

**ENVIRONMENTAL ASSESSMENT FOR
FORT BLISS LOCAL FLYING AREA AND
LOCAL FLYING RULES (FB 95-1)
FORT BLISS, TEXAS AND NEW MEXICO**



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July 2017

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EXECUTIVE SUMMARY

Purpose of and Need for the Proposed Action

Army aviators training at Fort Bliss require flying space outside the restricted airspace over the Fort Bliss Training Complex in order to maintain proficiency flying cross-country at normal altitudes while interfacing with civilian air traffic and low-altitude Federal Aviation Administration (FAA) air traffic controllers. Since the 1990s rules for using this airspace, called the Fort Bliss Local Flying Area (LFA), are delineated in Fort Bliss regulation 95-1 (FB 95-1). The purpose of the Proposed Action is to revise the FB 95-1 to reflect current and changing conditions so that the Army can continue using the LFA. Until this Environmental Assessment (EA) process is completed, interim FB 95-1 have been promulgated that restricts helicopters to a 3,000 feet Above Ground Level (AGL) minimum flying altitude.

The LFA includes areas outside the boundaries of the Fort Bliss Training Complex (FBTC) where pilots can practice visual flight rules (VFR) and instrument flight rules (IFR) flights at normal operating altitudes while interacting with FAA low-level air traffic control. The Fort Bliss LFA, established in the early 1990s, was delineated by the distance a single rotary-wing aircraft could fly from Biggs Army Airfield (Biggs AAF) on a single tank of fuel with normal reserves. Outlying private airports were identified at the boundaries of the LFA to provide fuel for the return trip to Biggs AAF. FB 95-1 was developed to provide guidance and rules that would govern flights from Biggs AAF to destinations on the Installation and within the Fort Bliss LFA, in compliance with Army Regulation 95-1 (AR 95-1). Additionally, two maintenance test flight areas (MTFAs) are also needed to separate helicopters undergoing maintenance testing from busy air traffic within the training areas on the FBTC, since these helicopters must be checked before being returned to the units for continued operation.

The LFA is needed to provide 1st Armored Division (1AD) Combat Aviation Brigade (CAB) pilots at Fort Bliss with practical, realistic training for flight proficiency in National Airspace outside of restricted airspace, where interaction with FAA low-level air traffic controllers and interaction with local private and commercial airport air traffic can be practiced on long-distance, cross-country routes. Implementation of the revised FB 95-1 Local Flying Rules is needed to establish training protocols and operating rules necessary to conduct flight operations in the LFA safely and in accordance with all applicable FAA and Army regulations. Interim FB 95-1 rules are currently in effect, which limit flights in the LFA to a minimum altitude of 3,000 feet AGL.

Alternative 1

Alternative 1 would have the CAB continue using the Fort Bliss LFA for flight training as it is currently delineated and following the revised FB 95-1 rules. Training rates (number and frequency of sorties within a given time period) would remain essentially unchanged from the initial stationing of the CAB at Fort Bliss in 2007. The CAB has approximately 276 aviators to train annually, and each aviator requires an instrument evaluation check plus at least four additional flights into the LFA. Single-aircraft sorties would be most common, with about one-third of the sorties comprising multi-ship groups of two or more aircraft. Rates would typically be approximately 16 sorties per week, but could approach approximately 40 sorties per week during times of unusually high activity. Additionally, the number of sorties in the LFA could also vary considerably depending upon differences in individual and crew proficiencies (i.e., the need for

more or fewer flights to reach required skill levels). However, the number of sorties would not be substantially different from those experienced within the LFA since the stationing of the CAB in 2007.

The vast majority of sorties would originate from Biggs AAF and traverse to selected regional airports within the LFA along generally straight-line paths to 14 non-DoD airports located within and around the edges of the LFA. The second leg of most sorties would be a direct return to Biggs AAF without transiting to additional airports, due to logistical (mainly fuel) constraints; however, flights to additional non-DoD airports prior to returning to Biggs AAF could rarely occur. Thus, much of the LFA would be overflowed relatively infrequently.

Helicopters would fly in FAA designated airspace as prescribed in the revised FB 95-1 rules and at an FAA allowed minimum altitude of 500 feet AGL. Due to numerous terrain and man-made obstructions and directions from FAA controllers, safe flight altitudes over most of the LFA would be higher than 500 feet AGL. Exceptions would be when approaching airports for landing. Over areas designated as noise-sensitive (heavily populated areas, national wildlife refuges, national parks, national monuments, wilderness areas, and areas having special environmental concerns such as habitat for sensitive species), flights would maintain an altitude of at least 2,000 feet AGL. The Mescalero Apache Reservation would also be overflowed at an altitude of at least 2,000 feet AGL. In addition, air traffic control may require that certain segments along flight routes be flown at least 2,000 feet above man-made or terrain obstacles for added safety. FB 95-1 is a living document and will be periodically revised to reflect these air traffic changes as they occur.

Two Maintenance Test Flight Areas (MTFAs) outside the installation are proposed as part of this alternative to separate helicopters under maintenance testing from busy air traffic within the training areas on the FBTC. The primary MTFA is in the vicinity of Kilbourne Hole in southern New Mexico, with a secondary MTFA southeast of El Paso. Aircraft in the MTFAs would fly at approximately 2,000 feet AGL as single aircraft (estimated as approximately 20 flights per week). No low-altitude training areas outside of the FBTC restricted airspace are proposed for Alternative 1. Due to this lack of designated low-altitude training areas, Alternative 1 does not fully satisfy the purpose of and need for the Proposed Action.

Alternative 2 (Preferred Alternative)

Revisions of FB 95-1 under Alternative 2 would use the same Fort Bliss LFA boundaries, provisions, maintenance test areas, and flight altitude limits as Alternative 1, but also add three sparsely populated areas designated for low-altitude tactical training, where flight would be allowed down to 100 feet AGL: 1) an area in southwestern New Mexico in the vicinity of the town of Deming; 2) the Sierra Diablo area of west Texas north of Van Horn; and 3) the Talon Military Operations Area (MOA) in southeastern New Mexico. These designated off-Installation training areas are intended as alternate low-altitude training areas when similar terrain within the FBTC is unavailable.

Low-altitude training would involve four to six sorties per month (included in the 16 to 40 sorties per week described in Alternative 1). Low altitude training areas would be used for stationary (helicopters hover) simulated targeting behind topography, rather than continuous low-level cross-country flight. Up to six aircraft would be involved with each low-altitude training flight.

Helicopters would hover at approximately 200 to 100 feet AGL behind topography and then “pop up” to simulate targeting of an enemy. No weapons or lasers would be deployed during the training flights. Low-altitude training when conducted would be completed usually in less than 15 to 30 minutes. More rarely, a supported aviation unit may request that the CAB conduct a low-altitude sortie for a specific objective. Planning for low altitude flights would always involve a recon of the area no more than 72 hours prior to the mission. Additionally, during the actual training and prior to descending below 500 feet AGL, aerial reconnaissance would be conducted within the specific area to be used (approximately 5 to 40 acres) to assure it is clear of humans, habitations, livestock, other aircraft, and obstructions of any kind. Only in areas that are clear of these impediments by at least 500 feet slant distance from the helicopter would be used for low altitude training.

Some areas within the designated low altitude training areas, such as the Guadalupe Mountains District of the Lincoln National Forest inside the Talon MOA, would not be used for low altitude training but have a minimum altitude limitation of 500 feet AGL similar to the rest of the LFA. The rest of the Talon MOA is controlled by Holloman Air Force Base and would be used sparingly to avoid scheduling conflicts with Air Force jets as an alternate low-altitude training area.

Revised FB 95-1 rules would be followed for all flights from Biggs AAF within the LFA and, as in Alternative 1, the current frequency or rate of training would not change. Alternative 2 fully satisfies the purpose of and need for the Proposed Action.

Alternative 3 (No Action Alternative)

The No Action Alternative would make the interim FB 95-1 rules permanent, whereby all flights outside of Fort Bliss restricted airspace within the LFA would maintain an altitude of at least 3,000 feet AGL except for emergencies and landings/departures. The interim FB 95-1 rules would be followed for all flights conducting training from Biggs AAF within the LFA. This alternative does not fully satisfy the purpose of and need for the Proposed Action, since training for which the LFA is designated cannot be fully implemented.

Environmental Consequences

The EA determined that the Proposed Action would have no significant impacts on the human or natural environments. Potential impacts on resources that could be affected by the Proposed Action are summarized in Table ES-1. Minor to negligible impacts on the human and natural environments would result from noise from helicopter flyovers in the Fort Bliss LFA.

Temporary and infrequent noise impacts of 88 to 92 decibels (dBA) would occur for flights at 100 feet AGL, 80 to 84 dBA for flights at 500 feet AGL, and 66 to 71 dBA for flights at 2,000 feet AGL. FB 95-1 flying rules instruct pilots to “fly neighborly” by avoiding overflights of residential dwellings and livestock whenever possible to minimize noise disturbance impacts. Helicopter crews would recon areas that would be flown below 500 feet AGL at least 72 hours prior to the mission and plan to avoid overflights of sensitive areas.

Federal species protected under the Endangered Species Act and the Bald and Golden Eagle Protection Act would only be subject to negligible to minor impacts from helicopter noise and

visual intrusion. Section 7 consultation under the Endangered Species Act is on-going and will be completed prior to approval of the decision document.

The 2007 *Grow the Army Programmatic Environmental Impact Statement*, the 2007 *Mission and Master Plan Supplemental Programmatic Environmental Impact Statement*, and the 2010 *Fort Bliss Army Growth and Force Structure Realignment Final Environmental Impact Statement* analyzed the impacts of stationing the 1AD and a CAB at Fort Bliss, and these documents are incorporated by reference in this EA.

Table ES-1. Summary of Potential Impacts from Implementation of the Proposed Action

Resource	No Action Alternative	Alternative 1	Alternative 2 (Preferred)
Noise	Impacts on the noise environment unchanged	Temporary minor impacts due to helicopter noise (80 to 84 dBA); noise impacts mitigated by avoiding flyovers of residences and livestock	Impacts the same as Alternative 1 for cross-country flights, 98 dBA over low-altitude training areas
Biological Resources	Impacts on biological resources unchanged	Temporary negligible to minor impacts on wildlife, including birds and small and large mammals, due to startle effect from helicopter flyovers and aircraft strikes; may have negligible effects on 10 Federally listed species	Impacts similar as Alternative 1; slightly greater potential for disturbances in low-altitude training areas
Airspace	Impacts on airspace unchanged	Minor impacts on airspace use by non-military aircraft due to helicopter flights; see-and-avoid procedures would minimize impacts	Impacts the same as Alternative 1
Health and Safety	No impacts on health and safety would occur, potential impacts on pilot safety in the event of engine failure at high altitude.	No impacts on health and safety when revised FB 95-1 rules are followed	Low-altitude training areas would be inspected prior to use, and training would occur only if no human population or livestock are present, so no additional impacts from Alternative 1
Air Quality	Impacts on air quality unchanged	No additional air quality impacts would occur, since there is no increase in number of aircraft or number of sorties.	Impacts the same as Alternative 1
Cultural Resources	Impacts on cultural resources unchanged	Potential for negligible impacts on cultural activities on the Mescalero Apache and Isleta del Sur Pueblo tribal lands and on other traditional cultural sites within the LFA	Impacts the same as Alternative 1
Socioeconomics, Environmental Justice, Protection of Children	Impacts on socioeconomics, environmental justice, and protection of children unchanged	Temporary minor impacts on residents due to helicopter noise; noise impacts mitigated by avoiding flyovers of residences and livestock	Impacts the same as Alternative 1 low-altitude training areas would be overflowed at higher altitudes to ensure no civilian or livestock in the 40 acre area to be used
Radio Frequency and Spectrum Use	Impacts on radio frequency and spectrum use unchanged	No additional impacts on radio frequency or spectrum use; all radio frequencies used are approved by the FAA and Department of Defense rules and policies	Impacts the same as Alternative 1

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Appendix A. Public Notices, Comments, Responses, and Correspondence

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ACRONYMS AND ABBREVIATIONS

1AD	1 st Armored Division
AAF	Army Airfield
AGL	Above Ground Level
AR	Army Regulation
ATC	Air Traffic Control
CAB	Combat Aviation Brigade
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon monoxide
dB	Decibel
dBA	A-weighted decibel
DNL	Day-night average sound level
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FB 95-1	Fort Bliss Regulation 95-1
FBTC	Fort Bliss Training Complex
FNSI	Finding of No Significant Impact
GPS	Global Positioning System
HAFB	Holloman Air Force Base
HAMETS	High Altitude Mountain Environment Training Strategy
HBCT	Heavy Brigade Combat Team
IFR	Instrument Flight Rules
LFA	Local Flying Area
MEF	Maximum Elevation Figure
MOA	Military Operations Area
MSL	Mean Sea Level
MSO	Mexican spotted owl
MTFA	Maintenance Test Flight Area
NEPA	National Environmental Policy Act
NO ₂	Nitrogen dioxide
O ₃	Ozone
ROI	Region of influence
SEIS	Supplemental Environmental Impact Statement
SO ₂	Sulfur dioxide
SUA	Special Use Airspace
SVFR	Special Visual Flight Rules
UAS	Unmanned Aerial Systems
USEPA	U.S. Environmental Protection Agency
VFR	Visual Flight Rules

VHF
WSMR

Very High Frequency
White Sands Missile Range

**SECTION 1.0
INTRODUCTION**

1.0 INTRODUCTION

This Environmental Assessment (EA) addresses the potential effects, beneficial and adverse, of the proposed update and revision of Local Flying Rules for the Fort Bliss Army Installation (Fort Bliss Regulation 95-1 [FB 95-1]) designed to provide safe and efficient training flights for Fort Bliss and associated tenant aircraft within a locally designated area in accordance with Army Regulation (AR) 95-1.

1.1 FORT BLISS BACKGROUND

Fort Bliss is a multi-mission Army Installation located in west Texas and southern New Mexico (Figure 1-1). The U.S. Army Garrison and Fort Bliss were originally established in 1849, and Fort Bliss is currently home to the 1st Armored Division (1AD). It consists of a Cantonment Area (Main Post, William Beaumont Army Medical Center, and Logan Heights), Biggs Army Airfield (AAF), and the Fort Bliss Training Complex (FBTC). Fort Bliss contains approximately 1.1 million acres located primarily in New Mexico and is used for training and maneuvers by the Army and other users.

As a result of Department of Defense (DoD) initiatives, Fort Bliss transitioned from an Air Defense Center to a major mounted training Installation supporting multiple types of Brigade Combat Teams (BCTs) under Forces Command. These initiatives include the Base Closure and Realignment Act, Army Transformation, Grow the Army, and Global Defense Posture Realignment, among others. One result of these initiatives was the re-stationing of the 1AD from Germany to Fort Bliss. The 1AD consists of four heavy brigade combat teams, a Combat Aviation Brigade (CAB), and a fires brigade. Land use changes and range construction to accommodate these units were analyzed in the *Fort Bliss Texas and New Mexico Mission and Master Plan Final Supplemental Programmatic Environmental Impact Statement* (SEIS), for which a Record of Decision was signed in April 2007 (U.S. Army 2007b). Under the SEIS, a large portion of the Fort Bliss training areas was authorized for weapons firing activities. The 2007 Fort Bliss Mission and Master Plan SEIS identified the establishment of a CAB at Fort Bliss.

Additionally, in December 2007, the Army signed the Record of Decision for the 2007 *Grow the Army Programmatic Environmental Impact Statement*, programming the stationing of up to two light Infantry Brigade Combat Teams at Fort Bliss (U.S. Army 2007c). In June 2010, the Army signed the Record of Decision for the *Fort Bliss Army Growth and Force Structure Realignment Final Environmental Impact Statement*, which allows training of the Infantry Brigade Combat Teams, as well as up to two Stryker Brigade Combat Teams (SBCTs) and two CABs, at Fort Bliss (U.S. Army 2010). Pursuant to force structure growth, including the CAB, Fort Bliss is required to facilitate the training for approximately 100 Army helicopters and 36 Unmanned Aircraft Systems (UAS). UAS are integrated components of any intelligence, surveillance, and reconnaissance plan used by military commanders during warfare situations. UAS missions provide unit commanders with current battlefield information and the ability to influence actions at the time and place of their choosing.

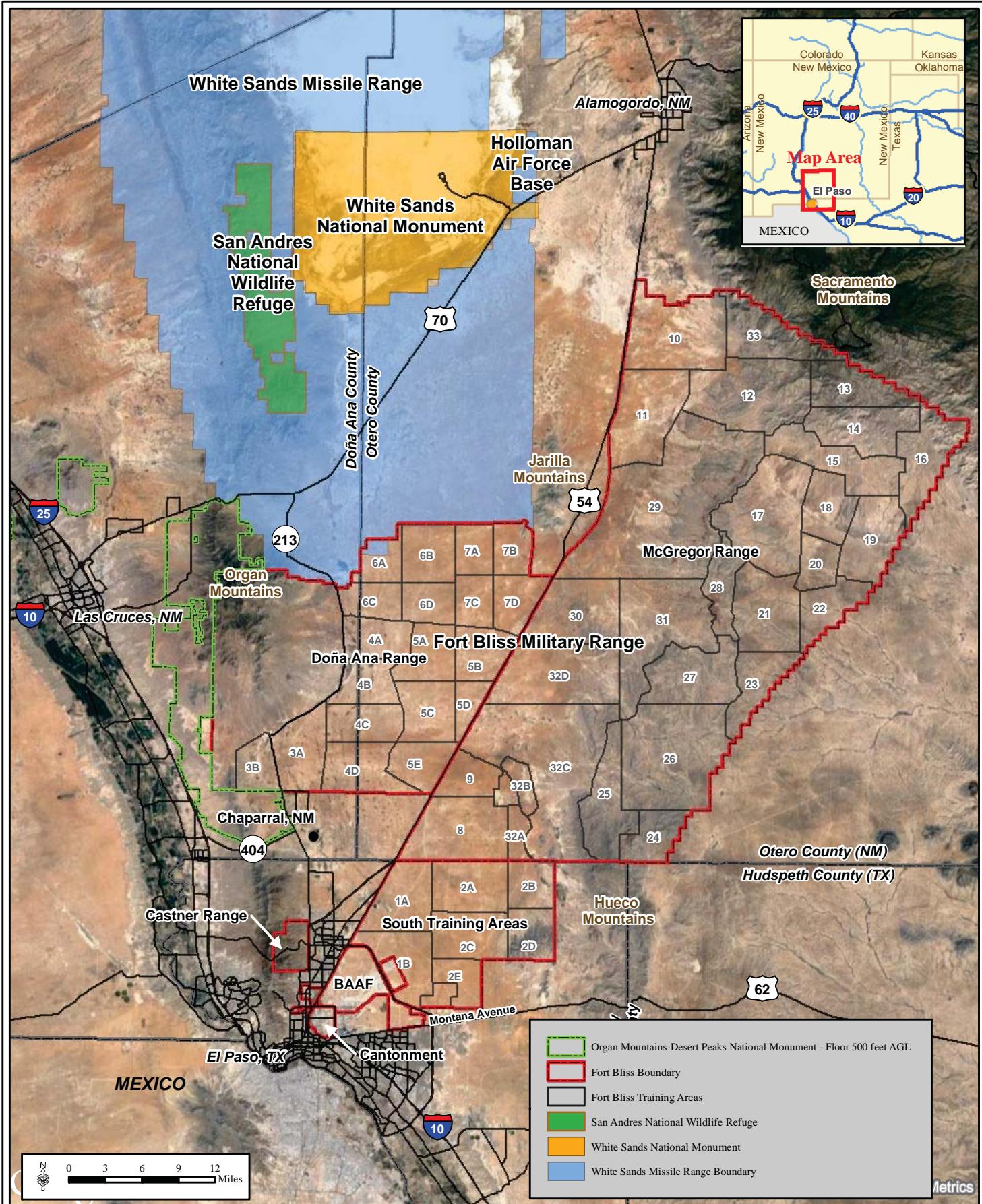


Figure 1-1. Fort Bliss Area Map

The ability of Fort Bliss to provide realistic training to units is essential to enhance the commanders' effectiveness and improve the Soldiers' survivability on the modern-day battlefield. As Army helicopters are a critical component of U.S. Army Combat Power and Theater Logistical Sustainment, integrated Combat Aviation Training will be a major component of the 1AD's combat power.

Most of the airspace over the FBTC is designated as Special Use Airspace (SUA) - Restricted, with use limited to military aircraft when the restricted status is activated. In order for Army helicopter pilots to train for a wide variety of mission scenarios, flights outside the controlled environment of Fort Bliss and its restricted airspace are necessary. These flights provide pilots with the opportunity to mix with non-military air traffic, land at non-military airports, and interact with normal Federal Aviation Administration (FAA) low-level air traffic controllers in visual flight rules (VFR) and instrument flight rules (IFR) situations. The Fort Bliss Local Flying Area (LFA) was established in the early 1990s to provide space for that off-Installation training (Figure 1-2). The LFA boundaries were delineated by the distance that a single rotary-wing aircraft could fly from Biggs AAF on a single tank of fuel with normal reserves. Commercial airports located near the boundaries of the LFA provide fuel services to Fort Bliss aircraft to allow round-trip flights. Within the LFA are numerous SUA-Restricted areas under the control of other military installations (Holloman Air Force Base [HAFB] and White Sands Missile Range [WSMR]).

The FB 95-1 flight rules established by Fort Bliss for flights within the LFA have evolved over time based on changes in training requirements, aircraft types, number of aircraft, and stationing of various units on the Installation. The FB 95-1 flight rules maintain flight safety requirements and procedures and above-ground-level (AGL) flight altitude requirements in accordance with AR 95-1 for Army helicopters and fixed-wing aircraft.

Biggs AAF serves as the main airfield for Fort Bliss, with other smaller improved dirt airfields located at Wilde Benton Airstrip, and an asphalt airfield at Davis Dome Airstrip near McGregor Range Camp (U.S. Army 2013). A UAS airfield is nearing completion at the Hueco Camp site (Training Area 4D) in the Doña Ana Range of the FBTC.

1.2 PURPOSE AND NEED

AR 95-1, Section 2-10: Local Flying Rules, directs installation commanders with Army aircraft stationed within their Installation to prepare and publish local flying rules. The rules shall include the use of tactical training and maintenance test flight area, arrival and departure routes, and airspace restrictions as appropriate to help control air operations within the LFA. These rules need to be periodically updated to reflect current conditions. Therefore, the purpose of the Proposed Action is to comply with AR 95-1 by revising the existing LFA rules to reflect changes to the operational and flight safety requirements of the 1AD CAB. Fort Bliss in the 1990s delineated the LFA outside the boundaries of the Installation where pilots can train for VFR and IFR flights at normal operating altitudes while interacting with FAA low-level air traffic control, and to comply with AR 95-1. A need exists for Army pilots to acquire proficiency training and complete both precision and non-precision approaches at various airports. Precision approaches applicable to Army helicopters include Instrument Landing System and Precision

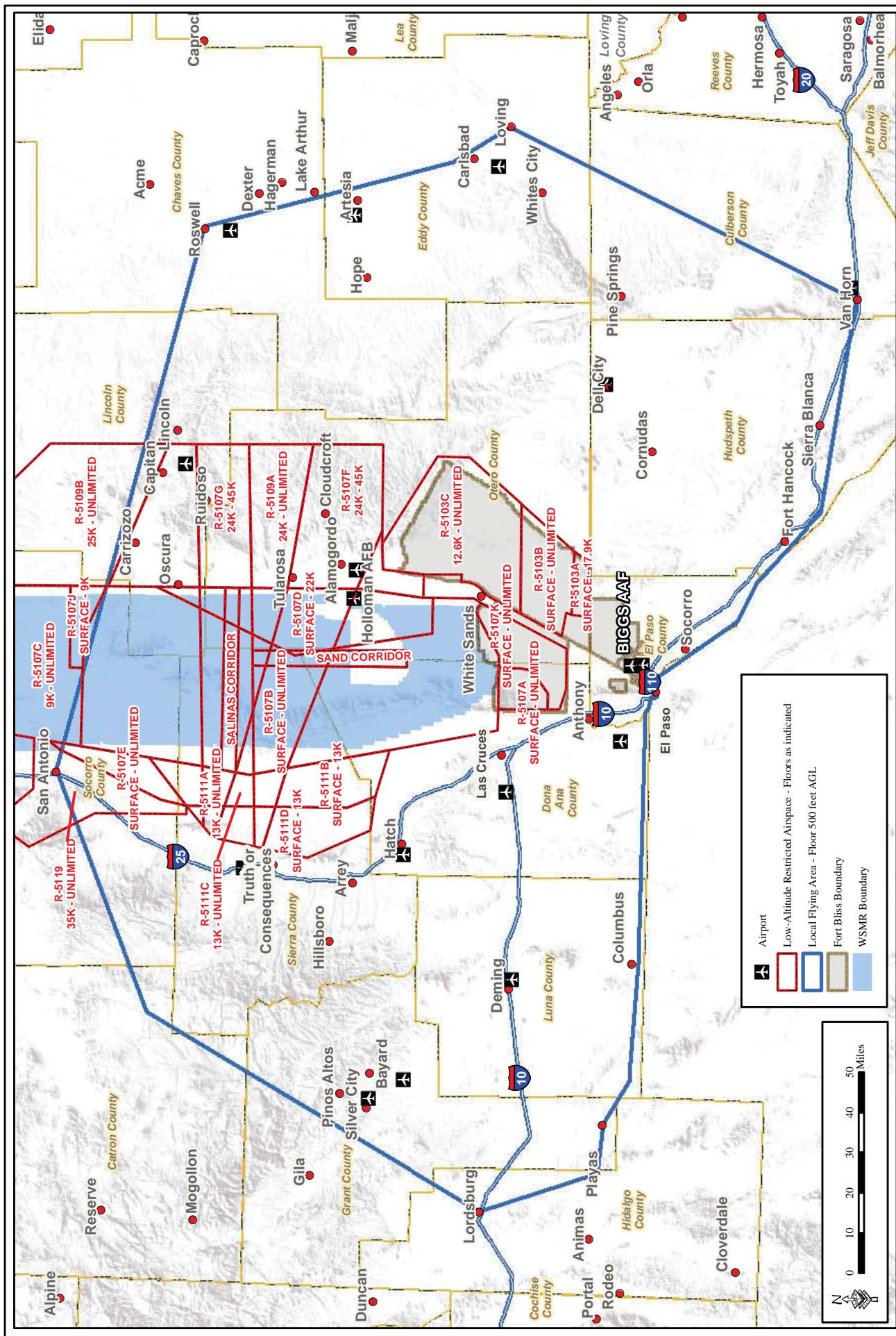


Figure 1-2. Fort Bliss Local Flying Area

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Approach Radar. Non-precision approaches include Very High Frequency and Omnidirectional Range, non-directional Beacon, Localizer, Global Positioning System (GPS), and Airport Surveillance Radar. Biggs AAF only has Very High Frequency and Omnidirectional Range and GPS approaches, with Precision Approach Radar available only in a limited capacity. Due to commercial aviation operations from the adjacent El Paso International Airport, El Paso Approach and Departure Control (air traffic control) has limited ability to accommodate practice IFR approaches in the numbers required to train helicopter pilots. For these reasons, it is necessary for Army helicopter units operating out of Fort Bliss to make use of non-DoD airports in the LFA to complete instrument approaches.

Additionally, Army aviators are required to perform electronically aided navigation and holding procedures as part of IFR operations. Given the structure of Victor (low-altitude) airways in the region, the location of holding points (navigational aids and airway route intersections), and the low capacity for IFR traffic in the vicinity of Biggs AAF, it is most practical for aviators to file for and conduct IFR flight plans that depart Fort Bliss and travel to a local non-DoD airfield.

Maintenance Test Flight Areas (MTFAs) are discrete areas large enough to maneuver helicopters that the Army uses to verify the air/combat worthiness of helicopters, especially after a major maintenance episode. These areas are selected for their sparse population and minimal interfering air traffic, giving the Army certifiers a chance to “put the aircraft through the paces” to ensure that the recently maintained helicopters are ready to turn over to the operational units. Isolating the helicopter testing allows the testers to concentrate on the performance of the aircraft and provides a safety measure for the testing process by eliminating outside distractions. The FBTC has too many distractions and potential live fire conflicts to do maintenance testing in Fort Bliss SUA, so MTFAs are needed outside the Installation boundaries.

Additionally, all helicopter training requires a low-level (from 100 feet to 500 feet AGL) aspect to result in full proficiency. Low-level training allows helicopter pilots to use natural obstructions such as mountains, ridges, mesas, and hills as cover to “hide behind” and then “pop up” to perform simulated targeting and attack maneuvers. Areas are needed that helicopters can use while conducting cross-country training to conduct this low-level training. Having the capability to use these areas affords a variety of topography that is different or unique from that found within the Installation, most of which consists of flat terrain. Because of the potential for live fire interference and conflicts with other flight and ground operations within the FBTC in the areas suitable for low-level training, low-level simulated targeting and attack maneuvers cannot be easily performed on Fort Bliss. Low-level training areas off-Installation are needed as alternate maneuver areas when ranges in the FBTC are occupied or closed.

Implementation of a revised FB 95-1 Local Flying Rules that reflect these requirements is needed to establish training protocols and operating rules necessary to conduct flight operations within the Fort Bliss SUA and in the LFA safely and to comply with FAA and Army regulations.

1.3 BACKGROUND FOR THE PROPOSED ACTION

The FBTC contains several SUA-Restricted areas where helicopter flight maneuvers can occur without special permission or clearance from the FAA (Figure 1-3). The SUAs need only to be

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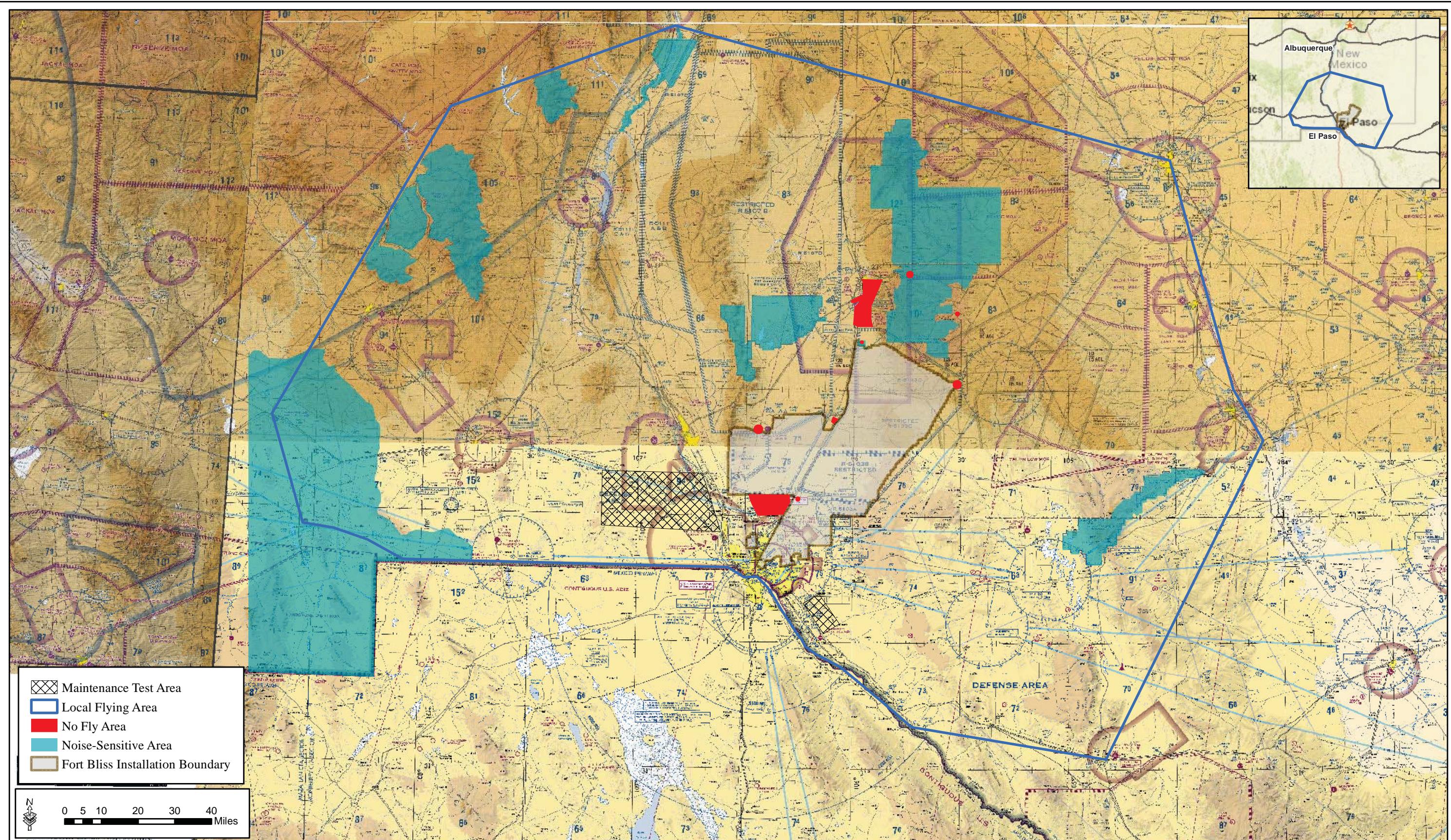


Figure 1-3. Fort Bliss LFA Existing Airspace Map (FAA El Paso North and Albuquerque South Sectionals)

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activated by notifying Albuquerque Air Route Traffic Control Center to be in effect. Most flight operations involving ground troop support occur within these SUAs, which allow flight operations from ground level to an unlimited maximum altitude. Due to the familiarity of most Army pilots with operations in the Fort Bliss SUAs, training can become complacent and lacking in challenges. The Fort Bliss LFA provides an expanded environment for flight operations beyond the normal troop support functions. Pilots must maintain proficiency flying outside of protected airspace and interacting with FAA low-altitude controllers and private aircraft and airports. The LFA also allows long-distance IFR and VFR flights utilizing on-board navigation equipment.

The 1AD at Fort Bliss operates in coordination with a CAB, which consists of over 100 rotary-wing aircraft, including H-60, H-64, and H-47 helicopters (Photographs 1-1, 1-2, and 1-3). The normal training schedule for the CAB involves approximately 16 flights per week from Biggs AAF, including four to six aircraft monthly flying to low-level tactical training areas outside Fort Bliss. If the entire CAB were called for quick deployment, the accelerated flight training could increase to 40 or more sorties per week.



Photograph 1-1. H 60 Utility and Medical Evacuation Helicopter



Photograph 1-2. H 64 Longbow Apache Attack Helicopter



Photograph 1-3. H 47 Medium Cargo Helicopter

Also, at least 20 maintenance test flights per week could be conducted to the MTFAAs as required by aircraft maintenance rules. Because of the extensive use of the FBTC for ground training operations, some of which involve live fire of small arms and artillery, there are no safe SUAs for Army aviators to conduct maintenance test flights without the potential for being struck by unseen projectiles from ground training. For the same reason, low-level tactical training within the FBTC is impractical. The use of WSMR SUA for MTFA and low-level training would

require clearance from WSMR for each use to avoid conflicts with fast aircraft traffic from WSMR or HAFB.

AR 95-1 sets forth the rules for Army flight operations within and outside of Army reservations. FB 95-1 incorporates the rules found in AR 95-1 and supplements those rules so that they apply specifically to Fort Bliss, including all notification contacts, emergency procedures, air traffic controller information, altitude restrictions, and noise abatement and avoidance procedures. This EA will inform the public and other regional stakeholders on proposed activities in the LFA. Until this EA is completed and a final determination is made, interim rules have been put in place for flights within the Fort Bliss LFA that limit flight altitudes outside Fort Bliss SUAs to no less than 3,000 feet AGL except for landings/departures and emergencies.

1.4 AIRSPACE BACKGROUND

All airspace in the United States has defined designations assigned by the FAA and adopted from international norms to govern flights of all aircraft, especially around airports. In and around the Fort Bliss LFA, these airspace designations are as follows (FAA 1991, FAA 2016a, and FAA 2016b):

Class A: Generally, that airspace from 18,000 feet to 60,000 feet mean sea level (MSL). All operations must be conducted under IFR.

Class B: Generally, that airspace from the surface up to 10,000 feet MSL surrounding the busiest airports with heavy traffic operations. This airspace is individually tailored to the specific airport in several layers. Air Traffic Control (ATC) clearance is required for all aircraft. Operations may be conducted under IFR, Special VFR (SVFR), or VFR clear of clouds.

Class C: Generally, that airspace from the surface to 4,000 feet above the airport elevation surrounding those airports that have an operational control tower and radar control. Class C airspace is individually tailored in layers, but usually extends out to 10 nautical miles from 1,200 feet to 4,000 feet above the airport elevation. Entering Class C airspace requires radio contact with the controlling ATC authority, and an ATC clearance is ultimately required for landing. Operations may be conducted under IFR, SVFR, or VFR.

Class D: Generally, that airspace from the surface to 2,500 feet above the airport elevation surrounding those airports that have an operational control tower. Aircraft entering the airspace must establish and maintain radio contact with the airport ATC. Operations may be conducted under IFR, SVFR, or VFR, but aircraft separation services are only provided between IFR and SVFR operations.

Class E: Generally, this is controlled airspace that is not Class A, B, C, or D. In the El Paso area, Class E airspace begins at 1,200 feet AGL (except for that Class E airspace assigned to El Paso International Airport, which begins at 700 feet AGL) and extends up to, but not including, 18,000 feet MSL. Subdivisions within Class E are for transitional purposes, extensions to the other controlled airspace classes, or other uses. Operations may be conducted under IFR, SVFR, or VFR. Flights under VFR are not subject to ATC clearance.

Class G: This is airspace that has not been designated as Class A, B, C, D, or E, and operations may be conducted under IFR or VFR. It is designated from surface to where it meets another airspace designation, usually Class E. ATC aircraft separation service is not provided, although traffic information may be given as far as is practical with respect to other flights.

As shown previously in Figure 1-3, there are numerous airspace designations in and around the Fort Bliss LFA. The most prominent airspace near Fort Bliss is the combination Class C for El Paso International Airport and Class D for Biggs AAF indicated by solid magenta and dashed blue circles around the El Paso airport. The Class C circle around the airport is interrupted by the border with Mexico and conflicting Class E for airports to the west and southeast. Over the FBTC, the SUAs are designated as Restricted Areas with numbers as identifiers. Beyond the FBTC, SUAs under the authorization of other military installations are also designated as Restricted Areas with numbers as identifiers. Smaller airports around the Fort Bliss LFA are shown with Class E depicted as shaded magenta circles with an 8-mile radius around each airport. Class D is also designated around Roswell International Air Center just south of Roswell, New Mexico. Keyhole-type extensions of the shaded circles indicate primary approaches to airport runways. Except for the Class C and D airspace around El Paso and Roswell, the airspace within the Fort Bliss LFA is Class E and G. Airspace that the CAB will be operating in under the action alternatives is mostly Class G airspace, with Class E airspace used over noise sensitive areas.

1.5 PUBLIC PARTICIPATION

Coordination with appropriate Federal and state agencies has occurred during the preparation of this EA. The primary Federal agencies consulted are the FAA, U.S. Fish and Wildlife Service, Bureau of Land Management, U.S. Forest Service, and National Park Service. Other DoD installations consulted include HAFB and WSMR. WSMR has agreed to be a cooperating agency for this EA. State natural resource agencies consulted include the New Mexico Department of Game and Fish and the Texas Parks and Wildlife Department. The mailing list of persons and offices contacted to receive a Notice of Availability for the EA and Draft FNSI is part of the Administrative Record but is not included herein for privacy and confidentiality reasons. Correspondence with interested parties for this EA can also be found in Appendix A. A list of applicable environmental statutes and regulations that apply to the Proposed Action is found in Table 1-1.

The Draft EA and Draft Finding of No Significant Impact (FNSI) will be published and delivered to the general public and to interested agencies and organizations for a review period of 30 days in accordance with coordination requirements as set forth in 32 Code of Federal Regulations (CFR) 651. A notice of availability for the Draft EA will be published in the *El Paso Times*, *Las Cruces Sun-News*, *Alamogordo Daily News*, *Truth or Consequences Herald*, *Van Horn Advocate*, *Carlsbad Current Argus*, *Roswell Daily Record*, *Silver City Daily Press*, and *Socorro El Defensor Chieftain* newspapers. The Draft EA and Draft FNSI will also be available for public review on the Fort Bliss website (www.bliss.army.mil/DPW/Environmental/EISDocuments2.html), and at public libraries in El Paso, Las Cruces, and Alamogordo. The revised FB 95-1 flight rules will also be available for review on the Fort Bliss website.

Table 1-1. Applicable Environmental Statutes and Regulations

Federal Laws and Regulations
Archaeological and Historic Preservation Act
Clean Air Act of 1970, as amended
Clean Water Act of 1987, as amended
Comprehensive Environmental Response, Compensation and Liability Act of 1986
Endangered Species Act of 1973, as amended
Migratory Bird Treaty Act of 1972
Bald and Golden Eagle Protection Act of 1962
National Environmental Policy Act of 1969, as amended
National Historic Preservation Act of 1966, as amended
Native American Graves Protection and Repatriation Act of 1990
American Indian Religious Freedom Act
Resource Conservation and Recovery Act of 1976
Safe Drinking Water Act of 1974
Watershed Protection and Flood Prevention Act of 1954
Executive Orders and Army Regulations
Environmental Effects of Army Actions (32 CFR 651)
Environmental Protection and Enhancement (AR 200-1)
Army Regulation 95-1 (AR 95-1)
Exotic & Non-Native Species (Executive Order [EO] 13112)
Protection of Migratory Birds and Game Mammals (EO 11629)
Flood Plain Management (EO 11988)
Protection of Wetlands (EO 11990)
Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898)
Consultation and Coordination with Indian Tribal Governments (EO 13175)
Protection of Children from Environmental Health Risks (EO 13045)
FAA Regulations
Environmental Impacts: Policies and Procedures (Order 1050.1E)
Procedures for Handling Airspace Matters (Order JO 7400.2G)
FAA Regulations in CFR Title 14, Part 91, §91.126 – §91.135

List is not all-inclusive.

All pertinent comments received during the 30-day public review period will be addressed before the FNSI is signed. Correspondence received during this review period will be included in Appendix A to the Final EA and will be retained as part of the Administrative Record.

1.6 DECISION(S) TO BE MADE

Fort Bliss Garrison Commander is the proponent for the Proposed Action. If no significant environmental impacts are determined based on the evaluation of impacts in this EA, a FNSI will be signed by the Garrison Commander. If it is determined that the Proposed Action would have significant environmental impacts, the action would be modified and mitigated to the level of no significant impact or a Notice of Intent would then be published, leading to the preparation of an Environmental Impact Statement (EIS).

SECTION 2.0
DESCRIPTION OF ALTERNATIVES

2.0 DESCRIPTION OF ALTERNATIVES

In accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14) and Army NEPA regulations (32 CFR Part 651), this EA identifies and describes all reasonable alternatives to the Proposed Action, including the No Action Alternative. This EA analyzes two action alternatives and the No Action Alternative.

2.1 PROPOSED ACTION

The Proposed Action is to delineate the Fort Bliss LFA as it is currently used and to implement the revised FB 95-1 Local Flying Rules for Fort Bliss helicopters for flights within the LFA. The alternatives analyzed are described in the following sections.

Alternative 1

Alternative 1 would have the CAB continue using the Fort Bliss LFA for flight training as it is currently delineated and following the revised FB 95-1 rules. Training rates (number and frequency of sorties within a given time period) would remain essentially unchanged from the initial stationing of the CAB at Fort Bliss in 2007. The CAB has approximately 276 aviators to train annually, and each aviator requires an instrument evaluation check plus at least four additional flights into the LFA. Single-aircraft sorties would be most common, with about one-third of the sorties comprising multi-ship groups of two or more aircraft. Rates would typically be approximately 16 sorties per week, but could approach approximately 40 sorties per week during times of unusually high activity. Additionally, the number of sorties in the LFA could also vary considerably depending upon differences in individual and crew proficiencies (i.e., the need for more or fewer flights to reach required skill levels).

The vast majority of sorties would originate from Biggs AAF and traverse to selected regional airports within the LFA along generally straight-line paths. There are 14 non-DoD airports located within and around the edges of the LFA. The second leg of most sorties would be a direct return to Biggs AAF without transiting to additional airports, due to logistical (mainly fuel) constraints; however, flights to additional non-DoD airports prior to returning to Biggs AAF could rarely occur. Thus, much of the LFA would be overflowed relatively infrequently.

Helicopters would fly in FAA designated airspace as prescribed in the revised FB 95-1 rules at a minimum altitude of 500 feet AGL. Due to numerous terrain and man-made obstructions and directions from FAA controllers, safe flight altitudes over most of the LFA would be higher than 500 feet AGL. Exceptions would be when approaching airports for landing. Over areas designated as noise-sensitive (heavily populated areas, national wildlife refuges, national parks, national monuments, wilderness areas, and areas having special environmental concerns such as habitat for sensitive species), flights would maintain an altitude of at least 2,000 feet AGL (Figure 2-1). The Mescalero Apache Reservation would also be overflowed at an altitude of at least 2,000 feet AGL. In addition, ATC may require that certain segments along flight routes be flown at least 2,000 feet above man-made or terrain obstacles for added safety.

Two MTFAs (see Figure 1-3) outside the installation are proposed in order to separate helicopters under maintenance testing from busy air traffic within the training areas on the FBTC. The primary MTFA is in the vicinity of Kilbourne Hole in southern New Mexico, with a secondary MTFA southeast of El Paso. Helicopters having undergone maintenance repairs must be checked before being returned to the unit for continued operation. Aircraft in the MTFAs would fly at approximately 2,000 feet AGL as single aircraft (estimated as about 20 flights per week). No low-altitude training areas outside of the FBTC restricted airspace are proposed for alternative 1. Due to this lack of designated low-altitude training areas, Alternative 1 does not fully satisfy the purpose of and need for the Proposed Action.

Alternative 2 (Preferred Alternative)

Alternative 2 would use the same Fort Bliss LFA boundaries, provisions, and flight altitude limits as Alternative 1, use the MTFAs, and add three sparsely populated areas designated for low-altitude tactical training, where flight would be allowed down to 100 feet AGL (Figure 2-2): 1) an area in southwestern New Mexico in the vicinity of the town of Deming; 2) the Sierra Diablo area of west Texas north of Van Horn; and 3) the Talon Military Operations Area (MOA) in southeastern New Mexico. These designated off-Installation training areas are intended as alternate low-altitude training areas when similar terrain within the FBTC is unavailable. As a flight safety measure, an exception to the 100-foot minimum altitude would be for aircraft to maintain at least a quarter-mile (1,320-foot) AGL altitude over the steeper, mountainous portions of these low-altitude training areas (i.e., the Florida Mountains, Sierra Diablo, and the Guadalupe Mountains).

Low-altitude training would involve four to six flights per month (included in the 16 to 40 per week for Alternative 1) for stationary simulated targeting behind topography, rather than continuous low-level cross-country flight. From one to six aircraft would be involved with each low-altitude training flight. Helicopters would hover at approximately 200 feet AGL behind topography and then “pop up” to simulate targeting of an enemy. Altitudes of 100-feet AGL could occur during directional transitions when hovering above a point. No weapons or lasers would be deployed during the training flights. Training would be completed for each low-level flight usually in less than 15 to 30 minutes. More rarely, a supported aviation unit may request that the CAB conduct a low-level sortie for a specific objective. No more than 72-hours prior to a mission, planning for low-level training would require a reconnaissance of the area to be used. Additionally, during the actual mission and before descending below 500 feet AGL, an aerial check would be conducted to assure that the specific area (approximately 5 to 40 acres, depending on the number of aircraft in the sortie) is clear of human population, habitations, livestock, other aircraft, and obstructions of any kind. Only in areas that are clear of human population or livestock at least 500 feet slant distance from the helicopter would sorties descend to 100 feet AGL altitude. Less than 40 acres within the designated low-altitude training areas would be overflowed at these lower altitudes during any given training event.

Although the Guadalupe Mountains District of the Lincoln National Forest is inside the Talon MOA, it would have a minimum altitude limitation of 500 feet AGL for CAB helicopters as a noise sensitive area. The Talon MOA is controlled by HAFB and areas within it would be used sparingly as an alternate low-altitude training area to prevent scheduling conflicts with fixed wing aircraft using the MOA.

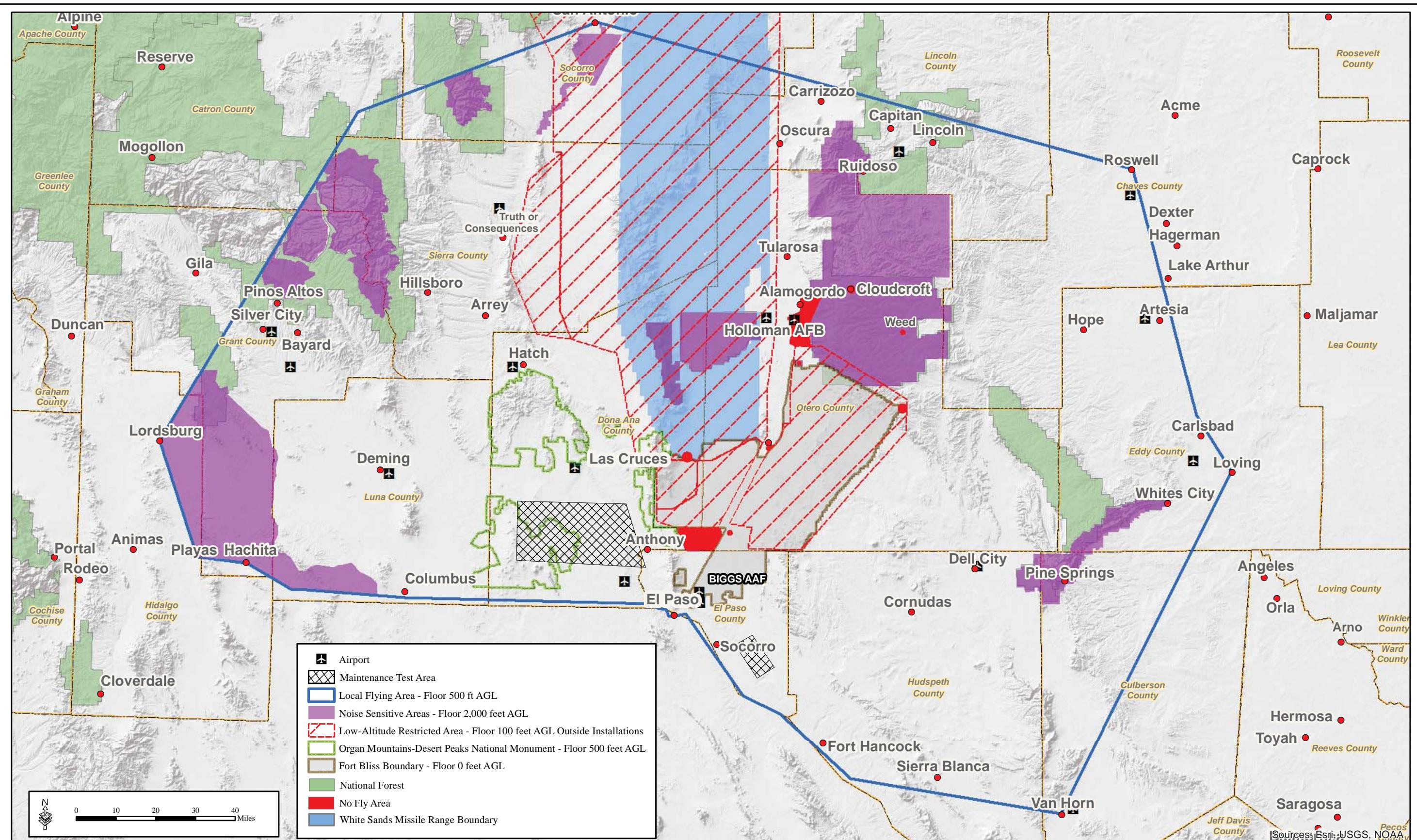


Figure 2-1. Fort Bliss Local Flying Area - Alternative 1

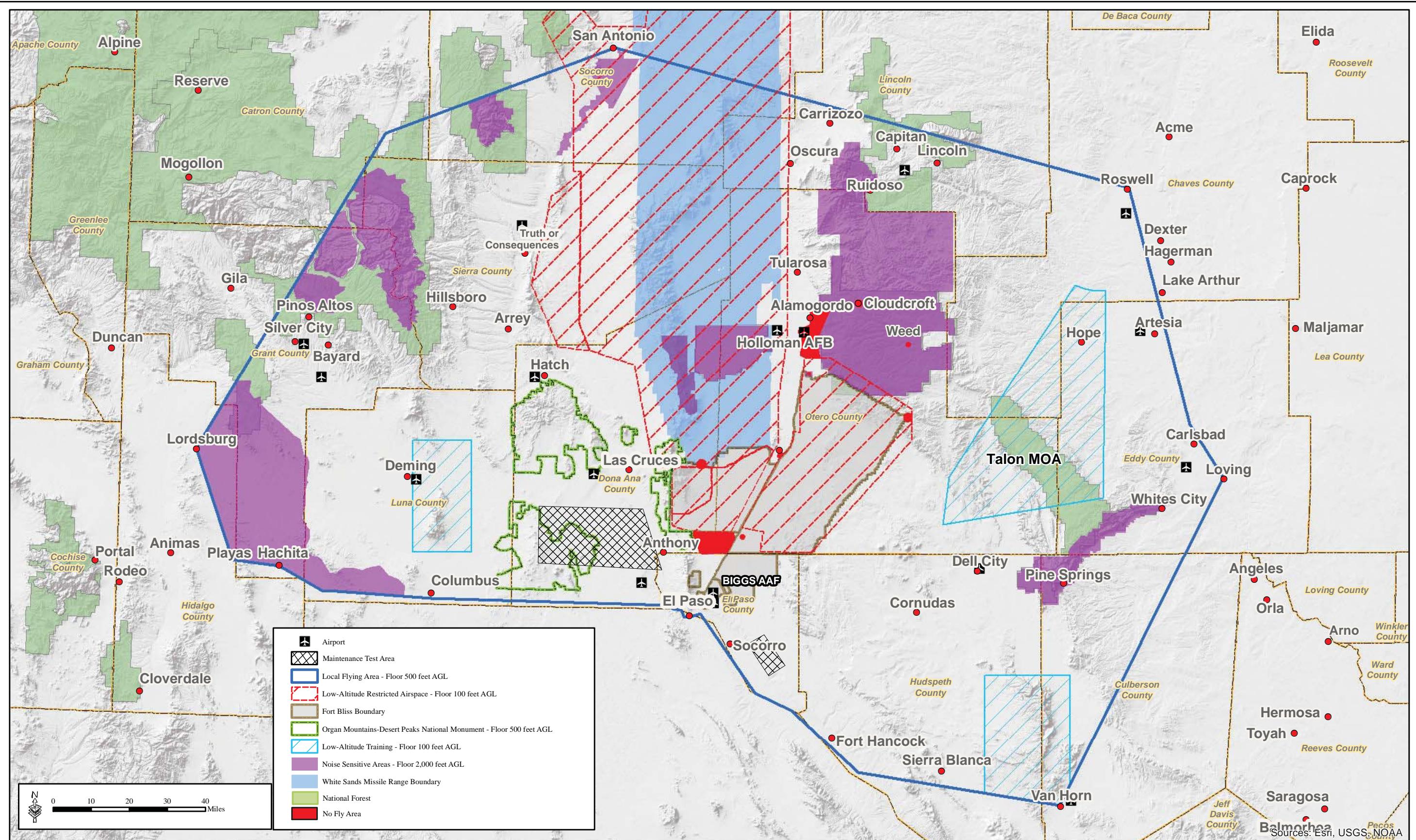


Figure 2-2. Fort Bliss Local Flying Area - Alternative 2 (Preferred Alternative)

Revised FB 95-1 rules would be followed for all training flights from Biggs AAF within the LFA and, as in Alternative 1, the current frequency or rate of training would not change. Alternative 2 fully satisfies the purpose of and need for the Proposed Action.

Alternative 3 (No Action Alternative)

The No Action Alternative would make the interim FB 95-1 rules permanent, whereby all flights outside of Fort Bliss restricted airspace within the LFA would maintain an altitude of at least 3,000 feet AGL except for emergencies and landings/departures. The interim FB 95-1 rules would be followed for all flights from Biggs AAF within the LFA. This alternative does not fully satisfy the purpose of and need for the Proposed Action, since training for which the LFA is designated cannot be fully implemented.

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**SECTION 3.0
AFFECTED ENVIRONMENT AND
ENVIRONMENTAL CONSEQUENCES**

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section of the EA describes the natural and human environments that exist within the LFA and the potential impacts of the action alternatives on those environments. Only those resources that have the potential to be affected by any of the alternatives considered are described, as per CEQ guidance (40 CFR 1501.7[3]). Locations and resources with no potential to be affected need not be analyzed. The effects from the action alternatives include impacts due to aircraft noise on humans and infrastructure and on animals, impacts due to safety risks associated with aircraft emergencies, impacts on airspace use by military and civilian aircraft within the LFA and at destination airports in and on the edges of the LFA, impacts on military training requirements at Fort Bliss, impacts on cultural and historic resources, and socioeconomic impacts (both beneficial and adverse) in the local communities within the LFA.

Impacts (consequence or effect) can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action. Direct impacts are those effects that are caused by the action and occur at the same time and place (40 CFR 1508[a]). Indirect impacts are those effects that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8[b]). As discussed in this section, the No Action and action alternatives may create temporary (lasting the duration of a flight), short-term (up to 3 years), long-term (greater than 3 years), or permanent impacts or effects.

Impacts on each resource can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. For the purpose of this analysis, the intensity of impacts would be classified as negligible, minor, moderate, or major. The intensity thresholds are defined as follows:

Negligible: A resource would not be affected or the effects would be at or below the level of detection, and changes would not result in any measurable or perceptible consequences.

Minor: Effects on a resource would be detectable, although the effects would be localized, small, and of little consequence to the sustainability of the resource. Mitigation measures, if needed to offset adverse effects, would be simple and achievable.

Moderate: Effects on a resource would be readily detectable, long-term, localized, and measurable. Mitigation measures, if needed to offset adverse effects, would be extensive and likely achievable.

Major: Effects on a resource would be obvious and long-term, and would have substantial consequences on a regional scale. Extensive mitigation measures to offset adverse effects would be required and success of the mitigation measures would not be guaranteed.

In accordance with NEPA and the CEQ regulations implementing NEPA, the analysis of environmental conditions only addresses those areas and environmental resources with the potential to be affected by any of the alternatives. More specifically, this EA examines the

potential for direct, indirect, adverse, or beneficial impacts. This EA also assesses whether such impacts are likely to be long-term, short-term, permanent, or cumulative. The valued environmental components that would potentially be affected by any of the alternatives are discussed in the following subsections. The following resources would not be impacted by the Proposed Action and are not addressed in this EA:

Land Use – No changes in land use designations are required in order to implement any of the alternatives.

Geology and Soils – All impacts are related to actions in the air due to aircraft missions and no ground disturbance would occur.

Water Resources – No water use would be required and no surface water impacts would occur from aircraft missions and flyovers.

Energy Demand and Utilities – No additional energy requirements are needed and no utilities would be affected by aircraft missions in the Fort Bliss LFA.

Traffic – All actions would occur in airspace, and no interaction with or disturbance of ground traffic would occur.

Hazardous Materials – There would be no release or increase in use of hazardous materials. Aircraft fueling activities at Biggs AAF were analyzed in the *Fort Bliss Texas and New Mexico Mission and Master Plan SEIS* and the *Growth and Force Structure Realignment Final Environmental Impact Statement* (U.S. Army 2010 and U.S. Army 2007b). Spills could occur in the event of an aircraft accident; however, since the LFA was established in the 1990s, and there have been no helicopter crashes, these type of spills would be highly unlikely.

3.1 NOISE

3.1.1 Affected Environment

Noise is generally described as unwanted sound, which can be based either on objective effects (i.e., hearing loss, damage to structures, etc.) or subjective judgments (e.g., community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Sound on the decibel scale is referred to as sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is approximately 120 dB.

Noise levels occurring at night generally produce a greater annoyance than do the same levels occurring during the day. An A-weighted decibel (dBA) is a measure of noise at a given, maximum level or constant state level louder than the same level of intrusive noise during the day, at least in terms of its potential for causing community annoyance. It is generally agreed that people perceive A-weighted intrusive noise at night as being 10 dBA louder than the same level of intrusive noise during the day. This perception is largely because background environmental sound levels at night in most areas are also approximately 10 dBA lower than those during the day. Because noise is measured logarithmically, two identical noise sources at the same point do not double the noise level emitted from that point. As an example, a helicopter

flying over a point may emit a noise level of 80 dBA, but a second helicopter flying along-side the first would only add about 3 dBA to the overall resulting noise level (Wyle 2017, Baldwin 2015).

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by the USEPA and has been adopted by most Federal agencies (USEPA 1974). A DNL of 65 dBA is the level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like construction.

Acceptable DNL noise levels have been established by the U.S. Army for aviation noise in noise zones near military airports (AR 200-1, U.S. Army 2007a). For noise impacts on land use, dBA noise levels are as follows:

- **Noise Zone I** – Less than 65 dBA is considered acceptable for normal uses, including residential, schools, hospitals.
- **Noise Zone II** – 65 dB to 75 dBA. This zone is considered unacceptable for most uses; however, annoyance from aircraft noise would be more severe for residential, schools, and hospitals; and barriers or special construction would be needed for reasonably acceptable indoor use.
- **Noise Zone III** – Greater than 75 dBA. This zone would be considered unacceptable for most uses, and barriers or special construction costs would be prohibitively expensive and would not totally eliminate the noise annoyance indoors.

As a general rule, noise generated by a stationary noise source, or “point source,” will decrease by approximately 6 dBA over hard surfaces and 9 dBA over soft surfaces for each doubling of the distance. For example, if a noise source produces a noise level of 85 dBA at a reference distance of 50 feet over a hard surface, then the noise level would be 79 dBA at a distance of 100 feet from the noise source, 73 dBA at a distance of 200 feet, and so on. To estimate the attenuation of the noise over a given distance, the following relationship is utilized:

$$\text{Equation 1: } \text{dBA}_2 = \text{dBA}_1 - 20 \log \left(\frac{d_2}{d_1} \right)$$

Where:

dBA_2 = dBA at distance 2 from source (predicted)

dBA_1 = dBA at distance 1 from source (measured)

d_2 = Distance to location 2 from the source

d_1 = Distance to location 1 from the source

Source: California Department of Transportation 1998

For helicopter noise, the effects are highly variable depending on the speed of the helicopter, the altitude AGL, climatic conditions, and the weight of the helicopter. Impacts on civilians are usually measured by the percentage of the population that is annoyed by a single flyover (U.S. Army Public Health Command [USAPHC] 2011). A flyover consists of the passing of an

aircraft overhead or to the side of a point on the ground measured in distance of the aircraft from that point.

To simulate the noise effects from an aircraft flyover, the sound exposure level (SEL) is most often used. This sound metric is the logarithmic measure of A-weighted sound pressure level squared and integrated over a specific time period, usually 1 second, and is measured in dBA. This takes into account the gradually increasing sound level as the aircraft approaches, the maximum sound level when it is overhead, and the gradually decreasing sound level as the aircraft departs to approximate the total sound energy of the event (Harris et al. 2017, Bernard 2017).

The general background noise environment over the open desert and mountain areas of the Fort Bliss LFA is relatively quiet, estimated as 35 dBA (Miller 2002), with sounds generated primarily by wind. Populated areas of cities and towns would have a background noise environment dominated by vehicle highway noise and general human urban activities.

3.1.2 Environmental Consequences

The USAPHC conducted an assessment of Army operational noise effects on nearby populated areas at Fort Carson, Colorado, for conditions similar to those at Fort Bliss. The operational noise effects calculated for helicopters flying at various altitudes AGL are shown in Table 3-1 as SEL noise. As can be seen from Table 3-1, the SEL noise levels expected to be generated during normal LFA flight operations would range from 79 dBA to 84 dBA at 500 feet AGL, and 71 dBA or less at 2,000 feet AGL. Although the USAPHC (2011) report did not identify SEL noise levels for helicopters at 100 feet AGL, the estimated noise levels for the AH 64 and CH 47 are approximately 98 dBA. These noise levels would occur only within the low-altitude training areas. The level of noise will vary depending on the direction and speed of flight and the weight of the load being carried in the helicopter. The heavier the aircraft, the louder the noise emitted due to the increased compression of air against the rotors. Helicopters create the maximum noise when hovering or coming in for a landing. The CH-47 cargo helicopter produces approximately 84 dBA on the ground at an average altitude of 500 feet AGL when the helicopter is traveling (USAPHC 2011).

Table 3-1. Maximum Noise Levels of Aircraft

Slant Distance (feet)	Maximum Noise Level, dBA (SEL)				
	AH-64	CH-47	OH-58	UH-60	UH-1
100*	98	98	93	94	97
200	92	92	87	88	91
500	83	84	79	80	83
1,000	77	78	72	73	76
1,500	73	74	68	69	73
2,000	70	71	65	66	70
2,500	67	68	62	63	68

USAPHC 2011; * estimated

For the purposes of noise impacts in this section, the noise effects are related to their impacts on civilian populations. Noise impacts on wildlife and their natural environment are addressed in the Biological Resources Section and noise impacts on livestock are addressed in the Socioeconomics Section. In response to scattered civilian noise complaints in the LFA in the past, Fort Bliss has designated several no-fly areas in the LFA, as indicated previously in Figure 1-3.

3.1.2.1 Alternative 1

Helicopter flights within the Fort Bliss restricted airspace over the FBTC would produce noise effects expected over a military training area, and would not result in any noise impacts on civilian populations, which are defined as non-DoD personnel. DoD personnel include soldiers, contractors, DoD civilians, etc., located on Fort Bliss. Noise impacts on the natural environment at Fort Bliss were addressed in numerous previous EAs and EISs developed for the deployment of military units at Fort Bliss (U.S. Army 2010, U.S. Army 2007b, and U.S. Army 2007c).

Flights outside the Fort Bliss boundaries within the LFA at a minimum altitude of 500 feet AGL would impact the human environments on the ground with noise from 80 to 84 dBA on an intermittent basis. While the noise would be clearly audible and annoying at that level, the interruption of the normal sound environment would be temporary (i.e., approximately 10 seconds, and definitely less than 1 minute), and the normal quiet background noise environment would quickly return after the aircraft has passed. It is estimated that approximately 35 percent of the impacted population would be highly annoyed by those noise levels (USAPHC 2011); however, 1AD CAB flights would avoid populated areas per the “fly neighborly” requirements, and persons living within the LFA would not normally be overflown by helicopters. FB 95-1 instructs Fort Bliss aviators to “fly neighborly” within the LFA, which means avoiding overflight of livestock, residences, and other man-made structures in order to minimize potential noise impacts on the civilian community (Helicopter Association International 2007). Importantly, no substantial change would occur to training activities that have been conducted since the CAB was stationed on Fort Bliss in 2007. Most of the LFA would not have any changes to the noise environment experienced since that time.

At an altitude of 2,000 feet AGL over noise-sensitive areas, a noise level of approximately 65 dBA (the level of a normal conversation) would be only a minor, temporary impact, and less than 1 percent of the impacted population would be annoyed by those sound levels. Helicopters using airports in the Fort Bliss LFA would produce noise considered normal for approach and departure patterns at those airports.

3.1.2.2 Alternative 2 (Preferred Alternative)

Implementation of Alternative 2 would produce the same noise impacts for cross-country flights in the Fort Bliss LFA as described for Alternative 1. Additional flight training in the areas described in Section 2.1, where flights would descend to a minimum altitude of 100 feet AGL for low-altitude simulated combat training, would produce considerably higher noise levels (93 to 98 dBA). However, those low-altitude training areas are located in sparsely inhabited areas, and pre-mission reconnaissance would be conducted to ensure that no persons or livestock are present in the specific areas to be used during low-altitude training. As mentioned previously, less than 40 acres within these designated low-level training areas would be affected during

training events and aviators would select areas with sparse or no population. Therefore, there would be no major impacts on the human environment in those areas due to helicopter noise.

3.1.2.3 Alternative 3 (No Action Alternative)

Under the No Action Alternative, the current interim FB 95-1 rules would continue to govern flights from Biggs AAF within the Fort Bliss LFA, and helicopter flights outside the Fort Bliss boundaries within the LFA would maintain a minimum altitude of 3,000 feet AGL. At that flight level, there would be negligible noise impacts on the human environments on the ground (60 dBA or less).

3.2 BIOLOGICAL RESOURCES

3.2.1 Affected Environment

The LFA includes portions of El Paso, Hudspeth, and Culberson counties in Texas and Otero, Chaves, Lincoln, Eddy, Doña Ana, Luna, Sierra, Grant, and Hidalgo counties in New Mexico. This area lies at the northern edge of the Chihuahuan Desert ecoregion, which is one of the most diverse desert ecoregions in the world, consisting of a series of basins and mountain ranges that are situated at a relatively high elevation, resulting in a cooler desert. The complex geographical structure of this region gives rise to a multitude of distinct vegetation communities, which follow distinct elevational gradients (Muldavin et al. 2000; Allison and Ashcroft 2011; USDA 2016). Specific vegetation associations within the LFA include various types of desert grasslands and shrublands, montane woodlands and coniferous forests, high plain and valley grasslands, and sand hills (Figure 3-1). Most of the LFA is considered desertic basins characterized by grass- and shrublands (Animas Valley Plains Desert Grass-Shrubland, Jornada Plains Desert Grass-Shrubland, and Trans-Pecos Desert Shrubland). Common vegetation in these basins consists of four-wing saltbush (*Atriplex canescens*), mesquite (*Prosopis* spp.), tarbush (*Flourensia cernua*), sand sage (*Artemisia filifolia*), creosotebush (*Larrea tridentata*), little leaf sumac (*Rhus mycophylla*), blue grama (*Bouteloua gracilis*), black grama (*Bouteloua eriopoda*), tobosa grass (*Pleuraphis mutica*), bush muhly (*Muhlenbergia porteri*), dropseed grasses (*Sporobolus* spp.), and other grama species (Muldavin et al. 2000; Allison and Ashcroft 2011; Michaud et al. 2012). Additionally, fields of coppice dunes that form around clumps of mesquite, saltbush, tobosa grass and creosotebush are present within the desertic basin ecosystem, as well as various massive, generally unvegetated dune fields associated with the WSMR and White Sands National Monument landscape (Muldavin et al. 2000).

The northeastern portion of the LFA, within portions of Chavez and Eddy counties, New Mexico, is occupied by grass-shrubland ecosystem (Artesia Plains Desert Grass-Shrubland). This ecosystem occurs at higher elevations and is characterized by a short-grass vegetation community composed of sideoats grama (*Bouteloua curtipendula*), hairy grama (*Bouteloua hirsuta*), galleta (*Pleuraphis jamesii*), big bluestem (*Andropogon gerardii*), sand bluestem (*Andropogon hallii*), little bluestem (*Schizachyrium scoparium*), buffalograss (*Buchloe dactyloides*), and vine-mesquite (*Panicum obtusum*), as well as shrubs such as creosotebush, four-wing saltbush, mesquite, and tarbush (Allison and Ashcroft 2011; Michaud et al. 2012). Grass-shrubland communities comprise 70.6 percent of the LFA.

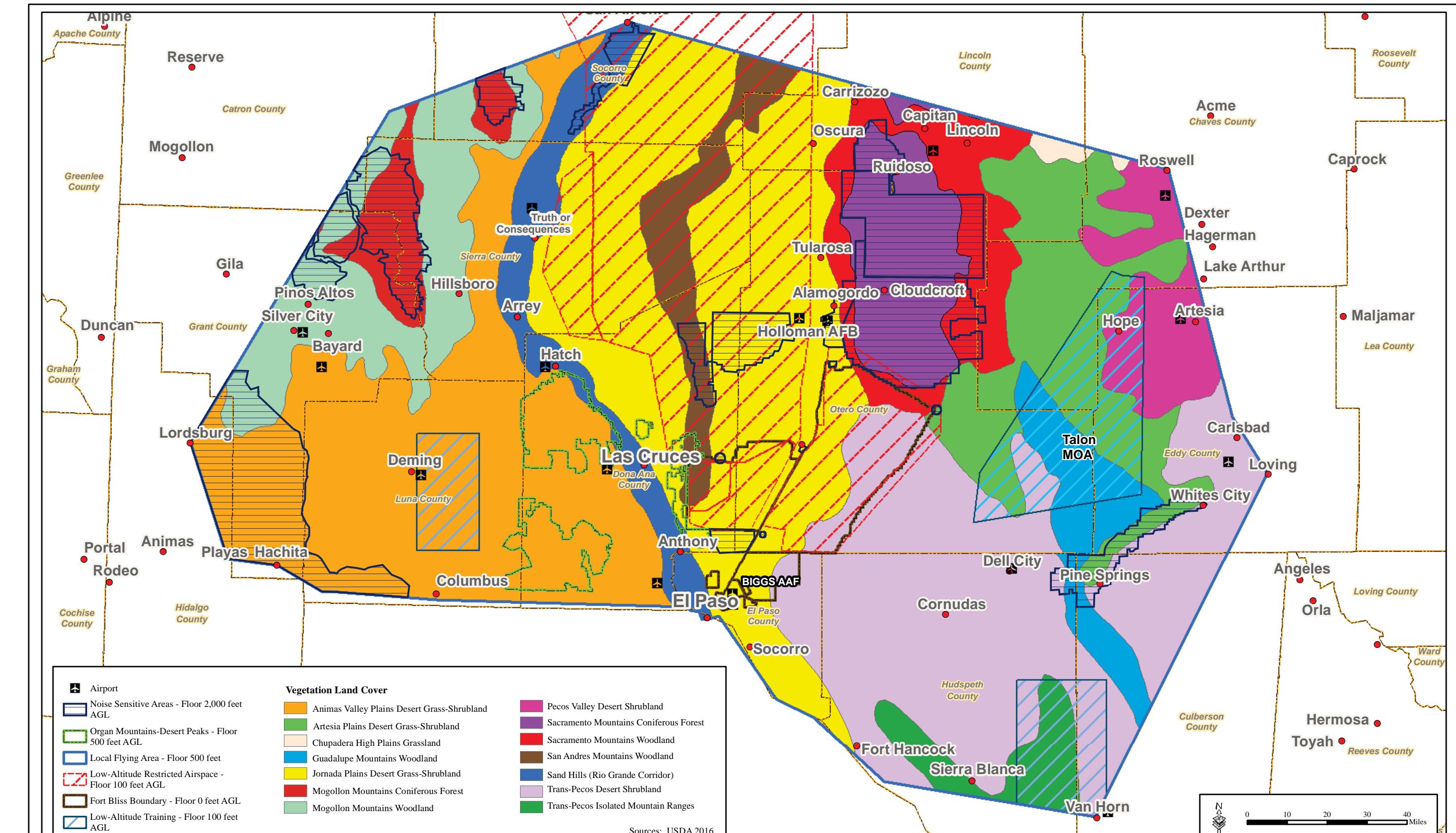


Figure 3-1. Vegetation Land Cover Within the Fort Bliss LFA.

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Separating the basin and plateau areas in the LFA are the mountain ranges and high valleys (Hueco Mountains, Organ Mountains, San Mateo Mountains, Franklin Mountains, Sacramento Mountains, San Andres Mountains, Oscura Mountains, Caballo Mountains, Sierra Blanca, Sierra Diablo, Delaware Mountains, and Guadalupe Mountains). The mountain ranges typically harbor mountain woodlands and coniferous forest ecosystems (Guadalupe Mountains Woodland, Mogollon Mountains Coniferous Forest and Woodland, Sacramento Mountains Coniferous Forest and Woodland, and Trans-Pecos Isolated Mountain Ranges, see Figure 3-1). The coniferous forests occupy the highest elevations and are characterized by open ponderosa pine (*Pinus ponderosa*) and Douglas fir (*Pseudotsuga menziesii*) forest interspersed with areas of deciduous oak (*Quercus gambelii*) woodland. As elevation decreases, the communities transition to a mountainous woodland comprised of pinyon pine (*Pinus edulis*) and juniper (*Juniperus monosperma*) woodlands intermixed with stands of evergreen oak (*Quercus grisea* and *Quercus turbinella*) (Muldavin et al., 2000). The high valleys and slopes support grasslands dominated by blue grama, hairy grama, sideoats grama, western wheat grass (*Pascopyrum smithii*), and New Mexico needlegrass (*Stipa neomexicana*) (Muldavin et al. 2000; Allison and Ashcroft 2011). These areas are also interspersed with subalpine meadows consisting of various grasses such as fescues (*Festuca* spp.), as well as sedges (*Carex* spp.) and rushes (*Juncus* spp.) (Muldavin et al. 2000; Allison and Ashcroft 2011). The lower foothills and fans of these areas support a similar grassland community structure, but also have a conspicuous shrub layer consisting of common stool (*Dasyliion wheeleri*), sacahuista (*Nolina microcarpa*), soaptree yucca (*Yucca elata*), mariola (*Parthenium incanum*), ocotillo (*Fouquieria splendens*) and Torrey's jointfir (*Ephedra torreyana*) (Muldavin et al. 2000). Several national forests are designated in these mountain ranges (Lincoln National Forest in the eastern portion of the LFA, Cibola National Forest in the northwestern portion of the LFA, and Gila National Forest in the western portion of the LFA). Overall, the mountain coniferous forests and woodlands comprise approximately 8.7 and 17.0 percent, respectively, of the Fort Bliss LFA.

The San Andres National Wildlife Refuge is located partially on and west of WSMR and the Bosque del Apache National Wildlife refuge is located at the north edge of the LFA along the Rio Grande. The Organ Mountains-Desert Peaks National Monument and White Sands National Monument are located near the center of the LFA, and the Guadalupe Mountains National Park and Carlsbad Caverns National Park are located in the eastern portion of the LFA.

The Rio Grande traverses the LFA north-to-south from San Antonio, New Mexico, to El Paso, Texas, and is characterized in Figure 3-1 as the Sand Hills (3.7 percent of the LFA). The Rio Grande valley vegetation land cover is dominated by agricultural land in the south, with a naturally vegetated riparian corridor at the north edge of the LFA, where the Bosque del Apache National Wildlife Refuge is located.

Terrestrial wildlife within the Fort Bliss LFA include mammals, reptiles, amphibians, and birds. Various species of small mammals occur within different natural communities within the LFA including Merriam's kangaroo rat (*Dipodomys merriami*), banner-tailed kangaroo rat (*Dipodomys spectabilis*), hispid cotton rat (*Sigmodon hispidus*), southern plains woodrat (*Neotoma micropus*), white-footed mouse (*Peromyscus leucopus*), deer mouse (*Peromyscus maniculatus*), Mearn's grasshopper mouse (*Onychomys arenicola*), western harvest mouse (*Reithrodontomys montanus*), spotted ground squirrel (*Xerospermophilus spilosoma*), and black-

tailed jackrabbit (*Lepus californicus*) (Clary et al. 2002). Medium-sized mammals would include coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), gray fox (*Urocyon cinereoargenteus*), badger (*Taxidea taxus*), javelina (*Pecari tajacu*), and bobcat (*Lynx rufus*). Large mammals would include mountain lions (*Puma concolor*), black bears (*Ursus americanus*), desert bighorn sheep (*Ovis canadensis mexicana*), mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), Rocky Mountain elk (*Cervus canadensis*). Other large, but exotic species that occur in the LFA include oryx (*Oryx gazelle*), ibex (*Capra ibex*), and Barbary sheep (*Ammotragus lervia*) (Fort Bliss 2016, Frey 2004).

A wide variety of bat species exist within the Fort Bliss LFA. Roosting areas for most bats are limited to the mountainous areas, where they roost under rock ledges, in large and small caves, and in heavily forested areas, as well as near large open structures in populated areas. Desert bats may roost in vegetation and rocks in otherwise open areas. The only documented communal roosting site in the LFA is at Carlsbad Caverns, dominated by Mexican free-tailed bats (*Tadarida brasiliensis*). Carlsbad Caverns National Park is world-famous for its nightly outflight of bats, which number in the thousands. Common bat species inhabiting the Fort Bliss LFA include Mexican free-tailed bat and various myotis species (*Myotis* spp.), with big free-tailed bat (*Nyctinomops macrotis*) and long-nosed bats (*Leptonycteris* spp.) also present.

Reptiles that could potentially occur within the LFA include desert box turtle (*Terrapene ornata*), yellow mud turtle (*Kinosternon flavescens*), painted turtle (*Chrysemys picta*), Big Bend slider (*Trachemys gaigeae*), Texas banded gecko (*Coleonyx brevis*), lesser earless lizard (*Holbrookia maculata*), greater earless lizard (*Cophosaurus texanus*), long-nosed leopard lizard (*Gambelia wislizenii*), desert spiny lizard (*Sceloporus magister*), ornate tree lizard (*Urosaurus ornatus*), Texas horned lizard (*Phrynosoma cornutum*), western coachwhip (*Coluber flagellum*), western patch-nosed snake (*Salvadora hexalepis*), desert kingsnake (*Lampropeltis getula*), long-nosed snake (*Rhinocheilus lecontei*), black-tailed rattlesnake (*Crotalus molossus*), prairie rattlesnake (*Crotalus viridis*), and western diamond-backed rattlesnake (*Crotalus atrox*) (Stebbins 2003).

Amphibians with the potential to occur within the LFA include Rio Grande leopard frog (*Lithobates berlandieri*), Chiricahua leopard frog (*Lithobates chiricahuensis*), canyon treefrog (*Hyla arenicolor*), mountain treefrog (*Hyla eximia*), western chorus frog (*Pseudacris triseriata*), red-spotted toad (*Anaxyrus punctatus*), Texas toad (*Anaxyrus speciosus*), green toad (*Anaxyrus debilis*), great plains toad (*Anaxyrus cognatus*), Mexican spadefoot toad (*Spea multiplicata*), Couch's spadefoot toad (*Scaphiopus couchii*), tiger salamander (*Ambystoma tigrinum*), and Sacramento Mountain salamander (*Aneides hardii*).

More than 179 fish species could occur in the naturally isolated and fragmented desert streams, springs, brooks, rivers, and ciénegas within all counties encompassed in the the LFA (Desert Fish Habitat Partnership 2008). These include pupfishes (*Cyprinodon* spp.), killifishes (*Empetrichthys* spp.), chubs (*Iotichthys* and *Gila* spp.), suckers (*Catostomus* spp.), shad (*Dorosoma* spp.), and other small fish adapted to live in these environs. Game fish with potential to occur within the LFA include catfish (*Ictalurus* spp.), sunfish (*Lepomus* spp.), bass (*Micropterus* spp.), and rainbow trout (*Oncorhynchus mykiss*).

Common bird species found within the desertic basins include black-throated sparrow (*Amphispiza bilineata*), western kingbird (*Tyrannus verticalis*), Scott's oriole (*Icterus parisorum*), and ash-throated flycatcher (*Myiarchus cinerascens*), northern mockingbird (*Mimus polyglottus*), cactus wren (*Camphylorhynchus brunneicapillus*), canyon towhee (*Melozone fusca*), house finch (*Haemorhous mexicanus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), scaled quail (*Callipepla squamata*), and Gambel's quail (*Callipepla gambelii*). Fort Bliss has recorded 344 species of birds on the Installation. Most of these species are protected under the Migratory Bird Treaty Act (MBTA) of 1918. Of these, 80 species occur throughout the year, 129 species are temporary during migration, 42 species are spring and summer residents, and the remaining species occur principally during the winter. Of the 344 bird species, 121 are common, 72 are uncommon, and 141 are rare to very rare (Fort Bliss 2016).

Common breeding bird species present in mountain woodlands include northern mocking bird, bushtit (*Psaltriparus minimus*), spotted towhee (*Pipilo maculatus*), and black-chinned sparrow (*Spizella atrogularis*). Common species in the oak/juniper habitat include mourning dove, house finch, bushtit, Bewick's wren (*Thryomanes bewickii*), canyon wren (*Catherpes mexicanus*), rock wren (*Salpinctes obsoletus*), and rufous-crowned sparrow (*Aimophila ruficeps*) (Fort Bliss 2016).

Common raptors in the LFA include Swainson's hawk (*Buteo swainsonii*), turkey vulture (*Cathartes aura*), golden eagle (*Aquila chrysaetos*), merlin (*Falco columbarius*), burrowing owl (*Athene cunicularia*), great horned owl (*Bubo virginianus*), and barn owl (*Tyto alba*) (Fort Bliss 2016).

3.2.2 Environmental Consequences

3.2.2.1 Alternative 1

Under Alternative 1, helicopter flights at a minimum of 500 feet AGL could occur over all of the Fort Bliss LFA, with the exception of those areas designated as noise-sensitive areas, where altitudes would be restricted to a minimum of 2,000 feet AGL (27,240 square miles at 500 feet AGL; 6,760 square miles at 2,000 feet AGL). Since the vast majority of flights would involve relatively straight-line flights from Biggs AAF to the designated non-DoD airport, most of the LFA would not be overflowed by 1AD CAB helicopters. Noise levels of up to SEL of 90 dBA at ground level, such as those that would occur in the Fort Bliss LFA for helicopter flights at 500 feet AGL, could startle wildlife under and near the flight paths (Larkin 1996). The startle effects are a combination of visual and noise impacts that vary considerably between individual species. The effects would be temporary, usually for about 10 seconds and no more than one minute. Noise would return to normal after the helicopter has passed. The reactions vary greatly with each species, and no lasting effect has been documented if the number of events is small with a significant length of time between each startle event (Larkin 1996), such as the case with 1AD CAB flights in the LFA.

Large birds of prey, such as bald eagles (*Haliaeetus leucocephalus*) and golden eagles, have been reported to flush from nests when approached by aircraft at distances of up to a mile (Watson 1993). However, the disturbances are temporary and the birds tend to return to the nest quickly; in fact, rotary-wing aircraft are an accepted method of conducting surveys for these species (Pagel et al. 2010, Grubb et al. 2010, Watson 1993).

Fish likely to be present in the LFA are in small streams, rivers, and reservoirs, and would not be affected by noise from helicopters because airborne noise of the frequency produced by helicopters does not propagate well in water and not at all in water less than 2 feet in depth (Lugli and Fine 2003). Snakes present in the LFA, while not able to hear as other animals do, can detect vibrations induced in surrounding materials by low-frequency noise from helicopters, and may react with a startle effect, but are much more sensitive to smell and sight intrusions (Knight 2012).

Wild ungulates (e.g., elk, mule deer, sheep, and javelina) have been studied for reaction to aircraft overflights. In a study on the effects of simulated low-altitude jet aircraft noise on desert mule deer and mountain sheep, it was documented that heart rates rise during simulated overflights with an equivalent continuous sound level of (L_{eq}) of 92 to 100 unweighted dB at a frequency of one to seven times per day, but return to normal rates after a maximum of three minutes (Weisenberger et al. 1996). Weisenberger et al. (1996) also documented that these species habituated to simulated low-altitude jet aircraft sound over time. Krausman et al. (1998) documented the response of desert bighorn sheep to 149 F-16 overflights of one to seven times per day at approximately 400 feet AGL within five different designated sound zones that had previously estimated sound pressure levels between 85 to 105 unweighted dB. Desert bighorn sheep responded with increased heart rates that would return to normal rates after 120 seconds, and did not show any alteration to their behavior or habitat use (Krausman et al. 1998). These studies, which were completed at lower flight elevations and higher frequencies (1 to 7 flights/day), concluded that temporary and infrequent overflights would not be considered detrimental. Therefore, the higher elevations (minimum of 500 feet AGL) and less frequent sorties (16-40 per week), as described in Alternative 1, would not be considered detrimental to the health and well-being of those species. Desert bighorn sheep and other species such as Persian ibex (*Capra aegagrus*), may be the most affected by 1AD CAB helicopter flights since their habitat is limited to mountain ranges that lack cover. The desert bighorn sheep is primarily found in the Ladron, Peloncillo, Little Hatchet, Big Hatchet, Fra Cristobal, Caballo, and San Andreas Mountains in New Mexico (NMDGF 2015), and the ibex is located in the Florida Mountains. Flights over these areas would be infrequent (less than the potential of 40 sorties per week) since these areas are not within direct flight lines to or from the approximately 10 airports that would be flown to in these areas. Other ungulate species may be less affected due to less habitat restriction. Therefore, Alternative 1 would have temporary, minor adverse impacts on ungulate wildlife due to noise and visual intrusion, as wildlife seem to habituate to the irregular noise events, and because of the limited timeframe during which the animals would be subjected to the noise intrusion (i.e., 10 seconds to 1 minute).

Most bird mortalities due to aircraft strike generally occur at or below 500 feet AGL (Dolbeer et al. 2015) and around airports. Almost all of the recorded bird strikes are due to impacts with fixed-wing aircraft. For bats, it has been shown that the mean altitude at which most aircraft strikes take place is 1,138 feet AGL and most strikes occur during spring and fall, and at night, when many species of bats are undertaking migratory flights (Peuarch et al. 2009). The majority of aircraft strikes to wildlife in the air and on the ground are attributable to fixed-wing rather than rotary-wing aircraft near airport runways, likely due to the greater speeds and longer takeoff distance required by fixed-wing aircraft (Dolbeer et al. 2015). Air traffic control for Fort Bliss has reported only two bird-aircraft strikes in the past 3 years, one bird-helicopter strike near the

Oro Grande Training Area and one bird-fixed-wing strike in the traffic pattern for Biggs AAF (M. Delaney email communication). The potential for bird-helicopter and wildlife-helicopter strikes in the LFA would be negligible.

3.2.2.2 Alternative 2 (Preferred Alternative)

Under Alternative 2, temporary and minor impacts discussed for Alternative 1 would occur en route, along with temporary (15 to 30 minutes) and minor startle impacts on wildlife in the specific low-altitude training areas used. Flight maneuvering to an altitude of 100 feet AGL would cause any animals present in the immediate area to flee and return only after the low-altitude exercise has been completed. When flying over mountainous regions in which species like desert bighorn sheep, Barbary sheep, ibex, or eagles may occur, aircraft will maintain at least a 1,300 feet AGL altitude. Use of the low-altitude training areas would be infrequent (approximately four to six sorties per month spread through the FBTC, when available, and the three off-Installation areas); therefore, impacts in the low-altitude training areas on wildlife would also be intermittent and minor.

3.2.2.3 Alternative 3 (No Action Alternative)

Under the No Action Alternative, helicopter flights would continue in the Fort Bliss LFA at an altitude of 3,000 feet AGL, and negligible impacts would occur on wildlife due to the much lower noise levels on the ground (less than 60 dBA) and the lack of birds flying at that altitude.

3.2.3 Threatened and Endangered Species and Protected Species

As shown in Table 3-2, a total of 45 species Federally protected under the Endangered Species Act (ESA) and the Bald and Golden Eagle Protection Act have the potential to occur within the boundaries of the LFA (USFWS 2017b). Their typical habitat associations and, if applicable, areas of designated Critical Habitat are also provided. These Federally protected species could be present within the LFA anywhere that suitable habitat for those species occurs.

3.2.3.1 Affected Environment

Additionally, two species protected under the Bald and Golden Eagle Protection Act, the bald eagle and golden eagle, are included in this table. Potential effects on these species are discussed in Section 3.2.3.2. Consultation with USFWS under Section 7 of the ESA is ongoing and will be completed for the Final EA and FNSI.

3.2.3.2 Environmental Consequences

Because there would be no landings (except in emergencies and at airports) by 1AD CAB helicopters or ground disturbance within the LFA, there would be no impacts on Federally protected plant species. Likewise, there would be no impacts on Federally protected snails, crustaceans, or clams from 1AD CAB helicopter operations because there would be no ground disturbance and no landings in the LFA, and all of the protected aquatic species occur in shallow water springs and creeks where helicopter noise would not propagate (Lugli and Fine 2003, USFWS 2005, USFWS 1994).

Eleven species of Federally protected fish are known to occur within the Fort Bliss LFA (see Table 3-2); however, none of these species would be impacted by helicopter noise. All of these species are associated with shallow headwater streams and riffle and pool microsites generally

1.6 feet in depth or less (Propst and Bestgen 1991, Rine 1991, USFWS 2002, and New Mexico Department of Game and Fish 2005). Low frequency sound (less than 100 Hz), such as that produced by helicopters, does not propagate well in shallow water, and sounds with frequencies under 750 Hz do not propagate at all in water less than 19.6 inches in depth (Lugli and Fine 2003). Therefore, noise from 1AD CAB aircraft operating under Alternative 1 would not have an effect on protected fishes or other aquatic species. Additionally, these species are not at risk of airstrike strike mortality from rotary-wing aircraft.

Two Federally protected snake species could potentially occur within the Fort Bliss LFA (see Table 3-2); however, no impacts on snakes from helicopter noise would occur. Snakes have a limited capacity to perceive airborne sound, compared to other terrestrial vertebrates, due to the lack of external ear structures. Snakes do, however, detect both airborne and substrate-borne vibrations through a process known as somatic hearing, in which vibrations are perceived along the body of the animal (Hartline 1971). In experiments on 27 snakes species including members of the crotalid (rattlesnakes) and colubrid (common snakes such as gartersnakes [*Thamnophis* spp.] and ratsnakes [*Pantherophis/Elaphe/Bogertophis* spp.]) snake taxa, it was found that snakes have increased sensitivity to ground vibrations, showing increased response to sounds greater than 80 dBA at frequencies averaging between 250 to 400 Hz; however, most helicopter tail and main rotor blade passages produce sounds at less than 100 Hz (True and Rickley 1977). Therefore, protected snake species are not expected to be affected by intermittent and short duration noise disturbances caused by 1AD CAB helicopters operating within the LFA. A total of 11 aircraft strike mortalities of snakes from individuals representing three species were reported in the U.S. for civil aircraft from 1990 to 2014 (Dolbeer et al. 2015). These individuals were killed by fixed-wing aircraft during takeoff, landing, or taxiing (Dolbeer et al. 2015). Helicopters take off and land relatively vertical and do not require ground taxiing; therefore, they do not pose an aircraft strike mortality risk to protected snakes.

Frogs are able to perceive sounds of approximately 50 dBA at frequencies less than 100 Hz (Hartline 1971). There is one Federally protected frog species known to be present within the Fort Bliss LFA, the Chiricahua leopard frog. It typically inhabits permanent water environments in springs, rivers, streams, pools, and cattle tanks. Critical Habitat for this species is designated in the Gila National Forest located along the western edge of the LFA. Potential impacts on the Chiricahua leopard frog are discussed later in Section 3.2.3.2.1.

Effects of the Proposed Action on species protected under the ESA and the Bald and Golden Eagle Protection Act would result from noise and visual disturbance. The relationship between noise disturbance and wildlife is multivariate and enormously complex. Long-term exposure to high levels of noise, including aircraft noise, has been shown to negatively impact stress physiology and reproductive success in some birds (Francis et al. 2011, Hayward et al. 2011) and amphibians (Sun and Narins 2005, Bee and Swanson 2007); however, 1AD CAB helicopter flights proposed in the LFA would be short-term and intermittent. More detailed information regarding potential effects to eagles are discussed in Section 3.2.3.2.1 below.

To determine if the increase in noise levels due to military helicopters operating within the Fort Bliss LFA would be likely to affect protected species, a literature search was conducted to determine the potential effects of noise disturbance on Federally protected species occurring

Table 3-2. Potentially Affected Federally Protected Species Occurring within the LFA

Common/Scientific Name	Federal Status	State	Habitat Requirements	Designated Critical Habitat within the LFA
Plants				
Wright's marsh thistle (<i>Cirsium wrightii</i>)	C	NM	Occurs in wetlands in alkaline soils on mountain slopes, forests, and marshes on the edges of rivers and ponds.	No
Kuenzler's hedgehog cactus (<i>Echinocereus fendleri</i> var. <i>kuenzleri</i>)	E	NM	Associated with the lower fringes of juniper-pinyon pine woodlands with a dominant overstory of one-seed juniper (<i>Juniperus monosperma</i>) in areas with skeletal soils.	No
Sacramento prickly poppy (<i>Argemone pleiacantha</i> ssp. <i>pinnatisecta</i>)	E	NM	Occurs in loose, gravelly soils of open disturbed sites, canyon bottoms, and sometimes along roadsides at elevations of 4,000 to 7,000 feet.	No
Sneed's pincushion cactus (<i>Coryphantha sneedii</i> var. <i>sneedii</i>)	E	TX, NM	Associated with grasslands or lechuguilla-sotol shrublands on limestone outcrops or rocky slopes.	No
Todsen's pennyroyal (<i>Hedeoma todsenii</i>)	E	NM	Occurs in sandy, gypsiferous soils on northern-facing, sheltered exposures within pinyon-juniper woodlands. Two distinct occurrence areas are known in the San Andreas and Sacramento mountain ranges.	Yes, two 0.4-square-mile sections in Sierra County, New Mexico, have been designated as Critical Habitat within the LFA.
Guadalupe fescue (<i>Festuca ligulata</i>)	PE	TX	Formerly part of the vegetative understory in pine, oak, and juniper woodlands above 6,000 feet. Only one remaining location known within the U.S. in the Chisos Mountains.	No
Gypsum wild-buckwheat (<i>Eriogonum gypsopilum</i>)	T	NM	Restricted to areas of almost pure gypsum soil that are sparsely vegetated. Associated species include Tiquilla hispidissima (<i>Coldenia hispidissima</i>), gypsum blazingstar (<i>Mentzelia humilis</i>), and southwestern ringstem (<i>Anulocaulis leiosolenus</i>).	Yes, Critical Habitat has been designated in Eddy County, New Mexico within the LFA.
Lee pincushion cactus (<i>Coryphantha sneedii</i> var. <i>leei</i>)	T	NM	Associated with cracks within limestone outcrops, in areas of steep rocky terrain in Chihuahuan Desert scrub communities between 4,000 and 5,000 feet in elevation.	No
Pecos sunflower (<i>Helianthus paradoxus</i>)	T	TX, NM	Grows in areas with permanently saturated alkaline or saline silty clay or fine sand soils with high organic matter content. Most commonly associated with desert springs and wet meadows.	No
Sacramento thistle (<i>Cirsium vinaceum</i>)	T	NM	Restricted to Sacramento Mountains. Occurs in wet travertine or limestone soils at elevations of 7,500 to 9,500 feet.	No
Invertebrates (Snails, Crustaceans, Clams)				
Koster's springsnail (<i>Juturnia kosteri</i>)	E	NM	Isolated limestone and gypsum springs, seeps, and wetlands located in and around Roswell, New Mexico, and Pecos and Reeves counties, Texas	No
Pecos assiminea snail (<i>Assiminea pecos</i>)	E	TX, NM	Isolated limestone and gypsum springs, seeps, and wetlands located in and around Roswell, New Mexico, and Pecos and Reeves counties, Texas	No
Roswell springsnail (<i>Pyrgulopsis roswellensis</i>)	E	NM	Isolated limestone and gypsum springs, seeps, and wetlands located in and around Roswell, New Mexico, and Pecos and Reeves counties, Texas	No

Table 3-2, continued

Common/Scientific Name	Federal Status	State	Habitat Requirements	Designated Critical Habitat within the LFA
Chupadera springsnail (<i>Pyrgulopsis chupaderae</i>)	E	NM	Small ephemeral springs along the Rio Grande in Socorro County, New Mexico	Yes, one small spring in the Bosque del Apache National Wildlife Refuge and two private springs are designated Critical Habitat within the LFA.
Noel's amphipod (<i>Gammarus desperatus</i>)	E	NM	Isolated limestone and gypsum springs, seeps, and wetlands located in and around Roswell, New Mexico, and Pecos and Reeves counties, Texas	No
Texas hornshell (<i>Popenaias popeii</i>)	PE	TX	Occurs in medium to large rivers within crevices, undercut riverbanks, travertine shelves, and under large boulders adjacent to runs and gravel beds. Usually found in clay, sand, and silt soils	No
Fishes				
Chihuahua chub (<i>Gila nigrescens</i>)	E	NM	Associated with pools, riffles, and shallow runs of small to moderate-sized streams with boulders, undercut banks, and debris as cover.	No
Gila chub (<i>Gila intermedia</i>)	E	NM	Occurs in rivers, streams, springs, lakes, ponds, and sinkholes. Associated with runs, riffles, and pools with silt/clay, sand, or cobble substrates.	No
Gila topminnow (<i>Poeciliopsis occidentalis</i>)	E	NM	Prefers shallow warm, and fairly slow-moving waters but can become acclimated to a range of aquatic habitats including broad variations in water temperature, dissolved oxygen content, and pH values. Restricted to the Gila River drainage in New Mexico.	No
Loach minnow (<i>Tiaroga cobitis</i>)	E	NM	Almost exclusively inhabits high gradient stream riffles ranging in depth from 4 to 10 inches.	No
Pecos gambusia (<i>Gambusia nobilis</i>)	E	TX, NM	Occupies spring-fed pools and marshes with constant temperatures within the Pecos River Basin	No
Rio Grande silvery minnow (<i>Hybognathus amarus</i>)	E, EP	NM	Occurs in desert streams, and utilizes silt substrates in areas of low or moderate water velocity, and eddies created by debris piles, pools, and riffles.	No
Spikedace (<i>Meda fulgida</i>)	E	NM	Occurs in desert streams characterized by shallow (10.6-inch-deep) slow-moving water with eddying currents and shear zones.	No
Beautiful shiner (<i>Cyprinella formosa</i>)	T	NM	Occupies headwater streams that are subject to desiccation under severe drought conditions, and is associated with midwater microsites such as pools and runs along shorelines in large streams and riffles in smaller streams.	Yes
Gila trout (<i>Oncorhynchus gilae</i>)	T	NM	Occurs in moderate- to high-gradient perennial mountain streams above 5,000 feet in elevation. These streams typically flow through steep-sided valleys and canyons. Requires water temperatures below 77°F and clean gravel substrates for spawning. Currently 14 populations are known, with most in New Mexico being found in the Mogollon Creek drainage.	No

Table 3-2, continued

Common/Scientific Name	Federal Status	State	Habitat Requirements	Designated Critical Habitat within the LFA
Pecos bluntnose shiner (<i>Notropis simus pecosensis</i>)	T	NM	Typically associated with desert streams with slow-moving water, 6 to 20 inches deep, with sand substrates	No
Roundtail chub (<i>Gila robusta</i>)	T	NM	Occurs in rivers and streams throughout the Colorado River basin. Typically associated with deep pools and eddies with cover in the form of boulders, overhanging cliffs, undercut banks, and vegetation.	No
Reptiles and Amphibians				
Chiricahua leopard frog (<i>Lithobates chiricahuensis</i>)	T	NM	Permanent aquatic habitats including river valley ciénegas, springs, pools, cattle tanks, lakes, reservoirs, streams, and rivers.	Yes, portions of the Gila National Forest are designated Critical Habitat within the LFA.
New Mexican ridge-nosed rattlesnake (<i>Crotalus willardi obscurus</i>)	T	NM	Occurs in pine-oak woodlands within the Animas, Peloncillo and Sierra San Luis Mountain ranges in New Mexico, Arizona, and northern Mexico.	No
Northern Mexican gartersnake (<i>Thamnophis eques megalops</i>)	T	NM	Species is a riparian obligate that feeds on fish and amphibians. Prefers areas of dense vegetation. Is distributed from southern Mexico north through the Mexican Plateau and Highlands to central Arizona and west-central New Mexico.	No
Birds				
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Bald and Golden Eagle Protection Act	TX, NM	Utilizes forested habitats for nesting and roosting, and expanses of shallow fresh and salt water for foraging. Widely distributed throughout the U.S.	No
Golden eagle (<i>Aquila chrysaetos</i>)	Bald and Golden Eagle Protection Act	TX, NM	Prefers semi-open areas with native vegetation communities primarily associated with mountain ranges reaching elevations of 12,000 feet, canyonlands, and riversided cliffs and bluffs. Occurs throughout much of the Northern Hemisphere.	No
Interior least tern (<i>Sterna antillarum</i>)	E	TX, NM	Nesting habitat includes bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with rivers and reservoirs. Breeds along the Missouri, Mississippi, Colorado, Arkansas, Red, and Rio Grande river systems.	No
Piping plover (<i>Charadrius melanotos</i>)	E	TX, NM	Three distinct breeding populations exist in the U.S.; the Northern Great Plains, the Great Lakes, and the Atlantic Coast populations. Nests on coastal beaches, sandflats, barrier islands, sparsely vegetated dunes, and washover areas in coastal areas, and on gravel beaches adjacent to alkali wetlands, and riverine sandbars in inland populations. Overwinters along the northern Gulf Coast, in Mexico and Central America.	No

Table 3-2, continued

Common/Scientific Name	Federal Status	State	Habitat Requirements	Designated Critical Habitat within the LFA
Southwestern willow flycatcher (<i>Empidonax trailii extimus</i>)	E	TX, NM	Inhabits dense riparian habitats along streams, reservoirs, or other wetlands containing tree and shrub species such as willow (<i>Salix</i> spp.), baccharis (<i>Baccharis</i> spp.), boxelder (<i>Acer negundo</i>), stinging nettle (<i>Urtica dioica</i>), blackberry (<i>Rubus</i> spp.), cottonwood (<i>Populus</i> spp.), arrowweed (<i>Pluchea sericea</i>), saltcedar (<i>Tamarix</i> spp.), and Russian olive (<i>Elaeagnus angustifolia</i>).	Yes, the Bosque del Apache National Wildlife Refuge within the LFA is designated Critical Habitat within the LFA.
Northern aplomado falcon (<i>Falco femoralis septentrionalis</i>)	E (TX), EP (NM)	TX, NM	Open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species.	No
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	T	TX, NM	Mature, old growth forests of white pine, Douglas fir, and ponderosa pine (<i>Pinus ponderosa</i>). They are generally associated with steep slopes, canyons, and rocky cliffs.	Yes, the Lincoln and Gila National Forest areas are designated Critical Habitat within the LFA.
Red knot (<i>Calidris canutus rufa</i>)	T	TX, NM	Rare migratory visitor	No
Yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	T	TX, NM	Associated with large tracts of deciduous, broad-leaved woodland with thick, scrubby undergrowth usually along water courses, as well as dense riparian thickets, marshes, and stands of successional hardwood forest. In the west it would also utilize mesquite scrubland adjacent to riparian woodlands.	Yes, one stream in the Gila National Forest and a portion of the Rio Grande corridor at the north edge of the LFA are designated as Critical Habitat. Other areas currently proposed as Critical Habitat could also fall within the LFA.
Mammals				
Peñasco least chipmunk (<i>Tamias minimus astrriatus</i>)	C	NM	Associated with montane woodlands, primarily ponderosa pine forest in open microsites where tree cover is less dense. Presumably extinct from the Sacramento Mountains where holotype specimen was collected. In the nearby Sierra Blanca Mountains it occurs up to 10,000 feet in elevation.	No
New Mexico meadow jumping mouse (<i>Zapus hudsonius luteus</i>)	E	NM	Species is a riparian area obligate, occurring in areas with moist to very wet soils, with dense vegetation, and free-flowing water nearby. A specialist of moist grasslands and meadows, occurring in isolated locations in the Jemez, Sangre de Cristo, and Sacramento mountain ranges in New Mexico.	Yes, several small mountain streams in the Lincoln National Forest are designated Critical Habitat within the LFA.
Jaguar (<i>Panthera onca</i>)	E	NM	Requires large expanses of isolated mixed grassland and scrubland, and montane forests.	No

Table 3-2, continued

Common/Scientific Name	Federal Status	State	Habitat Requirements	Designated Critical Habitat within the LFA
Mexican gray wolf (<i>Canis lupus baileyi</i>)	EP	TX, NM	Historically inhabited montane woodlands and adjacent grasslands in northern Mexico, New Mexico, Arizona, and the Trans-Pecos region of western Texas at elevations ranging from 4,000 to 5,000 feet.	No
Mexican long-nosed bat (<i>Leptonycteris nivalis</i>)	E	TX,NM	Desert scrub communities containing century plants (agaves), mesquite, creosote bush, and various species of cacti. Mexican long-nosed bats roost in caves, crevices, abandoned mines, tunnels, and old buildings and are highly colonial.	No
Lesser long-nosed bat (<i>Leptonycteris curasoae yerbabuena</i>)	T	NM	Desert scrub communities containing century plants (agaves), mesquite, creosote bush, and various species of cacti. Lesser long-nosed bats require caves and abandoned mines for roost sites.	No

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E = Endangered, T = Threatened, C = Candidate, PE = Proposed Endangered, EP= Experimental Population

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within the LFA or, in the case where no primary literature directly pertaining to the species could be found, similar species. In many of the references found, no distinction was made between visual and noise effects of aircraft on the animals studied. The potential for helicopter strike impacts on most species would be negligible.

3.2.3.2.1 Alternative 1

Bald and Golden Eagles

Effects on eagles due to aircraft noise associated with the implementation of Alternative 1 are anticipated to be negligible. 1AD CAB helicopter flights within potential eagle habitat would be at altitudes between 500 to 2,000 feet and, due to the low frequency of flights, are not expected to strike or disturb golden and bald eagles. Both golden and bald eagles are known to occur within the Fort Bliss LFA and are protected by the Bald and Golden Eagle Protection Act. Bald eagles are a winter resident of the northern edge of the Fort Bliss LFA, within Chaves, Lincoln, and Sierra counties, New Mexico. Bald eagles would most likely be associated with habitats within and near the riparian corridor of the Rio Grande, particularly impoundments such as Elephant Butte Reservoir. Golden eagles are a year-round resident typically associated with mountain ranges within the Fort Bliss LFA. While golden eagles prefer semi-open areas with native vegetation communities primarily associated with mountain ranges reaching elevations of 12,000 feet, canyonlands, and riversided cliffs and bluffs, they could potentially be found throughout mountain ranges as well as grassland-shrubland within the LFA.

A total of 202 aircraft strikes on bald eagles and 18 aircraft strikes on golden eagles by civil aircraft were recorded in the U.S. between the years of 1990 and 2014 (Dolbeer et al. 2015). The analysis of aircraft strikes on bald and golden eagles by civil and military aircraft indicated that eagles are most often struck by fixed-wing aircraft during approach and landing. Aircraft strike risk to eagles from helicopters is diminished relative to fixed-wing aircraft due to the increased maneuverability, slower flight speed, and shorter takeoff and landing space and time required by rotary-winged aircraft (Washburn et al. 2015). Therefore, effects on bald and golden eagles from aircraft strike due to 1AD CAB helicopter flights would be negligible.

Studies have shown that golden eagles are largely indifferent to helicopter activity, and even multiple close flight approaches (less than 300 feet) by relatively loud (greater than a SEL of 90 unweighted dB) military helicopters (AH-64 Apache) to nests did not result in decreased chick rearing or fledging success (Grubb et al. 2010). Golden eagles also had a tendency to habituate to frequent helicopter flyovers. For bald eagles, however, helicopters elicited a greater response than jets or small civilian aircraft, especially just prior to and just after nesting activities. Neither of the eagle studies differentiated between the effects of noise and visual impact on eagles. 1AD CAB helicopter flights under Alternative 1 would have to fly at an altitude of approximately 200 feet AGL to produce noise at a SEL of 90 dBA. Since flights under Alternative 1 would remain at 500 to 2,000 feet AGL, golden eagles would be negligibly impacted.

Southwestern Willow Flycatcher

Effects on the southwestern willow flycatcher due to helicopter noise in the LFA would be negligible. The Fort Bliss LFA overlaps with three areas designated as Critical Habitat for southwestern willow flycatcher. Helicopter flights would not typically traverse these Critical Habitat areas from Biggs AAF because no destination airports are located beyond these areas.

Rare overflights at greater than 2,000 feet AGL could occur due to flights between non-DoD airports. There would be no adverse modification of Critical Habitat because no ground- or vegetation-disturbing activities would take place, nor would any activities occur over Critical Habitat that would preclude the use of Critical Habitat by southwestern willow flycatcher. Critical Habitat is designated along the Rio Grande Main Conveyance Channel to the immediate northwest of the WSMR, and along the Gila and San Francisco rivers at the western edge of the LFA.

Impacts from helicopter noise and strike mortality would negligibly impact southwestern willow flycatcher. A study of two closely related species, the grey flycatcher (*Empidonax wrightii*) and ash-throated flycatcher (*Empidonax wrightii*), indicated that noise with an equivalent continuous sound level (L_{eq}), fast response time of 50 dBA or greater from human activity (constant generator noise) can lead to a decline in occupancy of suitable habitat and increased vocal amplitudes for this species (Francis et al. 2011). However, all military flights throughout the LFA under Alternative 1 would consist of cross-country flights, and flyover times and maximum noise levels would be too short in duration (approximately 10 seconds to 1 minute at 2,000 feet AGL (SEL of 65 to 70 dBA) to cause similar equivalent continuous sound levels over Critical Habitat and other areas of suitable habitat for southwestern willow flycatcher. Additionally, only three civil aircraft strikes to southwestern willow flycatchers in the U.S. were reported for years 1990 to 2014 (Dolbeer et al. 2015). Apart from migration flights, southwestern willow flycatchers generally undertake short flights at or below tree canopy level and, thus, are at minimal risk of airstrike mortality (USFWS 2002).

Northern Aplomado Falcon

Effects of helicopter noise disturbance on northern aplomado falcons occurring within the Fort Bliss LFA under Alternative 1 would be negligible. 1AD CAB helicopter flights would be flying between 500 to 2,000 feet AGL or higher over potential habitat for northern aplomado falcon. The northern aplomado falcon can be found in open country, especially savanna and open woodland, and sometimes in very barren areas, such as grassy plains and valleys with scattered mesquite, yucca, and cactus. Much of the LFA is made up of this type of habitat. However, aplomado falcons will be negligibly impacted by 1AD CAB helicopter flights due to their low flight pattern and low abundance in remote areas of the LFA. No specific instances of aircraft strikes on northern aplomado falcons were recorded in the U.S. for civil aircraft from 1990 to 2014.

Northern aplomado falcons have been reported on Otero Mesa, but are more likely to be found in southwest and south-central New Mexico. While aircraft noise is likely to illicit a startle response in northern aplomado falcons, similar to that of other species (Larkin 1996), the aplomado falcon may exhibit similar behavior to that of other raptors. A study of the effect of jet noise on a closely related species, the peregrine falcon (*Falco peregrinus*), indicated that aircraft noise disturbance under a SEL of 90 dBA did not illicit intense reactions (crouching, cowering, or evasive flights) in nesting individuals (Nordmeyer 1999). In comparison, 1 AD CAB helicopters would need to be flying approximately 200 feet AGL to produce a SEL of 92 dBA, and under Alternative 1 they would be restricted to 500 to 2,000 feet AGL.

Mexican Spotted Owl

Impacts on Mexican spotted owl (MSO) from 1AD CAB helicopter flights in the LFA would be negligible. 1AD CAB helicopter flights would be flying at 2,000 feet AGL or higher over the Critical Habitat delineated for MSO. For the few places where there may be MSOs outside the Critical Habitat, 1 AD helicopters would be flying at a minimum altitude of 500 feet AGL when approaching airports. Delaney et al. (1999) monitored reproductive success and behavioral response to 81 military helicopter approaches towards MSOs. Delaney et al. (1999) point out there was no significant difference in reproductive success between nest sites experiencing military helicopter flights and nests sites that did not. Military helicopter flights did not affect MSO nest attentiveness. Prey delivery to nests was determined to be unaffected by helicopters greater than 315 feet away. No flushes were observed when helicopters were more than 345 feet away, and only 50 percent of the owls flushed when helicopters were within 99 feet. Helicopters under Alternative 1 would only be less than 500 feet AGL when landing at airports. The minimal detectable response to the helicopter flights was termed an “alert response”, and the average distance at which an alert responses was detected when approached by a helicopter occurred at an average distance of 1,322 feet away; 95 percent of the alert responses occurred at distances of 1,808 feet or less, and the maximum distance at which a response was detected was 2,165 feet (Delaney et al. 1999). This study points out that the results suggest “there is a likelihood of habituation with repeated exposures” to helicopter flights. The noise generated by both military helicopters and chainsaws was recorded during this study, and reported in both dBA, and a transformed value to simulate the hearing sensitivity of owls (dBO) was produced. There were no flushes by MSOs when the noise level was less than or equal to 92 dBA (102 dBO) (Delaney et al. 1999). When comparing the rate of flushing by owls in response to both military helicopters and chainsaw manipulations over different sound levels (dBO), the noise level does not explain the difference in owl response to helicopters in relation to chain saws (see Figure 4 in Delaney et al. 1999). The authors point out that “ground-based activities are typically more disturbing to raptors than aerial activities.”

1AD CAB helicopters flights would be at or above 2,000 feet. This height exceeds even the highest level at which Delaney et al. (1999) could detect any type of response to a military helicopter approaching the nesting area. Even if two helicopters are flying together, the maximum noise level would be approximately 74 dBA at a distance of 2,000 feet. Delaney et al. (1999) suggest caution about applying these results to more than one flight per week, or other conditions that do not match the conditions of the experiment, which was conducted on the Sacramento Ranger District of Lincoln National Forest. However, their data point out that habituation to the approaches by military helicopters was evident. Furthermore, the flight elevations over the vast majority of MSO habitat within the LFA would be greater than that for any behavioral response detected by Delaney et al. (1999), and over three times the distance at which flushes occur or any impact on prey delivery to nests is expected. The 1AD CAB flights within the LFA are primarily from Biggs AAF to the destination airport and return, so a relatively small portion of the MSO Critical Habitat within the LFA would be exposed to 2,000 feet AGL flights. Of the 14 non-DoD airports available within the LFA, only the Ruidoso Municipal Airport and the Sierra Blanca Regional Airport are located such that 1AD CAB flights would have to fly over MSO Critical Habitat to reach those airports from Biggs AAF. There would be no adverse modifications of Critical Habitat, as no habitat would be disturbed as part of these actions. MSOs typically fly below the forest canopy and do not migrate or make short-

range altitudinal migrations and, thus, are not vulnerable to collisions with aircraft (USFWS 2012a). Therefore, there would be negligible impacts on MSOs within the LFA.

Yellow-Billed Cuckoo

Negligible effects due to 1AD CAB helicopter flights would occur on yellow-billed cuckoos within the Fort Bliss LFA. None of the designated Critical Habitat areas would be overflowed by 1AD CAB helicopters flying from Biggs AAF to destination airports in the LFA. Rare overflights could occur due to flights between non-DoD airports. There would be no adverse modifications of the proposed Critical Habitat because no ground- or vegetation-disturbing activities would take place. Yellow-billed cuckoos are true neotropical migrant birds, in that they typically would arrive at habitats in the LFA in March and April and depart for southern wintering grounds in September and October (Bennett and Keinath 2003); therefore, they would not be at risk due to helicopter impacts during the winter months.

The Fort Bliss LFA overlaps with three tracts of yellow-billed cuckoo breeding habitat that have been proposed as Critical Habitat for this species. This habitat corresponds largely with the areas designated as Critical Habitat for the southwestern willow flycatcher (riparian habitat along the Rio Grande near the Bosque del Apache National Wildlife Refuge, along the Rio Grande Main Conveyance Channel to the immediate northwest of WSMR, and along the Gila and San Francisco rivers at the western edge of the LFA). It is likely that the yellow-billed cuckoo could respond to noise disturbance in a similar way as other bird species that breed in riparian corridors and excessive and prolonged noises (e.g., greater than 90 dBA or continuous) may reduce suitable habitat utilization (Francis et al. 2011); however, the proposed helicopter sorties would not be expected to create such noise conductors.

There are currently no studies documenting the effects of rotary-winged aircraft on yellow-billed cuckoo. One study that investigated the effects of highway traffic noise on several bird species, including yellow-billed cuckoo, found that highway traffic noise does affect habitat occupancy for birds. Between quiet plots (traffic noise at a 30 second average SEL of 41-52 dBA) and noisy plots (traffic noise at a 30 second average SEL of 44-57 dBA), the yellow-billed cuckoo was 10 times less likely to occupy noisy plots (Goodwin and Shriver 2010), and habitat occupancy for yellow-billed cuckoo was affected the most out of the eight species studied. The authors suggest that this is likely due to acoustic masking of their songs by traffic noise (Goodwin and Shriver 2010). 1AD CAB helicopter flights may produce higher sound levels (SEL of 79-84 dBA at 500 feet AGL) than highway traffic, but are much shorter in duration and too intermittent to have negative impacts on the songs of yellow-billed cuckoo.

Most aircraft strike mortality on birds is associated with fixed-wing aircraft, usually around airports (Dolbeer et al. 2015). Rotary-wing aircraft pose less of a risk to birds because they are slower, more maneuverable, and require less takeoff time and distance than fixed-wing aircraft. Yellow-billed cuckoos forage at or below the tree canopy level for grubs, caterpillars, insects, and ground-dwelling small prey and, therefore, would not normally be flying at or above 500 feet AGL (Bennett and Keinath 2003), and yellow-billed cuckoos would not normally be present on or around airports. Therefore, the likelihood of aircraft strikes with yellow-billed cuckoos within the LFA would be negligible.

Mexican Long-Nosed Bat and Lesser Long-Nosed Bat

Potential effects on these two protected bat species resulting from 1AD CAB helicopter flights due to the implementation of Alternative 1 would be negligible. There are no known roost sites for lesser long-nosed bats or Mexican long-nosed bats within the LFA, and individuals of these species that have been found within the boundaries of the LFA have been considered vagrants from larger migratory populations that breed, roost, and overwinter at different roosts outside of the LFA (USFWS 1995, Medellin 1994). Some individuals of these two species could roost overnight in Carlsbad Caverns; however, 1AD CAB flights over Carlsbad Caverns, if necessary, would be at altitudes of 2,000 feet AGL or greater. Within potential feeding habitat, 1AD CAB helicopter flights would be flying at altitudes of 500 to 2,000 feet AGL and usually during the day, therefore, effects of noise disturbance on these two bat species would be negligible.

The USFWS lesser long-nosed bat recovery plan references one unpublished study on the effects of a military aircraft (type not specified) overflight on the stability of a lesser long-nosed bat maternity roost sites in the Organ Pipe Cactus National Monument in Pima County, Arizona (USFWS 1995). The preliminary study indicated that, while there was a small reduction in the number of flights from the roost during a nearby overflight, there was not a significant increase in panic flights, startle response, or falling of non-volant offspring. In addition, normal bat flight levels returned in less than 30 minutes after the aircraft had passed (USFWS 1995).

No civil aircraft strikes were recorded for either of these species in the U.S. from 1990 to 2014 (Dolbeer et al. 2015). Additionally, both the lesser long-nosed bat and Mexican long-nosed bat undertake foraging flights close to the ground in order to locate *Agave* species (USFWS 1995, Medellin 1994), and do not typically reach altitudes associated with bat aircraft strike mortalities (Peuarch et al. 2009), except during migration flights. Therefore, effects of airstrike mortality on these two bat species would be negligible.

New Mexico Meadow Jumping Mouse

Noise and visual disturbance from 1AD CAB helicopter flights under Alternative 1 on the New Mexico meadow jumping mouse would be negligible. The vast majority of flights over this species' habitat would maintain an altitude of 2,000 feet AGL and would be too intermittent and short in duration to cause measurable effects. There would be no adverse modifications of Critical Habitat because no ground- or vegetation-disturbing activities would take place, and the species would not be vulnerable to aircraft strike mortality. In addition, Critical Habitat is not in direct flight lines to and from airports. New Mexico meadow jumping mouse is a habitat specialist, occurring in riparian wetland habitats such as beaked sedge (*Carex rostrata*) and canary grass (*Phalaris arundinacea*) communities, as well as willow (*Salix* spp.) and alder (*Alnus* spp.) communities. Within the Fort Bliss LFA, there is Critical Habitat designated for this species within the Bosque Del Apache National Wildlife Refuge, along five stream segments within the Lincoln National Forest, and along the Rio Grande Main Conveyance Channel to the immediate northwest of the WSMR; these areas are most likely the extent of the New Mexico jumping mouse.

Noise levels from road traffic of greater than a maximum average (over four hours in the morning, six hours in the evening, and two hours at night) SEL of 56 dBA have been shown to cause reduced abundance and species diversity in some rodent communities (Bissonette and Rosa 2009). 1AD CAB helicopter flights may produce higher sound levels (SEL of 79-84 dBA

at 500 feet AGL and SEL of 65-71 dBA at 2,000 feet AGL) than road traffic noise, but are much shorter in duration and too intermittent to have negative impacts on New Mexico meadow jumping mouse.

Peñasco Least Chipmunk

Potential effects due to noise and visual disturbance resulting from 1AD CAB helicopter flights under Alternative 1 would be negligible for the Peñasco least chipmunk. The area with Peñasco least chipmunk population within the LFA is designated as noise-sensitive and the vast majority of flights over this area would occur at or above 2,000 feet AGL. In addition, 1AD CAB helicopter flights under Alternative 1 would be short and intermittent and would not be in flight lines to and from airports. Within the LFA, the Peñasco least chipmunk historically occurred within the White Mountains, Otero and Lincoln Counties, and the Sacramento Mountains (USFWS 2017a); however, despite various surveys, the species has only been recently confirmed within the White Mountains Wilderness in the Sierra Blanca Mountains and is believed to have been extirpated from all other historical ranges (USFWS 2017a).

Mexican Gray Wolf

Disturbance to Mexican gray wolf due to 1AD CAB helicopter flights under Alternative 1 would be negligible. Any Mexican gray wolves occurring within these portions of the Fort Bliss LFA are considered part of the non-essential experimental population (USFWS 2015), and are within designated noise-sensitive areas (see Figure 3-1), over which aircraft would descend no lower than 2,000 feet AGL. Suitable habitat areas within the LFA include the Lincoln National Forest area near the center of the LFA and the Gila National Forest near the western edge of the LFA. The species would not likely be found within most of the Fort Bliss LFA because wolves do not generally live in open desert environments and prefer forested mountainous terrain (USFWS 2015). Helicopters do not represent a significant source of disturbance to this species because Mexican gray wolf counts are performed by both fixed-winged and rotary-winged aircraft (USFWS 2015), which may fly as low as 300 feet AGL (USFWS 2014) with no known significant adverse effects.

The Mexican gray wolf was effectively eliminated from the U.S. by 1970 due to prey and habitat loss, as well as extermination efforts, and was Federally listed as endangered in 1974. Captive-bred Mexican gray wolves were reintroduced into Arizona and New Mexico in 1998, and currently all populations of Mexican gray wolves in the southwestern U.S. are the product of this reintroduction program and are considered non-essential experimental populations (USFWS 2015). These populations are being released within the Apache-Sitgreaves National Forests, the Payson, Pleasant Valley, and Tonto Basin Ranger Districts of the Tonto National Forest in Arizona; and the Gila National Forest and the Magdalena Ranger District of the Cibola National Forest in New Mexico. All of these regions are located west of the Fort Bliss LFA, with the exception of the Magdalena Ranger District within Cibola National Forest. Mexican gray wolves may disperse and be found throughout the experimental population area, but are not allowed to establish territories outside of the recovery areas, and extermination of individuals to protect livestock is permitted. The Mexican gray wolf experimental population area is defined to be all of Arizona and New Mexico south of Interstate Highway 40 to the U.S./Mexico border.

Chiricahua Leopard Frog

Effects from aircraft noise disturbance on Chiricahua leopard frogs under Alternative 1 are determined to be negligible. 1AD CAB helicopter flights over any Chiricahua leopard frog Critical Habitat within the LFA would maintain an altitude of 2,000 feet AGL. The Fort Bliss LFA overlaps with three areas that have been designated as Critical Habitat for the Chiricahua leopard frog, located within the Gila National Forest. Because there are no destination airports located such that direct helicopter flights from Biggs AAF would cross the Critical Habitat, there would be negligible impacts on Chiricahua leopard frogs in Critical Habitat from helicopter noise. Rare overflights could occur between non-DoD airports, but these flights would be restricted to greater than 2,000 feet AGL. Furthermore, there would be no adverse modifications of Critical Habitat because no ground- or vegetation-disturbing activities would take place.

The effects of helicopter disturbance on frogs have not been documented. No long-term effects on population density or reproduction rates were found in various studies of vehicular traffic noise on grey treefrog (*Hyla chrysoscelis*) and European treefrog (*Hyla arborea*) (Bee and Swanson 2007, Lengagne 2008). These studies found that frogs would increase communication calling rates or frequencies in response to traffic noise of equivalent continuous sound levels (L_{eq}) (mean L_{eq} over 6 hours of 75.1 unweighted dB and mean L_{eq} over 3 hours of 72.3 dBA, in each study respectively). 1AD CAB helicopter flights may produce slightly higher sound levels (SEL of 79-84 dBA at 500 feet AGL and SEL of 65-71 dBA at 2,000 feet AGL) than road traffic noise, but are shorter in duration and too intermittent to have negative impacts on Chiricahua leopard frog.

3.2.3.2.2 Alternative 2 (Preferred Alternative)

Impacts on threatened and endangered species defined under Alternative 1 would also apply to cross-country flights at 2,000 and 500 feet AGL for Alternative 2. Under Alternative 2, low-altitude flights would take place four to six times per month (for approximately 15 to 30 minutes) and in designated areas where most Federally listed species are not likely to occur (generally not preferred habitat areas); so, for most listed species there would be no additional impacts. Aircraft traversing steeper mountainous regions during low-altitude flights (i.e., the Florida Mountains, Sierra Diablo, and the Guadalupe Mountains) would be flown at over 1,300 feet AGL and would not impact species restricted to these habitats, such as desert bighorn sheep, ibex, or nesting golden eagles. The northern aplomado falcon and golden eagle might be found foraging in the open desert low-altitude training areas. In particular, the aplomado falcon could occur in the low-altitude area near Deming, New Mexico. The approach and maneuvering of 1AD CAB helicopters for low-altitude training would cause any birds present to flee the area during flight activities. After training activities end, these species would generally return and resume normal activities. The presence of these species in the low-altitude training areas would be scattered and low-altitude training activities would occur only four to six times per month (if FBTC areas are not available). Currently there are no known eagle nests within the low-altitude area near Deming, New Mexico (Dr. B. Locke, personal communication, June 28, 2017), and presence of eagle nests within the Talon MOA and Texas low-altitude areas is not known; therefore, helicopter flights would have negligible to minor effects on eagles present within the Talon and Texas low-altitude area. In addition, the low-altitude training would be limited to less than 40 acres per training event. Consequently, negligible to minor additional impacts would occur on these species from those indicated for Alternative 1.

3.2.3.2.3 Alternative 3 (No Action Alternative)

Under Alternative 3, flights within the LFA would be limited to 3,000 feet AGL, and negligible impacts on Federally listed species would occur at that altitude.

3.3 AIRSPACE

All airspace in the United States is defined and regulated by the FAA, as described in Section 1.4. Airspace designations defined in Section 1.4 include Class A, Class B, Class C, Class D, Class E, and Class G airspace. The current FAA sectional navigation charts covering the Fort Bliss LFA were shown previously in Figure 1-3.

3.3.1 Affected Environment

The Fort Bliss LFA encompasses a variety of airspace classes. SUAs (Restricted Areas) within the Fort Bliss boundaries and the boundaries of WSMR provide for military training flights at prescribed altitudes when the SUAs are activated. Flight restrictions within the SUAs are designed to prevent conflicts between civilian and military aircraft during training operations. The only Class C airspace within the Fort Bliss LFA is associated with the El Paso International Airport, and all Fort Bliss aircraft within that Class C airspace maintain contact with the El Paso ATC and follow FAA regulations for flight within that airspace. Class D airspace within the Fort Bliss LFA includes the airspace surrounding Biggs AAF, HAFB, and Roswell International Air Center. Flights within those airport areas follow FAA regulations requiring radio contact with ATC in the respective control towers. Operations may be conducted under IFR, SVFR, or VFR, but aircraft separation services are only provided between IFR and SVFR operations.

Most of the airspace within the Fort Bliss LFA is designated as Class E or Class G. Class E airspace generally begins at 1,200 feet AGL; therefore, flights at a minimum 500 feet AGL would operate in uncontrolled airspace. Flights at a minimum of 500 feet AGL in Class G would also operate in uncontrolled airspace. Around destination airports without control towers, operations for landings and departures would contact the local Unicom radio frequency for clearance and airport traffic information within the approach and control zones for those airports. For operations near airports with control towers, aircraft would contact the appropriate control tower for clearance and follow controllers' instructions.

There are numerous military training routes and visual and instrument flight navigation routes through the Fort Bliss LFA, which require visual avoidance measures when those routes are active. The FAA sectional navigation charts also show the maximum elevation figure found in each quadrangle on those charts defined by longitude and latitude. These maximum ground elevations include known obstructions, such as radio towers and antennas, to aid in determining a safe flight altitude through the area. The 500 feet AGL altitudes used by helicopters flying in the LFA would use these maximum elevation figures to define the lower limits of safe airspace to transit each quadrangle.

Within the Fort Bliss LFA, there are several no-fly zones for military aircraft defined by FB 95-1. These are indicated in red on the LFA map shown previously in Figure 1-3. They include the Chaparral housing area on the north side of El Paso north of Biggs AAF, the populated area of the City of Alamogordo east of Alamogordo-White Sands Regional Airport, and numerous small

areas associated with military munitions hazard sites and civilian noise sensitivity areas. No Fort Bliss military helicopter flights are allowed over these areas, with the following exceptions:

- The area east of the Alamogordo-White Sands Regional Airport shall not be overflown below 2,000 feet AGL except when conducting an instrument approach or when the traffic pattern requires landing to the southwest.
- Local Notice to Airmen-restricted areas, ammunition storage areas, and hospitals shall not be overflown at less than 2,500 feet AGL.

3.3.2 Environmental Consequences

No changes in FAA airspace designations are proposed as part of the implementation of FB 95-1. FB 95-1 defines and delegates rules and responsibilities for military aircraft operating in existing designated airspace classes within the Fort Bliss LFA.

3.3.2.1 Alternative 1

Under Alternative 1, there would be no change in designated airspace classes within the Fort Bliss LFA. Some currently designated SUAs (Restricted) under the control of other military installations may be activated on behalf of Fort Bliss training operations after coordination and cooperation with the other installations. In that case, airspace in the affected SUA would restrict civilian aircraft operations when the SUA is activated. When SUA assigned to other military installations is used (WSMR and HAFB), coordination with those installations would be conducted to avoid conflicts. Fort Bliss aircraft operating in the LFA outside of Fort Bliss SUA would utilize see-and-avoid procedures to prevent contact with civilian aircraft en route. Therefore, there would be only minor airspace impacts for civilian aircraft with implementation of Alternative 1.

3.3.2.2 Alternative 2 (Preferred Alternative)

Under Alternative 2, impacts for civilian aircraft would be the same as for Alternative 1 for en route activities. In addition, Local NOTAMs could be issued for the low-level training areas to advise civilian aviators of the potential hazard posed by military aircraft in those areas. Impacts on airspace, therefore, would be minor.

3.3.2.3 Alternative 3 (No Action Alternative)

Under the No Action Alternative, there would be negligible additional impacts on airspace or on civilian aircraft, since the current interim FB 95-1 rules would continue for 1AD CAB aircraft operating in the Fort Bliss LFA.

3.4 HEALTH AND SAFETY

The primary purpose of FB 95-1 is to establish standard responsibilities, procedures, and rules for flight operations and flight training, and the operation of Army aircraft assigned, attached, or utilizing the FBTC and the Fort Bliss LFA, in order to provide for the maximum safety of military aviators, military ground personnel and Soldiers, and civilians within the Fort Bliss LFA.

3.4.1 Affected Environment

The interim FB 95-1 rules comply with AR 95-1 to provide for the maximum safety of Army aircraft operations in the FBTC and the Fort Bliss LFA. The Fort Bliss LFA has been in effect since its inception in the 1990s, and continues to provide necessary training opportunities for Fort Bliss aviation training. There have been no accidents involving Fort Bliss rotary-wing aircraft operating in the Fort Bliss LFA outside the SUAs since the LFA and FB 95-1 have been in effect.

3.4.2 Environmental Consequences

3.4.2.1 Alternative 1

Revisions to FB 95-1 under Alternative 1 would address changes, additions, and updates to those rules resulting from past experience with Army aircraft at Fort Bliss, the addition of new aircraft and training requirements, changes to Fort Bliss command structure and reporting, and changes to or additions of new units at Fort Bliss. The revised FB 95-1 would also lower most training flights to 500 feet AGL within the LFA (the helicopter flight altitude most commonly used by Army pilots when deployed), but no additional adverse impacts on health and safety for the human environment would result from that change. The proposed changes to FB 95-1 would improve safety for Army aviators at Fort Bliss and in the LFA and, therefore, would have a beneficial effect on health and safety. The Fort Bliss LFA has been delineated and in operation since the 1990s with no adverse impacts on health and safety; therefore, retaining the current LFA structure and boundaries would have no impacts on health and safety.

3.4.2.2 Alternative 2 (Preferred Alternative)

The addition of designated low-altitude training areas under Alternative 2 would have no health and safety impacts on Soldiers or Fort Bliss aviation personnel, and no impacts on civilians in the low-altitude training areas, since the low-altitude training areas would be surveyed prior to use to ensure that no persons or livestock are present.

3.4.2.3 Alternative 3 (No Action Alternative)

Under the No Action Alternative, the interim FB 95-1 rules would require that all Fort Bliss Army aircraft maintain a minimum altitude of 3,000 feet AGL within the LFA. This flight altitude could compromise aviator and aircraft safety in the event of a loss of aircraft power and the difficulty in safely descending from that altitude under autorotation. It would also place Army helicopters at an altitude where commercial and civilian aircraft operate, increasing the potential for conflicts. Therefore, there would potentially be minor to moderate impacts on safety as a result of the No Action Alternative.

3.5 AIR QUALITY

The USEPA established National Ambient Air Quality Standards (NAAQS) for specific pollutants determined to be of concern with respect to the health and welfare of the general public (USEPA 2016a). Ambient air quality standards are classified as either "primary" or "secondary." The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), particulate matter less than 10 microns (PM-10), particulate matter less than 2.5 microns (PM- 2.5), and lead (Table 3-3, USEPA

2016a). NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare.

Areas that do not meet NAAQS standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas. The Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria or requirements for conformity determinations for Federal projects. The Federal Conformity Final Rule was first promulgated in 1993 by the USEPA, following the passage of Amendments to the Clean Air Act in 1990. The rule mandates that a conformity analysis must be performed when a Federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more NAAQS.

Table 3-3. National Ambient Air Quality Standards

Pollutant [links to historical tables of NAAQS reviews]	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	primary	8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead (Pb)	primary and secondary	Rolling 3-month average	0.15 $\mu\text{g}/\text{m}^3$ ⁽¹⁾	Not to be exceeded
Nitrogen Dioxide (NO ₂)	primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	primary and secondary	1 year	53 ppb ⁽²⁾	Annual Mean
Ozone (O ₃)	primary and secondary	8 hours	0.070 ppm ⁽³⁾	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	PM _{2.5}	primary	1 year	12.0 $\mu\text{g}/\text{m}^3$ annual mean, averaged over 3 years
		secondary	1 year	15.0 $\mu\text{g}/\text{m}^3$ annual mean, averaged over 3 years
	PM ₁₀	primary and secondary	24 hours	35 $\mu\text{g}/\text{m}^3$ 98th percentile, averaged over 3 years
		primary and secondary	24 hours	150 $\mu\text{g}/\text{m}^3$ Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO ₂)	primary	1 hour	75 ppb ⁽⁴⁾	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

USEPA 2016a

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 $\mu\text{g}/\text{m}^3$ as a calendar quarter average) also remain in effect.

(2) The level of the annual NO₂ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which implementation plans providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a SIP call under the previous SO₂ standards (40 CFR 50.4(3)). A SIP call is a USEPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

A conformity analysis is the process used to determine whether a Federal action meets the requirements of the General Conformity Rule. It requires the responsible Federal agency to evaluate the nature of a proposed action and associated air pollutant emissions, and calculate emissions as a result of that proposed action. If the emissions exceed established limits, known as *de minimis* thresholds, the proponent is required to implement appropriate mitigation measures.

This EA considers greenhouse gas (GHG) emissions as a category of air emissions. EO 13693, “Planning for Federal Sustainability in the Next Decade,” outlines policies intended to ensure that federal agencies evaluate resilience to climate change and manage the short- and long-term effects of climate change on their operations and mission. The EO also requires agencies within the DoD to reduce agency-wide direct and indirect GHG emissions from their activities. Federal and most state agencies segregate airsheds by county boundaries. In other words, the USEPA, New Mexico Environment Department, and Texas Commission on Environmental Quality monitor air emissions by county.

3.5.1 Affected Environment

The Fort Bliss LFA is located in 10 counties in New Mexico and in three counties in Texas. Table 3-4 presents the counties in which the LFA and flight operations are located, as well as the counties’ attainment status for NAAQS. The impacts of stationing the 1AD and the CAB at Fort Bliss were addressed in the *Fort Bliss Army Growth and Force Structure Realignment Final Environmental Impact Statement* (U.S. Army 2010), and included impacts for approximately 100 rotary-wing aircraft operating from Biggs AAF. The air quality impacts assessed at that time from the operation of aircraft were found to be less than *de minimis* levels. When the aircraft engine exhaust emissions resulting from approximately 16 to 40 training flights per week and 20 maintenance flights per week are distributed over the area and counties included in the Fort Bliss LFA, the amount of pollutants emitted in any county would be far less than the *de minimis* levels, thus eliminating the need for any conformity analysis for counties in maintenance or nonattainment for any NAAQS.

Table 3-4. States/COUNTIES – Fort Bliss LFA NAAQS Status

State Location	County	NAAQS Attainment Status
Texas	El Paso	City of El Paso is in moderate nonattainment for CO; county is in moderate nonattainment for PM-10 and 1-hour O ₃
Texas	Hudspeth	In attainment for all NAAQS
Texas	Culberson	In attainment for all NAAQS
New Mexico	Doña Ana	City of Anthony is in moderate nonattainment for PM-10; Sunland Park is in moderate nonattainment for 1-hour O ₃
New Mexico	Luna	In attainment for all NAAQS
New Mexico	Hidalgo	In attainment for all NAAQS
New Mexico	Grant	Portion is in nonattainment for SO ₂ (1971)
New Mexico	Sierra	In attainment for all NAAQS
New Mexico	Socorro	In attainment for all NAAQS
New Mexico	Lincoln	In attainment for all NAAQS
New Mexico	Otero	In attainment for all NAAQS
New Mexico	Eddy	In attainment for all NAAQS
New Mexico	Culberson	In attainment for all NAAQS

USEPA Green Book Nonattainment Areas (USEPA 2016b)

3.5.2 Environmental Consequences

3.5.2.1 Alternative 1

Under Alternative 1, air quality impacts for Fort Bliss aircraft operating in the LFA would be the same as those currently occurring under the interim FB 95-1 rules because there would be no change in the number of aircraft deployed or the number of sorties flown. There would be no additional impacts.

3.5.2.2 Alternative 2 (Preferred Alternative)

Under Alternative 2, a slight increase in aircraft exhaust emissions would result from approximately four to six flights per month to the low-altitude training areas as part of the 16 to 40 flights currently occurring. These emissions would be very slight and well below *de minimis* levels for aircraft hovering and maneuvering in those areas.

3.5.2.3 Alternative 3 (No Action Alternative)

Continuation of aircraft operations in the Fort Bliss LFA under the interim FB 95-1 rules would not result in any additional air quality impacts.

3.6 CULTURAL RESOURCES

Cultural resources are important because of their association or linkage to past events, historically important persons, and design and construction values, and for their ability to yield important information about history. Fort Bliss manages cultural resources associated with all prehistoric and historic periods recognized in south-central New Mexico and western Texas. The *Fort Bliss Texas and New Mexico, Mission and Master Plan, Programmatic Environmental Impact Statement* (U.S. Army 2007b) describes in detail the cultural history of Native Americans and post-contact inhabitants in the region. The *Integrated Cultural Resources Management Plan* for Fort Bliss (Fort Bliss 2016) also contains detailed information about the history of Fort Bliss. The revised Fort Bliss ICRMP (2017 to 2021) would be in effect at the start of calendar year 2017 when the Preferred Alternative for this EA is implemented.

3.6.1 Affected Environment

The Fort Bliss LFA contains many culturally and historically important sites. The Proposed Action does not involve any physical disturbance of sites in the LFA since only overflights by aircraft are involved. The LFA does include the Mescalero Apache Reservation, located north of Alamogordo, New Mexico, and the Isleta del Sur Pueblo reservation, located in El Paso, Texas, and it is possible that traditional cultural activities on the reservations could be interrupted by helicopter overflights. Other Native American sacred cultural sites within the LFA could also be overflowed by helicopters, interrupting traditional cultural activities. All potentially affected Native American tribes were consulted during preparation of this EA (see list in Appendix A).

3.6.1.1 Alternative 1

Under Alternative 1, 1AD CAB helicopter flights over the Mescalero Apache Reservation would occur at an altitude of 2,000 feet AGL; therefore, flights over the reservation north of Alamogordo could result in negligible to minor adverse effects. Coordination and comments on the Proposed Action were requested from the Mescalero Apache Tribe and the Isleta del Sur Pueblo to identify any sensitive areas on the reservations that should be avoided.

3.6.1.2 Alternative 2 (Preferred Alternative)

The low-altitude training areas proposed under Alternative 2 are not located near any known Native American traditional cultural places, so the impacts on cultural resources would be the same as for Alternative 1.

3.6.1.3 Alternative 3 (No Action Alternative)

Under Alternative 3, the interim LF 95-1 flying rules would remain in effect, and there would be negligible impacts on Native American cultural resources.

3.7 SOCIOECONOMICS

Socioeconomics includes the civilian population and economy of the general area around Fort Bliss and within the Fort Bliss LFA. Socioeconomics in the region of influence (ROI) for Fort Bliss were discussed in detail in the *Fort Bliss Texas and New Mexico Mission and Master Plan Final Supplemental Programmatic Environmental Impact Statement* (U.S. Army 2007b) and the *Growth and Force Structure Realignment Final Environmental Impact Statement* (U.S. Army 2010), and those discussions are herein incorporated by reference. The ROI is defined as the geographic area encompassed by the Fort Bliss LFA where the majority of any potential direct and indirect socioeconomic effects are likely to occur.

3.7.1 Affected Environment

Population data from the U.S. Census Bureau, in Table 3-5 for the ROI counties and in Table 3-6 for the ROI cities and places, show that most of the people in the region live in El Paso County, Texas, and Doña Ana County, New Mexico, primarily in the El Paso and Las Cruces metropolitan areas. Figure 3-2, which shows the locations of cities and places within the LFA, illustrates the population clusters within the LFA.

Table 3-5. Population, Poverty, and Minority – Fort Bliss LFA Counties

Geographic Area	2014 Population	Persons per Square Mile 2010	Poverty (Percent)	Minority (Percent)
United States	314,107,084	87	15.6	37.2
New Mexico	2,080,085	17	20.9	60.4
Texas	26,092,033	96	17.7	55.7
Counties – New Mexico				
Chaves County	65,850	11	21.9	57.6
Doña Ana County	212,942	55	27.8	70.6
Eddy County	54,834	13	13	49.4
Grant County	29,303	7	19.6	52
Hidalgo County	4,734	1	22.8	57.9
Lincoln County	20,162	4	16.2	35.4
Luna County	24,947	9	30.2	66.1
Otero County	65,415	9.6	22	48.3
Sierra County	11,774	3	17.7	32.7
Socorro County	17,608	3	25.1	63.3
Total New Mexico ROI Counties	507,569			
Counties - Texas				
Culberson County	2,325	0.6	29.1	81.6

Table 3-5, continued

Geographic Area	2014 Population	Persons per Square Mile 2010	Poverty (Percent)	Minority (Percent)
El Paso County	823,862	791	23.4	86.6
Hudspeth County	3,344	0.8	43.2	79.9
Total Texas ROI Counties	829,531			

U.S. Census Bureau. 2015a, 2015b, and 2015c.

Table 3-6. Population, Poverty, Minority – Fort Bliss LFA Places

Geographic Area	2014 Population	Poverty (Percent)	Minority (Percent)
United States	314,107,084	15.6	37.2
New Mexico	2,080,085	20.9	60.4
Texas	26,092,033	17.7	55.7
Places (County) – New Mexico			
Alamogordo (Otero)	31,224	18.5	44.3
Artesia (Eddy)	11,494	13.2	55.0
Bayard (Grant)	2,640	25.0	88.9
Capitan (Lincoln)	1,261	21.9	34.4
Carlsbad (Eddy)	26,996	13.8	48.1
Carrizozo (Lincoln)	866	37.9	53.8
Cloudcroft (Otero)	577	11.3	10.1
Columbus (Luna)	1,278	47.8	86.9
Deming (Luna)	14,760	33.9	73.8
Hatch (Doña Ana)	1,830	30.2	85.9
Las Cruces (Doña Ana)	100,360	23.9	62.9
Lordsburg (Hidalgo)	2,831	25.9	74.5
Mescalero (Otero)	1,601	47.6	97.1
Roswell (Chaves)	48,568	22.7	60.7
Ruidoso (Lincoln)	7,954	13.0	31.0
Santa Teresa (Doña Ana)	4,271	27.4	77.5
Silver City (Grant)	10,245	23.8	60.4
Sunland Park (Doña Ana)	14,794	37.6	96.3
Truth or Consequences (Sierra)	6,337	22.5	35.5
Tularosa (Otero)	2,916	14.0	65.5
Vado (Doña Ana)	2,781	53.1	91.9
Places (County) – Texas			
Clint (El Paso)	892	28.0	86.2
El Paso (El Paso)	669,771	21.5	85.2
Fabens (El Paso)	8,282	52.2	99.0
Fort Hancock (Hudspeth)	1,590	43.7	97.9
Horizon City (El Paso)	18,477	20.8	85.4
San Elizario (El Paso)	14,380	46.6	99.7
Sierra Blanca (Hudspeth)	547	44.1	66.2
Socorro (El Paso)	32,623	35.0	98.1
Tornillo (El Paso)	1,388	31.7	100.0
Van Horn (Culberson)	2,264	29.4	82.9

U.S. Census Bureau. 2015a, 2015b, and 2015c.

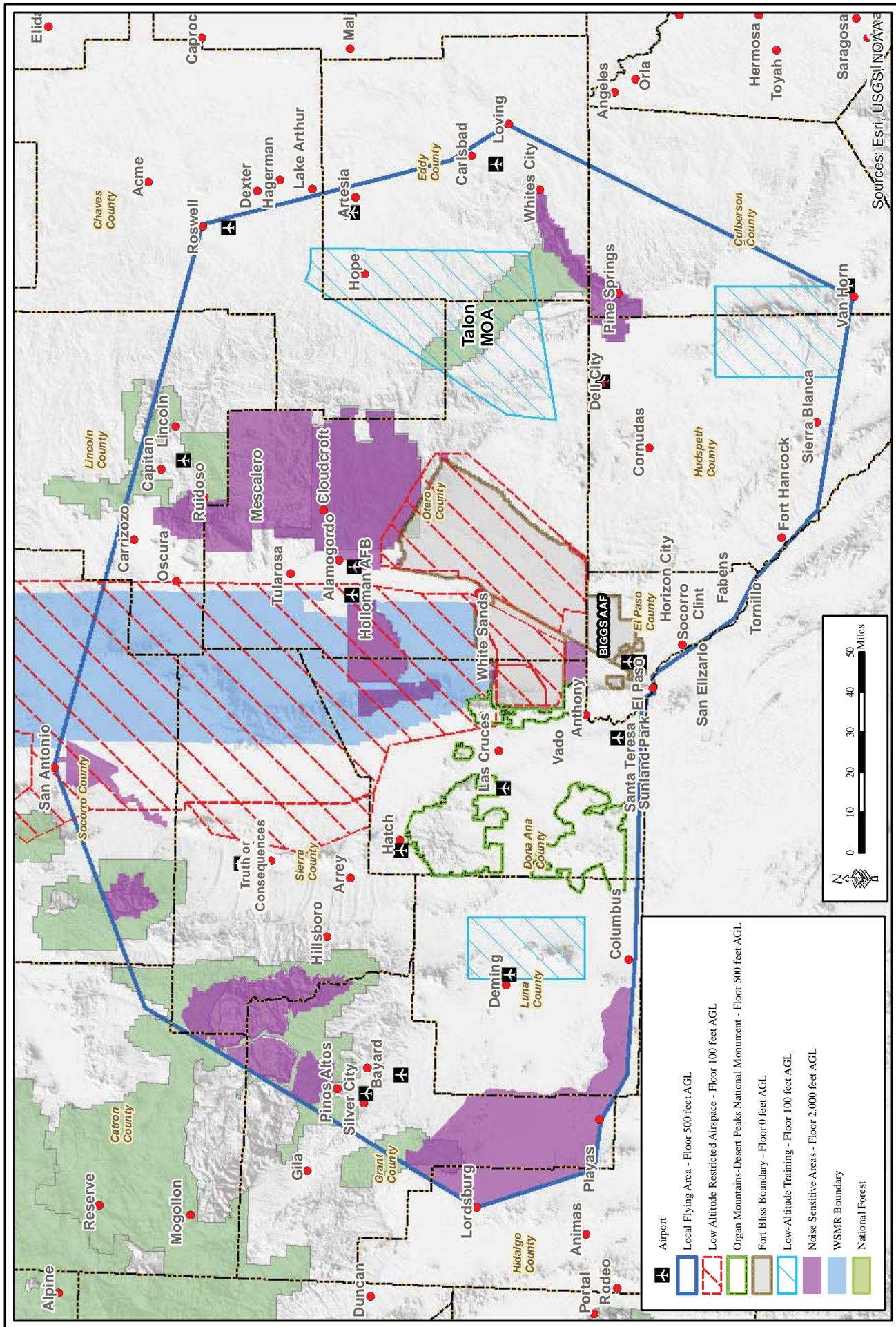


Figure 3-2. Counties, Cities, and Places Within the Fort Bliss LFA

Population data for the ROI counties show that in 2014, of the estimated 829,531 people who live in the Texas ROI counties, 99 percent live in El Paso County. Of the estimated 507,569 people who live in the New Mexico ROI counties, 42 percent live in Doña Ana County. Of the estimated 1,337,100 people who live in the 13-county ROI, there are six cities in the region with more than 25,000 people. These cities (El Paso and Socorro in Texas and Alamogordo, Carlsbad, Las Cruces, and Roswell in New Mexico) account for 68 percent of the total population of the ROI.

Population density data, also shown in Table 3-5, indicate that outside of El Paso County, which has a population density of 791 persons per square mile, the ROI is very sparsely populated. Eleven of the 13 counties have less than 13 persons per square mile, compared to 87, 96, and 17 persons per square mile for the U.S., Texas, and New Mexico, respectively.

3.7.2 Environmental Consequences

There are numerous scattered ranches, farms, and livestock pens located throughout the LFA, and livestock at those locations could be impacted by helicopter noise from 1AD CAB flights from Biggs AAF. Fort Bliss aviators are instructed to “fly neighborly” within the LFA, avoiding overflight of residences and other man-made structures and livestock, in order to minimize potential noise impacts on civilians. In general, outside of the largest cities in the ROI, El Paso and Las Cruces, most of the communities are located along highway corridors. There are relatively few people living within the affected counties outside of the cities, towns, and places listed in Table 3-6. The relatively isolated and sparsely populated areas can be easily avoided by 1AD CAB helicopters during flights to outlying airports.

3.7.2.1 Alternative 1

As described previously in Section 3.1.2.1, flights outside the Fort Bliss boundaries within the LFA at a minimum altitude of 500 feet AGL could impact the human environment on the ground with noise from 80 to 92 dB on an intermittent basis. While the noise would be clearly audible and annoying at that level, the interruption of the normal sound environment would be minor to moderate. However, it would be temporary, and the normal quiet background noise environment would quickly return after the aircraft has passed. At an altitude of 2,000 feet AGL over noise-sensitive areas, a noise level of 65 dB would be only a negligible, temporary impact.

Helicopter landings at outlying airports at the edges of the Fort Bliss LFA would produce noise considered normal for approach and departure patterns at those airports, and no additional impacts would occur. While there are population clusters throughout the ROI, the “fly neighborly” policy combined with population concentrations that allow pilots to avoid large population centers and the intermittent and brief nature of the noise disturbances, would result in temporary and negligible noise impacts on civilian populations. Domestic livestock that may be present in the LFA would also be avoided under the “fly neighborly” policy, but any livestock that might be subject to an occasional flyover would likely acclimate to the helicopter noise as only a minor impact and would not suffer any lasting effects (Wyle 2017). Many studies have indicated that livestock appear to acclimate and habituate to the disturbances over a period of time (Manci et al. 1988). Noise complaints from helicopter flyovers in the LFA are handled on an individual basis by Fort Bliss, and there have been only occasional complaints of this nature

in the past. In response to past complaints, several no-fly areas have been designated in the LFA to prevent future civilian noise complaints in those areas (see Figure 1-3).

3.7.2.2 Alternative 2 (Preferred Alternative)

Under Alternative 2, impacts as described under Alternative 1 would occur en route. No additional impacts would be expected since specific areas designated for low-altitude training (approximately 40 acres) would be subjected to overflight reconnaissance to ensure no civilians and livestock are present prior to use, and overflight of residences would be avoided. Less than 40 acres would be used for the low-altitude training per training event, so the reconnaissance efforts can easily identify areas where civilian and livestock are not present.

3.7.2.3 Alternative 3 (No Action Alternative)

Under the No Action Alternative, the current interim FB 95-1 rules would continue to govern flights from Biggs AAF within the Fort Bliss LFA, and helicopter flights outside the Fort Bliss boundaries within the LFA would maintain a minimum altitude of 3,000 feet AGL. At that flight level, there would be negligible additional noise impacts on the ground.

3.7.3 Environmental Justice and Protection of Children

EO 12898, entitled “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” was signed on 11 February 1994. The EO directs Federal agencies to make achieving environmental justice part of their missions by identifying and addressing, as appropriate, disproportionately high adverse human health, environmental, economic, and social effects of their programs, policies, and activities on minority or low-income populations. A Presidential Transmittal Memorandum issued with the EO states that “each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the NEPA 42 U.S. Code Section 4321, et seq.”

EO 12898 does not provide guidelines as to how to determine concentrations of minority or low-income populations. However, analysis of demographic data on race and ethnicity and poverty provides information on minority and low-income populations that could be affected by proposed action alternatives. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, or Other. Poverty status is used to define low-income. Poverty is defined as the number of people with income below poverty level, which was \$24,036 for a family of four in 2015, according to the U.S. Census Bureau (U.S. Census Bureau 2015d). A potential disproportionate impact may occur when the percent minority in the study area exceeds 50 percent or when the percentage of minority or low-income in the study area is meaningfully greater than those in the region.

EO 13045 requires each Federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children” and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. The potential for impacts on the health and safety of children is greater where projects are located near residential areas.

Tables 3-5 and 3-6 provided data on the percentage of the population living in poverty and the percentage minority. Nine of the 13 ROI counties have minority populations exceeding 50 percent. The four counties that do not have minority populations over 50 percent also do not have poverty rates exceeding the rate for New Mexico. The nine counties with minority populations exceeding 50 percent (Chaves, Doña Ana, Grant, Hidalgo, Luna, and Socorro counties in New Mexico and Culberson, El Paso, and Hudspeth counties in Texas) account for 89 percent of the population within the ROI.

3.7.4 Environmental Consequences

The potential impacts on Environmental Justice issues and Protection of Children would be the same as those described for all alternatives for Socioeconomics in Section 3.7.2.

3.7.4.1 Alternative 1

While there are environmental justice populations and children present throughout the ROI, the “fly neighborly” policy, combined with the planning and pre-mission reconnaissance that allow pilots to avoid large population centers and the intermittent and brief nature of the noise disturbances, leads to adverse noise impacts that would be temporary and minor. As a result, there would be no disproportionately high adverse human health, economic, or social effects on the minority residents or children within the ROI.

3.7.4.2 Alternative 2 (Preferred Alternative)

Impacts would be the same as for Alternative 1. Low-altitude training areas would be free of civilians prior to use, so no additional impacts would occur in those areas,

3.7.4.3 Alternative 3 (No Action Alternative)

The interim FB 95-1 rules would apply, and there would be no additional impacts relative to Environmental Justice or Protection of Children issues.

3.8 RADIO FREQUENCY AND SPECTRUM USE

Radio frequencies used by aircraft for communication with FAA facilities and airports are set by the FAA and Federal Communications Commission, and the use of those frequencies is tightly regulated to prevent miscommunications and potential aircraft mishaps. In addition, Fort Bliss has established Installation radio frequencies for use by Army aircraft when in communication with other Army aircraft and Fort Bliss personnel in the field and at Biggs AAF. The use of these Fort Bliss-assigned radio frequencies is regulated under FB 95-1.

3.8.1 Affected Environment

All aircraft operating within the Fort Bliss LFA are required to communicate with appropriate ATC personnel depending on the type of airspace where they are operating. Any changes to the frequencies to be used are determined by the FAA and are published on the appropriate air navigation sectional maps. Any Fort Bliss units or facilities that would add radio frequencies or radar facilities are required to clear those frequencies and facilities with the FAA prior to use in order to prevent interference with established communications.

3.8.2 Environmental Consequences

3.8.2.1 Alternative 1

Under Alternative 1, no new radio frequencies would be established by Fort Bliss for aircraft operations within the LFA. All current military frequencies and rules for their use are already established by FB 95-1 and have received clearance from the FAA. Fort Bliss military aircraft communications utilize frequencies that are approved for that purpose (MIL-STD-461F) that do not interfere with other military or civilian air traffic frequencies (DoD 2007). If any frequency changes are imposed, they would first be cleared with the FAA and would be in compliance with all applicable Army and DoD standards. Therefore, there would be no impacts on radio frequencies with implementation of Alternative 1.

3.8.2.2 Alternative 2 (Preferred Alternative)

Alternative 2 would have the same impacts on radio frequencies as Alternative 1.

3.8.2.3 Alternative 3 (No Action Alternative)

Under Alternative 3, there would be no change to aircraft operations currently occurring in the Fort Bliss LFA and there would be no impacts on radio frequencies.

3.9 SUMMARY

The resources that are potentially impacted and discussed in detail in this EA include noise, biological resources, airspace, health and safety, air quality, cultural resources, socioeconomic and environmental justice, and radio frequency and spectrum use. Table 3-7 contains a summary of potential impacts on these resources.

Table 3-7. Summary Matrix of Potential Impacts

Resource	No Action Alternative	Alternative 1	Alternative 2 (Preferred)
Noise	Impacts on the noise environment unchanged	Temporary minor impacts due to helicopter noise (80 to 84 dBA); noise impacts mitigated by avoiding flyovers of residences and livestock	Impacts the same as Alternative 1, 88 dBA over areas without residences or livestock
Biological Resources	Impacts on biological resources unchanged	Temporary negligible to minor impacts on wildlife due to startle effect from helicopter flyovers; negligible impacts on birds and bats due to aircraft strikes; may have negligible effects on 11 Federally listed species	Impacts the same as Alternative 1, no Federally listed species in low-altitude training areas
Airspace	Impacts on airspace unchanged	Minor impacts on airspace use by non-military aircraft due to helicopter flights; see-and-avoid procedures would minimize impacts	Impacts the same as Alternative 1
Health and Safety	No impacts on health and safety would occur, potential impacts on pilot safety in the event of engine failure at high altitude	No impacts on health and safety when revised FB 95-1 rules are followed	Low-altitude training areas would be inspected prior to use, and training would occur only if no humans or livestock are present, so no additional impacts
Air Quality	Impacts on air quality unchanged	No additional air quality impacts would occur, since there is no increase in number of aircraft or number of sorties.	Impacts the same as Alternative 1
Cultural Resources	Impacts on cultural resources unchanged	Potential for negligible impacts on cultural activities on the Mescalero Apache and Isleta de Sur Pueblo tribal lands and on other traditional cultural sites within the LFA	Impacts the same as Alternative 1
Socioeconomics, Environmental Justice, Protection of Children	Impacts on socioeconomics, environmental justice, and protection of children unchanged	Temporary minor impacts on residents due to helicopter noise; noise impacts mitigated by avoiding flyovers of residences	Impacts the same as Alternative 1 low-altitude training areas would be overflowed at higher altitudes to ensure no civilian or livestock in the 40-acre area to be used
Radio Frequency and Spectrum Use	Impacts on radio frequency and spectrum use unchanged	No additional impacts on radio frequency or spectrum use; all radio frequencies used are approved by the FAA and Department of Defense rules and policies	Impacts the same as Alternative 1

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SECTION 4.0
CUMULATIVE IMPACTS

4.0 CUMULATIVE IMPACTS

Cumulative impacts are defined as the impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Because the Proposed Action does not involve any ground disturbance or additional development of physical facilities within the Fort Bliss LFA, cumulative impacts due to ground disturbances or developments by others will not be considered in this analysis. The Proposed Action does not include additional aircraft or number of sorties, but cumulative impacts resulting from additional military aircraft deployments, additional aircraft noise impacts, and additional use or restriction of airspace within the Fort Bliss LFA by other actions or by other entities will be considered when evaluating cumulative impacts from the Proposed Action.

Within the boundaries of Fort Bliss, the completion of the new UAS airfield in the Doña Ana Range would result in deployment of UAS at that location and flights of UAS within military SUAs on Fort Bliss and possibly on WSMR. UAS flights would result in additional airspace impacts within SUAs on the two military installations due to required avoidance of UAS during normal operations. With proper pre-flight clearance and separation of aircraft according to FB 95-1, UAS operations would not create a cumulative impact when combined with Fort Bliss 1AD CAB helicopter flights within the Fort Bliss LFA.

Fort Bliss is evaluating potential High Altitude Mountain Environment Training Strategy (HAMETS) operations within the Sacramento Ranger District of the Lincoln National Forest, located north of the Fort Bliss installation. A HAMETS EA is being prepared to analyze the impacts of this high altitude training on the human and natural environments of the proposed training areas. Flights would include rapid descents from an altitude of 2,000 feet AGL to landings in discrete landing zones within the mountainous areas. The helicopter training flights proposed for HAMETS are separate from normal cross-country flights in the LFA and are an entirely separate action from the one analyzed in this document. It would, however, add additional noise disturbance in the Lincoln National Forest which would be assessed in the HAMETS EA. Because the Lincoln National Forest is a noise-sensitive zone for the Fort Bliss LFA, flights under the revised FB 95-1 would maintain an altitude of at least 2,000 feet AGL over the area. LFA traffic would be separated from any future HAMETS operations to avoid airspace conflicts with HAMETS operations. The two operations would therefore not occur simultaneously. Due to the high altitude used and the separation of the two activities, a negligible contribution to cumulative noise impacts would be experienced when this action is combined with the HAMETS. It is important to note that the number of flights experienced over the forest at 2,000 feet AGL as a part of the LFA training would not change from those experienced since 2007 when the CAB was first stationed on Fort Bliss.

HAFB is developing an EA to analyze impacts resulting from the interim relocation of 45 F-16 aircraft to HAFB with training operations to be conducted in the R-5111 C and D restricted airspace over the WSMR. This restricted airspace is also proposed for use by Fort Bliss rotary-wing aircraft within the LFA under the revised FB 95-1 rules. No flight altitudes have been defined for the Holloman action; however, the noise from F-16 aircraft would contribute to impacts on the ground. The expected flight altitudes (much higher than 1AD CAB operations) for F-16 aircraft and the location within WSMR restricted airspace would result in minor

cumulative effects on airspace use when combined with the intermittent 1AD CAB helicopter cross-country flights from Biggs AAF at 500 to 2,000 feet AGL (USAF 2016). Jet noise would also contribute to cumulative noise effects on the ground in WSMR airspace, but the level of those effects cannot be determined at this time.

Kirtland AFB proposed to conduct air rescue training at three sites at the northern edge of WSMR within the LFA. The training would include operation of the CV 22 Osprey aircraft during training missions. The location of the training areas at the northern edge of the Fort Bliss LFA would result in minor cumulative effects when combined with the helicopter flights from Biggs AAF within the LFA (Kirtland AFB 2008), since the Osprey operational areas would not normally be overflowed by 1AD CAB helicopters.

No other air operations were identified within the Fort Bliss LFA that would contribute to cumulative airspace impacts; therefore, cumulative airspace impacts for the Proposed Action would be minor.

Other civilian aircraft operating within the LFA could contribute to noise impacts; however, those civilian aircraft would likely be fixed-wing aircraft operating at altitudes well above those used by Fort Bliss helicopters. Likewise, jet aircraft operating from HAFB or flying into or out of El Paso International Airport would also fly at altitudes well above those used by Fort Bliss helicopters, and would negligibly contribute to cumulative noise impacts.

4.1 NOISE

When combined with aircraft noise generated by jet aircraft flights over the LFA from HAFB and WSMR and HAMETS operations in the Lincoln National Forest, 1AD CAB helicopter flights within the LFA would only contribute negligible to minor cumulative noise impacts on civilian populations in the LFA. The “fly neighborly” rules in effect for FB 95-1 and the pre-mission planning would prevent any significant increase in noise impacts within populated areas.

4.2 BIOLOGICAL RESOURCES

Biological resources within the LFA do not currently experience major identified impacts from other aircraft flights in the LFA from HAFB, WSMR, or commercial traffic to small non-DoD airports or El Paso International Airport. The addition of 1AD CAB helicopter flights as described in the Proposed Action would contribute only negligible to minor cumulative effects on wildlife within the LFA due to the temporary and intermittent nature of those flights.

4.3 AIRSPACE

No airspace conflicts were identified for the Proposed Action; therefore, 1AD CAB helicopter flights in the LFA would not contribute to cumulative airspace impacts in the area.

4.4 HEALTH AND SAFETY

No health and safety impacts were identified for the Proposed Action. Persons that live within the LFA that could suffer health effects from noise due to helicopter flights overhead would be able to file complaints to Fort Bliss (Fort Bliss Public Affairs Office or the installation Airspace Officer). That particular area would then be designated as a noise sensitive or avoidance area. Accident rates for the CAB, especially for operations within the LFA, have been extremely low and are expected to remain low. Pre-planning would also assure that only sparsely populated areas would be used for the low level flights. Implementation of the revised FB 95-1 rules would in effect improve safety for 1AD CAB aviators; and there would be a net positive safety effect of either of the proposed action alternatives.

4.5 AIR QUALITY

The less than *de minimis* emissions from 1AD CAB helicopter flights within the LFA would not significantly contribute to cumulative air quality impacts for any areas within the LFA when combined with all other air quality impacts in the region.

4.6 CULTURAL RESOURCES

There would be negligible impacts on cultural resources from the Proposed Action, so there would be negligible to minor contribution to cumulative impacts on cultural resources in the LFA when combined with other activities in the region.

4.7 SOCIOECONOMIC RESOURCES

The Proposed Action would only negligibly impact socioeconomic resources within the LFA, primarily due to occasional noise complaints; but all noise complaints are resolved by Fort Bliss, and the “fly neighborly” policy would be in effect, so there would be no resulting cumulative impacts. No cumulative impacts on Environmental Justice or Protection of Children were identified.

4.8 RADIO SPECTRUM AND FREQUENCY USE

No impacts on radio spectrum or frequencies were identified, so there would be no cumulative impacts.

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**SECTION 5.0
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5.0 REFERENCES

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SECTION 6.0
LIST OF PREPARERS

6.0 LIST of PREPARERS

The following people were primarily responsible for preparing this Environmental Assessment.

Name	Agency/Organization	Discipline/ Expertise	Experience	Role in Preparing EA
John Barrera	Fort Bliss Directorate of Public Works Environmental Division	NEPA Program Manager	23 years NEPA studies	Fort Bliss NEPA Manager; EA review and comment
John Kipp	Fort Bliss Environmental Division, NEPA Planner	Soil science, Geomorphology	28 years earth science and NEPA studies	Fort Bliss Project Manager; EA review and comment
Brian Locke, Ph.D.	Fort Bliss Wildlife Biologist	Wildlife Biology	40+ years biological studies	EA review, biology
Chris Ingram	Gulf South Research Corporation	Biology/Ecology	38 years EA/EIS studies	Senior EA review
Steve Oivanki	Gulf South Research Corporation	Geology/NEPA	36 years natural resources and NEPA studies	Project Manager and EA preparation
Ann Guissinger	Gulf South Research Corporation	Socioeconomics	36 years socioeconomics and planning	Socioeconomics
Liz Ayarbe-Perez	Gulf South Research Corporation	GIS/Graphics	14 years GIS/graphics experience	GIS analysis and graphics
Logan Mccardle	Gulf South Research Corporation	Biology	10 years biological studies	Biology and Biological Assessment

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Appendix A
Public Notices, Comments, Responses, and Correspondence



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BLISS
1741 MARSHALL ROAD
FORT BLISS, TX 79916

SEP 13 2016

Subject: Environmental Assessment for Fort Bliss Regulation 95-1: Local Flying Rules (FB 95-1), Fort Bliss, Texas and New Mexico

Gilbert Anaya
Chief, Environmental Management Division
International Boundary and Water Commission United States and Mexico
The Commons Building, Suite 310
4171 N. Mesa Street
El Paso, TX 79902

Dear Sir:

The U.S. Army Garrison, Fort Bliss, Texas, is preparing an Environmental Assessment (EA) to evaluate environmental and socioeconomic effects associated with the update and revision of Fort Bliss Regulation 95-1: Local Flying Rules (FB 95-1) for military helicopters operating outside of military restricted airspace. The Proposed Action is to provide for safe and efficient training flights in accordance with Army Regulation 95-1. Flights in the Fort Bliss Local Flying Area (LFA) are necessary to provide pilots with cross-country instrument flight rules (IFR) training, along with interaction with commercial airports, associated navigation instrumentation, and Federal Aviation Administration (FAA) low-altitude control.

Army regulation (32 Code of Federal Regulations [CFR] Part 651: Environmental Analysis of Army Actions, Final Rule) requires aviation training that may affect either prime or unique wildlife habitat or historically significant structures, sites, or places, as well as flights below 500 above ground level (AGL), to be addressed in a National Environmental Policy Act (NEPA) analysis that receives public review. This EA will meet those requirements. The Fort Bliss LFA (map enclosed), established at least since the early 1990s, is based on the maximum flight distance from Biggs Army Airfield (AAF) for a single rotary-wing aircraft on a single tank of fuel with normal reserves. The regulation mirrors established FAA airspace designations (e.g., aviation mostly within Class G airspace requiring flights at or above 500 feet AGL). Until the EA can be completed, Interim FB 95-1 rules (i.e., the No Action Alternative) were put in place that limit flights within the LFA to a minimum altitude of 3,000 feet AGL based on screening for less than 65 decibel noise levels and FAA Categorical Exclusion Order 1050.1F, section 5-6.5 (i). Military aircraft would only descend below that limit during emergencies and landings at regional airports within the LFA.

The Proposed Action is to update FB 95-1 and continue flight training in Class G airspace at an altitude of 500 feet minimum AGL, except over noise-sensitive areas, and national parks, monuments, and wildlife refuges, where the minimum altitude would be 2,000 feet AGL. The action would also include provisions for even lower-level training (down to 200 feet AGL) in military designated airspace within the LFA but outside of Department of Defense installations, and in four additional areas (see map). Training allowed by the finalized FB 95-1 is crucial in providing aviators with experience at the more realistic operational altitudes.

To assist in the preparation of the EA, we are requesting any input you may have on the Proposed Action and its potential effects (both beneficial and adverse) on the human and natural environments. The alternatives to be evaluated in the EA include the following:

Alternative 1:

Under Alternative 1, helicopters using the LFA would operate within FAA airspace designated altitudes, most of which is Class G airspace, while maintaining a minimum altitude of 2,000 feet AGL above noise-sensitive areas, national parks, national monuments, national wildlife refuges, and any other areas identified with special environmental concerns.

Alternative 2 (Preferred Alternative):

Under Alternative 2, the provisions in Alternative 1 would be followed plus an allowance for flights to a minimum altitude of 200 feet AGL over additional training areas within military low-altitude restricted airspace, the Talon Military Operations Area, and three subareas outside of the regional military reservations. These would be used only after site reconnaissance determines that the area planned for use is clear of persons or livestock.

Alternative 3: No Action Alternative

Under Alternative 3, the Interim FB-95-1 rules would remain in effect for training flights outside Fort Bliss restricted airspace.

Fort Bliss is in the process of gathering the most current information available, in accordance with 40 CFR Part 1500 and 32 CFR 651. The Department of the Army respectfully requests that you provide input regarding any unique or sensitive areas or species that may be affected by the Proposed Action. In addition, the Department of the Army welcomes any information that you believe would be helpful in ensuring the overall success of this effort. We respectfully request that information be submitted no later than 30 days after receipt of this letter, for it to be considered in the Draft EA. Your response should be sent to our Point of Contact:

John Kipp, Ph.D.
NEPA Planner, Conservation Branch
Environmental Division
Directorate of Public Works
Bldg. 624 Pleasonton Road
Fort Bliss, TX 79916
john.m.kipp6.civ@mail.mil

We intend to provide you with a copy of the Draft EA for review and comment once the document is completed. Please inform us if additional copies are needed or if another person or department should receive a copy of this letter and the Draft EA. This letter and other applicable documents will be posted on the Fort Bliss website <https://www.bliss.army.mil/DPW/Environmental/EISDocuments2.html> as they become available.

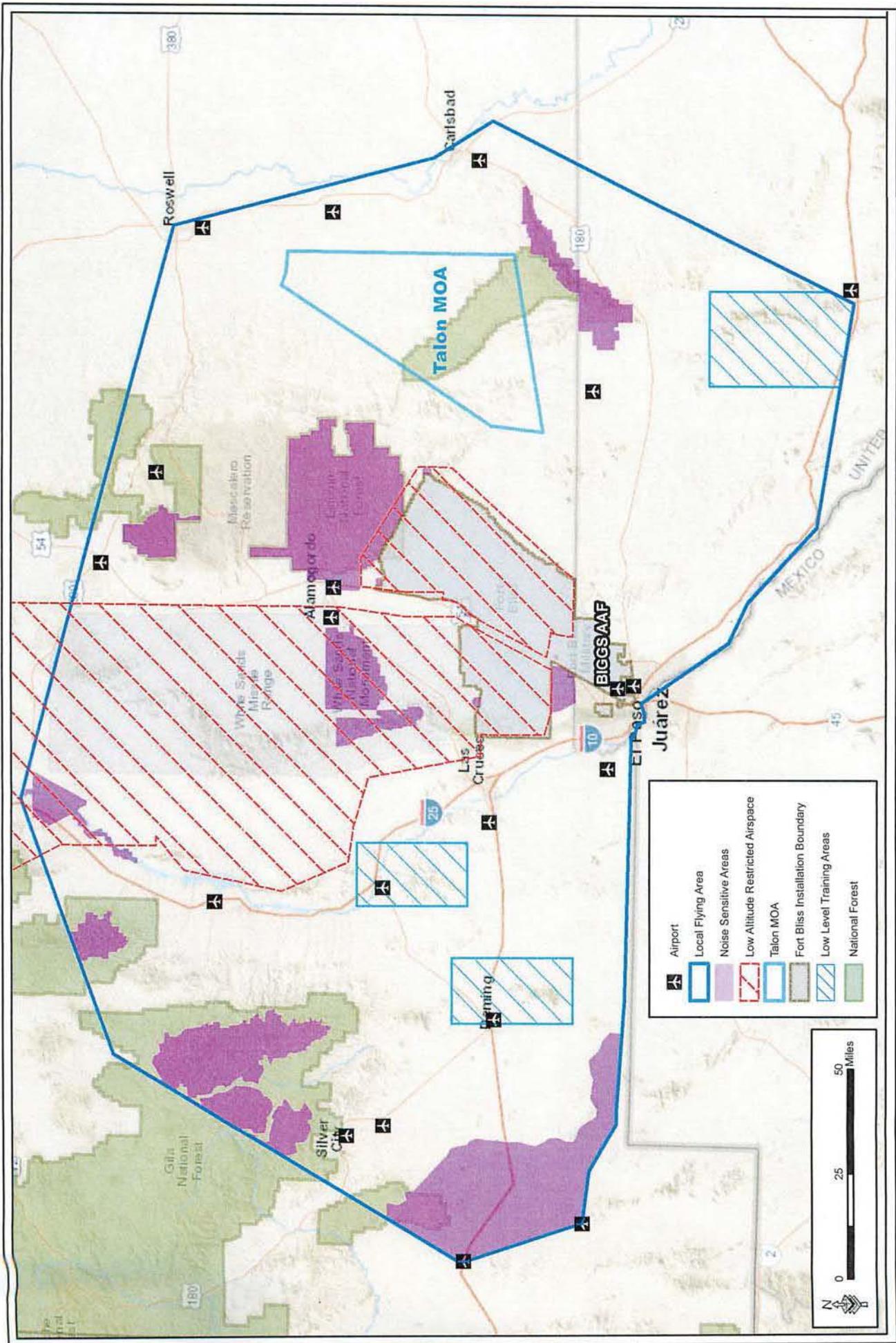
If you have questions or require additional information, please do not hesitate to contact Dr. Kipp at the address above or at (915) 568-5162.

Sincerely,

A handwritten signature in blue ink, appearing to read "Vicki G. Hamilton".

Vicki G. Hamilton, R.A.
Chief, Environmental Division
Directorate of Public Works

Enclosure



Fort Bliss Local Flying Area



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BLISS
1741 MARSHALL ROAD
FORT BLISS, TX 79916

SEP 13 2016

Subject: Environmental Assessment for Fort Bliss Regulation 95-1: Local Flying Rules (FB 95-1), Fort Bliss, Texas and New Mexico

Mr. Carlos Hisa, Governor
Ysleta Del Sur Pueblo Council
P.O. Box 17579
El Paso, TX 79917-7579

Dear Mr. Hisa:

The U.S. Army Garrison, Fort Bliss, Texas, is preparing an Environmental Assessment (EA) to evaluate environmental and socioeconomic effects associated with the update and revision of Fort Bliss Regulation 95-1: Local Flying Rules (FB 95-1) for military helicopters operating outside of military restricted airspace. The Proposed Action is to provide for safe and efficient training flights in accordance with Army Regulation 95-1. Flights in the Fort Bliss Local Flying Area (LFA) are necessary to provide pilots with cross-country instrument flight rules (IFR) training. Along with interaction with commercial airports, associated navigation instrumentation, and Federal Aviation Administration (FAA) low-altitude control.

Army regulation (32 Code of Federal Regulations [CFR] Part 651: Environmental Analysis of Army Actions, Final Rule) requires aviation training that may affect either prime or unique wildlife habitat or historically significant structures, sites or places; as well as flights below 500 above ground level (AGL) to be addressed in a national Environmental Policy Act (NEPA) analysis that receives public review. This EA will meet those requirements. The Fort Bliss LFA (map enclosed), established at least since the early 1990s, is based on the maximum flight distance from Biggs Army Airfield (AAF) for a single rotary-wing aircraft on a single tank of fuel with normal reserves. The regulation mirrors established FAA airspace designations (e.g., aviation mostly within Class G airspace requiring flights at or above 500 feet AGL). Until the EA can be completed, interim FB 95-1 rules (i.e., the No Action Alternative) were put in place that for less than 65 decibel noise levels and FAA Categorical Exclusion Order 105. 1F, emergencies and landings at regional airports within the LFA.

The Proposed Action is to update FB 95-1 and continue flight training in Class G airspace at an altitude of 500 feet minimum AGL, except over noise-sensitive areas, and national parks, monuments, and wildlife refuges, where the minimum altitude would be 2,000 feet AGL. The action would also include provisions for even lower-level training (down to 200 feet AGL) in military designated airspace within the LFA but

outside of the Department of Defense installations, and four additional areas (see map). Training allowed by the finalized FB 95-1 is crucial in providing aviators with experience at the more realistic operational altitudes.

To assist in the preparation of the EA, we are requesting any input you may have on the Proposed Action and its potential effects (both beneficial and adverse) on the human and natural environments. The alternatives to be evaluated in the EA include the following.

- a. Alternative 1: Under Alternative 1, helicopters using the LFA would operate with in FAA airspace designated altitudes, most of which is Class G airspace, while maintaining a minimum altitude of 2, 000 feet AGL above noise-sensitive areas, national parks, national monuments, national wildlife refuges, and any other areas identified with special environmental concerns.
- b. Alternative 2 (preferred Alternative): Under Alternative 2, the provisions in Alternative 1 would be followed plus an allowance for flights to a minimum altitude of 200 feet SGL over additional training areas within military low-altitude restricted airspace, the Talon Military Operations Area, and three smaller areas outside of the regional military reservations. These would be used only after site reconnaissance determines that the area planned for use is clear of persons or livestock.
- c. Alternative 3: No Action Alternative: Under Alternative 3, the Interim FB 95-1 rules would remain in effect for training flights outside Fort Bliss restricted airspace.

Fort Bliss is in the process of gathering the most current information available, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800. The Department of the Army respectfully requests the Ysleta Del Sur Pueblo Council to provide input regarding any unique or culturally sensitive areas or species that may be affected by the Proposed Action. In addition, the Department of the Army welcomes any information that you believe would be helpful in ensuring the overall success of this effort.

We respectfully request that information to be submitted no later than 30 days after receipt of this letter, for it to be considered in the Draft EA. Your response should be sent to our point of contact:

Ms. Belinda Mollard, Senior Archaeologist/Tribal Liaison
Cultural Resources Manager
Bldg. 624 Pleasonton Road
Directorate of Public Works
Fort Bliss, TX 79916
belinda.c.mollard.civ@mail.mil

We intend to provide you with a copy of the Draft EA for review and comment once the document is completed. Please inform us if additional copies are needed or if another person or department should receive a copy of this letter and the Draft EA. This letter and other applicable documents will be posted on the Fort Bliss website <https://www.bliss.army.mil/DPW/Environmental/EISDocuments2.html> as they become available.

If you have questions or require additional information, please do not hesitate to contact Fort Bliss Tribal Liaison, Ms. Mollard at the address above or at (915) 568-8420.

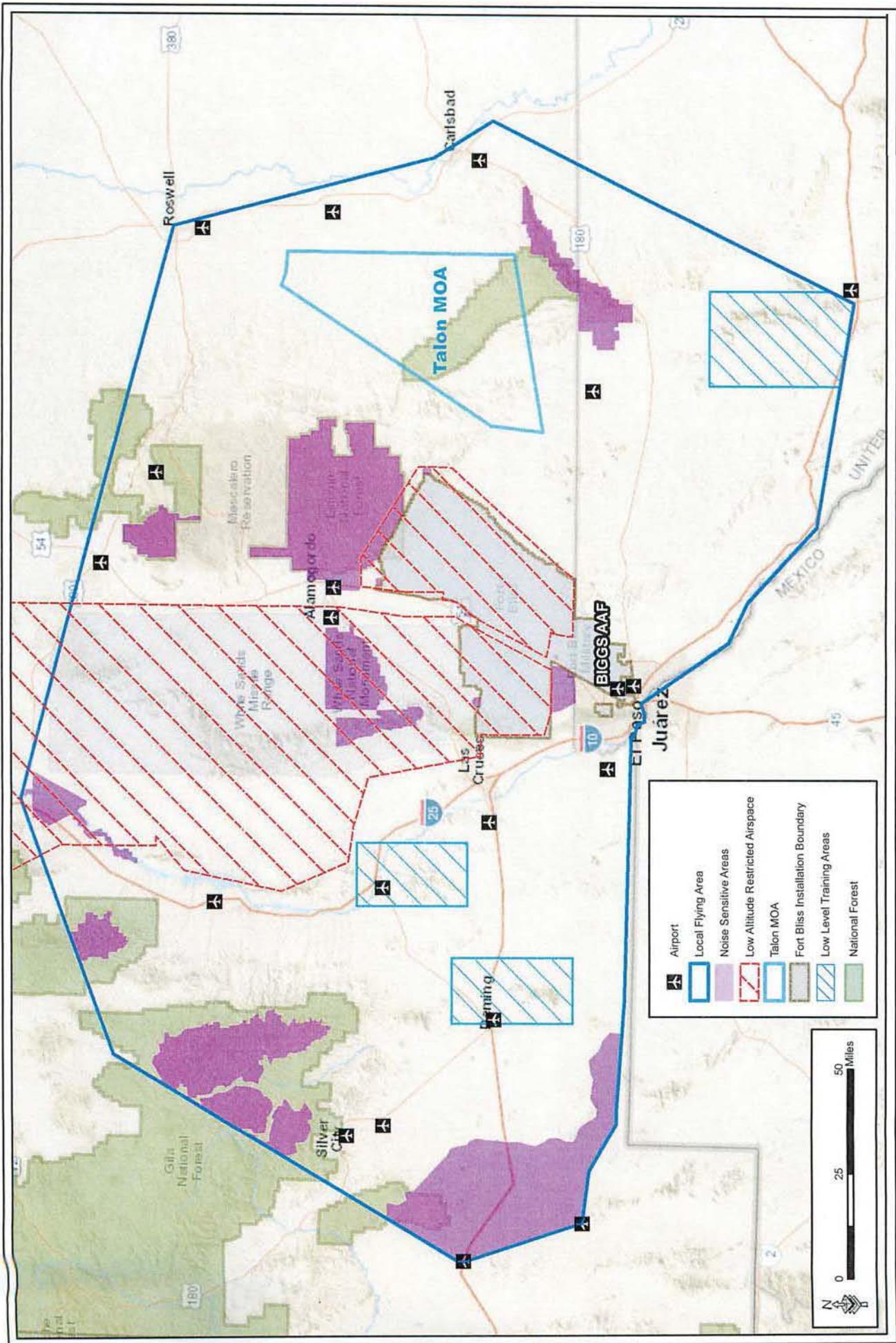
Sincerely,



Mike Hester
Colonel, U.S. Army
Commanding

Enclosure

cc:
Mr. Javier Loera, War Captain/THPO
Ysleta Del Sur Pueblo Council
119 South Old Pueblo Road
El Paso, TX 79907



Fort Bliss Local Flying Area



Kiowa Tribe of Oklahoma

Office of Historic Preservation

P.O. Box 50
100 Kiowa Way
Carnegie, OK 73015

September 24, 2016

Ms. Belinda Mollard Sr. Archaeologist
Cultural Resources Manager
Bldg. 624 Pleasonton Road
Directorate of Public Works
Fort Bliss, TX 79916

RE: Section 106 Consultation and Review for proposed EA for Fort Bliss Regulation 95-1: Local Flying Rules (FB 95-1) Fort Bliss, TX and NM

Dear Ms. Mollard,

The Kiowa Tribe Office of Historic Preservation has received the information and materials requested for our Section 106 Review and Consultation. Section 106 of the National Historic Preservation Act of 1966 (NHPA), and 36 CFR Part 800 requires consultation with the Kiowa Tribe.

Given the information provided, you are hereby notified that the proposal project location should have minimal potential to adversely affect any known Archaeological, Historical, or Sacred Kiowa sites. Therefore, in accordance with 36 CFR 800.4(d) (1), you may proceed with your proposed project. However, please be advised undiscovered properties may be encountered and must be immediately reported to the Kiowa Tribe Office of Historic Preservation under both the NHPA and NAGPRA regulations.

This information is provided to assist you in complying with 36 CFR Part 800 for Section 106 Consultation procedures. Please retain this correspondence to show compliance. Should you have any questions, please do not hesitate to contact me at kellie@tribaladminservices.org. Thank you for your time and consideration.

Sincerely,

Kellie J. Poolaw
Acting Tribal Historic Preservation Officer (THPO)

Phone: (405) 435-1650

Kellie J. Poolaw
Acting Tribal Historic Preservation Officer (THPO)
kellie@tribaladminservices.org Complex: (580) 654-2300



OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

October 11, 2016

John Kipp, Ph.D.
NEPA Planner, Conservation Branch
Environmental Division
Directorate Public Works
Bldg. 624 Pleasonton Road
Fort Bliss, TX 79916

Subject: Scoping for Environmental Assessment for Fort Bliss Regulation 95-1: Local Flying Rules (FB 9501), Fort Bliss, Texas and New Mexico.

Dear Mr. Kipp:

The International Boundary and Water Commission, United States Section (USIBWC) has received your September 13, 2016 letter requesting scoping information for the preparation of an Environmental Assessment (EA) on the update and revision of Fort Bliss Regulation 95-1: Local Flying Rules (FB 95-1) for military helicopters operating outside of military restricted airspace.

The alternatives include helicopters flying in Class G airspace (uncontrolled airspace 1,200 feet above ground level (AGL)) except for above noise-sensitive areas such as national parks, national monuments, and national wildlife refuges, where helicopters would maintain a minimum altitude of 2,000 feet AGL. In addition, one alternative would allow flights in certain areas to a minimum altitude of 200 feet AGL. The USIBWC has reviewed the information provided and has the following comments.

The map indicates that the Fort Bliss Local Flying Area covers the Rio Grande in New Mexico in USIBWC's Rio Grande Canalization Project, as well as along the international boundary in Texas and in USIBWC's Rio Grande Rectification Project. The Local Flying Area also extends near the international land boundary in New Mexico. The map also indicates there is one Low Level Training Area over the Rio Grande near Hatch, New Mexico which will include low flying helicopters at a minimum altitude of 200 feet AGL.

The EA should consider that the Rio Grande is a major waterway in the North American flyways for migrating birds. In addition, the USIBWC is currently working on implementing habitat restoration projects along the Rio Grande in southern New Mexico. Some of the projects are to create or enhance habitat for the endangered Southwestern Willow Flycatcher and the threatened Yellow Billed Cuckoo. Low-flying helicopters should avoid early morning flying over noise-sensitive areas of the Rio Grande, particularly from Elephant Butte Reservoir downstream to Leasburg Dam during the breeding season for these two avian species, from mid-May to mid-August.

In addition, the map does not indicate that state-protected areas are noise sensitive areas. Such areas could include Mesilla Valley Bosque State Park, Leasburg Dam State Park, and Franklin Mountains State Park.

The USIBWC appreciates the opportunity to provide comments on the proposed regulation. Please continue to keep the USIBWC informed of the progress of this project and other projects potentially impacting the Rio Grande and its watershed.

Sincerely,



Gilbert G. Anaya
Division Chief
Environmental Management Division

COMANCHE NATION



Headquarters, United States Army Garrison, Fort Bliss
Attn: Ms. Belinda Mollard
Building 624 Pleasonton Road
Texas 79916

October 24, 2016

Re: Environmental Assessment for Fort Bliss Regulation 95-1: Local Flying
Rules (FB 95-1), Fort Bliss, Texas and New Mexico

Dear Ms. Mollard:

In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of **"No Properties"** have been identified. (IAW 36 CFR 800.4(d)(1)).

Please contact this office at (580) 595-9960/9618 if you require additional information on this project.

This review is performed in order to identify and preserve the Comanche Nation and State cultural heritage, in conjunction with the State Historic Preservation Office.

Regards

Comanche Nation Historic Preservation Office
Theodore E. Villicana, Technician
#6 SW "D" Avenue, Suite C
Lawton, OK. 73502



United States Department of the Interior



NATIONAL PARK SERVICE
White Sands National Monument
P.O Box 1086
Holloman AFB, NM 88330
575.479.6124

IN REPLY REFER TO:
L7619 (WHSAs)

November 9, 2016

Dear Dr. John Kipp,

Thank you for contacting White Sands National Monument with respect to scoping for the pre-draft EA of Ft Bliss RB 95-1. We request that you consider the following items for analysis during your development of impact topics and development of alternatives:

- Effects to night sky darkness as experienced from the national monument, with increased number flights
- Increases in the number of flights above the national monument and their effects to stability of historic structures and visitor experiences
- Increases and changes in types of training overflights and the effects to visitor safety at the national monument, from the draft it appears that technical flight training may be park of training
- Increases in overflights and effects on resident wildlife in the national monument

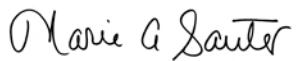
NPS strongly prefers the minimum altitudes specified in Alternative 1 be maintained in all alternatives for national park units and other areas for which NPS has a support responsibility. According to FAA Advisory Circular [AC 91-36D](#), a minimum altitude of 2,000 feet is encouraged over all noise sensitive areas, including national parks, wilderness areas, recreation areas, and cultural and historical sites where a quiet setting is a generally recognized feature or attribute. NPS would prefer that regular deviations from this minimum recommended altitude not be authorized in an environmental assessment. If an allowance is proposed to a minimum altitude of 200 feet AGL is proposed for NPS-managed areas, then we would respectfully request consideration of whether such minimum altitudes would

result in a significant impact that should trigger an Environmental Impact Statement.

Attached for you review is a map of sensitive areas within the national monument including but not limited to all park visitor areas, the historic district, housing areas and hiking trails.

If you need specific information from the national monument as you develop the environmental assessment, please contact me at (575)479-6124, extension 210, or at the above address.

Sincerely,



Marie Frias Sauter

Superintendent

CC:

David Hurd, Environmental Protection Specialist, IMR, NPS

Randy Stanley, Natural Sounds & Night Skies Coordinator, NRD, IMR, NPS

Enclosure



Park Map

