-disturbing activities would occur. This alternative would involve only interior renovations, restriping of the existing apron, installation of anchor points into the concrete apron, and construction of aircraft sun shades on the apron. Proposed activities would occur within developed areas that are currently used for similar activities. Therefore, no significant impacts to vegetation are anticipated.

Wildlife. Under Alternative 1, no construction or ground-disturbing activities would occur; building interiors would be renovated, the existing apron would be restriped, anchor points would be installed into the concrete apron, and aircraft sun shades would be constructed on the apron. Proposed activities would occur within developed areas that are currently used for similar activities. Therefore, no significant impacts to wildlife are anticipated.

Species protected under the MBTA and the Bald and Golden Eagle Protection Act have the potential to occur within the ROI. Because only interior renovations and work on the existing apron would occur, impacts to these species are not anticipated. However, if determined necessary, conservation measures focusing on avoidance and minimization of adverse impacts to breeding, wintering, and migratory birds would be implemented during project activities. Bird species protected under the MBTA and the Bald and Golden Eagle Protection Act would be avoided to the maximum extent possible.

Threatened and Endangered Species. The Air Force initiated informal consultation procedures, as advised under Section 7 of the federal ESA, to address potential impacts to federally protected species that may occur within the ROI (see Appendix A). No federally threatened and endangered species are known to occur within the ROI. Under Alternative 1, no construction or ground-disturbing activities would occur; only interior renovations and work on the existing apron would occur. Proposed activities would occur within developed areas that are currently used for similar activities. Therefore, no significant impacts to threatened and endangered species are anticipated.

Sensitive Habitats. Proposed activities would occur away from sensitive habitats on Holloman AFB within developed areas that are currently used for similar activities. Therefore, no significant impacts to sensitive habitats are anticipated.

4.4.1.2 Operational Activity Impacts

Vegetation. Because the F-16 aircraft would use existing runways, taxiways, and apron space on Holloman AFB, no significant impacts on vegetation are anticipated.

Wildlife. Wildlife species that occur on and near Holloman AFB exist in a military airfield environment that includes regular takeoffs, landings, and low-level overflights by military aircraft as well as other human activities. The noise levels associated with the F-16 vary considerably according to the actual flight profile, distance from receptor, altitude, and local conditions. Wildlife species on and near Holloman AFB have been exposed to military aircraft noise for several decades; therefore, continuation of military aircraft noise is not anticipated to result in significant impacts to wildlife or habitat.

Threatened and Endangered Species. No federally threatened and endangered species are known to occur within the ROI. No significant impacts to threatened and endangered species are anticipated due to

the qualitatively similar nature of F-16 operations to the existing airfield environment and local species' habituation to these operations.

Sensitive Habitats. Because the F-16 aircraft would use existing runways, taxiways, and apron space on Holloman AFB, no significant impacts to sensitive habitats are anticipated.

4.4.1.3 Mitigation Measures

No mitigation measures would be required.

4.4.2 Alternative 2 – JBSA-Lackland (Kelly Field)

4.4.2.1 Renovation Activity Impacts

Vegetation. Under Alternative 2, no significant construction and limited ground-disturbing activities would occur; building interiors would be renovated, striping and aircraft sun shade installation would take place on the apron, and approximately 4,500 lf of security fencing would be installed from Facility 1470 to Facility 1614, replacing portions of the existing security fence in the area. Proposed activities would occur within developed areas that are currently used for similar activities; therefore, no significant impacts to vegetation are anticipated.

Wildlife. Under Alternative 2, proposed activities would occur within developed areas that are currently used for similar activities; therefore, no significant impacts to wildlife are anticipated.

Species protected under the MBTA and the Bald and Golden Eagle Protection Act have the potential to occur within the ROI. Because only interior renovations, work on the concrete apron, and security fence installation would occur, impacts to these species are not anticipated. However, if determined necessary, conservation measures focusing on avoidance and minimization of adverse impacts to breeding, wintering, and migratory birds would be implemented during project activities. Bird species protected under the MBTA and the Bald and Golden Eagle Protection Act would be avoided to the maximum extent possible.

Threatened and Endangered Species. The Air Force initiated informal consultation procedures, as advised under Section 7 of the federal Endangered Species Act, to address potential impacts to federally protected species that may occur within the ROI (see Appendix A). No federally threatened and endangered species are known to occur within the ROI. Under Alternative 2, proposed activities would occur within developed areas that are currently used for similar activities; therefore, no significant impacts to threatened and endangered species are anticipated.

The increase in 875 personnel to support the two squadrons is estimated to increase water usage by 43.8 acre-feet per year. Currently JBSA withdraws approximately 4,840 acre-feet of water per year from the Edwards Aquifer. The increase in water usage would cause JBSA to pump approximately 4,884 acre-feet of water, which is well within the allowable pumping limit of 12,012 acre-feet per year from the Edwards Aquifer specified in the Biological Opinion (USFWS, 2013 pg. 2-3). As a result, species dependent on water within the Edwards Aquifer (i.e., Texas wild-rice, Peck's Cave amphipod, Comal Springs dryopid beetle, San Marcos gambusia, fountain darter, San Marcos salamander, and Texas blind salamander) are not anticipated to be impacted from the increase in personnel associated with JBSA-Lackland (Kelly Field).

Sensitive Habitats. Under Alternative 2, proposed activities would occur away from wetlands on JBSA-Lackland within developed areas that are currently used for similar activities. Therefore, no significant impacts to sensitive habitats are anticipated.

4.4.2.2 Operational Activity Impacts

Vegetation. Because the F-16 aircraft would use existing runways, taxiways, and apron space on JBSA-Lackland (Kelly Field), no significant impacts on vegetation are anticipated.

Wildlife. Wildlife species that occur on and near JBSA-Lackland (Kelly Field) exist in a military airfield environment that includes regular takeoffs, landings, and low-level overflights by military aircraft as well as other human activities. The noise levels associated with the F-16 vary considerably according to the actual flight profile, distance from receptor, altitude, and local conditions. Wildlife species in and near JBSA-Lackland (Kelly Field) have been exposed to high performance military aircraft noise for several decades; therefore, continuation of military aircraft noise is not anticipated to result in significant impacts to wildlife or habitat.

Threatened and Endangered Species. No federally threatened and endangered species are known to occur within the ROI. No significant impacts to threatened and endangered species are anticipated due to the qualitatively similar nature of F-16 operations to the existing airfield environment and local species' habituation to these operations.

Sensitive Habitats. Because the F-16 aircraft would use existing runways, taxiways, and apron space on JBSA-Lackland (Kelly Field), no significant impacts to sensitive habitats are anticipated.

4.4.2.3 Mitigation Measures

No mitigation measures would be required.

4.4.3 No-Action Alternative

Under the No-Action Alternative, the interim relocation of two F-16 squadrons to Holloman AFB or JBSA-Lackland (Kelly Field) would not occur. No renovations or construction activities would occur and no increase in operational activities would occur; therefore, no significant impacts to biological resources would be anticipated at Holloman AFB or JBSA Lackland (Kelly Field). At Hill AFB, cessation of F-16 activities and storage of the aircraft would not be expected to have any impact on biological resources.

4.4.3.1 Mitigation Measures

No mitigation measures would be required.

4.5 CULTURAL RESOURCES

This section presents the potential effects of the two action alternatives and the No-Action Alternative on cultural resources (e.g., prehistoric and historic archaeological resources; historic buildings, structures, and objects; and traditional cultural resources) within the APE.

The potential for significant impacts to cultural resources were assessed by (1) reviewing the potential indirect and direct effects the Proposed Action could have on the 30 facilities at Holloman AFB and 30

facilities and JBSA-Lackland (Kelly Field) that would support the F-16 FTU mission, and (2) identifying the nature and significance of cultural resources within the APE.

4.5.1 Alternative 1 – Holloman AFB

4.5.1.1 Prehistoric and Historic Archaeological Resources

A review of the NMCRIS and Holloman AFB records was conducted in December 2016 to determine whether Alternative 1 has the potential to affect prehistoric or historic archaeological sites at Holloman AFB. Of the 262 archaeological sites previously identified at Holloman AFB, none are within 500 feet of facilities that would support the F-16 FTU mission. No ground disturbance is anticipated for the F-16 parking apron as the existing apron would be re-striped and anchor points installed into the concrete apron with aircraft sun shades constructed on the apron. The proposed interior renovation activities are not anticipated to result in ground-disturbance.

In the event that archaeological resources are encountered during renovation activities, the contractor would suspend work in the immediate area, protect the site in place, and report the discovery to the Holloman AFB Cultural Resources Manager to determine if additional investigation is required. In the event that further investigation is required, any data recovery would be performed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 *Federal Register* [FR] 44734–44737) and take into account the ACHP's publication, *Treatment of Archaeological Properties*. Due to the developed nature of the property and findings of previous surveys on Holloman AFB and surrounding areas, no significant impacts to archaeological resources are anticipated.

4.5.1.2 Historic Buildings, Structures, and Objects

A review of the NMCRIS and Holloman AFB records was conducted in December 2016 to determine whether Alternative 1 has the potential to affect historic buildings, structures, and objects that meet the criteria for historic properties at Holloman AFB. Of the 30 facilities within the APE, Facilities 809, 811, and 839 are 50 years old or older; however, these facilities were previously determined to be not eligible for listing in the NRHP. Therefore, based on the findings of the December 2016 review, no significant impacts to historic buildings, structures, and objects are anticipated.

F-16 FTU training activities would operate in the same airspace and conduct similar missions as currently conducted by the 49 WG. Operations would continue to occur during the environmental daytime hours between 7 am and 10 pm. Noise levels for subsonic activity related to the interim relocation would increase compared to current conditions. A very small portion of the northeast corner of the White Sands National Monument falls within the 65-70 dBA DNL noise contour (see Figure 4-1). The National Monument Historic District (including the Visitor Center) is located over 5 miles from Holloman AFB in an area that would experience noise levels well below 65 dBA. Because the Visitor Center would experience no change in subsonic noise levels, F-16 operations are not anticipated to result in significant impacts to visitors or structures at White Sands National Monument, as well as other archeological, traditional, or historic architectural resources within the APE.

Supersonic booms would continue to occur within the same areas and are anticipated to double from current conditions. As is currently the case, a large portion of the APE would have no supersonic activity. Although there would be approximately double the number of supersonic operations, there would be no changes to the location and operation of areas where supersonic flights occur. Therefore, no significant impacts to adobe structures or hearth mounds are anticipated from implementation of Alternative 1.

4.5.1.3 Traditional Cultural Resources

The Air Force has conducted consultations with representatives of Native American groups as required under the NHPA. The purpose of these consultations was to determine AIRFA-related concerns such as access to sites of past cultural activity, landforms, and components of the natural environment that may occur on Holloman AFB and are important to traditional religious practices of Native American groups. The Native American groups consulted include the Mescalero Tribe and the Fort Sill Apache Tribe. Based on consultation with representatives of Native American groups, no traditional cultural resources, sacred areas, or traditional use areas have been identified within the area of Alternative 1; therefore, no significant impacts are anticipated.

4.5.1.4 Mitigation Measures

Because established Holloman AFB Standard Operating Procedures for the protection and treatment of cultural resources would be implemented during renovation and operational activities, no mitigation measures would be required.

4.5.2 Alternative 2 – JBSA-Lackland (Kelly Field)

4.5.2.1 Prehistoric and Historic Archaeological Resources

A review of the TASA and JBSA-Lackland records was conducted in December 2016 to determine whether Alternative 2 has the potential to affect prehistoric or historic archaeological sites. Of the 76 archaeological sites previously identified at JBSA-Lackland, none are within 100 feet of facilities that would support the F-16 FTU mission.

In the event that archaeological resources are encountered during renovation activities, the contractor would suspend work in the immediate area, protect the site in place, and report the discovery to the JBSA-Lackland Cultural Resources Manager to determine if additional investigation is required. In the event that further investigation is required, any data recovery would be performed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37) and take into account the ACHP's publication, *Treatment of Archaeological Properties*. Due to the developed nature of the property and findings of previous surveys on JBSA-Lackland (Kelly Field) and surrounding areas, no significant impacts to archaeological resources are anticipated.

4.5.2.2 Historic Buildings, Structures, and Objects

A review of the TASA and JBSA-Lackland records was conducted in December 2016 to determine whether Alternative 2 has the potential to affect historic buildings, structures, and objects that meet the criteria for historic properties. Of the 30 facilities within the APE, Facilities 935, 956, 957, 958, 1155, 1470, 1530, 1600, 1610, 1612, 1614, and 1618 are 50 years old or older and the construction date of Facility 1502 is unknown. The proposed renovations of historic facilities, with the exception of Facility 1610, are exempted by the Programmatic Agreement (PA) among the Air Force and the Texas SHPO. However, based on Section 106 consultation with the Texas SHPO, Building 1610 is considered to be covered by the existing PA. The Air Force has recommended additional coordination be conducted when schematics/plans for the proposed renovations become available as well as if any exterior renovations are required. Any proposed renovation of the eligible structures would be conducted in accordance with the PA; therefore, significant impacts to historic buildings, structures, and objects are not anticipated.

4.5.2.3 Traditional Cultural Resources

The Air Force has conducted consultations with representatives of Native American groups as required under the NHPA. The purpose of these consultations was to determine AIRFA-related concerns such as access to sites of past cultural activity, landforms, and components of the natural environment that may occur on JBSA-Lackland (Kelly Field) and are important to traditional religious practices of Native American groups. The Native American groups consulted include the Mescalero Apache Tribe, the Tonkawa Tribe, the Comanche Tribe, and the Wichita and Affiliated Tribes. Based on consultation with representatives of Native American groups, no traditional cultural resources, sacred areas, or traditional use areas have been identified within the area of Alternative 2; therefore, no significant impacts are anticipated.

4.5.2.4 Mitigation Measures

Because established standard operating procedures for the protection and treatment of cultural resources, as outlined in the JBSA Integrated Cultural Resources Management Plan (JBSA, 2014a), would be implemented during renovation and operational activities, no mitigation measures would be required.

4.5.3 No-Action Alternative

Under the No-Action Alternative, the interim relocation of two F-16 squadrons to Holloman AFB or JBSA-Lackland (Kelly Field) would not occur. No renovations or construction activities would occur and no increase in operational activities would occur; therefore, no significant impacts to cultural resources would be anticipated at Holloman AFB or JBSA-Lackland (Kelly Field). At Hill AFB, cessation of F-16 activities and storage of the aircraft would not be expected to have any impact on cultural resources.

4.5.3.1 Mitigation Measures

No mitigation measures would be required.

4.6 AIRSPACE MANAGEMENT AND AIR TRAFFIC CONTROL

Coordinated scheduling, real-time accommodations for operational necessities, and consistent cross-functional communication between installation mission partners are essential to enabling and sustaining readiness and training requirements. Neither installation manages and schedules all the airspace required for F-16 IQT syllabus accomplishment. Holloman AFB aircraft operations in particular require ongoing efforts to optimize access to and use of surrounding airspace and ranges in conjunction with other military activities, particularly DoD Test and Evaluation missions which are an airspace scheduling and utilization priority in WSMR airspace. JBSA-Lackland (Kelly Field) requires considerable airspace that is managed, scheduled, and prioritized by installations tasked with training requirements beyond F-16 IQT syllabus accomplishment.

As discussed in Section 3.6.2, previous EIAP analyses have evaluated airspace at both installations for F-16 training operations. The New Mexico Training Range Initiative (NMTRI) Environmental Impact Statement (EIS) (Cannon AFB, 2006) assessed New Mexico airspace for F-16 training and the Pecos MOA complex was expanded east, west, and south to conform with the overlying Sumner Air Traffic Control Assigned Airspace (ATCAA) based on the Record of Decision (ROD). This EIS evaluated F-16 training operations and requirements for the 27 FW (Cannon AFB) and the New Mexico ANG, sorties that are not flown in 2017 due to installation realignments and mission changes. The airspace evaluated for NMTRI sorties, however, does support F-16 FTU operations and is available to meet flying requirements should 45 F-16 aircraft relocate from Hill AFB to Holloman AFB. The scope of the JBSA-Lackland (Kelly

Field) airspace analysis (Texas ANG, 1999) did not contain the level of detail as did Holloman AFB, 2011a, and Cannon AFB, 2006.

The F-16 IQT syllabus tasks described in Section 3.6.2 are programmed to be completed in 164 training days based on a class size of 16 students. Each additional student assigned to a class increases the sortie completion timeline by 8-days. Syllabus flying is broken down by phase and flying hours:

- Transition to the F-16 (TR): 14 hours, 16 sorties (student plus supporting formation aircraft)
- Advanced Handling (AH): 11 hours, 20 sorties (student plus supporting formation aircraft)
- Air-to-Air (A-A): 15 hours, 21 sorties (student plus supporting formation aircraft)
- Air-to-Surface (A-S): 32 hours, 49 sorties (student plus supporting formation aircraft)

There is a 7 percent re-fly rate built in syllabus completion per the F-16 syllabus.

The estimated number of sorties at either installation could increase annually by 9,480. The flight altitudes required to accomplish all syllabus phases currently – and to meet the purpose and need of this Environmental Assessment – are:

- Altitude range – 30,000 MSL and above; Projected number of flight hours – 2 percent
- Altitude range – 18,000 to 30,000 MSL; Projected number of flight hours – 30 percent
- Altitude range – 10,000 to 18,000 AGL; Projected number of flight hours – 30 percent
- Altitude range – 5,000 to 10,000 AGL; Projected number of flight hours – 15 percent
- Below 5,000 AGL; Projected number of flight hours – 23 percent

Tables 4-22 and 4-23 display the Special Use Airspaces and Military Training Routes that are available to support the various phases of syllabus accomplishment for Holloman AFB and JBSA-Lackland (Kelly Field), respectively.

4.6.1 Alternative 1 - Holloman AFB

The proposed relocation of 45 aircraft would result in an increase of approximately 137 daily sorties at Holloman AFB (90 percent increase) as compared to current conditions (123 per flying day). Operations would be distributed across available airspace based on availability and ability to meet syllabus requirements (Table 4-22). Per the NMTRI EIS (Cannon AFB, 2006), Holloman AFB has access to the additional airspace required to meet increased F-16 training requirements, and underutilized airspace can support the additional required training time.

There would be more frequent use of currently utilized airspace, i.e., there would be more operations using the same volume of airspace and same time periods currently available for use. Significant impacts to the environment are not anticipated based on the analysis of resources discussed in this EA. Airspace operational capacity is anticipated to increase through ongoing optimization efforts.

Table 4-22. Special Use Airspace and Military Training Routes Available to F-16 Aircraft at Holloman AFB to Support Two Additional Squadrons

Airspace	Scheduled By	Current Number of Annual Operations	Additional F-16 Syllabus Support
Beak A, B, C	Holloman AFB	3,637	TR, AH, A-A
Bronco 1	Cannon AFB	9	TR, AH, A-A
Bronco 2	Cannon AFB	0	TR, AH, A-A
Bronco 3, 4	Cannon AFB	19	TR, AH, A-A
Cato	Kirtland AFB	1	TR, AH
Pecos South	Cannon AFB	1,140	TR, AH, A-A, A-S
Pecos North Low	Cannon AFB	1,259	TR, AH, A-A, A-S
Pecos North High	Cannon AFB	903	TR, AH, A-A
Smitty	Kirtland AFB	15	TR, AH, A-A, A-S
Talon High East, West	Holloman AFB	3,326	TR, AH, A-A
Talon Low	Holloman AFB	1,771	TR, AH, A-A, A-S
Valentine	Holloman AFB	1	TR, AH, A-A
R-5103 A	Army Fort Bliss	65	A-A, A-S
R-5103 B, C	Army Fort Bliss	5,090	TR, AH, A-A, A-S
R-5107 A	Army Fort Bliss	2,399	TR, AH, A-A, A-S
R-5107 B	WSMR	8,792	TR, AH, A-A, A-S
R-5107 C	WSMR	6,337	TR, AH, A-A, A-S
R-5107 D	WSMR	187	TR, AH, A-A
R-5107 E	WSMR	5,762	TR, AH, A-A, A-S
R-5107 H	WSMR	6,333	TR, AH, A-S
R-5107 J	WSMR	6,325	TR, AH, A-S
R-5107 K	Army Fort Bliss	2,399	TR, AH, A-A, A-S
R-5111 A	WSMR	5,978	TR, AH, A-A
R-5111 B	WSMR	5,856	TR, AH, A-A, A-S
R-5111 C	WSMR	229	TR, AH, A-A
R-5111 D	WSMR	161	TR, AH, A-A, A-S
VR-176	Holloman AFB	212	TR, AH
IR-133	Holloman AFB	330	TR, AH
IR-134	Holloman AFB	21	TR, AH
IR-142	Holloman AFB	0	TR, AH
IR-192	Holloman AFB	97	TR, AH
IR-194	Holloman AFB	81	TR, AH
IR-195	Holloman AFB	29	TR, AH
AR121	Holloman AFB	0	TR
AR310	Holloman AFB	82	TR
AR644	Holloman AFB	439	TR

Sources: DoD, 2016 and 2017. Current Number of Annual Operations were provided through a Center Scheduling Enterprise (CSE) query or installation airspace managers. CSE is the Air Force wide web-based tool for the scheduling, management, and recording the utilization of airspace and ranges.

A-A = Air-to-Air
AFB = Air Force Base
AH = Advanced Handling
AR = Air Refueling Route
A-S = Air-to-Surface
FL = Flight Level
IR = Instrument Route
TR = Transition
VR = Visual Route
WSMR = White Sands Missile Range

Mitigation Measures. No mitigation measures to reduce significant environmental impacts to airspace would be required to support the interim relocation of additional F-16 FTU operations to Holloman AFB. An airspace utilization and optimization analysis could be conducted to assist operational planners and schedulers in making the best use of airspace and range capacity in accordance with existing restrictions and limits.

4.6.2 Alternative 2 - JBSA-Lackland (Kelly Field)

The proposed relocation of 45 aircraft would result in an increase of approximately 110 daily operations at JBSA-Lackland (Kelly Field), a 200 percent increase as compared to current conditions (55 per flying day). Operations would be distributed across available airspace based on availability and ability to meet syllabus requirements (Table 4-23). Analysis suggests there is adequate airspace across the region to support the additional operations required by relocating two F-16 squadrons to JBSA-Lackland (Kelly Field). Airspace, air-to-ground range availability and scheduling limitations may result in operational and student FTU syllabus production limitation. F-16 IQT training is currently performed within the airspace available and utilized by JBSA-Lackland; however, thorough EIAP documentation analyzing regional airspace utilization is lacking and additional data collection, interpretation, and analysis should be undertaken to confirm this determination.

There would be more frequent use of currently utilized airspace, i.e., there would be more operations using the same volume of airspace and same time periods currently available for use. Significant impacts to the environment are not anticipated based on the analysis of resources discussed in this EA. Airspace operational capacity is anticipated to increase through ongoing optimization efforts.

Mitigation Measures. No mitigation measures to reduce significant environmental impacts to airspace would be required to support the interim relocation of additional F-16 FTU operations JBSA-Lackland (Kelly Field). An airspace utilization and optimization analysis could be conducted to assist operational planners and schedulers in making the best use of airspace and range capacity in accordance with existing restrictions and limits.

4.6.3 No-Action Alternative

Under the No-Action Alternative, the interim relocation of two F 16 FTU squadrons to Holloman AFB or JBSA-Lackland (Kelly Field) would not occur. Existing F 16 aircraft at Holloman AFB and JBSA-Lackland (Kelly Field) would continue to operate and train in the airspace as under current conditions. Therefore, no significant environmental or mission impacts to airspace management and air traffic control would be anticipated at Holloman AFB or JBSA-Lackland (Kelly Field).

The No-Action Alternative would result in mission impact at Hill AFB as no additional F-16 pilot training could occur if the aircraft remain at Hill AFB; however, no environmental impacts to the airspace would be expected.

Mitigation Measures. No environmental impact mitigation measures would be required.

Table 4-23. Special Use Airspace and Military Training Routes Available to F-16 Aircraft at JBSA-Lackland (Kelly Field) to Support Two Additional Squadrons

Airspace	Scheduled By	Current Number of Annual Operations	Additional F-16 Syllabus Support
Brady High	NAS Fort Worth JRB	980	TR, AH, A-A, A-S
Brady Low	NAS Fort Worth JRB	982	TR, AH, A-S
Crystal	149 FW Kelly	3,494	TR, AH, A-A, A-S
Crystal North	149 FW Kelly	3,494	TR, AH, A-A, A-S
Laughlin 1	Laughlin AFB	9,237	TR, AH, A-A
Laughlin 2	Laughlin AFB	19,983	TR, AH, A-A, A-S
Laughlin 3 Low	Laughlin AFB	1,319	TR, AH, A-A, A-S
Laughlin 3 High	Laughlin AFB	1,319	TR, AH, A-A, A-S
Randolph 1A	Randolph AFB	No CSE Data	TR, AH, A-A, A-S
Randolph 1B	Randolph AFB	No CSE Data	TR, AH, A-A, A-S
Randolph 2A	Randolph AFB	No CSE Data	TR, AH, A-A
Randolph 2B	Randolph AFB	No CSE Data	TR, AH, A-A
Kingsville 1	NAS Kingsville	No CSE Data	TR, AH, A-A, A-S
Kingsville 2	NAS Kingsville	No CSE Data	TR, AH, A-A
Kingsville 3	NAS Kingsville	No CSE Data	TR, AH, A-A, A-S
Kingsville 4	NAS Kingsville	No CSE Data	TR, AH, A-A, A-S
Kingsville 5	Randolph AFB	No CSE Data	TR, AH, A-A, A-S
Brownwood 1	NAS Fort Worth JRB	810	TR, AH, A-A, A-S
Brownwood 2	NAS Fort Worth JRB	810	TR, AH, A-A, A-S
Brownwood 3, 4	NAS Fort Worth JRB	808	TR, AH, A-A
Hood	Army Fort Hood	268	TR, AH, A-A, A-S
Hood High	Army Fort Hood	86	TR, AH, A-A
Texon	Randolph AFB	No CSE Data	TR, AH, A-A, A-S
R-6302 A	Army Fort Hood	No CSE Data	TR, AH, A-A, A-S
R-6302 B	Army Fort Hood	No CSE Data	TR, AH, A-A, A-S
R-6302 C, D	Army Fort Hood	No CSE Data	TR, AH, A-A, A-S
R-6312	NAS Kingsville	1,067	TR, AH, A-A, A-S
W-147 C, D	Ellington JRB	No CSE Data	TR, AH, A-A, A-S
W-228	NAS Corpus Christi	1,799	TR, AH, A-A, A-S
VR-156	149 FW Kelly	No CSE Data	TR, AH
VR-1105	149 FW Kelly	No CSE Data	TR, AH
VR-1106	149 FW Kelly	No CSE Data	TR, AH
VR-1120	149 FW Kelly	No CSE Data	TR, AH
VR-1121	149 FW Kelly	No CSE Data	TR, AH
VR-1122	149 FW Kelly	No CSE Data	TR, AH
VR-1123	149 FW Kelly	No CSE Data	TR, AH
AR614	Randolph AFB	No CSE Data	TR

Sources: DoD, 2016 and 2017. Current Number of Annual Operations were provided through a Center Scheduling Enterprise (CSE) query or installation airspace managers. CSE is the Air Force wide web-based tool for the scheduling, management, and recording the utilization of airspace and ranges.

A-A = Air-to-Air
AFB = Air Force Base
AH = Advanced Handling
AR = Air Refueling Route
A-S = Air-to-Surface
JRB = Joint Reserve Base
NAS = Naval Air Station
TR = Transition
VR = Visual Route

4.7 COMPATIBILITY OF THE PROPOSED ACTION WITH OBJECTIVES OF FEDERAL, STATE, REGIONAL, AND LOCAL LAND USE PLANS AND POLICIES

The Proposed Action and alternatives promote the Air Force's intention to cooperate with communities and other federal agencies, whenever possible, during implementation of federal actions. The Proposed Action and alternatives would not adversely affect federal, state, regional, or local land use plans and policies and are compatible with adjacent land uses.

4.8 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

The Proposed Action and alternatives would not affect the long-term productivity of the environment because no significant environmental impacts are anticipated, provided that the best management practices identified in this EA are implemented.

4.9 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the impacts that using these resources have on future generations. Irreversible effects result primarily from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored due to the action.

For the proposed interim relocation of two F-16 squadrons to Holloman AFB or JBSA-Lackland (Kelly Field), most resource commitments are neither irreversible nor irretrievable. Most impacts would be short term and temporary, such as air pollutant emissions from building renovation activities. Increases in sonic booms would be negligible and the duration of individual booms would be extremely brief. Renovation of base facilities would require the consumption of limited amounts of material typically associated with interior renovations (e.g., wiring, windows, and drywall) and exterior construction (e.g., concrete, steel, sand, and brick). An unknown amount of energy to conduct facility renovation and operation activities would be expended and irreversibly lost.

Training operations would continue and would involve consuming nonrenewable resources such as gasoline used in vehicles and jet fuel used in aircraft. These activities would not be expected to reduce the availability of minerals or petroleum resources. Use of personal vehicles by personnel supporting the F-16 FTU missions would consume fuel, oil, and lubricants. The amount of these materials used would increase slightly; however, this additional use is not expected to affect the availability of the resources significantly.

4.10 CUMULATIVE ENVIRONMENTAL CONSEQUENCES

The CEQ regulations stipulate that the cumulative effects analysis should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person (federal or non-federal) undertakes such other actions" (40 CFR 1508.7). In this section, an effort has been made to identify past and present actions on or in the vicinity of Holloman AFB and JBSA-Lackland (Kelly Field) and those reasonably foreseeable actions that are in the planning phase or unfolding at this time. Actions that have a potential to interact with the Proposed Action at each installation are included in this

cumulative analysis. This approach enables decision makers to have the most currently available information to evaluate the environmental consequences of the relocation of two squadrons of F-16 aircraft to Holloman AFB or JBSA-Lackland (Kelly Field).

4.10.1 Present and Reasonably Foreseeable Actions

A review of future developments identified the following current or future actions at Holloman AFB and JBSA-Lackland (Kelly Field) that could contribute to cumulative impacts.

4.10.1.1 Current and Future Projects at Holloman AFB

Several small-scale renovation projects have been identified for Holloman AFB that are programmed to occur between 2017 and 2018. The projects involve primarily upgrading fire suppression systems, repairing/upgrading heating and air conditioning systems, restriping pavement, and renovating building interiors. Because these renovation/repair projects are small in scale, they are not anticipated to contribute to cumulative impacts when combined with the Proposed Action.

In an effort to increase flexibility of airspace use for F-16 FTU and other missions, the Air Force is preparing environmental documentation to expand an existing MOA, create a new MOA, and/or restructure regional airspace to support current and future missions at Holloman AFB. These efforts are in early stages; however, the interim F-16 FTU mission would take advantage of any airspace expansions or optimizations completed during the interim beddown period.

The GAF Flying Training Center (FTC), which operates 14 Tornado aircraft from Holloman AFB, will terminate its contract to train its pilots at the installation and is scheduled to depart Holloman AFB by 2019. Approximately 600 German personnel are associated with the GAF FTC that would return to Germany.

The Air Force recently completed an EA addressing Air Force fighter aircraft with inert training munitions that would operate out of Biggs Army Air Field (AAF) at Fort Bliss to support joint training exercises. Approximately 480 sorties would occur during up to six joint training exercises annually (U.S. Air Force, 2014).

4.10.1.2 Current and Future Projects at JBSA-Lackland (Kelly Field)

The following current or future major construction and maintenance actions at JBSA-Lackland (Kelly Field) have been identified that could contribute to cumulative impacts:

- Construct Conventional Munitions Storage in FY 2017
- Repair Hush House Access in FY 2017
- Maintain and Repair Taxiway G in FY 2017
- Construct Firefighter Training Facility in FY 2018
- Construct Non-Destructive Inspection Shop in FY 2019
- Construct Air Traffic Control Tower in FY 2019
- Medical Facility in FY 2021
- Repair Airfield Aprons in FY 2023
- Construct Corrosion Control Facility in FY 2024

Additionally, several renovation projects have also been identified for JBSA-Lackland (Kelly Field), programmed to occur between 2017 and 2018, primarily involving upgrading fire suppression systems,

repairing/upgrading heating and air conditioning systems, installing mooring points and restriping pavement, and renovating building interiors. Because these renovation/repair projects are small in scale, they are not anticipated to contribute to cumulative impacts when combined with the Proposed Action.

Table 4-24 summarizes present and reasonably foreseeable actions within the region that could interact with the current proposal at Holloman AFB or JBSA-Lackland (Kelly Field). Table 4-24 briefly describes each identified action and the time frame, and indicates which resources could interact with the Proposed Action.

Table 4-24. Present and Future Actions at Holloman AFB and JBSA-Lackland (Kelly Field) and the Associated Regions

Action	Time Frame	Description	Resource Interaction
Holloman AFB			
Environmental Impact Statement for Airspace Expansion	FY 2018	The Air Force proposes to reduce disruption to the FTU flying training schedule by establishing sufficient airspace to conduct multiple, simultaneous F-16 FTU missions when WSMR airspace is not available. Documentation is being prepared for expanding an existing MOA, creating a new MOA, and/or restructuring regional airspace to support current and future requirements.	Airspace Management, Safety, Air Quality, Noise, Biological Resources, Land Use
Environmental Assessment for Airspace Usage	FY 2018	The Air Force proposes to use R-5111 C/D airspace west of WSMR to support F-16 FTU mission requirements at Holloman AFB.	Airspace Management, Safety, Air Quality, Noise, Biological Resources, Land Use
German Air Force Departing Holloman AFB	2017-2019	The GAF FTC (approximately 600 personnel and associated aircraft) would depart Holloman AFB by 2019.	Airspace Management, Air Quality, Noise, Socioeconomics
Biggs Army Air Field Operations	2015	The Air Force would conduct approximately 480 annual sorties with inert training munitions from Biggs Army Air Field at Fort Bliss to support joint training exercises (approximately six times annually).	Airspace Management, Safety, Air Quality, Noise
JBSA-Lackland (Kelly Field)			
Construct Conventional Munitions Storage	FY 2017	This project adds to and alters the conventional munitions shops at Buildings 956 and 957. The approximately 16,100 sf addition would include a reinforced concrete foundation and floor slab with steel-framed masonry walls and standing seam metal roof and gutter system.	Safety, Soils and Geology, Water Resources, Noise, Air Quality, Biological Resources, Cultural Resources, Land Use, Socioeconomics
Repair Hush House Access	FY 2017	Approximately 38,000 sf of existing deteriorated access pavement to the hush house (Building 1147) is to be replaced with new concrete. Current pavement is failing resulting in FOD hazard.	Safety, Soils and Geology, Water Resources, Noise, Air Quality, Socioeconomics
Maintain and Repair Taxiway G	FY 2017	A 3-inch concrete overlay, covering approximately 338,000 sf, would be placed on Taxiway G; cracks would be sealed; and approximately 15 sf of Taxiway G pavement would be repaired. The current pavement patch along the centerline of the taxiway is failing, resulting in FOD hazards.	Safety, Soils and Geology, Water Resources, Noise, Air Quality, Socioeconomics

Table 4-24. Present and Future Actions at Holloman AFB and JBSA-Lackland (Kelly Field) and the Associated Regions

Action	Time Frame	Description	Resource Interaction
Construct Firefighter Training Facility	FY 2018	This project involves constructing a single-story, 4,200-sf firefighter classroom training and storage facility. The facility would have similar architectural features as the existing fire station (Building 1207) directly across the street from the proposed construction site. The facility would include space for training, briefing, testing, administration, equipment storage, and personnel lockers.	Safety, Soils and Geology, Water Resources, Noise, Air Quality, Biological Resources, Cultural Resources, Land Use, Socioeconomics
Construct Non-Destructive Inspection Shop	FY 2019	This project involves renovating Building 932 or constructing a 4,000-sf nondestructive inspection lab to inspect aircraft components. The facility would include a Joint Oil-Analysis Program lab, X-ray room, film developing room, tool crib, and administrative space.	Safety, Soils and Geology, Water Resources, Noise, Air Quality, Biological Resources, Cultural Resources, Land Use, Socioeconomics
Construct Air Traffic Control Tower	FY 2019	This project involves constructing a new 6,300-sf air traffic control tower to meet current Air Force requirements and provide an unimpeded view of the airfield. The current 4,650-sf control tower (Building 1160) would be demolished, as it is considered substandard, has severely deteriorated, and poses potential safety hazards.	Airspace Management, Safety, Soils and Geology, Water Resources, Noise, Air Quality, Biological Resources, Cultural Resources, Land Use, Socioeconomics
Addition and Alteration of Medical & Security Forces Facility	FY 2021	This project involves constructing a 2,000-sf addition to the medical and security forces facility (Building 930) to support existing mission requirements.	Safety, Hazardous Materials/Waste, Soils and Geology, Water Resources, Noise, Air Quality, Socioeconomics
Repair Airfield Aprons	FY 2023	Approximately 45,175 sy of existing deteriorated apron pavement would be replaced and approximately 3,777 sy of asphalt shoulder would be repaired. Current pavement is failing, resulting in FOD hazards.	Safety, Soils and Geology, Water Resources, Noise, Air Quality, Socioeconomics
Construct Corrosion Control Facility	FY 2024	This project involves converting the aircraft wash rack, Building 936 (12,200 sf), into a corrosion control facility. The corrosion control facility would provide an environmentally controlled area to wash aircraft, as well as space for corrosion treatment, corrosion repair, and limited paint removal/ repainting. The facility would also provide space for paint preparation and drying areas, abrasive blasting room(s), booth(s) for mixing and applying paint, tool storage, lockers, and administrative areas.	Safety, Hazardous Materials/Waste, Noise, Air Quality, Biological Resources, Socioeconomics

AFB = Air Force Base
FOD = Foreign Object Debris
FTU = Flying Training Unit
FY = fiscal year
GAF FTC = German Air Force Flying Training Center
JBSA = Joint Base San Antonio
MOA = Military Operating Area
sf = square feet
sy = square yards
WSMR = White Sands Missile Range

4.10.2 Cumulative Impacts

The following analysis considers how the impacts of the actions listed in Table 4-24 might affect, or be affected by, the Proposed Action at Holloman AFB or JBSA-Lackland (Kelly Field). The analysis considers whether such a relationship would result in potentially significant impacts not identified when the Proposed Action is considered alone. Table 4-25 summarizes the cumulative effects of these actions by resource.

Table 4-25. Cumulative Impacts of the Proposed Action

Resource	Alternative 1 (Holloman AFB)	Alternative 2 (JBSA-Lackland [Kelly Field])
Airspace Management	Optimization of legacy airspace would be beneficial because additional airspace capacity would be available to support the F-16 FTU missions. Air Force operations from Biggs AAF could create additional congestion for use of airspace as well as congestion at Biggs AAF, because it is an auxiliary landing field for Holloman AFB flights. However, because joint training exercises would be pre-coordinated for airspace and range use, no significant cumulative impacts are anticipated. With the GAF departing Holloman AFB, airspace availability would improve, resulting in a beneficial cumulative effect.	Proposed construction activities would not result in significant cumulative impacts related to airspace management. Constructing a new control tower would reduce potential airfield safety hazards and improve airspace management.
Safety	Risks of mishaps and bird strikes from operations in training airspace are low and manageable through adherence to existing procedures. Therefore, no significant cumulative safety impacts are anticipated from the use of new or expanded airspace, or joint training exercises from Biggs AAF.	Proposed construction activities would not result in significant cumulative safety impacts. The design and construction of new facilities would comply with the requirements set forth in UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*, as applicable. During construction activities, safety practices would be followed in accordance with relevant regulations established by the Air Force, OSHA, and other federal and state agencies. Construction sites would be fenced and accessible only by workers and other persons with a need to be there.
Air Quality	Because the proposed activities would occur in an air quality attainment area, emissions from air operations at Holloman AFB and Biggs AAF or in new or expanded airspace are not anticipated to result in significant cumulative air quality impacts. With the GAF departing Holloman AFB, the reduction in GAF aircraft operations would result in reduced emissions, a beneficial cumulative effect.	The increase in air pollutant emissions from short-term construction activities would require analysis; however, maintenance of the NAAQS is expected. Therefore, no significant cumulative impacts are anticipated.
Noise	Noise levels at Holloman AFB and Biggs AAF, and in areas underlying existing and new special use airspace, would increase during annual joint training exercises. However, subsonic and supersonic noise levels beneath the training airspace are anticipated to remain	Temporary construction noise impacts could occur. However, because construction noise would be temporary and would affect only areas close to the construction area at JBSA-Lackland (Kelly Field), no significant cumulative impacts are anticipated.

Table 4-25. Cumulative Impacts of the Proposed Action

Resource	Alternative 1 (Holloman AFB)	Alternative 2 (JBSA-Lackland [Kelly Field])
	below 65 dB DNL (U.S. Air Force, 2014 pg. 19; Holloman AFB, 2006 pg. 4-13). Therefore, no significant cumulative noise impacts are anticipated. With the GAF departing Holloman AFB, the reduction in GAF aircraft operations would likely result in an imperceptible reduction in noise levels.	
Biological Resources	Impacts on biological resources occurring under airspace could result from low-level overflights and associated noise, sonic booms, and bird-aircraft collisions. However, biological resources in the region are currently exposed to aircraft overflights, so no new types of impacts would be introduced into these areas. Therefore, no significant cumulative impacts on biological resources are anticipated.	Proposed construction activities would not affect listed species because none have been identified on base. Wildlife species occupying JBSA-Lackland (Kelly Field) are common and widespread in the region, and may be displaced during construction but would likely return after construction activities are completed. No sensitive habitat would be disturbed during construction activities. Therefore, no significant cumulative impacts on biological resources are anticipated.
Soils and Geology	Because no ground-disturbing projects have been identified, no significant cumulative impacts to soils and geology are likely.	Proposed construction activities are unlikely to affect regional or local geology. Potential impacts on soil would result primarily from ground disturbance for construction of new structures and pavements. Implementation of construction management practices and compliance with permits as appropriate would occur during construction activities; therefore, no significant cumulative impacts on soils and geology are anticipated.
Water Resources	Because no ground-disturbing projects have been identified, no significant cumulative impacts to water resources are likely.	Potential impacts on water resources would result primarily from ground disturbance for construction of new structures and pavements. Implementation of construction management practices and compliance with permits as appropriate would occur during construction activities; therefore, no significant cumulative impacts on water resources are anticipated.
Cultural Resources	Because no ground-disturbing projects have been identified, no significant cumulative effects to cultural resources are likely.	Coordination with the Texas SHPO would be completed for construction of the conventional munitions storage area, firefighter training facility, NDI laboratory, and air traffic control tower, and appropriate surveys would be conducted as needed for construction at specific buildings and areas. Therefore, no significant cumulative impacts on cultural resources are anticipated.
Land Use	Noise under designated airspace may cause occasional impacts on individual recreational experiences. However, because of the duration and hours of operation in the airspace, no significant cumulative impacts related to land use and aesthetics are anticipated.	Proposed construction projects would be compatible with existing land uses surrounding the project areas. The proposed projects would also be consistent with the IDP. Therefore, no significant land use impacts are anticipated.
Socioeconomics	The departure of 600 GAF personnel would result in housing vacancies locally and a reduction in regional spending. Incoming personnel associated with F-16 FTU missions	The use of local construction workers would produce increases in local sales volumes, payroll taxes, and purchases of goods and services, resulting in a beneficial increase in

Table 4-25. Cumulative Impacts of the Proposed Action

Resource	Alternative 1 (Holloman AFB)	Alternative 2 (JBSA-Lackland [Kelly Field])
	would see more housing availability and would offset reductions in regional spending.	the local economy.
Environmental Justice	Because no significant change in population or employment would result from the identified projects, no significant cumulative impacts to environmental justice are likely.	Because no significant change in population or employment would result from the identified projects, no significant cumulative impacts to environmental justice are likely.
Infrastructure	Because no significant change in population or employment would result from the identified projects, no significant cumulative impacts to infrastructure are likely.	Because no significant change in population or employment would result from the identified projects, no significant cumulative impacts to infrastructure are likely.
Transportation	Because no significant change in population or employment would result from the identified projects, no significant cumulative impacts to transportation are likely.	Because no significant change in population or employment would result from the identified projects, no significant cumulative impacts to transportation are likely.
Hazardous Materials and Hazardous Waste Management	Hazardous materials use and waste generation would increase. Holloman AFB is currently a large-quantity generator with adequate capacity, management procedures, and safety practices in place to handle the increase and maintain compliance. Therefore, no significant cumulative impacts related to hazardous materials and hazardous waste management are anticipated.	JBSA-Lackland (Kelly Field) would be able to absorb any additional quantities as a large-quantity generator from conversion of a facility to be a Corrosion Control Facility and expansion of the Medical Facility. Procedures and safety practices are in place to handle hazardous materials and wastes. Therefore, no significant cumulative impacts to hazardous materials and hazardous waste management are anticipated.

AAF = Army Air Field
AFB = Air Force Base
dB -= decibel
DNL = day-night average sound level
DoD = Department of Defense
FTU = Flying Training Unit
GAF = German Air Force
IDP = Installation Development Plan
JBSA = Joint Base San Antonio
NAAQS = National Ambient Air Quality Standards
NDI = Non-destructive Inspection
OSHA = Occupational Safety and Health Organization
SHPO = State Historic Preservation Officer
UFC = Unified Facilities Criteria

Recent construction on Holloman AFB and JBSA-Lackland (Kelly Field) is already reflected in baseline conditions. Renovation activities for the two F-16 FTU squadrons would not increase the amount of impervious surface on either installation. Proposed renovation activities associated with this F-16 FTU interim beddown effort could overlap with programmed development projects at the installations. Future construction activities would generally be expected to result in some increased noise, increased air emissions, potential for erosion, and generation of small amounts of hazardous materials and wastes. Construction activities generally would be expected to result in short-term job creation and materials procurement. These types of short-term, construction-related effects would occur regardless of project location and would not constrain the operations of the F-16 FTU squadrons. Sound engineering and construction management practices would be implemented to minimize potential impacts of construction. Any additional impervious surfaces from future construction projects (not associated with the F-16 FTU mission) would require installing appropriate stormwater system improvements that would integrate with existing systems to ensure less than significant impacts to stormwater flows.

Training airspace identified for the F-16 mission has supported military missions for units at JBSA-Lackland (Kelly Field), Holloman AFB, Cannon AFB, WSMR, and Fort Bliss, as well as joint exercises and transient military users, for decades. The combination of users has resulted in varied utilization of MOAs, MTRs, and restricted airspace over time. The relocation of F-16 training, in combination with ongoing and evolving operations at regional installations, could cause an increase in noise events in some underlying areas. This could cumulatively affect recreational sites and isolated homesteads throughout the region; however, these areas are currently overflown with no significant effects to the areas below.

Cumulative use of WSMR airspace for testing purposes (with expanding safety volumes for directed energy weapons tests), projected use of restricted airspace by multiple military installations, and increased use for training purposes would place considerable pressure on scheduling and airspace management to maintain safe operating conditions. To address this trend and prevent significant impacts, a centralized scheduling and air traffic control system for the Fort Bliss, Holloman AFB, and WSMR airspace complex is being coordinated, and special use airspace is being expanded or additional airspace created for training activities.

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9.0 GLOSSARY

Above Ground Level (AGL): Altitude expressed in feet measured above the ground surface.

Aerial Refueling Tracks: Refueling operations are performed in designated aerial refueling tracks, anchors, or FAA approved airspace.

Air-to-Air Training: Air-to-air training prepares aircrews to achieve and maintain air superiority over the battlefield and defeat enemy aircraft. Air-to-air training often includes some aircraft playing the role of adversaries, or enemy forces. Air-to-air training activities include advanced handling characteristics, air combat training, low-altitude air-to-air training, and air intercept training. This training also requires the use of defensive countermeasures.

Air-to-Ground Training: Air-to-ground training employs all the techniques and maneuvers associated with weapons use and include low-and high-altitude tactics, navigation, formation flying, target acquisition, and defensive reaction. Training activities include surface attack tactics, different modes of weapons delivery, electronic combat training, and the use of defensive countermeasures.

Air Traffic: Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

Air Traffic Control (ATC): A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic.

Air Traffic Control Assigned Airspace (**ATCAA):** Procedural airspace established by letter of agreement between the user and ATC, within positive control (Class A) airspace, of defined vertical and lateral limits, for the purpose of providing air traffic segregation between the specified activities conducted within the assigned airspace and other IFR traffic. ATCAAs are not charted.

Beddown: The provision of expedient facilities for troop support to provide a platform for the projection of force.

Clean Air Act (**CAA):** This Act empowered the United States Environmental Protection Agency to establish standards for common pollutants that represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect public health and safety.

C-Weighted Day-Night Sound Level (CDNL): C-Weighted Day-Night Sound Level is day-night sound levels computed for areas subjected to sonic booms.

Chaff: Chaff is the term for small fibers of aluminum-coated mica packed into approximately 150 gram bundles and ejected by aircraft as a self-defense measure to reflect hostile radar signals.

Council on Environmental Quality (CEQ): The Council is within the Executive Office of the President and is composed of three members appointed by the President, subject to approval by the Senate. Members are to be conscious of and responsive to the scientific, economic, social, esthetic, and cultural needs of the nation; and to formulate and recommend national policies to promote the improvement of quality of the environment.

Day-Night Average Sound Level (DNL): Day-Night Average Sound Level is a noise metric combining the levels and durations of noise events and the number of events over an extended time period. It is a cumulative average computed over a 24-hour period to represent total noise exposure. DNL also accounts for more intrusive nighttime noise, adding a 10 dB penalty for sounds after 10:00 P.M. and before 7:00 A.M. DNL is the FAA's primary noise metric. FAA Order 1050.1E defines DNL as the yearly day/night average sound level.

Decibel (dB): A sound measurement unit.

Defensive Countermeasures: Coordination of maneuvers and use of aircraft defensive systems designed to negate enemy threats. Those maneuvers (which include climbing, descending, and turning) requiring sufficient airspace to avoid being targeted by threat systems. Aircraft use sophisticated electronic equipment to jam air and ground radar-tracking systems and dispense chaff and flares to confuse hostile radar and infrared sensors.

Endangered Species: The Endangered Species Act of 1973 defined the term "endangered species" to mean any species (including any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature) that is in danger of extinction throughout all or a significant portion of its range.

Flight Level: The Flight Level refers to the altitude above MSL. FL230, for example, is approximately 23,000 feet MSL.

Instrument Flight Rules (IFR): A standard set of rules that all pilots, civilian and military, must follow when operating under flight conditions that are more stringent than visual flight rules. These conditions include operating an aircraft in clouds, operating above certain altitudes prescribed by Federal Aviation Administration regulations, and operating in some locations like major civilian airports. Air traffic control agencies ensure separation of all aircraft operating under IFR.

Instrument Route (IR): Routes used by the DoD and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training in both IFR and VFR weather conditions below 10,000 feet MSL at airspeeds in excess of 250 knots indicated airspeed.

Mean Sea Level (MSL): Altitude expressed in feet measured above average sea level.

Military Operations Area (MOA): Airspace below 18,000 feet MSL established to separate military activities from instrument flight rule traffic and to identify where these activities are conducted for the benefit of pilots using visual flight rules.

Military Training Airspace: Special Use Airspace and Airspace for Special Use used by military aircrews to practice flight activities necessary to maintain combat readiness.

Military Training Route (MTR): A Military Training Route is a corridor of airspace with defined vertical and lateral dimensions established for conducting military flight training at airspeeds in excess of 250 nautical miles per hour.

Mitigation: CEQ Sec. 1508.20 defines "Mitigation" to include:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

National Environmental Policy Act (**NEPA):** The National Environmental Policy Act of 1969 directs federal agencies to take environmental factors into consideration in their decisions.

Notice to Airmen (NOTAM): A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) the timely knowledge of which is essential to personnel concerned with flight operations.

Ordnance: Any item carried by an aircraft for dropping or firing, including but not limited to, live or inert bombs, ammunition, air-to-air missiles, chaff, and flares.

Restricted Areas: A restricted area is designated airspace that supports ground or flight activities that could be hazardous to non-participating aircraft.

See-and-avoid: When weather conditions permit, pilots operating IFR or VFR are required to observe and maneuver to avoid other aircraft. Right-of-way rules are contained in FAR Part 91.

Sonic Boom: A sonic boom is the impulsive noise created when a vehicle flies at speeds faster than sound.

Sortie: A sortie is a single flight, by one aircraft, from takeoff to landing.

Sortie-Operation: The use of one airspace unit (e.g., Military Operations Area or Air Traffic Control Assigned Airspace) by one aircraft. The number of sortie-operations is used to quantify the number of uses by aircraft and to accurately measure potential impacts; e.g. noise, air quality, and safety impacts. A sortie-operation is not a measure of how long an aircraft uses an airspace unit, nor does it indicate the number of aircraft in an airspace unit during a given period; it is a measurement for the number of times a single aircraft uses a particular airspace unit.

Threatened Species: A species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Visual Flight Rules (VFR): A standard set of rules that all pilots, both civilian and military, must follow when not operating under instrument flight rules. These rules require that pilots remain clear of clouds and avoid other aircraft. See instrument flight rules.

Visual Routes (VR): Routes used by military aircraft for conducting low-altitude, high-speed navigation, and tactical training. These routes are flown under Visual Flight Rules.

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APPENDIX A

CONSULTATION LETTERS

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION LETTERS

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (ACC)
HOLLOMAN AIR FORCE BASE NEW MEXICO

21 Dec 2016

MEMORANDUM FOR FEDERAL, STATE, AND LOCAL PUBLIC AGENCIES

FROM: 49 CES/CC
550 Tabosa Avenue
Holloman AFB NM 88330-8458

SUBJECT: Temporary Relocation of Two F-16 Squadrons to Holloman Air Force Base (AFB), NM

1. The United States Air Force is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with temporarily relocating two squadrons of F-16 Fighting Falcon fighter aircraft (total of 45 aircraft), currently, based at Hill AFB, UT, either together or separately, to a location or locations currently hosting a F-16 Flying Training Unit (FTU).

2. The purpose of and need for this action is the temporary (approximately 5 years) relocation of F-16 aircraft to make room for F-35 aircraft bedding down at Hill AFB, while continuing F-16 pilot training during the selection and preparation of permanent F-16 FTU beddown location(s). Actions to support this relocation, include renovation of existing facilities and training in existing military airspace and ranges. No new military construction and no significant ground disturbance would occur.

3. The EA will consider the potential impacts of this proposed action and assess installations that meet the requirements to host the F-16 FTU. Alternative 1 is Holloman AFB, NM and Alternative 2 is Joint Base San Antonio (JBSA), Lackland (Kelly Field), TX. The No-Action Alternative will also be considered. Maps depicting the location of Holloman AFB and facilities that would support the F-16 FTU are included as Attachments 1 and 2, respectively.

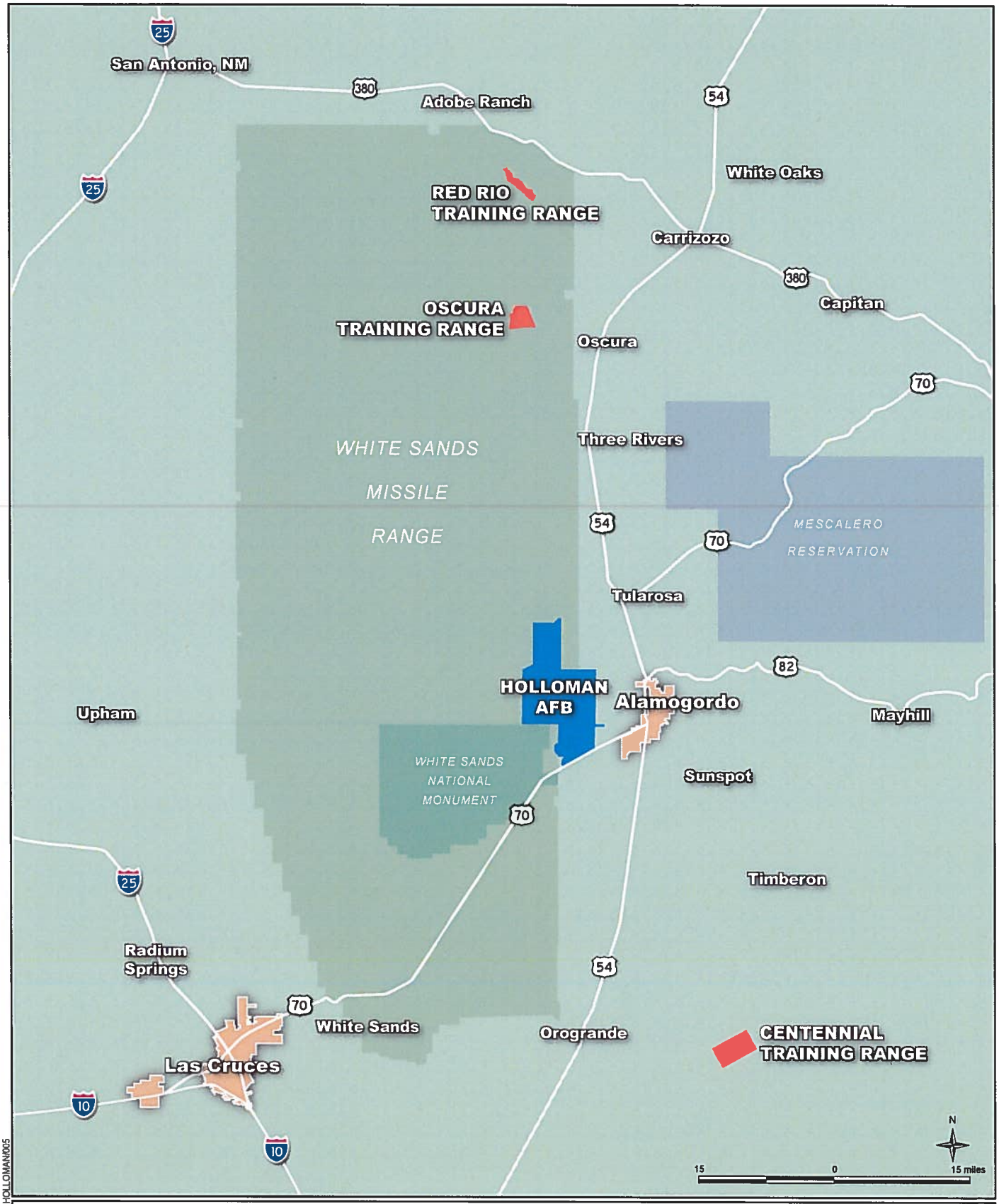
4. The EA will be prepared in compliance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.), the Council of Environmental Quality NEPA Regulations, 40 Code of Federal Regulations (CFR) Parts 1500-1508, and the Air Force's Environmental Impact Analysis Process, 32 CFR 989. As part of this EA, we request your assistance in identifying potential areas of environmental impact to be assessed in the study.

5. If you have any specific items of interest about this proposal, please contact Mr. Andrew Gomolak, 49 CES/CEIE, 550 Tabosa Avenue, Holloman AFB, NM 88330-8458, by e-mail to andrew.gomolak@us.af.mil, or at (575) 572-6647 within 30 days of receipt of this letter.

MARES.KEVIN.A.1162435724
Digitally signed by MARES.KEVIN.A.1162435724
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=MARES.KEVIN.A.1162435724
Date: 2016.12.21 13:25:29 -07'00'

KEVIN A. MARES, Lt Col, USAF
Commander, 49th Civil Engineer Squadron

2 Attachments:
1. Holloman AFB Location Map
2. Map of Facilities Supporting the F-16 FTU Interim Relocation



LACKLAND IR F-16 FTU HOLLOMAN005

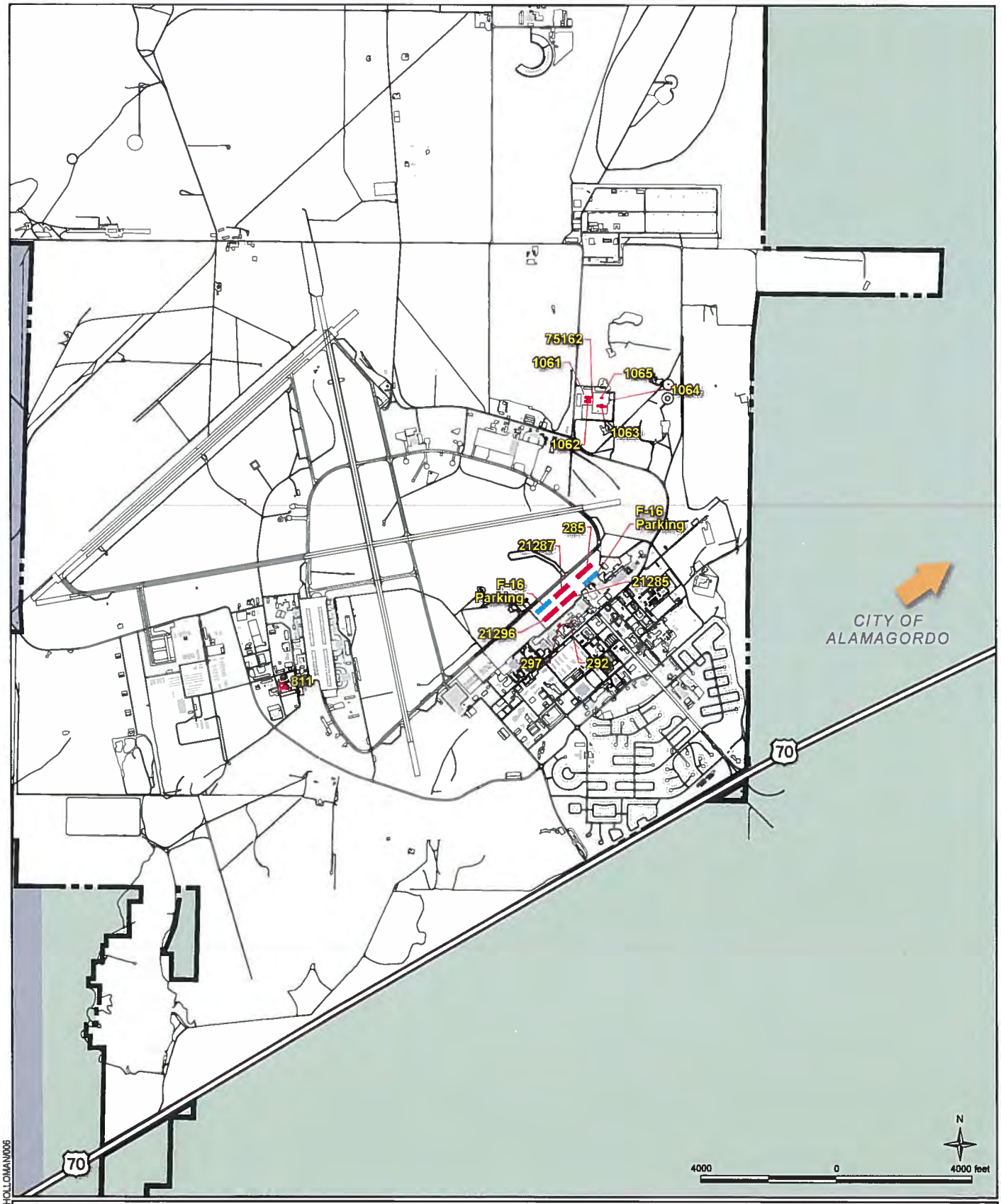
LEGEND

70 U.S. Highway

10 Interstate Highway

Oscura, Red Rio, and Centennial Training Range Locations

Attachment 1



LACKLAND IR F-16 FTU HOLLOMAN006

LEGEND

- Facilities to Support F-16 FTU
- F-16 Parking
- White Sands Missile Range (WSMR)
- 70 U.S. Highway

Facilities Supporting F-16 FTU Interim Relocation, Holloman AFB

Attachment 2

From: James Talbert [redacted]
Sent: Friday, December 23, 2016 9:52 AM
To: GOMOLAK, ANDREW R JR GS-11 USAF ACC 49 CES/CEIAA <andrew.gomolak@us.af.mil>
Cc: Richard Boss [redacted]
Subject: EA F-16 airspace

Mr. Gomolak;
I am Jim Talbert, the airport manager for the Alamogordo airport. I have also flown F-4's and AT-38B's here at Holloman as well as civilian airplanes in our airspace for over 25 years. I have received the Memo concerning the EA about using R-5111 for F-16 FTU training. Although I live at the opposite end of this airspace, I find this a very workable solution for the
F-16 training. My comments are as follows:

1. There will most likely be some sonic booms heard in Tor C, this can be handled with information to the residents of the area, we have them (booms) all the time in Alamogordo and it is part of doing business in the world we live in.

2. There is an airway through the airspace that can be moved or eliminated.

3. Although this has been terminated due to funding, the Civil Air Patrol flys airborne standby search and rescue with the Coast Guard on certain Holidays over Elephant Butte Lake. Since this is done on Holidays, that should not propose a conflict.

I am a member of the Joint Land Use Study (JLUS) committee, airspace section, and I have forwarded this EA letter to that committee. This has been a topic of discussion for that committee.

Jim Talbert
Alamogordo NM

-----Original Message-----
From: Barrera, John F CIV USARMY IMCOM CENTRAL (US) [mailto:john.f.barrera.civ@mail.mil]
Sent: Monday, January 09, 2017 11:51 AM
To: GOMOLAK, ANDREW R JR GS-11 USAF ACC 49 CES/CEIAA <andrew.gomolak@us.af.mil>
Subject: FW: Holloman F-16 bed-down EA

JR: FYI. From our Air Traffic/Airspace Officer (see below).

John F. Barrera
NEPA Program Manager
IMBLS-PWE
Directorate of Public Works - Env. Div
Bldg 624, Pleasonton Ave.
Fort Bliss, TX 79916-2018
915-568-3908
john.f.barrera.civ@mail.mil

-----Original Message-----
From: Delaney, Michael J (Mike) II CIV USARMY IMCOM CENTRAL (US)
Sent: Monday, January 09, 2017 11:24 AM
To: Barrera, John F CIV USARMY IMCOM CENTRAL (US) <john.f.barrera.civ@mail.mil>; Segura, Juan Carlos (JC) LTC USARMY 1 AD (US) <juan.c.segura.mil@mail.mil>
Cc: Merino, Carlos A CW5 USARMY 1 AD CAVN BDE (US) <carlos.a.merino.mil@mail.mil>; Bender, Michael J CPT USARMY 1 AD (US) <michael.j.bender1.mil@mail.mil>; Livingston, Lisa M MAJ USARMY 1 AD (US) <lisa.m.livingston10.mil@mail.mil>; Ridge, Ross M (Matt) MAJ USARMY 1 AD (US) <ross.m.ridge.mil@mail.mil>; Locke, Brian A CIV USARMY IMCOM CENTRAL (US) <brian.a.locke.civ@mail.mil>
Subject: RE: Holloman F-16 bed-down EA

John,
I'd recommend the entire Centennial Fly Area be under the analysis and not just the impact area as depicted on their map attachment (SE corner page 2). There's also potential of added IR activity.

Thanks,
-Mike

Michael J. Delaney
Installation AT&A Officer
DPTMS - 1AD HQ
Ft Bliss, TX
☎ E. Bliss: 915-744-1256, DSN: 621
☎ BB: 915-203-2728
michael.j.delaney.civ@mail.mil

-----Original Message-----
From: Skibitski, Thomas, NMENV [mailto:thomas.skibitski@state.nm.us]
Sent: Tuesday, January 10, 2017 2:55 PM
To: GOMOLAK, ANDREW R JR GS-11 USAF ACC 49 CES/CEIAA
<andrew.gomolak@us.af.mil>
Subject: Temporary Relocation of two F-16 Squadrons to Holloman AFB, NM

Mr. Gomolak,
I've reviewed the attached documents and the New Mexico Environment Department has no comment at this time. Please include me on your distribution when the environmental assessment is available. My contact information is listed below.
Thank you,
TS

Thomas Skibitski
Emergency Response Operations Chief
New Mexico Environment Department
121 Tijeras Avenue NE, Suite 1000
Albuquerque, NM 87102-3400

Office (505) 222-9552
Cell (505) 377-8135

DEPARTMENT OF THE AIR FORCE
502D AIR BASE WING
JOINT BASE SAN ANTONIO

JAN 13 2017

MEMORANDUM FOR DISTRIBUTION

FROM: 502 CES/CL
1555 Gott Street
JBSA-Lackland TX 78236

SUBJECT: Temporary Relocation of two F-16 Squadrons to Joint Base San Antonio (JBSA) Lackland (Kelly Field), TX

1. The United States Air Force (USAF) is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with temporarily relocating two squadrons of F-16 Fighting Falcon fighter aircraft (total of 45 aircraft) currently based at Hill AFB, UT, either together or separately, to a location or locations currently hosting an F-16 Flying Training Unit (FTU).

2. The purpose of and need for this action is the temporary (approximately 5 years) relocation of F-16 aircraft to make room for F-35 aircraft bedding down at Hill AFB, while continuing F-16 pilot training during the selection and preparation of (a) permanent F-16 FTU beddown location(s). Actions to support this relocation include renovation of existing facilities, installation/replacement of security fencing, and training in existing military airspace and ranges. No new military construction (MILCON) and no significant ground disturbance would occur.

3. The EA will consider the potential impacts of this Proposed Action and assess installations that meet the requirements to host the F-16 FTU. Alternative 1 is Holloman AFB, NM and Alternative 2 is JBSA Lackland (Kelly Field), TX. The No-Action Alternative will also be considered. Maps depicting the location of JBSA Lackland (Kelly Field) and facilities that would support the F-16 FTU are included as Attachments 1 and 2, respectively.

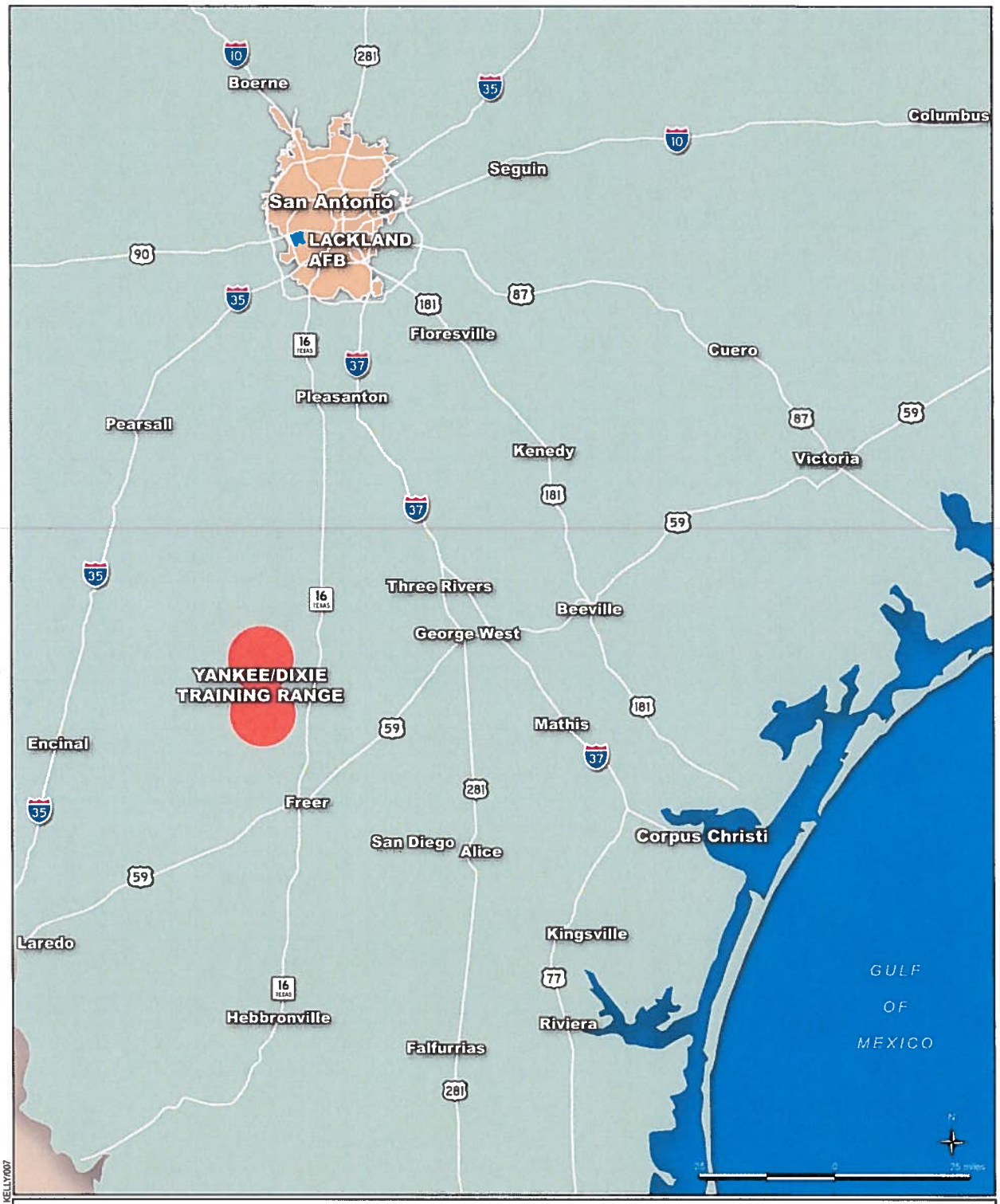
4. The EA will be prepared in compliance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.), the Council of Environmental Quality NEPA Regulations, 40 Code of Federal Regulations (CFR) Parts 1500-1508, and the Air Force's Environmental Impact Analysis Process, 32 CFR 989. As part of this EA, we request your assistance in identifying potential areas of environmental impact to be assessed in the study.

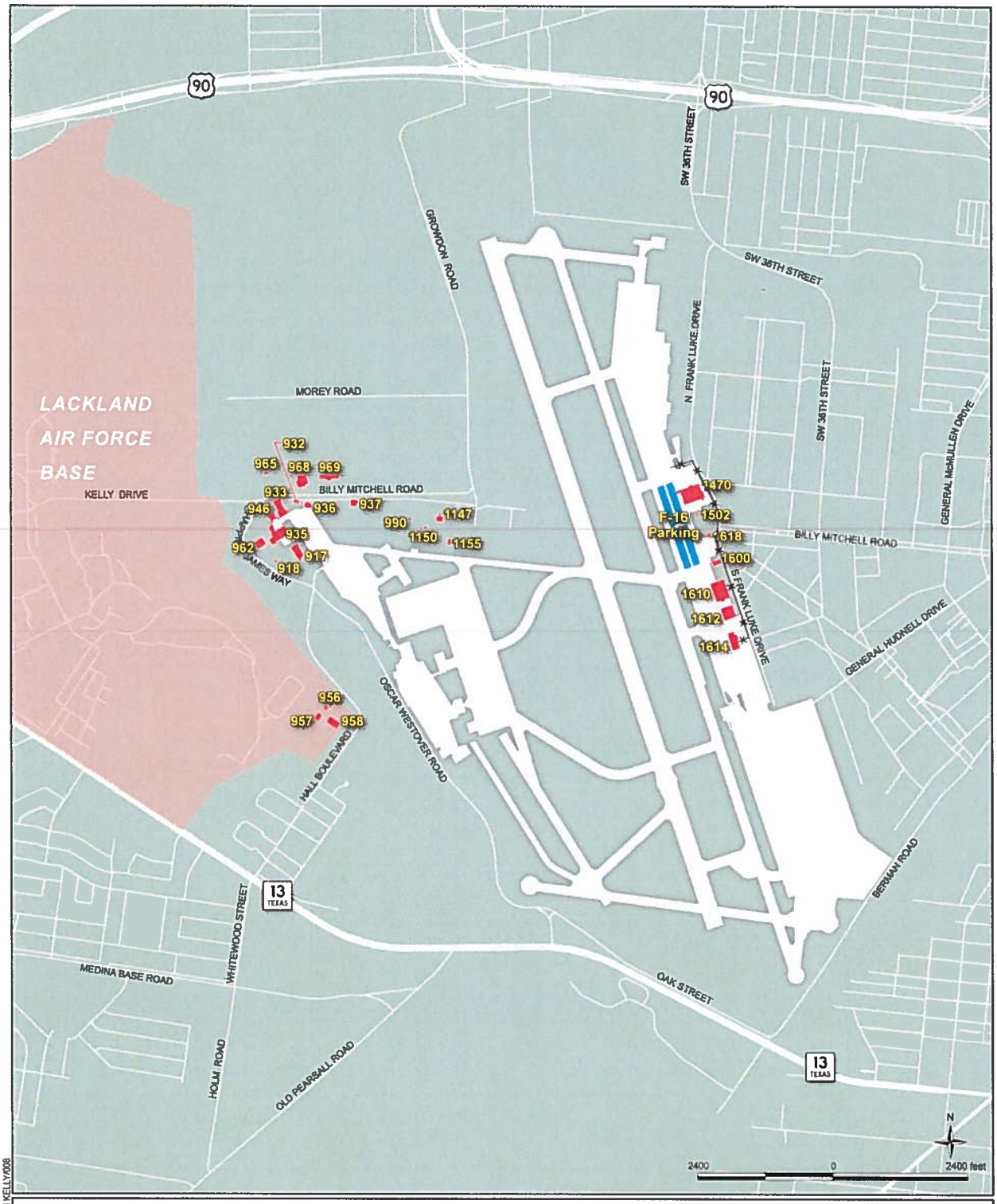
5. If you have any specific items of interest about this proposal, please contact Ms. Dayna Cramer, 502 CES/CEIE, 1555 Gott Street, JBSA Lackland, TX 78236, by email to dayna.cramer@us.af.mil, or by phone at (210) 652-0181 within 30 days of receipt of this letter.

ROESCH.BRENDA.L.1231708843
Digitally signed by ROESCH.BRENDA.L.1231708843
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=ROESCH.BRENDA.L.1231708843
Date: 2017.01.12 10:38:45 -06'00'

BRENDA ROESCH
Joint Base Civil Engineer

2 Attachments:
1. JBSA Lackland (Kelly Field) Location Map
2. Map of Facilities Supporting the F-16 FTU Interim Relocation


Boerne
Columbus
Seguin
San Antonio
LACKLAND AFB
Floresville
Cuero
Pleasanton
Pearsall
Kenedy
Victoria
Three Rivers
Beeville
George West
YANKEE/DIXIE TRAINING RANGE
Mathis
Encinal
Freer
San Diego
Alice
Corpus Christi
Laredo
Kingsville
Hebbronville
Riviera
Falfurrias
GULF OF MEXICO
LEGEND
U S Highway
Texas State Highway
Interstate Highway
Yankee/Dixie Training Range Location
Attachment 1
LACKLAND DR F-16 FTU KELLY/007



LACKLAND IR F-16 FTU KELLY008

LEGEND

- Facilities to Support F-16 FTU
- F-16 Parking
- New Security Fence
- 90 U S Highway
- 13 TEXAS Texas State Highway

JBSA Lackland (Kelly Field) Facilities Supporting F-16 FTU Interim Relocation

Attachment 2

-----Original Message-----
From: Jenise Walton [mailto:Jenise.Walton@txdot.gov]
Sent: Wednesday, January 25, 2017 9:55 AM
To: CRAMER, DAYNA A GS-13 USAF AETC 502 CES/CEIE <dayna.cramer@us.af.mil>
Subject: request for information -from USAF

We received your letter dated January 13, 2017 (attached). I forwarded the letter to our San Antonio district office and below is a comment from Barrlynn West. We have no further comments.

Jenise, we would have no comments from environmental other than if they need to do any work in TxDOT ROW, to please contact TxDOT first to coordinate.

Barrlynn West
TxDOT San Antonio District
Environmental Coordinator
210-615-5840
Barrlynn.West@txdot.gov
[#EndTheStreak]<http://www.txdot.gov/inside-txdot/media-center/psas/end-streak.html>

-----Original Message-----
From: Robert Jackson [mailto:Robert.W.Jackson@txdot.gov]
Sent: Thursday, January 26, 2017 8:12 AM
To: CRAMER, DAYNA A GS-13 USAF AETC 502 CES/CEIE <dayna.cramer@us.af.mil>
Subject: Temporary relocation of two F-16 squadrons to JBSA

Ms. Cramer:

The Texas Department of Transportation Aviation Division (TxDOT AVN) has received the undated Memorandum for Distribution from Brenda Roesch regarding the above referenced federal action, and the preparation of an environmental assessment of that action. TxDOT AVN has no comment to make on this proposed action, but wishes to express our appreciation for being informed regarding preparation of the EA.

Regards,

Robert W. Jackson, PhD, AICP, C.M.

Environmental Specialist

TxDOT AVN

512-416-4511

<http://www.txdot.gov/inside-txdot/media-center/psas/end-streak.html>

Interagency and Intergovernmental Coordination

Contact	Agency
Holloman AFB	
The Honorable Martin Heinrich	United States Senate
The Honorable Tom Udall	United States Senate
The Honorable Steve Pearce	U.S. House of Representatives
Mr. Greg Byus	Federal Aviation Administration
Superintendent	Bureau of Indian Affairs Southwest Region Mescalero Agency
Mr. Joe Yadouga	Federal Aviation Administration Southwest Region
Field Manager	Bureau of Land Management Socorro Field Office
Superintendent	White Sands National Monument
Airspace Manager	White Sands Missile Range
Director	U.S. Environmental Protection Agency Region 6 Office of Planning and Coordination
District Manager	Bureau of Land Management Las Cruces District Office
The Honorable Susana Martinez	Governor, State of New Mexico
Director	New Mexico Department of Energy Minerals and Natural Resources
Division Chief	New Mexico Department of Game and Fish Conservation Services Division
Ms. Deborah Hartell	NEPA Customer Support Division Environment and Safety Directorate, WSMR
Mr. John Barrera	NEPA Program Manager Fort Bliss
Mr. Ned Farquhar	NM SPOC Energy and Environmental Policy
Aviation Director	New Mexico Department of Transportation
Commissioner	New Mexico State Land Office
The Honorable Richard Boss	Mayor, City of Alamogordo
Mayor	Town of Carrizozo
The Honorable Ken Miyagishima	Mayor, City of Las Cruces
The Honorable Tom Battin	Mayor, City of Ruidoso
The Honorable Dennis Kintigh	Mayor, City of Roswell
The Honorable Gary Williams	Mayor, City of Ruidoso Downs
County Manager	Doña Ana County
County Manager	Sierra County
Director	Alamogordo City Commission
Director	Doña Ana County Commissioners
Director	Lincoln County Commissioners
Director	Otero County Commissioners
Director	Sierra County Commissioners
Manager	Alamogordo Airport
Airport Director	Sierra Blanca Regional Airport

Contact	Agency
President/CEO	Alamogordo Chamber of Commerce
Director	Cloudcroft Chamber of Commerce
Director	Las Cruces Chamber of Commerce
Director	Ruidoso Chamber of Commerce
Chairman	Committee of 50
President	Mesilla Valley Audubon Society
JBSA-Lackland (Kelly Field)	
The Honorable Greg Abbott	Governor of Texas
Director	U.S. Environmental Protection Agency Region 6 Office of Planning and Coordination
Mr. Joe Kevin L. Solco	Federal Aviation Administration Southwest Region
The Honorable Ivy Taylor	Mayor, City of San Antonio
Director	Texas Parks and Wildlife Department
Director	Texas Department of Transportation Aviation Division
Director	Texas Department of Transportation Environmental Affairs Division
Chairman	Texas Commission on Environmental Quality
Director	City of San Antonio Planning and Community Development Department
Director	City of San Antonio Aviation Department
Director	Port San Antonio
Director	Alamo Area Council of Governments

NATIVE AMERICAN LETTERS

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (ACC)
HOLLOMAN AIR FORCE BASE NEW MEXICO

JAN 0 9 2016

Lieutenant Colonel Kevin A. Mares
Commander, 49th Civil Engineer Squadron
550 Tabosa Avenue
Holloman AFB NM 88330-8458

Mr. Danny Breuninger
President, Mescalero Apache Tribe
PO Box 227
Mescalero NM 88340

Dear Mr. Breuninger

The purpose of this letter is twofold. The first purpose is to invite you, pursuant to Section 106 of the National Historic Preservation Act,[1] to government-to-government consultation with Holloman AFB about possible effects on archaeological, historical or traditional cultural properties that might result from a proposed action. The second is to give you an opportunity to consider and provide comments on the proposed relocation of two more F-16 squadrons to Holloman AFB. Impacts of this proposed action will be addressed by an environmental assessment in which the Mescalero Apache may have an interest.

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act[2] (NEPA) to evaluate the potential environmental impacts of temporarily relocating two squadrons (a total of 45 aircraft) of F-16 Fighting Falcons that are currently at Hill AFB, UT. Either together or separately, these aircraft will be moved to a location or locations presently hosting an F-16 Formal Training Unit (FTU).

The relocation action is intended to be temporary (approximately 5 years) to make room for F-35 aircraft bedding down at Hill AFB, while continuing F-16 pilot training during selection and preparation of (a) permanent F-16 FTU beddown location(s). Actions to support the relocation include interior renovation of existing facilities and training in existing airspace and ranges. No new construction, and only minor ground disturbance in the built area of base (e.g., installing anchors on the aircraft parking ramp), would occur. The EA will consider the potential impacts resulting from this Proposed Action.

This EA will assess two potential locations that meet the requirements to host the F-16 FTU, as well as the No-Action Alternative. Alternative 1 is to temporarily relocate two squadrons to Holloman AFB, NM and Alternative 2 is to temporarily relocate the two squadrons to Joint Base San Antonio (JBSA) at Lackland (Kelly Field), TX.

Both installations meet the screening criteria of currently hosting an F-16 FTU, requiring no major construction or renovation, and having runway, ramp, maintenance and administrative capacity.

---

[1] 54 United States Code (U.S.C.) § 306108, as implemented by 36 Code of Federal Regulations (CFR) Part 800

[2] NEPA of 1969 (42 U.S.C. § 4321 *et seq.*); Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508); and Air Force Instruction (AFI) 32-7061, *Environmental Impact Analysis Process* (32 CFR Part 989).

There will be no increase in airspace use beyond what has been previously analyzed. Therefore, the area of potential effect (APE) for this action is limited to the areas of renovation and aircraft parking on the installations. Maps depicting the location of Holloman AFB (Attachment 1) and the proposed facilities (Attachment 2) on Holloman AFB that would support the additional F-16 FTU are attached.

We would appreciate a response as to whether the Mescalero Tribe would like to engage in government-to-government consultation on this project, and ask your assistance in identifying whether there are areas of historic, religious or cultural significance, or traditional cultural properties within the built area of Holloman that is the APE of the proposed undertaking. Please know that regardless of whether the Tribe chooses to consult on this project, the Air Force will fully comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or human remains.

My staff will be contacting your office by telephone to discuss the project and any potential impacts. For staff questions, comments, or input on the NHPA Section 106 and NEPA processes, please contact Mr. Andrew Gomolak, by e-mail: andrew.gomolak@us.af.mil, at (575) 572-6647, or by mail at 49 CES/CEIE, 550 Tabosa Avenue, Holloman AFB, NM 88330-8458.

Please take this opportunity to complete the questionnaire (Attachment 3) below, to identify the level of your tribe's interest in consulting about the proposed action and to facilitate further communication on the matter. Upon completion, please return the questionnaire to us in the stamped and self-addressed envelope provided. I look forward to receiving any input you may have regarding this endeavor.

Sincerely

KEVIN A. MARES, Lt Col, USAF
Commander, 49th Civil Engineer Squadron

3 Attachments:
1. Holloman AFB Location Map
2. Map of Facilities (the APE) Supporting the F-16 FTU Interim Relocation
3. Interest Questionnaire

LACKLAND IR F-16 FTU HOLLOMAN005

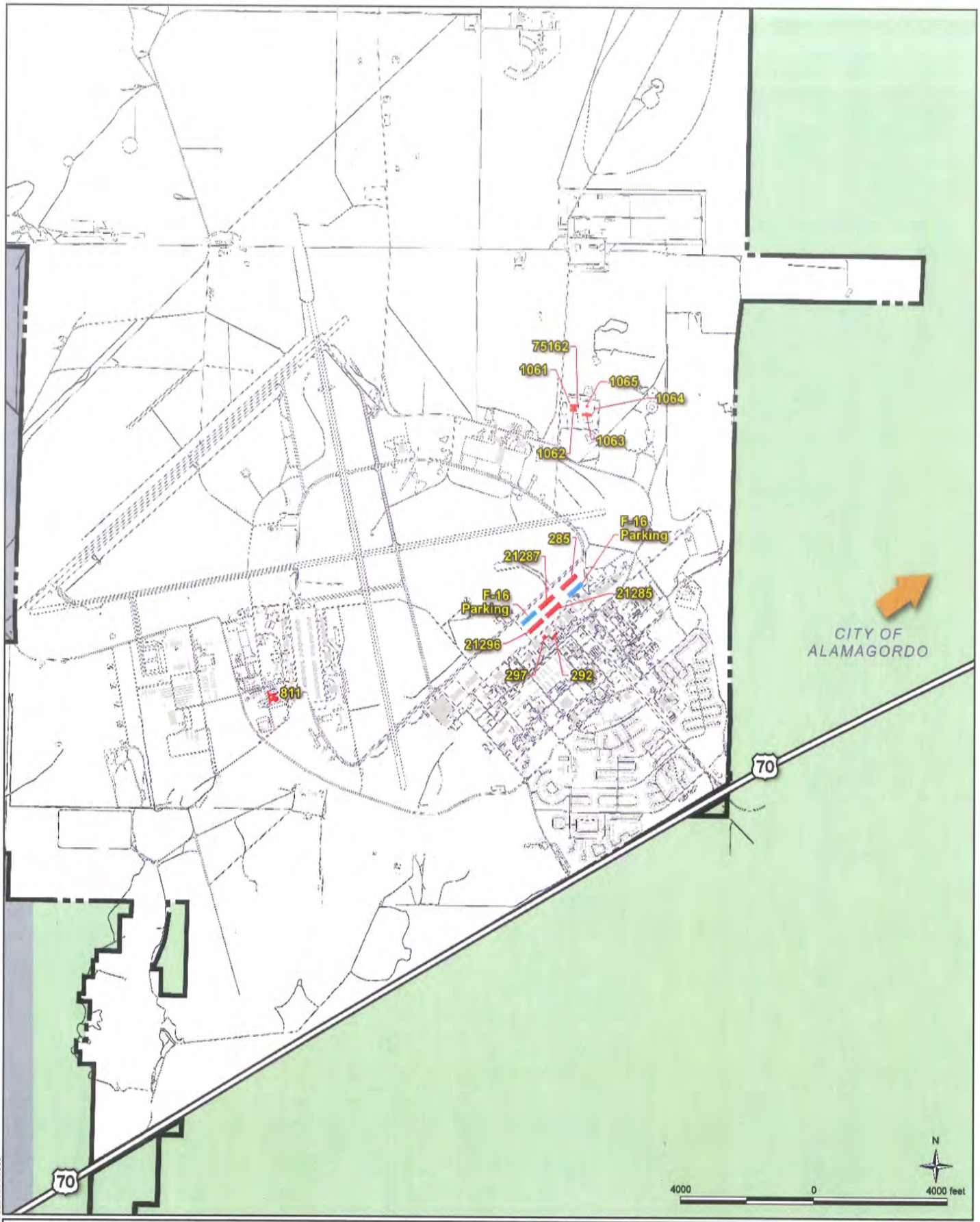
LEGEND

70 U.S. Highway

10 Interstate Highway

Oscura, Red Rio, and Centennial Training Range Locations

Attachment 1



LEGEND

- Facilities to Support F-16 FTU
- F-16 Parking
- White Sands Missile Range (WSMR)
- 70 U.S. Highway

Facilities Supporting F-16 FTU Interim Relocation, Holloman AFB

Attachment 2

LACKLAND IR F-16 FTU HOLLOMAN006

If you choose to not send another written response, please respond by indicating the Mescalero Apache Tribe's level of interest in consulting (receiving, reviewing and responding) on the Environmental Assessment for the proposed action of adding 45 F-16s to the Flying Training Units at Holloman AFB. Please return this questionnaire in the addressed envelope provided.

- ☐ Mescalero Apache Traditional Cultural Properties are not present on Holloman AFB, and therefore the tribe does not desire to be consulted on this or future projects.

- ☐ Mescalero Apache archaeological sites and Traditional Cultural Properties may be present on Holloman AFB, but consultation is not required at this time because those properties are not expected to be affected by the proposed action.

- ☐ Mescalero Apache archaeological sites or Traditional Cultural Properties are present on Holloman AFB, and the tribe desires to consult on this proposed action and on future projects.

- ☐ Other: _____

_____

_____

_____

Signature

_____

Position

DEPARTMENT OF THE AIR FORCE
502D AIR BASE WING
JOINT BASE SAN ANTONIO

MEMORANDUM FOR Johnny Wauqua, Chairman
Comanche Tribe
P.O. Box 908
Lawton, OK 73502

JAN 11 2017

FROM: 502 CES/CL
1555 Gott Street
JBSA Lackland, TX 78236

SUBJECT: Environmental Assessment – Temporary Relocation of two F-16 Squadrons to Joint Base San Antonio (JBSA) Lackland (Kelly Field), TX

1. The purpose of this letter is twofold: to give you an opportunity to review and comment on a Proposed Action at JBSA Lackland (Kelly Field) in which your tribe may have an interest; and to invite your tribe to participate in government-to-government consultation with JBSA Lackland (Kelly Field) pursuant to Section 106 of the National Historic Preservation Act.[1]

2. The United States Air Force (USAF) is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential environmental impacts associated with temporarily relocating two squadrons of F-16 Fighting Falcon fighter aircraft (total of 45 aircraft) currently based at Hill Air Force Base (AFB), UT, either together or separately, to a location or locations currently hosting an F-16 Flying Training Unit (FTU). The relocation action is intended to be temporary (approximately 5 years) in order to make room for F-35 aircraft bedding down at Hill AFB while continuing F-16 pilot training during selection and preparation of permanent F-16 FTU beddown location(s). Activities that would occur to support the temporary relocation include renovation of existing facilities and training in existing military airspace and ranges. No new construction and no significant ground disturbance would occur (e.g., installing anchors on the aircraft apron and installing a security fence). The EA will, as required by law and regulations,[2] consider the potential impacts resulting from this Proposed Action.

3. The EA will assess two potential installations that meet the requirements to host the F-16 FTU as well as the No-Action Alternative. Alternative 1 is to temporarily relocate the two squadrons to Holloman AFB, NM and Alternative 2 is to temporarily relocate the two squadrons to JBSA Lackland (Kelly Field), TX. Both installations meet the screening criteria of already hosting an F-16 FTU; no major construction or renovation actions would be required; and the installations have ramp, maintenance, and administrative capacity. Therefore, the area of potential effect (APE) for this action will be limited to the areas of renovation and aircraft parking on the installations. A map depicting the location of JBSA Lackland

[1] 54 United States Code (U.S.C.) § 306108, as implemented by 36 Code of Federal Regulations (CFR) Part 800.
[2] NEPA of 1969 (42 U.S.C. § 4321 *et seq.*); Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508); and Air Force Instruction (AFI) 32-7061, *Environmental Impact Analysis Process* (32 CFR Part 989).

(Kelly Field) (Attachment 1) and a map of the proposed facilities on JBSA Lackland (Kelly Field) that would support the F-16 FTU (the APE) (Attachment 2) are attached. Appointment of Air Force contacts for Tribal concerns is provided in Attachments 4, 5, and 6.

4. We would appreciate a response as to whether the Comanche Tribe would like to engage in government-to-government consultation on this project. Specifically, we would like to request your assistance in helping to identify whether there are historic areas of religious and cultural significance or traditional cultural properties within the APE of the proposed undertaking. Please know that regardless of whether the Tribe chooses to consult on this project, the Air Force will fully comply with applicable laws and regulations in the event of an inadvertent discovery of archaeological or funerary objects and/or human remains.

5. My staff will be contacting your office by telephone to discuss the project and any potential impacts. For staff questions, comments, or input on the NEPA process, please contact Mr. Arlan Kalina, 502 CES/CEIEA, 1555 Gott Street, JBSA Lackland, TX 78236, by email to arlan.f.kalina@mail.mil, or by phone at (817) 584-4948. For matters related to government-to-government consultation, you may contact me directly at (210) 671-2977.

6. Please take this opportunity to complete the questionnaire below, which can be filled out to identify your tribe's interest in consulting about the Proposed Project and to facilitate further communication on the matter. Upon completion, please return the questionnaire to us in the stamped and self-addressed envelope provided. I look forward to receiving any input you may have regarding this endeavor.

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Date: 2017.01.03 12:13:55 -06'00'

BRENDA ROESCH, GS-15, DAF
Joint Base Civil Engineer
502 Civil Engineer Squadron

6 Attachments:

1 JBSA Lackland (Kelly Field) Location Map
2 APE – Map of Facilities Supporting the F-16 FTU Interim Relocation
3 Installation Tribal Liaison Appointment Letter
4 Installation Tribal Representative Appointment Letter
5 Installation Cultural Resources Manager Appointment Letter

Our tribe has determined that:

- ☐ Native American Traditional Cultural Properties are not present on JBSA Lackland (Kelly Field), and therefore the tribe does not desire to be consulted on this or future projects.

- ☐ Native American Traditional Cultural Properties are present on JBSA Lackland (Kelly Field), but consultation is not required at this time because the properties will not be affected by the Proposed Project.

- ☐ Native American Traditional Cultural Properties are present on JBSA Lackland (Kelly Field), and the tribe desires to consult on the Proposed Project and on future projects.

- ☐ Other: _____

_____

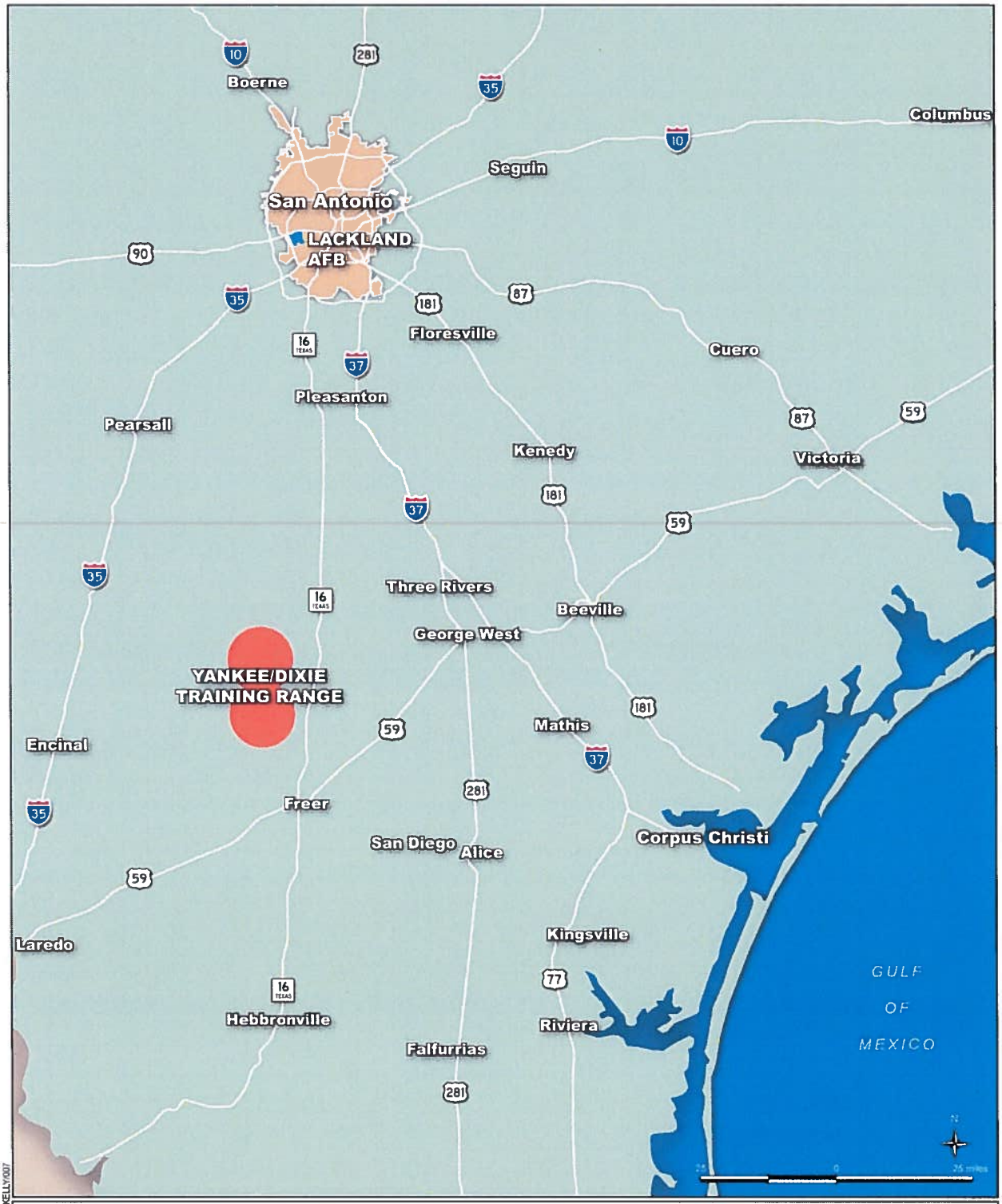
_____

_____

Signature

_____

Position



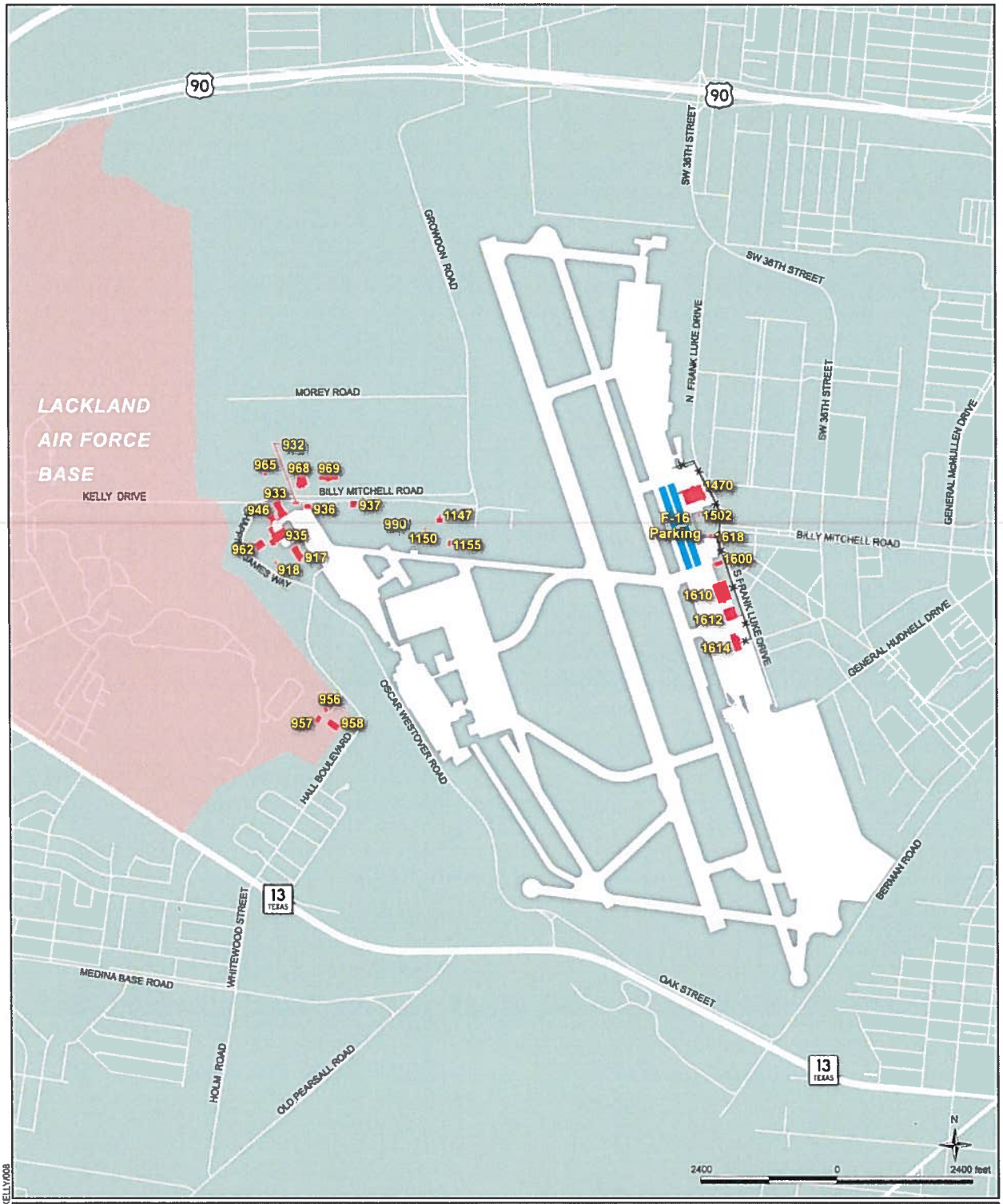
LACKLAND IR F-16 FTU KELLY/007

LEGEND

- U S Highway
- Texas State Highway
- Interstate Highway

Yankee/Dixie Training Range Location

Attachment 1



LEGEND

- Facilities to Support F-16 FTU
- F-16 Parking
- New Security Fence
- U S Highway
- Texas State Highway

LACKLAND IR F-16 FTU KELLY/008

JBSA Lackland (Kelly Field) Facilities Supporting F-16 FTU Interim Relocation

Attachment 2

DEPARTMENT OF THE AIR FORCE
502D AIR BASE WING
JOINT BASE SAN ANTONIO

MEMORANDUM FOR DISTRIBUTION

FROM: 502 ABW/CC
2080 Wilson Way
JBSA- Ft Sam Houston TX 78234-7680

SUBJECT: Installation Tribal Liaison Officer Appointment (ITLO)

1. This appointment designates the following individuals as the Agency Officials responsible for facilitating relations and consultations with the Federally Recognized Tribes IAWAFI 32-7065, 19 November 2014, *Cultural Resource Management*, AFI 90-2002, 19 November 2014, *Air Force Interactions with Federally Recognized Tribes and* DoDI 4710.02, 14 September 2006, *DoD Interactions with Federally Recognized Tribes.*

a. ITLO: Mr. Arlan Kalina, GS-12
502 CES/CEIEA 817-584-4948
arlan.f.kalina.civ@mail.mil

b. ITLO: Mrs. Dayna Cramer, GS-12
502 CES/CEIEA
210-426-7131
dayna.cramer@us.af.mil

2. This appointment supersedes previous ITLO appointments.

3. For questions please contact the JBSA Cultural Resource Office at 210-652-4668.

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Date: 2016.02.22 17:27:13 -06'00'
ROBERT D. LABRUTTA
Brigadier General, USAF
Commander

4 Attachments:
1. Distribution List
2. AFI 32-7065, 19 Nov 14, *Cultural Resource Management*
3. AFI 90-2002, 19 Nov 14, *Air Force Interactions with Federally Recognized Tribes*
4. DoDI 4710.02, 14 Sep 06, *DoD Interactions with Federally Recognized Tribes*

DEPARTMENT OF THE AIR FORCE
502D AIR BASE WING
JOINT BASE SAN ANTONIO

MEMORANDUM FOR DISTRIBUTION

FROM: 502 ABW/CC
2080 Wilson Way
JBSA- Ft Sam Houston TX 78234-7680

SUBJECT: Installation Tribal Representative Appointment

References: (a) AFI 32-7065, 19 November 2014, *Cultural Resource Management.*
(b) AFI 90-2002, 19 November 2014, *Air Force Interactions with Federally Recognized Tribes.*
(c) DoDI 4710.02, 14 September 2006, *DoD Interactions with Federally Recognized Tribes.*

1. This appointment designates the following individual, as the O-6 civilian equivalent, which is empowered to make decisions for the Installation Commander regarding the Federally Recognized Tribes.

Designated Representative:

Ms. Brenda Roesch, GS-15
502 CES/CD
210-671-2977
brenda.roesch@us.af.mil

2. This appointment supersedes previous Federally Recognized Tribes Installation Representative appointments.

3. For questions please contact the JBSA Civil Engineer Office, 210-671-2977.

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Date: 2016.02.22 17:26:45 -06'00'

ROBERT D. LABRUTTA
Brigadier General, USAF
Commander

4 Attachments:
1. Distribution List
2. AFI 32-7065, 19 Nov 14, *Cultural Resource Management*
3. AFI 90-2002, 19 Nov 14, *Air Force Interactions with Federally Recognized Tribes*
4. DoDI 4710.02, 14 Sep 06, *DoD Interactions with Federally Recognized Tribes*

DEPARTMENT OF THE AIR FORCE
502D AIR BASE WING
JOINT BASE SAN ANTONIO

MEMORANDUM FOR DISTRIBUTION

FROM: 502 ABW/CC
2080 Wilson Way
JBSA-Ft Sam Houston TX 78234-7680

SUBJECT: Cultural Resource Manager Appointment

1. This appointment designates the following individuals as the Federal Agency Officials responsible for Cultural Resource Management (CRM) on Joint Base San Antonio IAW AFI 32-7065, 14 November 2014, *Cultural Resource Management and* 16 U.S.C. 470, 15 October 1966, *National Historic Preservation Act.*

a. CRM (P): Mrs. Dayna Cramer, GS-12
502 CES/CEIEA
210-426-7131
dayna.cramer@us.af.mil

b. CRM (A): Mr. Arlan Kalina, GS-12
502 CES/CEIEA
817-584-4948
arlan.f.kalina.civ@mail.mil

2. This appointment supersedes all previous CRM appointments.

3. For questions please contact the JBSA Cultural Resource Office at 210-652-4668.

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Date: 2016.02.22 17:26:21 -06'00'
ROBERT D. LABRUTTA
Brigadier General, USAF
Commander

3 Attachments:
1. Distribution List
2. AFI 32-7065, 19 Nov 14, *Cultural Resource Management*
3. 16 U.S.C. 470, 15 Oct 66, *National Historic Preservation Act*

Native American Tribal Contacts

Tribe	Contact
Holloman AFB	
Mescalero Apache and Affiliated Tribes	Mr. Danny Breuninger, President
Fort Sill Apache Tribe	Mr. Jeff Haozous, Chairman
JBSA-Lackland (Kelly Field)	
Mescalero Apache and Affiliated Tribes	Mr. Danny Breuninger, President
Comanche Nation	Mr. Johnny Wauqua, Chairman
Wichita and Affiliated Tribes	Ms. Terri Parton, President
Tonkowa Tribe	Mr. Russell Martin, President

SECTION 7 CONSULTATION

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (ACC)
HOLLOMAN AIR FORCE BASE NEW MEXICO

JAN 0 9 2016

Lieutenant Colonel Kevin A. Mares
Commander, 49th Civil Engineer Squadron
550 Tabosa Avenue
Holloman AFB NM 88330-8458

US Fish and Wildlife Service
Attn: Mr. Wally Murphy, Field Supervisor
New Mexico Ecological Services Field Office
2105 Osuna Road NE
Albuquerque NM 87113

Dear Mr. Murphy

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with temporarily relocating two squadrons of F-16 Fighting Falcon fighter aircraft (total of 45 aircraft) currently based at Hill AFB, UT, either together or separately, to a location or locations currently hosting an F-16 Formal Training Unit (FTU).

The purpose of this letter is to initiate consultation in accordance with the Endangered Species Act (ESA) of 1973, Section 7(c)(1) and the National Environmental Policy Act (NEPA) of 1969, as amended, early in the EA planning process regarding any potential adverse effects the proposed action might have on biological resources. Two maps are included with this correspondence. Attachment 1 shows the regional location of Holloman AFB and Attachment 2 depicts the areas on Holloman that would be impacted by the proposed action.

PURPOSE AND NEED FOR ACTION

The purpose of the Proposed Action is to temporarily relocate two F-16 squadrons currently based at Hill AFB to one of the identified potential interim relocation installations (i.e., Holloman AFB, NM or Joint Base San Antonio [JBSA] Lackland [Kelly Field], TX).

The need for the Proposed Action is to make room at Hill AFB for the ongoing beddown of F-35 aircraft and continue F-16 pilot training while permanent F-16 FTU location(s) are selected and prepared. The aircraft maintenance staff at Hill AFB would discontinue F-16 maintenance as of October 2017 when they begin maintenance training for F-35s. Without maintenance support, F-16 pilot training cannot continue at Hill AFB, necessitating the mission relocation.

PROPOSED ACTION

The Proposed Action is to relocate two squadrons of F-16 aircraft currently based at Hill AFB, Utah, either together or separately, to a location or locations currently hosting an F-16 FTU. F-16 aircraft are scheduled to begin departing Hill AFB in September 2017 with all 45 F-16 aircraft arriving at the interim relocation installation by January 2018. This relocation is intended to be temporary (for about 5 years) in order to make room for F-35 aircraft bedding down at Hill AFB while continuing F-16 pilot training during selection and preparation of (a) permanent F-16 FTU beddown location(s).

Actions that would occur to support the temporary relocation of the F-16 aircraft include renovation of existing facilities and training within existing military airspace and ranges. The two F-16 FTU squadrons would conduct approximately 8,079 sorties each year including transition, advanced handling, air-to-air, and air-to-ground training, but total airspace use would not exceed the quantities previously analyzed and found not to cause significant impacts. No new construction and no impacts outside the built portion of the base are proposed. Permanent relocation of these F-16s and airspace use at the destination base will be addressed in a separate Environmental Impact Analysis Process (EIAP).

NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the interim relocation of two F-16 squadrons would not occur. The No-Action Alternative is not considered reasonable as it fails to address the purpose and need for the action. However, it will be carried forward for further analysis, consistent with Council on Environmental Quality (CEQ) regulations, to provide a baseline against which the impacts of the Proposed Action and alternatives can be assessed.

THREATENED AND ENDANGERED SPECIES

The Holloman AFB Integrated Natural Resource Management Plan (INRMP), the US Fish and Wildlife Service (USFWS) website's Information, Planning, and Conservation (IPAC) System, and the New Mexico Department of Game and Fish (NMDGF) website were reviewed for the most up-to-date information concerning federally and state threatened and endangered species that have the potential to occur within Holloman AFB (Table 1).

Table 1. Federal and State Threatened and Endangered Species Potentially within Holloman AFB

Common Name	Scientific Name	Federal Status	State Status
Plants			
Sacramento prickly poppy	*Argemone pleiacantha* ssp. *pinnatisecta*	Endangered	Endangered
Sacramento Mountains thistle	*Cirsium vinaceum*	Threatened	Endangered
Wright's marsh thistle	*Cirsium wrightii*	Candidate	Endangered
Kuenzler hedgehog cactus	*Echinocereus fendleri* var. *kuenzleri*	Endangered	Endangered
Todsen's pennyroyal	*Hedeoma todsenii*	Endangered	Endangered
Fish			
White Sands pupfish	*Cyprinodon tularosa*	--	Threatened
Birds			
Baird's sparrow	*Ammodramus bairdii*	--	Threatened
Burrowing owl	*Athene cunicularia*	--	SGCN
Ferruginous hawk	*Buteo regalis*	--	SGCN
Scaled quail	*Callipepla squamata*	--	SGCN
Costa's hummingbird	*Calypte costae*	--	Threatened
Mountain plover	*Charadrius montanus*	--	SGCN
Snowy plover	*Charadrius nivosus*	Threatened	SGCN
Yellow-billed cuckoo	*Coccyzus americanus*	Threatened	SGCN
Northern aplomado falcon	*Falco femoralis*	Experimental Population, Non-Essential	Endangered
Peregrine falcon	*Falco peregrinus*	--	Threatened
Bald eagle	*Haliaeetus leucocephalus*	Delisted	Threatened
Brown pelican	*Pelecanus occidentalis*	Delisted	Endangered
Neotropic cormorant	*Phalacrocorax brasilianus*	--	Threatened

Table 1. Federal and State Threatened and Endangered Species Potentially within Holloman AFB

Common Name	Scientific Name	Federal Status	State Status
White-faced ibis	*Plegadis chihi*	--	SGCN
Least tern	*Sternula antillarum*	Endangered	Endangered
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	SGCN
Mammals			
Spotted bat	*Euderma maculatum*	--	Threatened
Mule deer	*Odocoileus hemionus*	--	SGCN
Penasco least chipmunk	*Tamias minimus atristriatus*	Candidate	Endangered
Meadow jumping mouse	*Zapus hudsonius luteus*	Endangered	Endangered

Notes:

Candidate = Any species that is under consideration for official listing as Endangered or Threatened for which there is sufficient information to support listing.
Endangered = Any species that is in danger of extinction throughout all or a significant portion of its range.
Threatened = Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
SGCN = Species of Greatest Conservation Need.

The federally and state endangered Sacramento prickly poppy (*Argemone pleiacantha* ssp. *Pinnatisecta*) is a robust, herbaceous perennial with large white, and showy, flowers from May to August. The Sacramento prickly poppy is found from 4,200-7,100 feet above mean sea level (amsl) on loose, gravelly soils in open disturbed areas, canyon bottoms and slopes, and sometimes along roadsides. Although the Sacramento prickly poppy has the potential to occur within Holloman AFB, implementation of the Proposed Action would not result in any ground disturbance and is not likely to adversely affect this species.

The federal candidate and state endangered Wright's marsh thistle (*Cirsium wrightii*) is a robust biennial or monocarpic perennial with white or pink flowers from August to October. Wright's marsh thistle occurs from 3,450-8,500 feet amsl in wet, alkaline soils in spring seeps and marshy edges of streams and ponds. Wright's marsh thistle has the potential to occur within Holloman AFB; however, implementation of the Proposed Action would not result in any ground disturbance and is not likely to adversely affect this species.

Sacramento Mountains thistle (*Cirsium vinaceum*), Kuenzler hedgehog cactus (*Echinocereus fendleri* var. *kuenzleri*), Todsen's pennyroyal (*Hedeoma todsenii*), and Penasco Least Chipmunk (*Tamias minimus atristriatus*) all occur within an elevation range that does not occur within Holloman AFB; therefore, these species are not likely to occur on the installation.

The federally and state endangered least tern (*Sternula antillarum*); the federally threatened snowy plover (*Charadrius nivosus*); the federally delisted and state endangered brown pelican (*Pelecanus occidentalis*); the federally delisted and state threatened bald eagle (*Haliaeetus leucocephalus*); the state endangered northern aplomado falcon (*Falco femoralis*); the state threatened White Sands pupfish (*Cyprinodon Tularosa*), Baird's sparrow (*Ammodramus bairdii*), Costa's hummingbird (*Calypte costae*), peregrine falcon (*Falco peregrinus*), neotropic cormorant (*Phalacrocorax brasilianus*), and spotted bat (*Euderma maculatum*); and the state species of greatest conservation need are the burrowing owl (*Athene cunicularia*), ferruginous hawk (*Buteo regalis*), scaled quail (*Callipepla squamata*), mountain plover (*Charadrius montanus*), white-faced ibis (*Plegadis chihi*), and mule deer (*Odocoileus hemionus*) that are known to occur on Holloman AFB. However, implementation of the Proposed Action would not result in any ground disturbance and is not likely to adversely affect these species.

The federally and state endangered meadow jumping mouse (*Zapus hudsonius luteus*) and the federally threatened yellow-billed cuckoo (*Coccyzus americanus*) and Mexican spotted owl (*Strix occidentalis lucida*) have the potential to occur within Holloman AFB; however, implementation of the

Proposed Action would not result in any ground disturbance and is not likely to adversely affect these species.

Nesting and breeding migratory bird species protected under the Migratory Bird Treaty Act (MBTA) have the potential to occur within Holloman AFB. Bird species listed by the USFWS IPAC System as having the potential to winter on Holloman AFB, if suitable habitat is present, include: short-eared owl (*Asio flammeus*), McCown's longspur (*Calcarius mccownii*), chestnut-collared longspur (*C. ornatus*), bald eagle, Lewis's woodpecker (*Melanerpes lewis*), and Brewer's sparrow (*Spizella breweri*). Bird species listed by the USFWS IPAC System as having the potential to breed on Holloman AFB, if suitable habitat is present, include: cassin sparrow (*Aimophila cassinii*), burrowing owl, Swainson's hawk (*Buteo swainsoni*), snowy plover, Grace's warbler (*Dendroica graciae*), black-chinned sparrow (*Spizella atrogularis*), Virginia's warbler (*Vermivora virginiae*), Bell's vireo (*Vireo bellii*), and gray vireo (*V. vicinior*).

Bird species listed by the USFWS IPAC System as having the potential to be year-round residents on Holloman AFB, if suitable habitat is present, include: rufous-crowned sparrow (*Aimophila ruficeps*), golden eagle (*Aquila chrysaetos*), Peregrine falcon (*Falco peregrinus*), pinyon jay (*Gymnorhinus cyanocephalus*), loggerhead shrike (*Lanius ludovicianus*), and Bendire's thrasher (*Toxostoma bendirei*). Bird species listed by the USFWS IPAC System as having the potential to migrate on Holloman AFB, if suitable habitat is present, include: Sonoran yellow warbler (*Dendroica petechial* ssp. *sonorana*).

Because no construction or ground-disturbance would occur during implementation of the Proposed Action, impacts to these species are not anticipated. However, if determined necessary, conservation measures focusing on avoidance and minimization of adverse impacts to breeding, wintering, and migratory birds and other federally protected species would be implemented during project activities.

If any of the above described species are identified within the vicinity of the Proposed Action, the expected impact would include temporary displacement of individuals. Therefore, we believe a determination of "may effect, not likely to adversely affect" for listed species is appropriate for the Proposed Action.

SENSITIVE HABITATS

In 2015, the U.S. Army Corps of Engineers (USACE) performed a jurisdictional determination of Holloman AFB and found that the base contains isolated intrastate waters without a connection to the nearest Traditional Navigable Water, the Rio Grande. Based on this finding, the USACE determined that waters on Holloman AFB are not jurisdictional or subject to regulation under Section 404 of the Clean Water Act. Implementation of the Proposed Action would not occur near waters or wetlands on Holloman AFB and would not result in any ground disturbance; therefore, adverse effects to sensitive habitats would not occur.

CONCLUSION

The Air Force is requesting initiation of Section 7 consultation pursuant to the ESA and is requesting your input into the preparation of this EA in the following areas:

- Confirmation that our threatened and endangered species list is current and complete.
- Input on our finding of "may affect, not likely to adversely affect" federally threatened and endangered species.

The Air Force appreciates your review of our project activities and assistance with our efforts to identify important biological resources early in the EA development. Upon completion, a copy of the draft EA will be forwarded to your office for review.

Please direct any questions to Mr. Ramon Acevedo-Cruz, Holloman AFB Natural Resources Manager. He can be reached via e-mail at ramon.acevedocruz.3@us.af.mil, (575) 572-3931; or Mr. Andrew Gomolak, NEPA staff, at andrew.gomolak@us.af.mil, (575) 572-6647.

Sincerely

KEVIN A. MARES, Lt Col, USAF
Commander, 49th Civil Engineer Squadron

2 Attachments:
1. Location of Holloman AFB
2. Proposed Project Area

LACKLAND IR F-16 FTU HOLLOMAN005

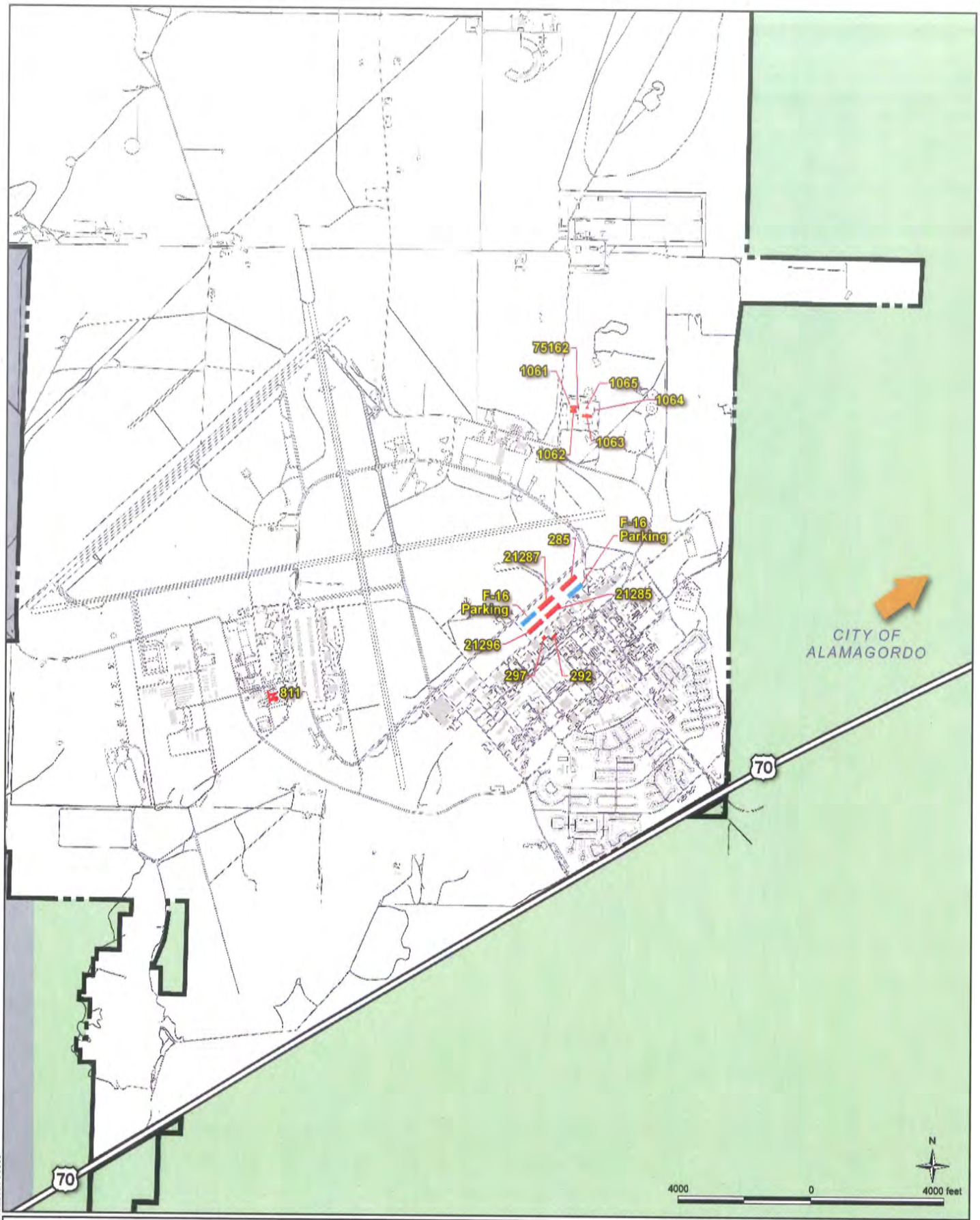
LEGEND

70 U.S. Highway

10 Interstate Highway

Oscura, Red Rio, and Centennial Training Range Locations

Attachment 1



LACKLAND IR F-16 FTU HOLLOMAN\006

LEGEND

- Facilities to Support F-16 FTU
- F-16 Parking
- White Sands Missile Range (WSMR)
- 70 U.S. Highway

Facilities Supporting F-16 FTU Interim Relocation, Holloman AFB

Attachment 2

DEPARTMENT OF THE AIR FORCE
502D AIR BASE WING
JOINT BASE SAN ANTONIO

Ms. Brenda Roesch
Joint Base Civil Engineer
502D Civil Engineer Squadron
1555 Gott Street
JBSA Lackland, TX 78236

Mr. Adam Zerrenner, Field Supervisor
Texas Ecological Services Field Office
U.S. Fish and Wildlife Service
10711 Burnet Road, Suite 200
Austin, TX 78758

SUBJECT: Temporary Relocation of two F-16 Squadrons to Joint Base San Antonio (JBSA) Lackland (Kelly Field), Bexar County, Texas

References:
(a) Endangered Species Act (ESA) of 1973, Section 7(c)(1)
(b) National Environmental Policy Act (NEPA) of 1969, as amended

Dear Mr. Zerrenner

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with temporarily relocating two squadrons of F-16 Fighting Falcon fighter aircraft (total of 45 aircraft) currently based at Hill Air Force Base (AFB), UT, either together or separately, to a location or locations currently hosting an F-16 Flying Training Unit (FTU). The purpose of this letter is to initiate consultation early in the EA planning process regarding any potential adverse effects the Proposed Action might have on biological resources.

I have included two attachments with this correspondence. Attachment 1 is a map depicting the location of JBSA Lackland (Kelly Field). Attachment 2 shows the project area in relation to the installation.

PURPOSE AND NEED FOR ACTION

The purpose of the Proposed Action is to temporarily relocate two F-16 squadrons currently based at Hill AFB to one of the identified potential interim relocation installations (i.e., Holloman AFB, NM or JBSA Lackland [Kelly Field], TX).

The need for the Proposed Action is to make room at Hill AFB for the ongoing beddown of F-35 aircraft and continue F-16 pilot training while permanent F-16 FTU locations are selected and prepared. The aircraft maintenance staff at Hill AFB would discontinue F-16 maintenance as of October 2017 when they begin maintenance training for F-35s. Without maintenance support, F-16 pilot training cannot continue at Hill AFB, necessitating the mission relocation.

PROPOSED ACTION

The Proposed Action is to relocate two squadrons of F-16 aircraft currently based at Hill AFB, UT, either together or separately, to a location or locations currently hosting an F-16 FTU. F-16 aircraft are

scheduled to begin departing Hill AFB in September 2017 with all 45 F-16 aircraft arriving at the interim relocation installation by January 2018. This relocation action is intended to be temporary (approximately 5 years) in order to make room for F-35 aircraft bedding down at Hill AFB while continuing F-16 pilot training during selection and preparation of permanent F-16 FTU beddown location(s). Activities that would occur to support the temporary relocation of the F-16 aircraft include renovation of existing facilities, installation/replacement of security fencing, and training within existing military airspace and ranges. No substantial construction and no impacts outside the built portion of the base are proposed. Permanent relocation of the F-16 squadrons will be addressed in a separate Environmental Impact Analysis Process (EIAP) effort.

The two F-16 FTU squadrons would conduct approximately 8,079 sorties each year including transition, advanced handling, air-to-air, and air-to-ground training.

Personnel associated with the interim relocation would include approximately 175 active duty Air Force personnel and approximately 700 contracted maintenance personnel (total of 875 personnel). This increase in personnel would result in an estimated increase in water usage of 43.8 acre-feet per year

NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the interim relocation of two F-16 squadrons would not occur. The No-Action Alternative is not considered reasonable as it fails to address the purpose and need for the action. However, it will be carried forward for further analysis, consistent with Council on Environmental Quality (CEQ) regulations, to provide a baseline against which the impacts of the Proposed Action and alternatives can be assessed.

THREATENED AND ENDANGERED SPECIES

The JBSA Integrated Natural Resource Management Plan (INRMP), the U.S. Fish and Wildlife Service (USFWS) website's Information, Planning, and Conservation (IPAC) System , and the Texas Parks and Wildlife Department (TPWD) website were reviewed for the most up-to-date information concerning federally and state threatened and endangered species that have the potential to occur within JBSA Lackland (Kelly Field) (Table 1).

Table 1. Federal and State Threatened and Endangered Species Potentially within JBSA Lackland (Kelly Field)

Common Name	Scientific Name	Federal Status	State Status
Plants			
Bracted twistflower	*Streptanthus bracteatus*	Candidate	--
Texas wild-rice	*Zizania texana*	Endangered	Endangered
Insects			
Helotes mold beetle	*Batrisodes venyivi*	Endangered	--
Comal Springs riffle beetle	*Heterelmis comalensis*	Endangered	Endangered
Beetle (no common name)	*Rhadine exilis*	Endangered	--
Beetle (no common name)	*Rhadine infernalis*	Endangered	--
Comal Springs dryopid beetle	*Stygoparnus comalensis*	Endangered	Endangered
Arachnids			
Robber Baron Cave meshweaver	*Cicurina baronia*	Endangered	--
Madla's Cave meshweaver	*Cicurina madla*	Endangered	--
Braken Bat Cave meshweaver	*Cicurina venii*	Endangered	--

Table 1. Federal and State Threatened and Endangered Species Potentially within JBSA Lackland (Kelly Field)

Common Name	Scientific Name	Federal Status	State Status
Government Canyon Bat Cave meshweaver	*Cicurina vespera*	Endangered	--
Government Canyon Bat Cave spider	*Neoleptoneta microps*	Endangered	--
Cokendolpher Cave harvestman	*Texella cokendolpheri*	Endangered	--
Crustaceans			
Peck's Cave amphipod	*Stygobromus pecki*	Endangered	Endangered
Clams			
Texas fatmucket	*Lampsilis bracteata*	Candidate	Threatened
Golden orb	*Quadrula aurea*	Candidate	Threatened
Texas Pimpleback	*Quadrula petrina*	Candidate	Threatened
Fish			
Fountain darter	*Etheostoma fonticola*	Endangered	Endangered
Amphibians			
San Marcos salamander	*Eurycea nana*	Threatened	Threatened
Texas blind salamander	*Typhlomolge rathbuni*	Endangered	Endangered
Reptiles			
Timber/canebrake rattlesnake	*Crotalus horridus*	--	Threatened
Texas indigo snake	*Drymarchon melanurus erebennus*	--	Threatened
Texas tortoise	*Gopherus berlandieri*	--	Threatened
Texas horned lizard	*Phrynosoma cornutum*	--	Threatened
Birds			
Zone-tailed hawk	*Buteo albonotatus*	--	Threatened
Red knot	*Calidris cantus rufa*	Threatened	--
Piping plover	*Charadrius melodus*	Threatened	Threatened
Golden-cheeked warbler	*Dendroica chrysoparia*	Endangered	Endangered
Peregrine falcon	*Falco peregrinus*	Delisted	Threatened
Whooping crane	*Grus americana*	Endangered	Endangered
Bald eagle	*Haliaeetus leucocephalus*	Delisted	Threatened
Least tern	*Sternula antillarum*	Endangered	Endangered
Black-capped vireo	*Vireo atricapilla*	Endangered	Endangered

Notes:

Candidate = Any species that is under consideration for official listing as Endangered or Threatened for which there is sufficient information to support listing.

Endangered = Any species that is in danger of extinction throughout all or a significant portion of its range.

Threatened = Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Based on information included in the 2015 JBSA INRMP, there are no federally listed species known to occur on JBSA Lackland (Kelly Field). Therefore, implementation of the Proposed Action is not likely to adversely affect federally threatened and endangered species.

The increase in 875 personnel to support the two squadrons is estimated to increase water usage by 43.8 acre-feet per year. Currently JBSA withdraws approximately 4,840 acre-feet of water per year from the Edwards Aquifer. The increase in water usage would result in approximately 4,884 acre-feet of water being pumped by JBSA, which is well within the allowable pumping limit of 12,012 acre-feet per year from the Edwards Aquifer specified in the Biological Opinion. As a result, species dependent on water within the Edwards Aquifer (i.e., Texas wild-rice, Peck's Cave amphipod, Comal Springs dryopid beetle,

San Marcos gambusia, fountain darter, San Marcos salamander, and Texas blind salamander) may be affected, but not likely adversely affect by the increase in personnel at JBSA Lackland (Kelly Field).

The federal candidate bracted twistflower (*Streptanthus bracteatus*) is an annual herb with showy purple flowers from late April to May. The bracted twistflower is found in oak-juniper woodlands and associated openings on slopes and in canyon bottoms with shallow, well drained, gravelly clays and clay loams over limestone. This type of habitat does not exist within JBSA Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

The federal and state endangered Texas wild-rice (*Zizania texana*) is an aquatic perennial grass found in clear, flowing waters of spring origin with gravelly, sandy to silty clay soils. This type of habitat does not exist within JBSA Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

The federal and state endangered Comal Springs riffle beetle (*Heterelmis comalensis*), Comal Springs dryopid beetle (*Stygoparnus comalensis*), Peck's Cave amphipod (*Stygobromus pecki*), fountain darter (*Etheostoma fonticola*), Texas blind salamander (*Typhlomolge rathbuni*), the federal and state threatened San Marcos salamander (*Eurycea nana*), the federal candidate and state threatened Texas fatmucket (*Lampsilis bracteata*), golden orb (*Quadrula aurea*) and Texas pimpleback (*Q. petrina*) are not known to occur in Bexar County; therefore, these species are not likely to occur on the installation.

The federally endangered Helotes mold beetle (*Batrisodes venyivi*), Beetle (*Rhadine exilis*), Beetle (*R. infernalis*), Robber Baron Cave meshweaver (*Cicurina baronia*), Madla's Cave meshweaver (*C. madla*), Braken Bat Cave meshweaver (*C. venii*), Government Canyon Bat Cave meshweaver (*C. vespera*), Government Canyon Bat Cave spider (*Neoleptoneta microps*), and Cokendolpher Cave harvestman (*Texella cokendolpheri*) inhabit caves and mesocaverns and are only known to occur in karst landforms in northwest Bexar County. This type of habitat does not exist within JBSA Lackland (Kelly Field); therefore, these species are not likely to occur on the installation.

The state threatened timber/canebrake rattlesnake (*Crotalus horridus*) typically occurs within or in close proximity to woodland habitats. The rattlesnake prefers rocky areas where underground crevices provide retreats for overwintering, such as a fissure in a ledge, a crevice between ledge and ground, talus below a cliff, open skree slope, or fallen rock partly covered by soil. Timber/canebrake rattlesnake has the potential to occur within JBSA Lackland (Kelly Field); however, implementation of the Proposed Action would not result in substantial ground disturbance (e.g., installation of a security fence) and is not likely to adversely affect this species.

The state threatened Texas indigo snake (*Drymarchon melanurus erebennus*) can be found in mesquite savanna, thorn brush woodlands, grassy plains, and coastal sand hills, utilizing underground burrows with high humidity for molting and permanent dens. Indigo snakes require large areas of suitable habitats as the species has a large home range size of up to 229 hectares (ha) during the summer months. Texas indigo snake has the potential to occur within JBSA Lackland (Kelly Field); however, implementation of the Proposed Action would not result in substantial ground disturbance and is not likely to adversely affect this species.

The state threatened Texas tortoise (*Gopherus berlandieri*) occurs in open scrub woods, arid brush, lomas, and grass-cactus association; often in areas with sandy well-drained soils. When inactive, it occupies shallow depressions dug at the base of bushes or cactus; sometimes in an underground burrow, or under an object. Texas tortoise has the potential to occur within JBSA Lackland (Kelly Field); however, implementation of the Proposed Action would not result in substantial ground disturbance and is not likely to adversely affect this species.

The state threatened Texas horned lizard (*Phrynosoma cornutum*) can be found in arid and semi-arid habitats in open areas with sparse grass cover. Texas horned lizard has the potential to occur within

JBSA Lackland (Kelly Field); however, implementation of the Proposed Action would not result in substantial ground disturbance and is not likely to adversely affect this species.

The federal and state endangered whooping crane (*Grus americana*), the federally threatened red knot (*Calidris cantus rufa*), the federally delisted and state threatened peregrine falcon (*Falco peregrinus*), bald eagle (*Haliaeetus leucocephalus*), and the state threatened zone-tailed hawk (*Buteo albonotatus*) are possible transient visitors to JBSA Lackland (Kelly Field). Implementation of the Proposed Action would not result in substantial ground disturbance; therefore, the Proposed Action is not likely to adversely affect these species.

The federal and state threatened piping plover (*Charadrius melodus*) nests on shorelines around small alkaline lakes, large reservoir beaches, river islands and adjacent sand pits, beaches on large lakes, and industrial pond shorelines. Suitable breeding habitats are wide beaches with highly clumped vegetation, having less than 5 percent overall vegetation cover and/or with extensive gravel. This type of habitat does not exist within JBSA Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

The federal and state endangered golden-cheeked warbler (*Dendroica chrysoparia*) is found within juniper-oak woodlands, and is dependent on Ashe juniper (*Juniperus ashei*) for pealing bark from mature trees to use in nest construction. This type of habitat does not exist within JBSA Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

The federal and state endangered least tern (*Sternula antillarum*) nests along sand and gravel bars within braided streams and rivers and is also known to nest on man-made structures such as inland beaches, wastewater treatment plants, and gravel mines. This type of habitat does not exist within JBSA Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

The federal and state endangered black-caped vireo (*Vireo atricapilla*) is found in oak-juniper woodlands with a distinctive patchy, two-layered aspect of a shrub and tree layer with open, grassy spaces. This type of habitat does not exist within JBSA Lackland (Kelly Field); therefore, this species is not likely to occur on the installation.

Nesting and breeding migratory bird species protected under the Migratory Bird Treaty Act (MBTA) have the potential to occur within JBSA Lackland (Kelly Field).

Bird species listed by the USFWS IPAC System as having the potential to winter on JBSA Lackland (Kelly Field), if suitable habitat is present, include: Le Conte's sparrow (*Ammodramus leconteii*), Sprague's pipit (*Anthus spragueii*), short-eared owl (*Asio flammeus*), burrowing owl (*Athene cunicularia*), lark bunting (*Calamospiza melanocorys*), chestnut-collared longspur (*Calcarius ornatus*), peregrine falcon, bald eagle, red-headed woodpecker (*Melanerpes erythrocephalus*), fox sparrow (*Passerella iliaca*), lesser yellowlegs (*Tringa flavipes*), and Harris's sparrow (*Zonotrichia querula*). Bird species listed by the USFWS IPAC System as having the potential to breed on JBSA Lackland (Kelly Field), if suitable habitat is present, include: little blue heron (*Egretta caerulea*), orchard oriole (*Icterus spurius*), least bittern (*Ixobrychus exilis*), painted bunting (*Passerina ciris*), dickcissel (*Spiza americana*), scissor-tailed flycatcher (*Tyrannus forficatus*), and Bell's vireo (*Vireo bellii*). Bird species listed by the USFWS IPAC System as having the potential to be year-round residents on JBSA Lackland (Kelly Field), if suitable habitat is present, include: rufous-crowned sparrow (*Aimophila ruficeps*), Audubon's oriole (*Icterus graduacauda*), and loggerhead shrike (*Lanius ludovicianus*). Bird species listed by the USFWS IPAC System as having the potential to migrate on JBSA Lackland (Kelly Field), if suitable habitat is present, include: hudsonian godwit (*Limosa haemastica*).

Because no substantial construction or ground disturbance would occur during implementation of the Proposed Action, the action may affect but not likely to adversely affect these species However, if determined necessary, conservation measures focusing on avoidance and minimization of adverse impacts

to breeding, wintering, and migratory birds and other federally protected species would be implemented during project activities.

If any of the above described species are identified within the vicinity of the Proposed Action, the expected impact would include temporary displacement of individuals. Therefore, we believe a determination of "may effect, not likely to adversely affect" for listed species is appropriate for the Proposed Action.

SENSITIVE HABITATS

A total of 18.09 acres of U.S. jurisdictional waters have been identified within JBSA Lackland. Implementation of the Proposed Action would not occur near these areas and would not result in substantial ground disturbance; therefore, adverse affects to sensitive habitats would not occur.

CONCLUSION

The Air Force is requesting initiation of Section 7 consultation pursuant to the ESA and is requesting your input into the preparation of this EA in the following areas:

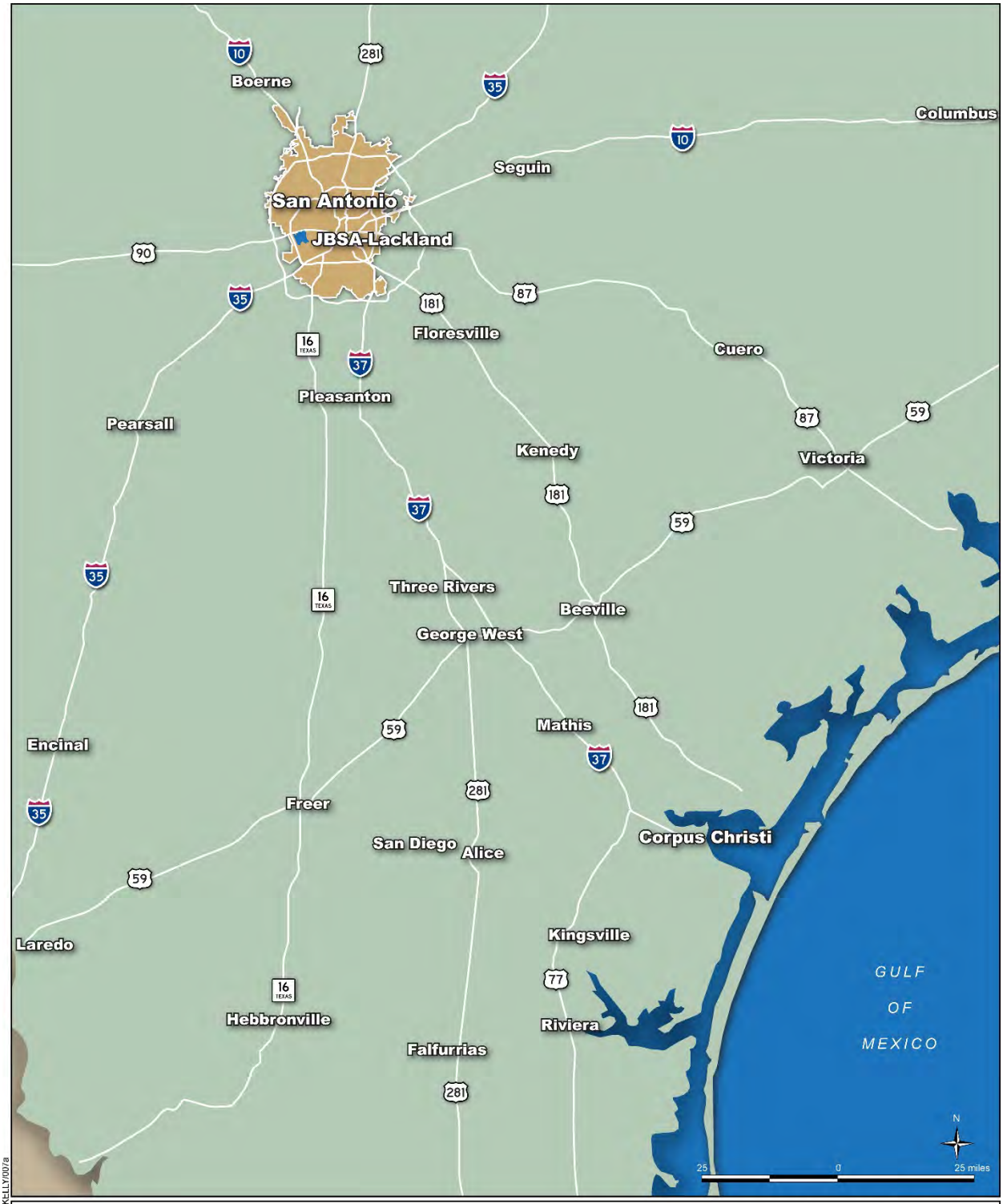
- Confirmation that our threatened and endangered species list is current and complete.
- Input on our finding of "may affect, not likely to adversely affect" federally threatened and endangered species.

The Air Force appreciates your review of our project activities and assistance with our efforts to identify important biological resources early in the EA development. Upon completion, a copy of the draft EA will be forwarded to your office for review.

Please direct any questions to Mr. Rustin Tabor, 502 CES/CEIE, 1555 Gott Street, JBSA Lackland, TX 78236, by e-mail at rustin.t.tabor.civ@mail.mil, or via telephone at (210) 295-8339.

BRENDA ROESCH

2 Attachments:
1. Location of JBSA Lackland (Kelly Field)
2. Proposed Project Area



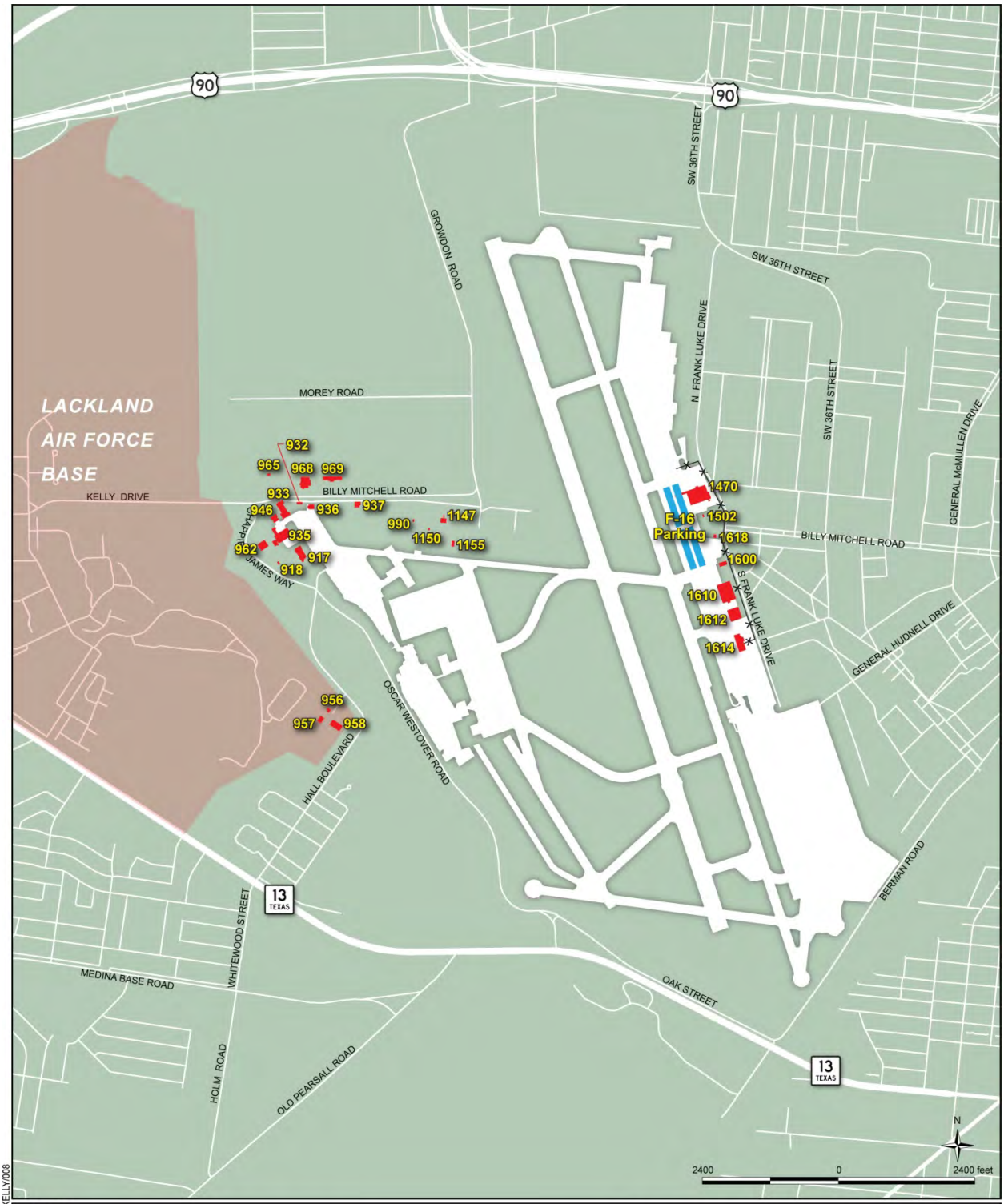
LEGEND

- U.S. Highway
- Texas State Highway
- Interstate Highway

JBSA-Lackland (Kelly Field) Location

Attachment 1

LACKLAND JK1-16-1 U KELLY/007a



LACKLAND IR F-16 FTU KELLY/008

LEGEND

- Facilities to Support F-16 FTU
- F-16 Parking
- New Security Fence
- 90 U.S. Highway
- 13 TEXAS Texas State Highway

JBSA Lackland (Kelly Field) Facilities Supporting F-16 FTU Interim Relocation

Attachment 2

SECTION 106 CONSULTATION

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (ACC)
HOLLOMAN AIR FORCE BASE NEW MEXICO

JAN 0 9 2016

Lieutenant Colonel Kevin A. Mares
Commander, 49th Civil Engineer Squadron
550 Tabosa Avenue
Holloman AFB NM 88330-8458

New Mexico Historic Preservation Division
Attn: Jeff Pappas, PhD
State Historic Preservation Officer
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe NM 87501

Dear Dr. Pappas

The purpose of this letter is to initiate consultation early in accordance with the National Historic Preservation Act and the National Environmental Policy Act. The US Department of the Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) that evaluates the potential effects on historic properties and impacts on human health and the environment that would be associated with the relocation of two squadrons (45 planes) of F-16 Fighting Falcon aircraft currently based at Hill AFB, Utah, either together or separately, to a location or locations currently hosting an F-16 Formal Training Unit (FTU).

Four potential interim relocation installations were evaluated. These included Holloman AFB, New Mexico, Joint Base San Antonio (JBSA) Lackland (Kelly Field), Texas, Luke AFB, Arizona, and Tucson International Airport (IAP), Air National Guard Base (ANGB), Arizona. The four alternatives were screened against selection standards based on availability, construction requirements, and capacity. Based on the screening, Luke AFB and Tucson IAP ANGB failed to meet one or more of the selection standards and were eliminated from consideration. Holloman AFB and JBSA-Lackland (Kelly Field) were selected as reasonable alternatives.

Description of the Undertaking

The Proposed Action is to relocate two squadrons of F-16 aircraft (total of 45 aircraft) currently based at Hill AFB, Utah, either together or separately, to a location or locations currently hosting a F-16 FTU. The purpose of the action is intended to be a temporary relocation (approximately 5 years) to make room for the beddown of F-35 aircraft at Hill AFB, and use the F-16s to increase F-16 pilot production while permanent F-16 FTU location(s) are selected and prepared. Activities that would occur to support the temporary relocation of the F-16 aircraft include interior renovation of existing facilities and training within existing military airspace and ranges. A list of the existing facilities, the proposed uses and the level of renovations proposed to support the interim relocation of the two squadrons of F-16 aircraft at Holloman AFB, is provided in Table 1.

Table 1. Facilities to Support F-16 FTU at Holloman AFB

Building No.	Year Constructed	Square Footage	Support of Interim Relocation/*Renovation*
283	1971	24,822	**Base Supply and Equipment Warehouse** To be used for warehousing/storage. *No renovation.*
285	1996	42,000	**Maintenance Dock** Facility contains three sections with 2 bays each; each section could hold one F-16 aircraft for sorties, two F-16 aircraft for parking. Facility would be available to support the FTU in October 2017. Facility has a non-high expansion foam (HEF) fire suppression system in-place, recommend utilizing as is with a Fire Safety Deficiency (FSD) waiver. *No renovation.*
292	1982	10,000	**T-38 Aircraft Parts Storage** Facility would be used as a parts warehouse. Facility contains a secured vaulted storage area. A 60 x 200 foot area is available for parts storage and warehousing. *No renovation.*
297	1981	11,051	**Non-Destruction Inspection (NDI) Laboratory** Facility to be used as an Aircraft Maintenance Unit (AMU) facility. *Renovate to convert facility from an NDI laboratory back to an AMU.*
316	1977	45,607	**F-16 Simulator Training Facility** Facility to be used as a simulator facility. *No renovation.*
811*	1956	56,908	**54th Fighter Group Command Post/Communications** Facility would be used as a Squadron Operations building with 2 Sensitive Compartmented Information Facility (SCIF) vaults. The facility was extensively remodeled in 1958, 1959, and 1969, and a portion of the building is proposed for demolition due to deterioration. *Renovate interior to include secured mission briefing areas.*
839*	1953	26,965	**Precision Measurement Equipment (PME) Laboratory** To continue in use as a PME laboratory. *No renovation.*
919	2013	996	**Hydrazine Facility** To be used as hydrazine facility. *No renovation.*
1061	1992	748	**4th Space Guard Shack** To be used as a guard shack. *No renovation.*
1062	1992	37,485	**4th Space Operations Building** To be used as Squadron Operations for both squadrons. Recertification of vault, armory, and secured (classified) briefing rooms would be required. *Renovations would include creation of two 4,000 square feet (sf) mission planning vaults, one secure briefing room with classified storage, and installation of an intrusion detection system.*
1063	1992	24,863	**4th Space Maintenance Building** To be used as multiple contractor maintenance back shops. *Renovations would be conducted for contractor maintenance such as Egress and other back shops.*
1064	1993	40	**4th Space Water Fire Pumping Station** To be used as water pump station for firefighting. *No renovation.*
1065	2001	4,600	**4th Space Storage Facility** To be used as a simulator facility. *Renovation to convert building from warehouse to simulator facility and installation of intrusion detection system.*
1211	2000	1,961	**Munitions Administration** To be used as administrative building for munitions storage. *No renovation.*
1223	2000	5,157	**Missile Assembly Shop** To be used as missile assembly shop. *No renovation.*
1227	2000	6,562	**Conventional Munitions Shop** To be used as conventional munitions shop. *No renovation.*

Table 1. Facilities to Support F-16 FTU at Holloman AFB

Building No.	Year Constructed	Square Footage	Support of Interim Relocation/*Renovation*
1230	2000	1,350	**Inert Munitions Storage** To be used for inert munitions storage. *No renovation.*
1240	1999	1,560	**Munitions Storage Igloo** To be used for munitions storage. *No renovation.*
1244	1999	1,350	**Munitions Storage Igloo** To be used for munitions storage. *No renovation.*
11285	1995	1,098	**Pad, Power Check** To be used as trim pad (anchored aircraft engine run-up check site). *No renovation.* Facility 11285 jet engine thrust & sound deflecting baffle 'hush house' on site is scheduled for demolition.
11648	1989	338	**South Hush House** To be used as a hush house. *No renovation.*
11649	1989	367	**North Hush House** To be used as a hush house. *No renovation.*
12245	1996	6,319lf	**Liquid Fuels Pipeline** To be used to refuel aircraft *No renovation.*
12285	1996	25,000ga	**Jet Fuel Tank 24** To be used to store fuel in support of refueling aircraft. *No renovation.*
12286	1996	25,000ga	**Jet Fuel Tank 25** To be used to store fuel in support of refueling aircraft. *No renovation.*
12287	2001	25,000ga	**Jet Fuel Tank 26** To be used to store fuel in support of refueling aircraft. *No renovation.*
12288	2001	25,000ga	**Jet Fuel Tank 27** To be used to store fuel in support of refueling aircraft. *No renovation.*
21295	2000	52,774	**Maintenance Dock** Facility contains three sections with 2 bays each; each section could hold one F-16 aircraft for sorties, two F-16 aircraft for parking. Facility would be available to support the FTU in October 2017. Facility has a non-HEF fire suppression system in-place, recommend utilizing as is with a FSD waiver. Facility contains a paint booth in one of the bays. *No renovation.*
21296	2000	52,774	**Maintenance Dock** Facility contains three sections with 2 bays each; each section could hold one F-16 aircraft for sorties, two F-16 aircraft for parking. Facility would be available to support the FTU in May 2017. Facility has a non-HEF fire suppression system in-place, recommend utilizing as is with a FSD waiver. *No renovation.*
21297	2000	52,774	**Maintenance Dock** Facility contains three sections with 2 bays each; each section could hold one F-16 aircraft for sorties, two F-16 aircraft for parking. Facility would be available to support the FTU in May 2017. Facility has a non-HEF fire suppression system in-place, recommend utilizing as is with a FSD waiver. *No renovation.*
75162	2003	NA	**4th Space Recreation Facility** To be used to support recreational needs of personnel. *No renovation.*

*Facility 811, 839, >50 years, previously determined not eligible for listing in the National Register of Historic Places (NRHP).

Area of Potential Effect

The cultural resources area of potential effect (APE) is the spatial limits of potential ground disturbing activities and encompasses the facilities supporting the F-16 FTU interim relocation, staging areas, utility relocations, and project-specific locations designated by the USAF. The APE, comprised of approximately 75 acres, is all within the built environment of main base Holloman and includes 31 facilities and two F-16 parking areas. Attachment 1 illustrates the locations of the larger facilities and the aircraft parking areas.

Identification of Cultural Resources

The New Mexico Cultural Resource Information System (NMCRIS) and Holloman AFB records were reviewed to compile information about previously recorded cultural resources that may be affected by the F-16 FTU interim relocation. The area reviewed was extended well beyond the buildings that would be used for the Holloman AFB relocation (see Figure). The review was conducted by visual comparison of online and file information with the known building locations.

Prehistoric and Historic Archaeological Resources

To date, archaeological investigations at Holloman AFB have located 262 archaeological sites on the Main Base. Of these, 94 are considered National Register of Historic Places (NRHP)-eligible, 86 have yet to be evaluated, and 82 are determined not eligible. This review identified three previously recorded archaeological sites within the vicinity of the APE, although all are greater than 500 feet from any of the buildings proposed for use. All three of the sites (LA99789/HAR-010, LA105442/HAR-040, and LA99790/HAR-011) are foundations and artifact scatters of demolished military facilities. HAR 10 and 11 were determined not eligible, 8 March 1993 (HPD Log# 39099). HAR 40 was recorded as; but, is yet to be determined, not eligible for listing in the NRHP. No other archaeological sites are nearer to, and none are expected to be impacted by, the Proposed Action.

No ground disturbance would occur for the F-16 parking area as the existing ramp would be re-striped and anchor points installed into the concrete apron. The proposed renovation of facilities 811 and 11285 have the potential for ground disturbing activities that could affect buried archaeological resources, but both are in/on landscape built since 1942, and the likelihood of significant buried deposits is considered low. Inadvertent discovery reporting requirements are included in all ground impacting contracts.

Historic Buildings and Structures

There are currently 23 architectural resources at Holloman AFB that are considered NRHP-eligible and none of those would be affected by the proposed action. Further, because no exterior construction is proposed, there will be no change in the view to or from those eligible properties. Of the 31 facilities listed in Table 1 above, two are 50 years or older and have been previously determined not eligible for listing in the NRHP (811 in 2009 and 839 in 1997).

Determination

Because no archaeological cultural resources are apparent in the areas to be affected, and no facilities considered historic properties will be affected, we determine that the proposed undertaking would have no adverse effect on historic properties eligible for or listed on the NRHP.

Traditional Cultural Properties

There are no known traditional cultural properties or natural resource sites on Holloman AFB. The Air Force has initiated consultation with representatives of the Mescalero Apache Tribe and the Fort Sill Apache Tribe. The purpose of these consultations is to determine NHPA and American Indian Religious Freedom Act related concerns such as sites of past cultural activity, landforms, and components of the natural environment that may occur at the project site and are important to traditional practices of Native Americans.

Conclusions

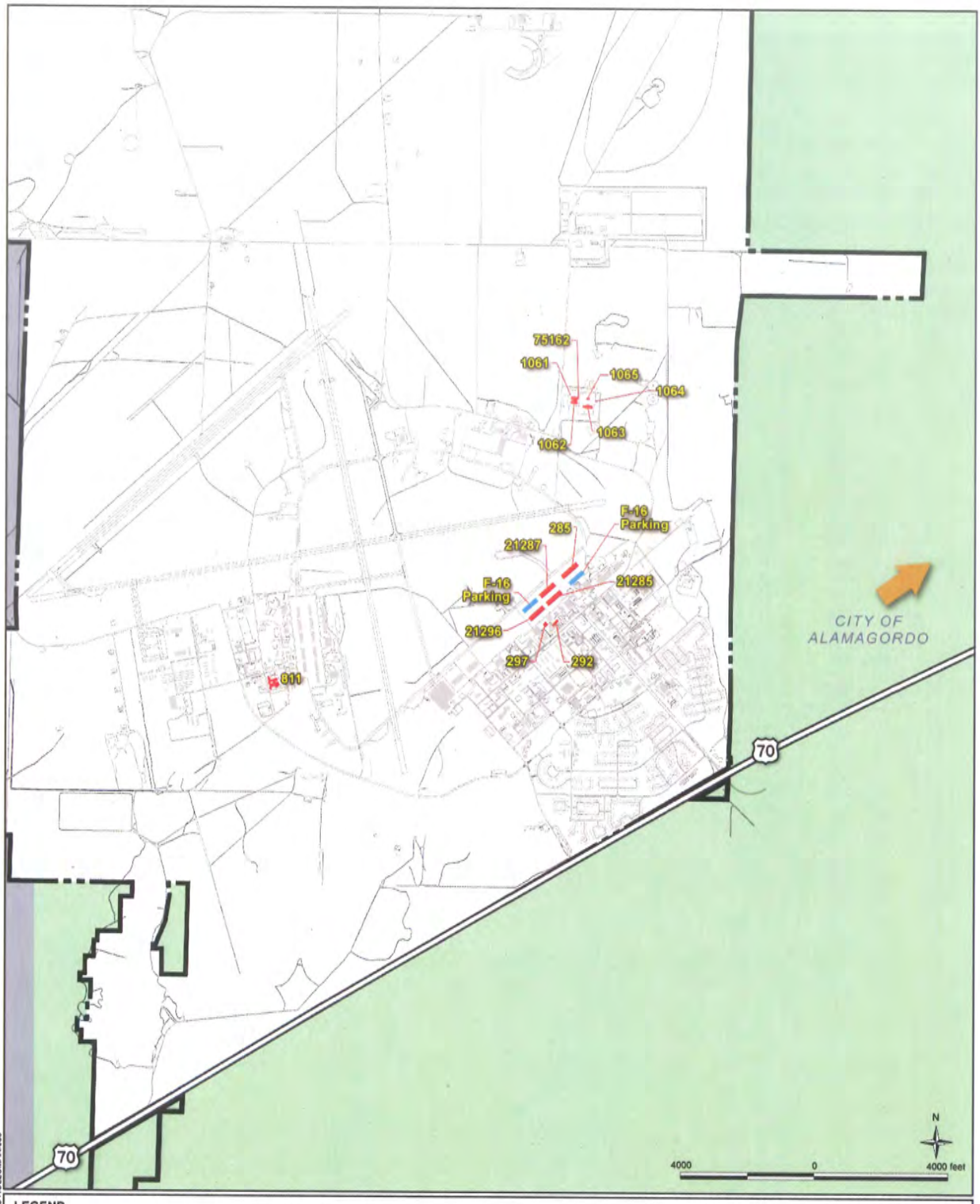
Based on the preceding, Holloman AFB requests that the New Mexico SHPO concur with our delineation of the APE for this undertaking, and with our determination that the proposed activities would have no adverse effect to historic properties.

The Air Force appreciates your review of our project activities and assistance with our efforts to identify cultural resource concerns early in the EA development. A copy of the draft EA will be forwarded to your office for review and comment. Please direct any comments and questions to Mr. Andrew Gomolak at 49 CES/CEIE, 550 Tabosa Avenue, Holloman AFB, NM 88330-8458, e-mail: andrew.gomolak@us.af.mil, or at (575) 572-6647.

Sincerely

KEVIN A. MARES, Lt Col, USAF
Commander, 49th Civil Engineer Squadron

Attachment:
Map of Facilities Supporting the F-16 FTU Interim Relocation



LEGEND

- Facilities to Support F-16 FTU
- F-16 Parking
- White Sands Missile Range (WSMR)
- 70 U.S. Highway

Facilities Supporting F-16 FTU
Interim Relocation, Holloman AFB

Attachment 1

LACKLAND:IR:F-16 FTU HOLLOMAN\006

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (ACC)
HOLLOMAN AIR FORCE BASE NEW MEXICO

JAN 09 2016
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RECEIVED
JAN 20 2017
HISTORIC PRESERVATION DIVISION

Lieutenant Colonel Kevin A. Mares
Commander, 49th Civil Engineer Squadron
550 Tabosa Avenue
Holloman AFB NM 88330-8458

New Mexico Historic Preservation Division
Attn: Jeff Pappas, PhD
State Historic Preservation Officer
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe NM 87501

Dear Dr. Pappas

The purpose of this letter is to initiate consultation early in accordance with the National Historic Preservation Act and the National Environmental Policy Act. The US Department of the Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) that evaluates the potential effects on historic properties and impacts on human health and the environment that would be associated with the relocation of two squadrons (45 planes) of F-16 Fighting Falcon aircraft currently based at Hill AFB, Utah, either together or separately, to a location or locations currently hosting an F-16 Formal Training Unit (FTU).

Four potential interim relocation installations were evaluated. These included Holloman AFB, New Mexico, Joint Base San Antonio (JBSA) Lackland (Kelly Field), Texas, Luke AFB, Arizona, and Tucson International Airport (IAP), Air National Guard Base (ANGB), Arizona. The four alternatives were screened against selection standards based on availability, construction requirements, and capacity. Based on the screening, Luke AFB and Tucson IAP ANGB failed to meet one or more of the selection standards and were eliminated from consideration. Holloman AFB and JBSA-Lackland (Kelly Field) were selected as reasonable alternatives.

Description of the Undertaking

The Proposed Action is to relocate two squadrons of F-16 aircraft (total of 45 aircraft) currently based at Hill AFB, Utah, either together or separately, to a location or locations currently hosting a F-16 FTU. The purpose of the action is intended to be a temporary relocation (approximately 5 years) to make room for the beddown of F-35 aircraft at Hill AFB, and use the F-16s to increase F-16 pilot production while permanent F-16 FTU location(s) are selected and prepared. Activities that would occur to support the temporary relocation of the F-16 aircraft include interior renovation of existing facilities and training within existing military airspace and ranges. A list of the existing facilities, the proposed uses and the level of renovations proposed to support the interim relocation of the two squadrons of F-16 aircraft at Holloman AFB, is provided in Table 1.

Table 1. Facilities to Support F-16 FTU at Holloman AFB

Building No.	Year Constructed	Square Footage	Support of Interim Relocation/*Renovation*
283	1971	24,822	**Base Supply and Equipment Warehouse** To be used for warehousing/storage. *No renovation.*
285	1996	42,000	**Maintenance Dock** Facility contains three sections with 2 bays each; each section could hold one F-16 aircraft for sorties, two F-16 aircraft for parking. Facility would be available to support the FTU in October 2017. Facility has a non-high expansion foam (HEF) fire suppression system in-place, recommend utilizing as is with a Fire Safety Deficiency (FSD) waiver. *No renovation.*
292	1982	10,000	**T-38 Aircraft Parts Storage** Facility would be used as a parts warehouse. Facility contains a secured vaulted storage area. A 60 x 200 foot area is available for parts storage and warehousing. *No renovation.*
297	1981	11,051	**Non-Destruction Inspection (NDI) Laboratory** Facility to be used as an Aircraft Maintenance Unit (AMU) facility. *Renovate to convert facility from an NDI laboratory back to an AMU.*
316	1977	45,607	**F-16 Simulator Training Facility** Facility to be used as a simulator facility. *No renovation.*
811*	1956	56,908	**54th Fighter Group Command Post/Communications** Facility would be used as a Squadron Operations building with 2 Sensitive Compartmented Information Facility (SCIF) vaults. The facility was extensively remodeled in 1958, 1959, and 1969, and a portion of the building is proposed for demolition due to deterioration. *Renovate interior to include secured mission briefing areas.*
839*	1953	26,965	**Precision Measurement Equipment (PME) Laboratory** To continue in use as a PME laboratory. *No renovation.*
919	2013	996	**Hydrazine Facility** To be used as hydrazine facility. *No renovation.*
1061	1992	748	**4th Space Guard Shack** To be used as a guard shack. *No renovation.*
1062	1992	37,485	**4th Space Operations Building** To be used as Squadron Operations for both squadrons. Recertification of vault, armory, and secured (classified) briefing rooms would be required. *Renovations would include creation of two 4,000 square feet (sf) mission planning vaults, one secure briefing room with classified storage, and installation of an intrusion detection system.*
1063	1992	24,863	**4th Space Maintenance Building** To be used as multiple contractor maintenance back shops. *Renovations would be conducted for contractor maintenance such as Egress and other back shops.*
1064	1993	40	**4th Space Water Fire Pumping Station** To be used as water pump station for firefighting. *No renovation.*
1065	2001	4,600	**4th Space Storage Facility** To be used as a simulator facility. *Renovation to convert building from warehouse to simulator facility and installation of intrusion detection system.*
1211	2000	1,961	**Munitions Administration** To be used as administrative building for munitions storage. *No renovation.*
1223	2000	5,157	**Missile Assembly Shop** To be used as missile assembly shop. *No renovation.*
1227	2000	6,562	**Conventional Munitions Shop** To be used as conventional munitions shop. *No renovation.*

Table 1. Facilities to Support F-16 FTU at Holloman AFB

Building No.	Year Constructed	Square Footage	Support of Interim Relocation/*Renovation*
1230	2000	1,350	**Inert Munitions Storage** To be used for inert munitions storage. *No renovation.*
1240	1999	1,560	**Munitions Storage Igloo** To be used for munitions storage. *No renovation.*
1244	1999	1,350	**Munitions Storage Igloo** To be used for munitions storage. *No renovation.*
11285	1995	1,098	**Pad, Power Check** To be used as trim pad (anchored aircraft engine run-up check site). *No renovation.* Facility 11285 jet engine thrust & sound deflecting baffle 'hush house' on site is scheduled for demolition.
11648	1989	338	**South Hush House** To be used as a hush house. *No renovation.*
11649	1989	367	**North Hush House** To be used as a hush house. *No renovation.*
12245	1996	6,319lf	**Liquid Fuels Pipeline** To be used to refuel aircraft *No renovation.*
12285	1996	25,000ga	**Jet Fuel Tank 24** To be used to store fuel in support of refueling aircraft. *No renovation.*
12286	1996	25,000ga	**Jet Fuel Tank 25** To be used to store fuel in support of refueling aircraft. *No renovation.*
12287	2001	25,000ga	**Jet Fuel Tank 26** To be used to store fuel in support of refueling aircraft. *No renovation.*
12288	2001	25,000ga	**Jet Fuel Tank 27** To be used to store fuel in support of refueling aircraft. *No renovation.*
21295	2000	52,774	**Maintenance Dock** Facility contains three sections with 2 bays each; each section could hold one F-16 aircraft for sorties, two F-16 aircraft for parking. Facility would be available to support the FTU in October 2017. Facility has a non-HEF fire suppression system in-place, recommend utilizing as is with a FSD waiver. Facility contains a paint booth in one of the bays. *No renovation.*
21296	2000	52,774	**Maintenance Dock** Facility contains three sections with 2 bays each; each section could hold one F-16 aircraft for sorties, two F-16 aircraft for parking. Facility would be available to support the FTU in May 2017. Facility has a non-HEF fire suppression system in-place, recommend utilizing as is with a FSD waiver. *No renovation.*
21297	2000	52,774	**Maintenance Dock** Facility contains three sections with 2 bays each; each section could hold one F-16 aircraft for sorties, two F-16 aircraft for parking. Facility would be available to support the FTU in May 2017. Facility has a non-HEF fire suppression system in-place, recommend utilizing as is with a FSD waiver. *No renovation.*
75162	2003	NA	**4th Space Recreation Facility** To be used to support recreational needs of personnel. *No renovation.*

*Facility 811, 839, >50 years, previously determined not eligible for listing in the National Register of Historic Places (NRHP).

Area of Potential Effect

The cultural resources area of potential effect (APE) is the spatial limits of potential ground disturbing activities and encompasses the facilities supporting the F-16 FTU interim relocation, staging areas, utility relocations, and project-specific locations designated by the USAF. The APE, comprised of approximately 75 acres, is all within the built environment of main base Holloman and includes 31 facilities and two F-16 parking areas. Attachment 1 illustrates the locations of the larger facilities and the aircraft parking areas.

Identification of Cultural Resources

The New Mexico Cultural Resource Information System (NMCRIS) and Holloman AFB records were reviewed to compile information about previously recorded cultural resources that may be affected by the F-16 FTU interim relocation. The area reviewed was extended well beyond the buildings that would be used for the Holloman AFB relocation (see Figure). The review was conducted by visual comparison of online and file information with the known building locations.

Prehistoric and Historic Archaeological Resources

To date, archaeological investigations at Holloman AFB have located 262 archaeological sites on the Main Base. Of these, 94 are considered National Register of Historic Places (NRHP)-eligible, 86 have yet to be evaluated, and 82 are determined not eligible. This review identified three previously recorded archaeological sites within the vicinity of the APE, although all are greater than 500 feet from any of the buildings proposed for use. All three of the sites (LA99789/HAR-010, LA105442/HAR-040, and LA99790/HAR-011) are foundations and artifact scatters of demolished military facilities. HAR 10 and 11 were determined not eligible, 8 March 1993 (HPD Log# 39099). HAR 40 was recorded as; but, is yet to be determined, not eligible for listing in the NRHP. No other archaeological sites are nearer to, and none are expected to be impacted by, the Proposed Action.

No ground disturbance would occur for the F-16 parking area as the existing ramp would be re-striped and anchor points installed into the concrete apron. The proposed renovation of facilities 811 and 11285 have the potential for ground disturbing activities that could affect buried archaeological resources, but both are in/on landscape built since 1942, and the likelihood of significant buried deposits is considered low. Inadvertent discovery reporting requirements are included in all ground impacting contracts.

Historic Buildings and Structures

There are currently 23 architectural resources at Holloman AFB that are considered NRHP-eligible and none of those would be affected by the proposed action. Further, because no exterior construction is proposed, there will be no change in the view to or from those eligible properties. Of the 31 facilities listed in Table 1 above, two are 50 years or older and have been previously determined not eligible for listing in the NRHP (811 in 2009 and 839 in 1997).

Determination

Because no archaeological cultural resources are apparent in the areas to be affected, and no facilities considered historic properties will be affected, we determine that the proposed undertaking would have no adverse effect on historic properties eligible for or listed on the NRHP.

Traditional Cultural Properties

There are no known traditional cultural properties or natural resource sites on Holloman AFB. The Air Force has initiated consultation with representatives of the Mescalero Apache Tribe and the Fort Sill Apache Tribe. The purpose of these consultations is to determine NHPA and American Indian Religious Freedom Act related concerns such as sites of past cultural activity, landforms, and components of the natural environment that may occur at the project site and are important to traditional practices of Native Americans.

Conclusions

Based on the preceding, Holloman AFB requests that the New Mexico SHPO concur with our delineation of the APE for this undertaking, and with our determination that the proposed activities would have no adverse effect to historic properties.

The Air Force appreciates your review of our project activities and assistance with our efforts to identify cultural resource concerns early in the EA development. A copy of the draft EA will be forwarded to your office for review and comment. Please direct any comments and questions to Mr. Andrew Gomolak at 49 CES/CEIE, 550 Tabosa Avenue, Holloman AFB, NM 88330-8458, e-mail: andrew.gomolak@us.af.mil, or at (575) 572-6647.

Sincerely

KEVIN A. MARES, Lt Col, USAF
Commander, 49th Civil Engineer Squadron

Attachment:
Map of Facilities Supporting the F-16 FTU Interim Relocation

Concur with recommendations as proposed.

for NM State Historic Preservation Officer Feb 2, 2017

DEPARTMENT OF THE AIR FORCE
502D AIR BASE WING
JOINT BASE SAN ANTONIO

502D Civil Engineer Squadron
1555 Gott Street
JBSA Lackland, TX 78236

Texas Historical Commission
Attn: Mark Wolfe
State Historic Preservation Officer
P.O. Box 12276
Austin, TX 78711

SUBJECT: Section 106 Consultation Initiation, Environmental Assessment for Interim Relocation of Two F-16 Squadrons to Joint Base San Antonio (JBSA) Lackland (Kelly Field), Texas

References:
(a) National Historic Preservation Act (NHPA) of 1966, Section 106 (54 U.S.C. Section 306108) and Section 110 (54 U.S.C. Section 306101-107, 109-114)
(b) National Environmental Policy Act of 1969
(c) Programmatic Agreement Among the U.S. Air Force and the Texas State Historic Preservation Officer for the Operation, Maintenance, and Development of Joint Base San Antonio, Texas

Dear Mr. Wolfe:

The purpose of this letter is to initiate consultation early in accordance with references (a) and (b) above. The U.S. Department of the Air Force (USAF) is in the process of preparing an Environmental Assessment (EA) that evaluates the potential environmental impacts associated with the relocation of two squadrons of F-16 Fighting Falcon fighter aircraft currently based at Hill Air Force Base (AFB), Utah, either together or separately, to a location or locations currently hosting an F-16 Formal Training Unit (FTU). Four potential interim relocation installations were evaluated, including Holloman AFB, New Mexico; JBSA Lackland (Kelly Field), Texas; Luke AFB, Arizona; and Tucson International Airport (IAP), Air National Guard Base (ANGB), Arizona. The four alternatives were screened against selection standards developed by the Air Force. In general, the selection standards were based on availability, construction requirements, and capacity. Based on the screening, Luke AFB and Tucson IAP ANGB failed to meet one or more of the selection standards and were eliminated from consideration. Holloman AFB and JBSA-Lackland (Kelly Field) were selected as reasonable alternatives. In reference with (c) above, the following documentation is presented as our initial consultation regarding effects on cultural resources not exempt in accordance with Stipulations II and III of the Programmatic Agreement (PA).

Description of the Undertaking

The Proposed Action is to relocate two squadrons of F-16 aircraft (total of 45 aircraft) currently based at Hill AFB, Utah, either together or separately, to a location or locations currently hosting an F-16 FTU. The purpose of the action is intended to be a temporary relocation (approximately 5 years) to make room for the beddown of F-35 aircraft at Hill AFB, and use the F-16s to increase F-16 pilot production while permanent F-16 FTU location(s) are selected and prepared. The proposed relocation is anticipated to occur between September 2017 and January 2018.

Activities that would occur to support the temporary relocation of the F-16 aircraft include renovation of existing facilities, installation/replacement of security fencing, and training within existing military airspace and ranges. A list of the existing facilities and renovations at JBSA Lackland (Kelly Field) proposed to support the interim relocation of the two squadrons of F-16 aircraft are provided in Table 1.

Table 1. Facilities to Support F-16 FTUs at JBSA Lackland (Kelly Field)

Building No.	Year Constructed	Square Footage	Support of Interim Relocation/*Renovation*
917	2003	31,045	**Squadron Operations/F-16 Simulator/Flying Training Classroom** F-16 Simulator Facility contains one F-16 simulator bay with three F-16 Simulators (one Unit Training Devise (UTD) and two Weapon System Trainers (WSTs). Two of the three classrooms in the building are underutilized and could be used for increased student academic training. Additional space is required for at least two (or up to four) UTD's coming from Hill AFB. *Simulator Shelters could be placed on constructed concrete pads adjacent to the building.*
918	1983	1,400	**Base Supply and Equipment Warehouse** Facility would support warehousing for the F-16 FTU. *No renovation required for this warehouse.*
932	1987	4,000	**Maintenance Office** Facility to be used for administrative office use. *Interior renovation to support office space.*
933	1980	40,800	**Avionics and Weapons** Facility has one covered space for aircraft. *No renovation.*
935*	1958	80,562	**Aircraft Maintenance Hangar** Utilized for 8 aircraft spots with 10 foot wing clearance. Utilized for 14 spots during bad weather. Hangar includes Egress/Ejection Seat Maintenance, Survival Shop, Machine Shop, Wheel and Tire, and Electrical and Environmental. *No renovation.*
936	2004	930	**Pad, Aircraft Wash Rack** Pad has one covered space, two bad weather spaces for aircraft. *No renovation.*
937	1987	9,704	**F-16 Simulator Facility** Two F-16 simulator bays contain two F-16 simulators within each bay (four total). There is one briefing room available in each bay. *No renovation.* The building was recently renovated to convert from a base warehouse to a simulator building. Operations began in May 2016.
946	1985	11,650	**Fuels Cell Maintenance** Hangar has two spots for aircraft (can hold three aircraft during bad weather). Spot 11 on parking ramp is a certified outside fuel cell maintenance location. *No renovation.*
956*	1964	1,263	**Less Explosive Munitions Storage/Missile Buildup** Facility to be used for munitions storage. *No renovation.* A new conventional munitions shop is programmed to be constructed in FY 2017.
957*	1962	3,938	**Munitions Storage**

Table 1. Facilities to Support F-16 FTUs at JBSA Lackland (Kelly Field)

Building No.	Year Constructed	Square Footage	Support of Interim Relocation/*Renovation*
			Facility to be used for munitions storage. *No renovation.*
958*	1962	6,175	**Munitions Storage** Facility to be used for munitions storage. *No renovation.*
962	1971	18,304	**Reserve Forces OPL Training** Facility to be used for administrative space and classroom training. *No renovation.*
965	1977	1,750	**Liquid Oxygen (LOX) Storage Area** Storage of LOX. *No renovation.*
968	1997	32,673	**Logistics Readiness Squadron and Base Supply/Contracting Squadron** Facility to be used for administrative space. *No renovation.*
969	2004	18,578	**Logistics Readiness Squadron and Vehicle Maintenance** Facility to be used for administrative space and vehicle maintenance. *No renovation.*
985	2002	208	**Vehicle Operations Administration** Facility to be used for administrative space. *No renovation.*
990	2002	1,500	**Vehicle Service Rack** Facility to be used as a vehicle service rack. *No renovation.*
1147	1981	867	**Hush House/Pad, Power Check with suppressor** Facility to be used as a hush house. *No renovation.*
1150	1987	773	**Hydrazine Servicing Area** Facility to be used for hydrazine services. *No renovation.*
1151	1976	12,210	**Jet Engine Intermediate Maintenance Shop** Facility to be used as a jet engine maintenance shop. *No renovation.*
1155*	1963	4,200	**Non-Destructive Inspection (NDI)** Facility has one bay that would continue to be used for NDI. *No renovation.* A new NDI Facility is programmed to be constructed in FY 2019.
1470***	1958	40,000	**Cargo Facility** Facility to be leased from Port San Antonio. Facility would be used to support storage requirements. The facility is outside of the current leaseback arrangement with the 502 ABW. The Border Patrol occupies a portion of the building and can remain. *Interior renovations to support storage.* Sprinkle system requirements in open cargo storage area may be "grandfathered" as intended use would be identical to historical use. Recommend adding 50 pound fire extinguishers to be added in non-administrative areas in lieu of installing a new fire suppression system.
1502***	NA	1,500	**Fire Extinguisher Storage** Facility to be leased from Port San Antonio.

Table 1. Facilities to Support F-16 FTUs at JBSA Lackland (Kelly Field)

Building No.	Year Constructed	Square Footage	Support of Interim Relocation/*Renovation*
			Facility to be used as a flight shack. *Interior renovations to convert to use as a flight shack.*
1530*	ca. 1970	413,264	**Warehouse** Facility currently under 50-year lease with Port San Antonio. Facility could be used to support storage requirements. Facility is a historical building with modifications allowed on the interior. *Interior renovations to support storage*.
1600	1940	8,377	**Port San Antonio Operations Facility** Facility to be leased from Port San Antonio. Facility would be used for administrative office space. The facility is outside of the current leaseback arrangement with the 502 ABW. This facility has six tenants that would potentially be displaced. The hangar is over 50 years old and is listed (NRHP) as noncontributing to Kelly Field Historic District. *Interior renovations to support administrative offices.*
1610**	1940	81,641	**Hangar** Facility currently under 50-year lease with Port San Antonio. Hangar to be used to support F-16 FTU. First floor has 14,494sf of administration offices located on the interior wall areas with approximately 70,302sf as aircraft interior hangar space. The second floor has 1,835sf of administrative space. The hangar would provide approximately eight covered spots. Hanger floor space can support nearly all F-16 maintenance actions. Conference rooms have Secure Internet Protocol Router drops. The hangar is over 50 years old and is listed (NRHP) as contributing to Kelly Field Historic District. *Renovations include upgrade ceiling lighting, add bird netting, evaluate electrical, add air and add HEF fire suppression unless an administrative waiver is provided to allow use of 50 pound fire bottles instead. Renovation required to provide back shop areas for wheel and tire shop, battery maintenance, egress/canopy shop. Plans to renovate an area between Room N2 and Room S1 to knock out wall and create a tool crib. Add a metal roof storage building either in front of the hangar or, if available, at the current transient alert Aerospace Ground Equipment (AGE) area beside the hangar. Within the maintenance bay, convert into egress/canopy repair with an explosive storage room. Convert Rooms N7 to N8 to a wheel and tire shop. Add aircraft power shop as well*.
1612*	1942	54,410	**Hangar** Facility currently under 50-year lease with Port San Antonio. Hangar would support Squadron Operations office requirements and possibly AGE shop needs. The first floor contains 13,966sf of administrative office space with the remaining 23,470sf used for open storage; the second floor has 11,437sf of administrative office space. The hangar is a historic building with modifications allowed on the interior. North side of the hangar could be used as a phase dock with the south side used for AGE storage, or vice versa. The hangar is over 50 years old, sits within Kelly Field Historic District, but is not listed as contributing or noncontributing.

Table 1. Facilities to Support F-16 FTUs at JBSA Lackland (Kelly Field)

Building No.	Year Constructed	Square Footage	Support of Interim Relocation/*Renovation*
			Renovate as needed to configure for two Squadron Operations administrative areas as well as some maintenance personnel offices. Renovate to abate peeling paint, repaint the building, add a battery shop on the north side, and add a tool crib on the south side.
1614*	1943	36,858	**Passenger Terminal** Facility currently under 50-year lease with Port San Antonio. Facility would support administrative and maintenance shop requirements. The building is a historical facility with modifications allowed on the interior. Approximately half of the building is currently vacant; space that would be used includes 3,736sf of administrative space and 4,272sf of open bay garage (former Fire Department). The hangar is over 50 years old, sits within Kelly Field Historic District, but is not listed as contributing or noncontributing. *Renovate the former fire department to an Alternate Maintenance Equipment shop. The open bay garage renovation would be require to include an F-16 gun vault, a stand-alone A-Frame crane, parts washer, ventilation to outside air, additional power requirements, and storage space for pods. The administrative area renovation would restore the interior; add communication lines, and climate control if needed.*
1618**	1943	8,000	**Offices** Facility to be leased from Port San Antonio. Facility would support office space for displaced personnel. The hangar is over 50 years old and is listed (NRHP) as contributing to Kelly Field Historic District. *Interior renovation to support office space.*
10792	1990	9,439	**Pad, Aircraft Wash Rack** Facility would be used as an aircraft wash rack. *No renovation.*

* Facility is or will be 50 years old or older by 2017, but was previously determined not eligible for listing in the NRHP.
** Facility was previously determined eligible for listing in the NRHP.
*** Facility date of construction and/or NRHP-eligibility is unknown.

Area of Potential Effect

The cultural resources area of potential effect (APE) is the spatial limits of potential ground disturbing activities and encompasses the facilities supporting the F-16 FTU interim relocation, the installment of replacement security fencing, staging areas, utility relocations, and any additional project-specific locations designated by the USAF. The APE, a combined approximate 140 acres, includes 30 structures and an F-16 parking area. The attached Figure illustrates the locations of these facilities, aircraft parking, and fence installation.

Identification of Historic Resources

Prehistoric and Historic Archaeological Resources. To date, archaeological investigations at JBSA – Lackland AFB have located 76 archaeological sites. Of these, five are NRHP-eligible and nine are potentially eligible, twelve of which are prehistoric and two are multicomponent sites. None of the 76 previously recorded archaeological sites are within 100 feet of the proposed actions. No ground disturbance would occur

for the F-16 parking area as the existing ramp would be re-striped and anchor points installed into the existing concrete apron.

Historic Buildings and Structures. There are currently 137 NRHP-eligible or contributing architectural resource at JBSA – Lackland AFB, including two NRHP-eligible historic districts. Of the 30 facilities listed in Table 1 above, 12 are or will be 50 years or older by 2017, and the construction date of one is unknown. The proposed renovation of historic facilities, with the exception of Facility 1610, are covered by the PA referenced above.

The proposed renovation of facilities 917, 956, 1155, 1610, 1612, and 1614 are not covered under the PA referenced above and coordination with the State Historic Preservation Office (SHPO) is required. Therefore, it is recommended that the SHPO decide if JBSA can treat these facilities as covered by the PA or if additional coordination must be conducted when schematics/plans for the proposed renovation of these facilities become available.

Traditional Cultural Resources. There are no known traditional cultural resources at the project location. The Air Force has initiated consultation with representatives of the Mescalero Apache Tribe, the Comanche Nation, the Wichita and Affiliated Tribes, and the Tonkawa Tribe. The purpose of these consultations is to determine American Indian Religious Freedom Act related concerns such as access to sites of past cultural activity, landforms, and components of the natural environment that may occur at the project site and are important to traditional religious practices of Native Americans.

Conclusions

Based on the preceding, JBSA Lackland AFB requests that the Texas SHPO concur with our delineation of the APE for this undertaking, and with our approach for determining if the proposed activities would have an adverse impact to historic properties.

The Air Force appreciates your review of our project activities and assistance with our efforts to identify important cultural resources early in the EA development. Upon completion, a copy of the draft EA will be forwarded to your office for review. Please direct any questions to Mr. Arlan Kalina, 502 CES/CEIEA, 1555 Gott Street, JBSA Lackland, TX 78236 or by e-mail at arlan.f.kalina@mail.mil.

DAYNA CRAMER
Chief, Environmental Analysis
502 Civil Engineer Squadron

Attachment:
(1) APE – Map of Facilities Supporting the F-16 FTU Interim Relocation

LACKLAND IR F-16 FTU KELLY/008

LEGEND

- Facilities to Support F-16 FTU
- F-16 Parking
- New Security Fence
- 90 U.S. Highway
- 13 TEXAS Texas State Highway

JBSA Lackland (Kelly Field) Facilities Supporting F-16 FTU Interim Relocation

Attachment 1

From: Info_Tech@thc.state.tx.us
Sent: Friday, January 13, 2017 6:34 AM
To: 502 CES/CEIEA CULTURAL RESOURCES; reviews@thc.state.tx.us
Subject: Project Review: 201702648

Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas
201702648
JBSA

Dear CRM:
Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act.

The review staff led by Mark Denton, Lila Rakoczy and Michael Robb has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources
- THC/SHPO concurs with information provided

Archeology Comments
- No historic properties present or affected

We have the following comments: The APE is agreeable as is applying the PA to the properties in question.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: mark.denton@thc.texas.gov, mike.robb@thc.texas.gov.

Sincerely,

Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.