



EXISTING CONDITIONS | EXECUTIVE SUMMARY  
INITIAL COMPATIBILITY ASSESSMENT REPORT | 2014

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# LIST of ACRONYMS

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1AD – 1st Armored Division	FAA – Federal Aviation Administration
AAF – Army Airfield	FBTC – Fort Bliss Training Complex
AAMDC – Army Air & Missile Defense Command	FCC – Federal Communications Commission
ABQ – Albuquerque International Sunport	FLPMA – Federal Land Policy and Management Act
ACUB – Army Compatible Use Buffer	FORSCOM – Forces Command
ACEC – Area of Critical Environmental Concern	FTU – 2 – Second Formal Training Unit
AETC – Air Education Training Command	FTX – Discrete field training site
AFRL – Air Force Resource Laboratory	GAF – German Air Force
ARFORGEN – Army Force Generation	GAF TTC – German Air Force Tactical Training Center
AGL – Above Ground Level	GEODSS – Ground-based Electro-Optical Deep Space Surveillance
AICUZ – Air Installation Compatible Use Zone	GLO – Texas General Land Office
APOE – Aerial Port of Embarkation	HAFB – Holloman Air Force Base
APZ – Accident Potential Zone	HAMET – High Altitude Mountain Environment Training
AR – Aerial Refueling	HBCT – Heavy Brigade
ARC – Acoustic Research Complex	HE – High Explosive
ARL – Army Research Laboratory	HELSTF – High Energy Laser Systems Test Facility
ARMS – Alliance for Regional Military Support	HPM – High Powered Microwave
ARTCC – Air Route Traffic Control Center	HSTT – High Speed Test Track
ATC – Air Traffic Control	IBCT – Infantry Brigade
ATEC – Army Test and Evaluation Center	ICRMP – Integrated Cultural Resources Management Plan
BASH – Bird Aircraft Strike Hazards	ICEMAP – Installation Complex Encroachment Management Action Plan
BEAR – Basic Expeditionary Airfield Resources	IFDS – Integrated Frequency Deconfliction System
BLM – Bureau of Land Management	INRMP – Integrated Natural Resources Management Plan
BMC – Brigade Modernization Command	IONMP – Installation Operational Noise Management Plan
BRAC – Base Realignment and Closure	JEF – Jornada Experimental Range
CAB – Combat Aviation Brigade	JLENS – Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System
CACTF – Combined Arms Collective Training Facility	JLUS – Joint Land Use Study
CCM – Center for Countermeasures	JPA – Joint Planning Agreement
CCS – Counter Communication System	JTX – Joint Training Exercise
CDN – C-weighted Noise	LUASP – Land Use and Airspace Strategy Plan
CDNL – Day-Night Average Sound Level for C-weighted noise	LUPZ – Land Use Planning Zone
CIGTF – Central Inertial and GPS Test Facility	MOA – Memorandum of Agreement
CLI – Cultural Landscapes Inventory	MPO – Metropolitan Planning Organization
CoA – Certificate of Authorization	MRTFB – Major Range and Test Facility Base
CRC – CONUS Replacement Center	MRU – Military Radar Unit
CRRUA – Camino Real Regional Utility Authority	MTRs – Military Training Routes
CSP – Concentrated Solar Power	NAS – National Airspace System
DAGIR – Digital Air-to-Ground Integration Range	NASA – National Aeronautics and Space Administration
dB - Decibels	NEPA – National Environmental Policy Act
DMPTC – Digital Multi-Purpose Training Complex	NGA – National Geospatial Intelligence Agency
DNL – Day-Night Average Sound Level	NHPA – National Historic Preservation Act
DoD – Department of Defense	NIA – Network Integration Exercise
DOI – Department of the Interior	NIE – Network Integration Evaluation
DTRA – Defense Threat Reduction Agency	NMSA – New Mexico Spaceport Authority
EBID – Elephant Butte Irrigation District	NMSLO – New Mexico State Land Office
EIS – Environmental Impact Statement	NOTAMs - Notices to Airmen
EMRE – Electromagnetic Radiation Effects	NPS – National Park Service
EMR – Energy Electromagnetic Radiation	
EPIA – El Paso International Airport	
ETZ – Extra-Territorial Zoning	

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## LIST of ACRONYMS

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NRAO – National Radio Astronomy Observatory	WSPG – White Sands Proving Ground
NRO – National Reconnaissance Office	WSSH – White Sands Space Harbor
NRTF – National Radar Cross Section Test Facility	WSTC – White Sands Test Center
NTIA – National Telecommunications and Information Administration	WSTF – White Sands Test Facility
NVD – Night Vision Training Devices	
OEA – Office of Economic Adjustment	
OE/AAA – Obstruction Evaluation/Airport Airspace Analysis	
PA – Programmatic Agreement	
PC – Policy Committee	
PV – Photovoltaic	
RAMS – RATSCAT Advanced Measurements	
RANM – Realtors Association of New Mexico	
RATSCAT – Radar Target Scatter	
REPI – Readiness and Environmental Protection Initiative	
RMP – Resource Management Plan	
RMPA – Resource Management Plan Amendment	
RPA – Remotely Piloted Aircraft	
RPO – Regional Planning Organization	
R&PP – Recreation and Public Purposes Act	
SBCT – Stryker Brigade	
SLVs – Suborbital Launch Vehicles	
SNM-EP – Southern New Mexico/El Paso Texas	
SOSI – System of System Integration	
SPOE – Sea Port of Embarkation	
STA – South Training Areas	
SVAD – Survivability, Vulnerability, and Assessment Directorate	
TAR – Texas Association of Realtors	
TC – Technical Committee	
TDRSS – Tracking and Data Relay Satellite System	
TDS – Total Dissolved Solids	
TG – Test Group	
TRADOC – Training and Doctrine Command	
TREC – Texas Real Estate Commission	
TRIAD - Partnership between HAFB, WSMR, and Fort Bliss	
UAS – Unmanned Aircraft System	
UAS FTC – Unmanned Aircraft System Flight Test Center	
UAV – Unmanned Air Vehicle	
USAADASCH – United States Army Air Defense Artillery School and Center	
USDA – U.S. Department of Agriculture	
USFS – United States Forest Service	
USFWS – United States Fish and Wildlife Service	
VHF – Very High Frequency	
WRP – Western Regional Partnership	
WSA – Wilderness Study Area	
WSEP – Weapons System Evaluation Program	
WNSA – White Sands National Monument	
WSMR – White Sands Missile Range	

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## 01 STUDY BACKGROUND AND PURPOSE



### 1.1 Purpose of Document

The purpose of the Existing Conditions/Initial Compatibility Assessment Report is to provide the foundation for the following:

- An understanding of existing issues and emerging trends in the study area; and
- Initial set of compatibility factors and geographic areas of concern.

### 1.2 Study Area

The Southern New Mexico-El Paso Texas Joint Land Use Study (JLUS) area encompasses six counties, two states, and the three military installations of Fort Bliss, White Sands Missile Range (WSMR), and Holloman Air Force Base (HAFB). As illustrated in **Figure 1.1**, Doña Ana, Sierra, Lincoln, Otero, and Socorro Counties in New Mexico and El Paso County, Texas surround the installations. The land area of interest is approximately 7,600 square miles—one of the largest JLUS areas ever studied. More than one million residents currently live in the Southern New Mexico-El Paso Texas (SNM-EP) region. On the military side, the controlled airspace and land assets of the three installations support one of the premier testing and training environments in the U.S.

### 1.3 Study Background

Several physical characteristics of the SNM-EP region are critical to the effective performance of missions at Fort Bliss, WSMR, and HAFB, including expansive, contiguous areas of controlled airspace to support aviation activity; rugged, uninterrupted land areas to accommodate maneuver training and hazardous test events; a clear electronic spectrum; and a wide range of geologic features.

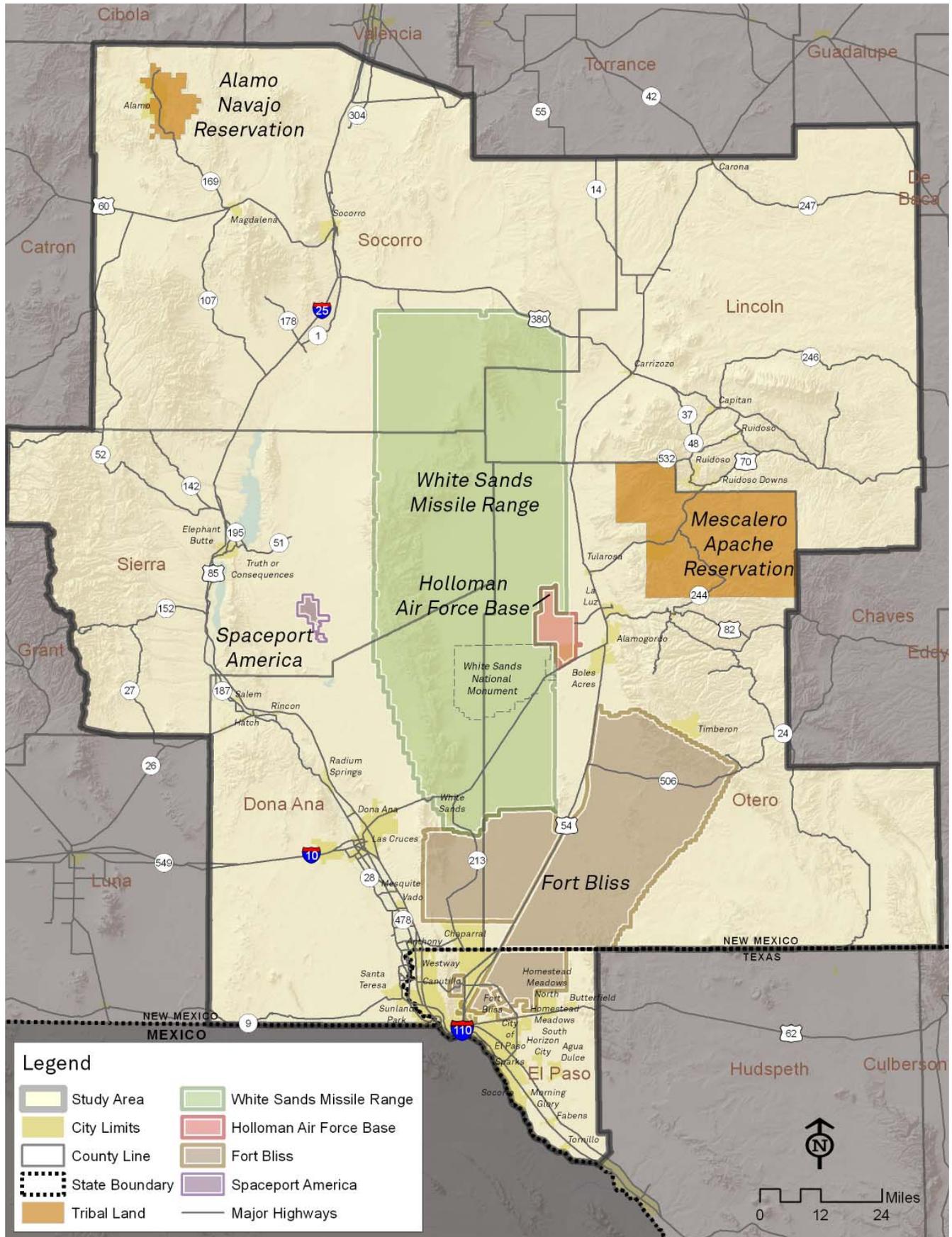
The ability to deploy and support operational forces, perform realistic aviation and live-fire training, and conduct weapons system testing in this environment is vital to maintaining the mission effectiveness of the three installations and the overall readiness of military forces.

### 1.4 Study Purpose and Goals

The JLUS is a collaborative process among city and county governments; the public; state and federal agencies; tribal governments; and military installations within the SNM-EP region. The study is designed to create dialogue around complex issues such as land use, economic development, infrastructure, environmental sustainability, and the operational demands and mission change of both military and civilian entities. The intent of the study is to highlight common interests, such as stable economic growth, more efficient infrastructure, healthier environments, improved quality of life, and the protection of Department of Defense (DoD) and civilian investments and missions.

The JLUS Final Report will provide a series of recommendations to guide future decisions and policy actions by public agencies, military installations and other partners. Recommendations are not binding, but study participants are asked to make a good faith effort to implement proposed action steps. The JLUS emphasizes coordination and communication as a way to strengthen the relationship among the study area partners and to build a framework for successful implementation and monitoring of recommendations around shared goals. The JLUS is expected to take a total of 19 months, with completion anticipated in mid 2014.

FIGURE 1.1 | SOUTHERN NEW MEXICO – EL PASO JLUS STUDY AREA



## 02 SUMMARY OF STUDY PARTNER PARTICIPATION



### 2.1 Formal Study Partners

To reflect the complexity of the study area, a diverse range of partners from throughout the region have formally joined in the study process, including:

- Doña Ana County
- Otero County
- Lincoln County
- Socorro County
- Sierra County
- El Paso County
- The City of Alamogordo
- The City of Las Cruces
- The City of El Paso
- Fort Bliss
- White Sands Missile Range
- Holloman Air Force Base
- New Mexico State Land Office
- Bureau of Land Management
- New Mexico Office of Military Base Planning and Support
- Military Base Planning Commission
- New Mexico Spaceport Authority
- United States Forest Service

### 2.2 JLUS Committees

#### **Policy Committee**

The Policy Committee (PC) consists of local elected officials from cities and counties participating in the MOA, as well as senior Air Force and Army leadership and representatives from federal and state entities. This committee oversees the JLUS process, reviews draft and final written reports, and evaluates policy recommendations. Policy Committee sessions are open to the public.

#### **Technical Committee**

This working group consists of area planners, city and county officials, technical and professional staff, and military planners. Members are responsible for assisting in data collection, identifying and studying technical issues, and developing recommendations for evaluation by the PC. Technical Committee (TC) meetings coincide with key milestones in the study process, including existing conditions findings, compatibility assessment results, draft strategy assessment, and implementation plan development.

#### **Project Management Team**

The Project Management Team (PMT) is a subset of the TC that directly supervises JLUS planning activities and provides support and guidance for ongoing meeting and public outreach events, data collection and review, and the delivery of study products.

### 2.3 Stakeholder and Interview Input

In addition to committee meetings and document review, the planning team has conducted face-to-face or telephone interviews with key stakeholders in the public, private, and community sectors to establish priorities for the study, gather data, and identify challenges to be examined more fully (see the full JLUS document and **Technical Appendix** for an analysis and complete listing of stakeholders interviewed).

## 2.4 Community Participation

### Round #1 Public and Community Meetings

The planning team held six public meetings for the JLUS from June 3 through June 13, 2013. The meetings were part of the initial phase of community outreach conducted for the study and assisted in describing existing conditions in the region (see **Technical Appendix** for full summary of all input received). A total of 130 people attended the June sessions, including members of the Policy and Technical Committees and representatives of study partner entities.

The planning team also conducted three community events in September 2013 at Weed and Chaparral, New Mexico and at Ranchers Day on WSMR. Approximately 100 people participated in the September events. Participants were asked to prioritize 17 initial compatibility themes, highlighting those items that they thought were most critical to address in the study.

The initial themes were displayed on a board. Participants were then given four “dot” stickers and asked to place them next to a factor that they had either experienced and/or thought was important for the JLUS to address. Overall, water received the highest number of priority stickers followed by energy/renewable energy development, aviation noise, and quality of life/accommodating military-related growth. Input also varied geographically, with respondents in Otero County/City of Alamogordo emphasizing the accommodation of military-related growth; and energy/renewable energy emerging as the most prominent factor in Socorro County. Participants in Weed expressed concern about sonic booms from aircraft activity, while Chaparral residents cited issues related to the use of local roadways by wheeled military vehicles.

To identify common elements among the feedback received, the planning team analyzed and grouped related individual comments under the series of broader themes:

- Recognition of the strong economic linkages between the military installations and the surrounding communities;
- Recognition of the complexity of the SunZia transmission corridor planning process and the potential impacts for the study area;

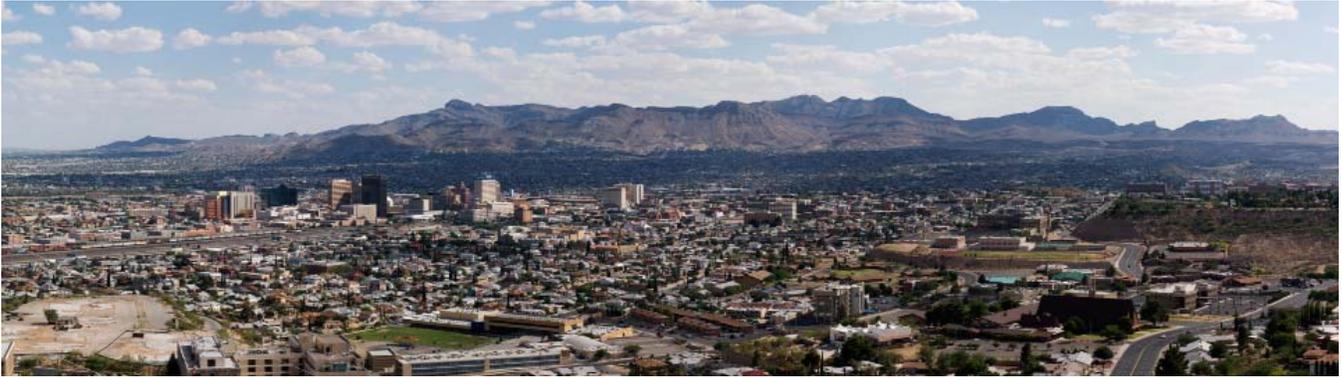
- Concern for the environmental and physical resources of the study area, particularly related to water resources, and a desire for a regional, integrated carrying capacity analysis;
- Concern for the protection of private property rights and local economic development opportunities; and
- Opportunities for increased coordination around specific facilities, particularly airports and roadways

The planning team and committees have drawn from comments received to refine the Existing Conditions and Compatibility Analysis.



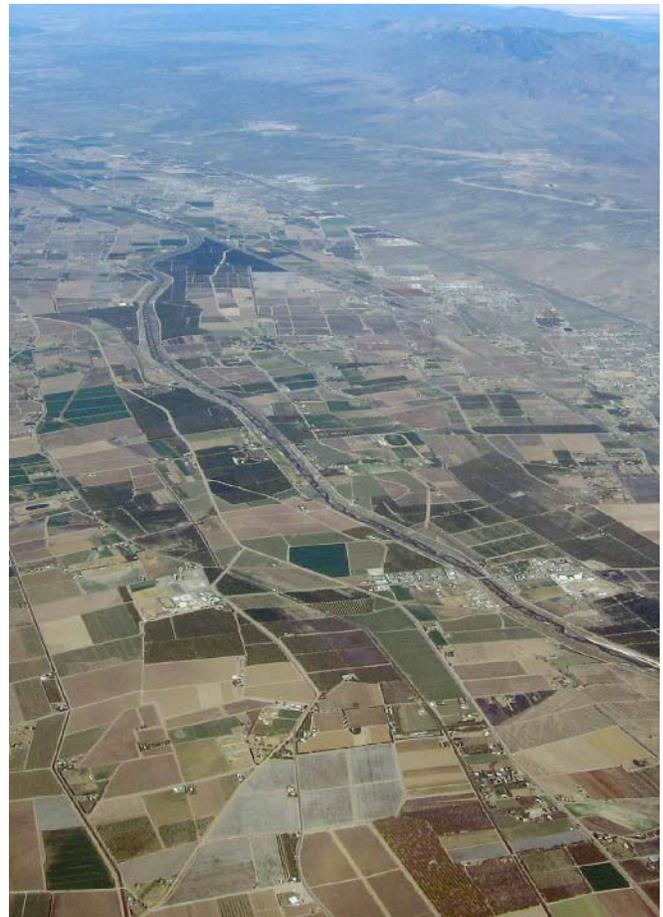
Public Meeting participants

### 03 OVERVIEW OF COMMUNITY PLANS AND REGULATORY POLICY



Land use tools, particularly zoning, subdivision regulations, and growth management policies are among the most effective compatibility measures available to local governments. Such tools may take the form of general policy language that emphasizes collaboration and compatibility between a community and military installation or specific regulatory codes that govern the density or type of development permitted in designated areas exposed to the impacts of military operations. The full JLUS document and **Technical Appendix** contain an analysis and a summary table of documents reviewed.

In general, the results indicate a lack of specific compatibility provisions, particularly in older comprehensive plans and land use ordinances. However, several communities within the region are in the process of updating community plans. The JLUS offers an opportunity to develop guidance in conjunction with these ongoing and planned compatibility efforts.



Mesilla Valley

## 04 OVERVIEW OF STAKEHOLDER ENTITIES AND SIGNIFICANT REGIONAL PROJECTS



Along with city and county governments and the three military installations, state, federal and tribal entities play a role in managing airspace and land resources in the JLUS study area.

### 4.1 Spaceport America

#### Background

Spaceport America is the first purpose-built facility in the world designed to accommodate commercial space flight. The site is located in Sierra County, New Mexico, about 55 miles north of Las Cruces and 30 miles southeast of Truth or Consequences. The New Mexico Spaceport Authority (NMSA) operates the facility, which is designed to accommodate horizontal and vertical launches of suborbital launch vehicles (SLVs).

The NMSA envisioned Spaceport America as a long-term economic development driver of high technology, tourism, and educational opportunities for Southern New Mexico. All of the facilities are set on state-owned land and the adjacent area features hundreds of square miles of open land. White Sands Missile Range lies 11 miles to the east, creating a long-term buffer. The surrounding area includes mostly BLM-administered land, along with a mix of additional State Trust and private lands.

Spaceport America's primary compatibility concerns with its surroundings revolve around launch safety, airspace, and radio frequency spectrum uses. During launches, specific areas must be clear of non-participating persons and vehicles, both in the air and on the ground. As a result Spaceport strongly values undeveloped adjoining land, making it a

highly compatible overall use with nearby military testing and training activities.

#### Current and Foreseeable Operations

Development of Spaceport America infrastructure is scheduled in two phases with Phase 1 now complete. This initial phase developed such basic operational infrastructure as an airfield, launch pads, terminal/hangar facility, emergency response capabilities, utilities and roadways. Phase 2, part of which is complete, includes runway extension, visitor accommodations, and road improvements to the south.

The main anchor tenant, Virgin Galactic, remains focused on space tourism with anticipated commercial flights beginning in 2014. Spaceport America has had about 20 launches to date with an operational tempo of about four flights per year. The frequency of launches is expected to increase with continued development. A higher launch frequency will intensify some of the compatibility factors that have been identified, particularly airspace coordination.

### 4.2 Bureau of Land Management (BLM)

#### Background

The BLM is an agency within the United States Department of the Interior that administers public lands and resources based on the principle of multiple use and sustaining the health, diversity, and productivity for present and future generations.

The BLM Las Cruces District Office manages 5.4 million acres of public land in Sierra, Otero, Doña Ana, Hidalgo, Luna, and Grant Counties in southern New Mexico.

The BLM Socorro Field Office manages public land in Socorro and Catron Counties, including the Fort Craig Historic Site, Gordy's Hill Area, Quebradas Backcountry Byway, San Lorenzo Canyon, Socorro Nature Area and the Box Recreation Area. The Roswell Resource Area Office of the BLM encompasses all of Lincoln County, along with Chaves, DeBaca, Roosevelt, Curry, Quay, and Guadalupe Counties in southeastern and east-central New Mexico.

The BLM manages special recreation permits; grazing allotments; major power, pipeline and communications rights-of-ways; land sales, exchanges, and Recreation and Public Purposes (R&PP) Act leases and transfers; geothermal, oil and gas, copper, mineral materials, and mining claims; operational maintenance of facilities, structures, roads and trails; wildfire suppression; and cultural and natural resource protection.

The Federal Land Policy and Management Act states that "Provided, That unless otherwise provided for by law, the Secretary may permit Federal departments and agencies to use, occupy, and develop public lands only through rights-of-way under section 507 of this Act, withdrawals under section 204 of this Act, and, where the proposed use and development are similar or closely related to the programs of the Secretary for the public lands involved, cooperative agreements under section (b) of section 307 of this Act".

McGregor Range which is a 606,157-acre range located in Otero County consists of public land managed by the BLM. This land has been withdrawn by legislation from the public domain for military use and is subject to special restrictions. However the BLM continues to manage 14 existing grazing units on McGregor Range consistent with military training priorities.

#### **TriCounty Draft Resource Management Plan/Environmental Impact Statement**

The planning area for the TriCounty Draft Resource Management Plan/Environmental Impact Statement (RMP/EIS) consists of about 9.3 million acres of federal, state trust, private and tribal lands in Sierra, Otero, and Doña Ana Counties. The new document is intended to provide a more comprehensive framework for management guidance and

reflect changes in demographic characteristics and the increased use of public land.

The RMP will establish consolidated guidance and updated objectives and management actions for the public land within the TriCounty area over the next 15 to 20 years. The draft document was available for public comment through November 4, 2013.

The RMP/EIS analyzes impacts across a wide range of areas and uses, including air, soil and water, vegetation, habitat, special status species, cultural and visual resources, grazing, recreation, minerals, lands and realty and renewable energy. In the JLUS context, RMP/EIS analysis related to lands and realty and energy issues are especially relevant.



### 4.3 New Mexico State Land Office

**Background**

The New Mexico State Land Office (NMSLO) manages approximately 9 million acres of surface and 13 million acres of mineral estate for 21 trust beneficiaries. The NMSLO operates under a constitutional mandate to optimize revenue for these trust beneficiaries through the highest and best use of State Trust Land.

The NMSLO has land holdings and leases throughout the JLUS study area, including approximately 1.6 million surface acres and 2.46 million subsurface acres within Doña Ana, Otero, Lincoln, Socorro, and Sierra Counties. Spaceport America and portions of the proposed SunZia transmission corridor routes are on State Trust Land.

State Trust Land may be exchanged, sold or leased for activities such as commercial development, renewable energy or oil, natural gas, and minerals production as part of transactions with other governmental entities or the private sector. Consistent with the agency mandate, these transactions must result in a higher and better use of holdings for the trust and its beneficiaries. The NMSLO has also targeted renewable energy as a major growth industry within the state. Long-term leases for the development of solar and wind projects represent an opportunity to generate significant income for trust beneficiaries.

### 4.4 U.S. Forest Service

**Background**

The United States Forest Service (USFS) is an agency of the United States Department of Agriculture that administers the nation’s 155 national forests and 20 national grasslands. The USFS manages lands and resources to restore and maintain species diversity and ecological productivity in support of recreation, water, timber, minerals, fish, wildlife, wilderness, and aesthetic values.

The USFS has a major presence the JLUS study area with the Lincoln National Forest, Cibola National Forest, and Gila National Forest. The Lincoln National Forest is in the eastern portion of the region and is in closer proximity to military operations than the Gila.



The School for the Blind and Visually Impaired, Alamogordo

The forest features many high quality recreational areas, including the Capitan Mountains Wilderness Area, the White Mountain Wilderness Area, the Sitting Bull Falls Recreation Area and the Trestle Recreation Area. A portion of McGregor Range overlaps with USFS land and is used for training and joint exercises and the Forest recently cooperated with WSMR on the Network Integration Exercise on base.

Along with its wildlife management responsibilities, the USFS accommodates an increasing level of recreational activity in the forest. High elevations make Lincoln Forest sites popular outdoor destinations, drawing about one million visitors yearly. In 2014, the USFS will conduct a survey of users to better inventory recreational functions in the forest and estimate visitor expenditures for the peak season.

## 4.5 National Park Service

### Background

The National Park Service (NPS) is an agency of the United States Department of the Interior that manages all national parks, many national monuments, and other conservation and historical properties. The NPS mission is to preserve the natural and cultural resources and values of the national park system for the unimpaired enjoyment, education, and inspiration of this and future generations.

The NPS owns and operates the lands comprising White Sands National Monument (WHSA), located adjacent to HAFB and surrounded by WSMR. White Sands National Monument spans 144,000 acres in parts of Doña Ana and Otero Counties and is bordered on the west by the San Andreas Mountains and by the Sacramento Mountains to the east. The purpose of the WHSA is to protect the geologically unique gypsum dune fields, and the flora and fauna living within them, while providing compatible educational, research, and recreational opportunities. The monument is the most visited National Park site in New Mexico and the largest NPS area in the state.

The NPS has multiple reports to direct the management of the monument's natural resources and guide operations, including accommodating its annual visitors and coordinating with adjacent entities, such as WSMR, HAFB, and local jurisdictions.

## 4.6 Tribal Governments

### Mescalero Apache Tribe

The Mescalero Apache Reservation spans approximately 719 square miles and is bordered by the Sacramento Mountains and Lincoln National Forest, with the majority of its land area located in Otero County. The Mescalero Apache Tribal Council manages the reservation's natural resources and development. The reservation's major economic generators are ranching, tourism, the Inn of the Mountain Gods Resort and Casino, and Ski Apache.



Lincoln National Forest, White Sands

**Ysleta del Sur Pueblo (Tigua)**

Located in the Cities of El Paso and Socorro, Texas, Ysleta del Sur Pueblo (Pueblo) is home to the Tigua tribal community, with over 1,700 citizens. The Pueblo encompasses over 2,600 acres of land. The Tribe also owns the Chilicote Ranch, which is comprised of over 70,000 acres and houses the Tribe's cattle ranching operations. The Pueblo is active in El Paso's regional economy and is currently involved in many local economic development initiatives.

**Piro-Manso-Tiwa Tribe of Guadalupe Pueblo**

The Piro-Manso-Tiwa Tribe of Guadalupe Pueblo is in Las Cruces, New Mexico. The Tribe originated from the Pueblo Indians of the Guadalupe Mission of Paso del Norte, whose descendants were among the first settlers of Las Cruces. The Piro-Manso-Tiwa Tribe formally organized as a non-profit corporation in 1998.

**Alamo Band Chapter of the Navajo Nation**

The Alamo Band Chapter of the Navajo Nation is in northwestern Socorro County, New Mexico. The reservation has a land area of 99 square miles and is home to approximately 2,000 members.

## 4.7 SunZia Southwest Transmission Project

**Background**

The proposed SunZia project would include two new, single-circuit 500 kV transmission lines within a right-of-way up to 1,000 feet wide. Based on a typical span of 1,400 feet, three to four transmission line structures per mile would be required for each of the two lines, with typical structure heights of 135 feet. The transmission line route would originate at a new substation (SunZia East) in Lincoln County, New Mexico, and terminate at the Pinal Central Substation in Pinal County, Arizona. Within the JLUS study area, the corridor would travel through Lincoln, Socorro, and Sierra Counties before heading southwest.

The purpose of the proposed project is to transport electricity to western power markets and load centers and to enable the development of renewable energy resources, including wind, solar, and geothermal generation by creating access to the interstate power grid in the Southwest. Under the current timeline, SunZia is anticipated to be operational by 2016.

**Environmental Impact Statement and Proposed Resource Management Plan Amendments (FEIS/RMPA)**

The BLM is the lead federal agency for the SunZia Final Environmental Impact Statement and Proposed Resource Management Plan Amendments (EIS/RMPA). Cooperating agencies include the National Park Service, New Mexico Spaceport Authority, New Mexico State Land Office, HAFB, Fort Bliss, and WSMR.

The BLM released the Final FEIS/RMPA document on June 14, 2013 and is scheduled to issue a Record of Decision in February 2014 that will include decisions on the approval of SunZia's application for right-of-way on federal lands, and proposed amendments to the RMPA to accommodate the project.

Impacts to land uses would occur along portions of the route that cross irrigated agricultural lands, sensitive migratory bird flight paths, residential subdivisions, and areas used for industrial or military testing and training. Particularly relevant for the JLUS context are the potentially adverse impacts of renewable energy infrastructure on aviation, testing, and training activities. The preferred alternative is within a portion of WSMR's Northern call-up area and portions of HAFB's R5107C/R5107H airspace used for flight operations.

The DoD remains highly committed to the development of renewable energy sources and the region's three installations are pursuing multiple renewable energy projects in response to federal priorities. The DoD, however, has expressed ongoing concern about the potentially adverse impacts of the transmission corridor, specifically as it travels through the Northern call-up area nearest to WSMR. The Pentagon has formally protested the preferred route proposed for the project.

Compatibility issues relate to the higher risk of potential damage to the transmission lines should a launched missile malfunction and need to be remotely destroyed within the fallout zone. The structures also pose a risk to aircraft due to physical intrusion into low-level flight corridors. The growing presence of wind turbines intended to feed the transmission line could also create compatibility issues because of an electromagnetic signature that can compromise radar, electronic systems, and other communications.

The BLM and cooperating agencies, including WSMR continue to work to identify a mutually beneficial solution. The process highlights the importance of jointly establishing planning and siting criteria that can assist in developing compatible renewable energy infrastructure.



Apache Point Observatory, New Mexico

#### 4.8 Apache Point Observatory

Located in Sunspot, New Mexico, Apache Point Observatory is operated by New Mexico State University and owned by the Astrophysical Research Consortium, consisting of multiple universities and institutions. Apache Point Observatory is a night-time astronomical facility that relies on dark skies to accomplish its research and operational missions.

#### 4.9 Texas General Land Office

The Texas General Land Office (GLO) administers and manages state lands and resources in Texas. The GLO manages lands and mineral rights totaling approximately 13 million acres across the state. The primary mission of the land office is to lease these state lands to raise revenue for the Permanent School Fund, which benefits the Texas public school system. Similar to the NMSLO, adjustments in land tenure status through the GLO can produce either increased or reduced compatibility risks based on the type and intensity of the resulting development.

## 05 MILITARY INSTALLATIONS



The missions of Fort Bliss, WSMR, and HAFB are distinct and separate, yet they provide an unequalled contiguous footprint of DoD-controlled surface area (composed of over 3.3 million contiguous acres), and over 8.8 million acres underlying associated restricted airspace over DoD and non-military land. Each of the installations manages its own land and air assets, but also leverages the synergy of the extended resources for particular missions. The following sections provide a snapshot of the current and foreseeable mission of each installation. The full JLUS document and Appendix contain a complete analysis of the histories and missions of Fort Bliss, HAFB, and WSMR.

### 5.1 Fort Bliss

#### Current Mission

Fort Bliss, home to the 1st Armored Division (1AD), has the primary mission to train, mobilize, and deploy members of joint and combined combat teams. Fort Bliss is also a “power projection platform” for rapidly deploying troops to worldwide combat zones by rail (to ship) or aircraft. The Army uses a training model that allows troops to train as they fight, with opportunities for multiple diverse brigades training together. The Army also seeks to create realistic training situations and has constructed specific training ranges (including mock villages) and has natural desert and mountainous terrain similar to many combat zones.

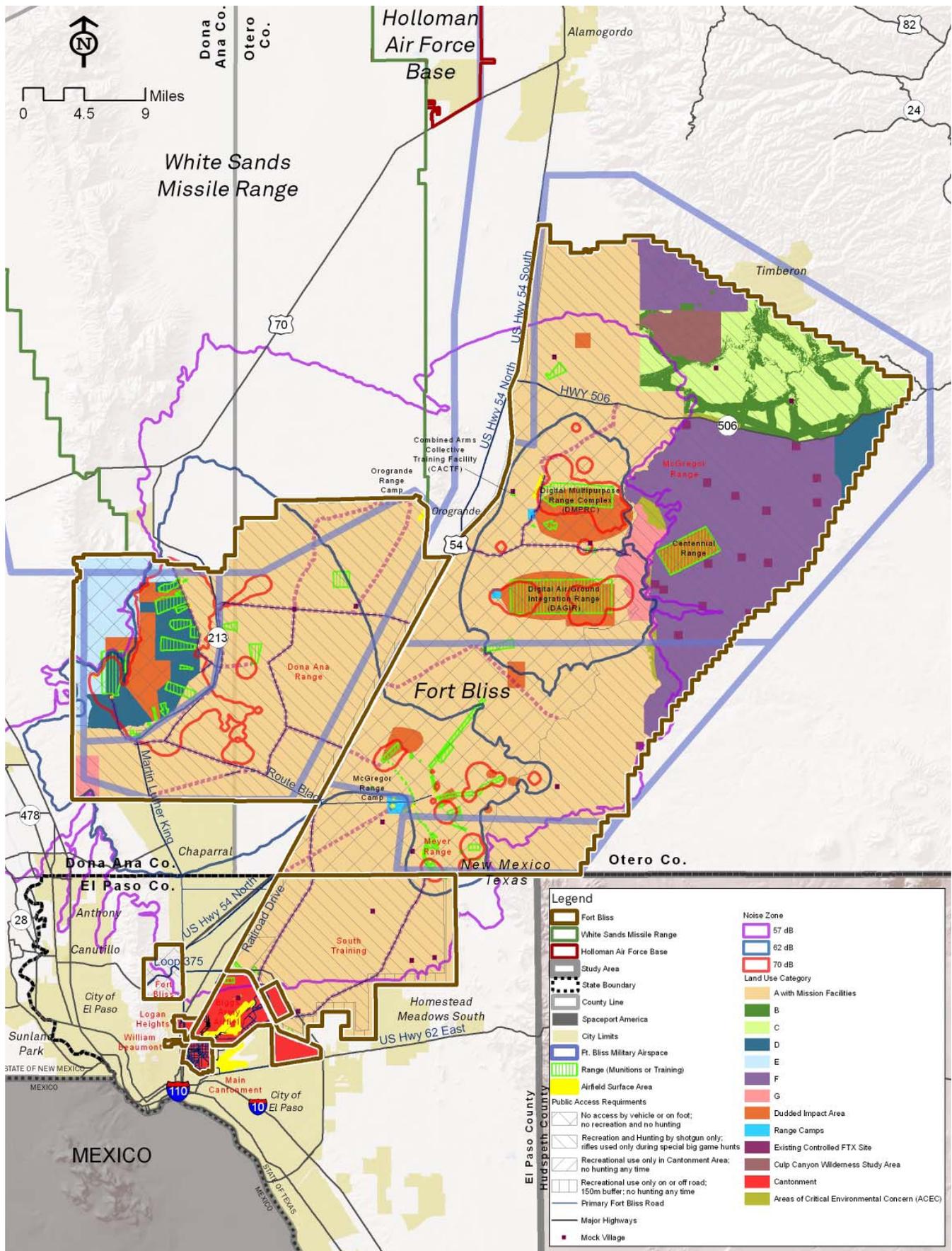
The Fort Bliss Training Complex (FBTC) is used not only by the home-stationed units, but also trains non-Fort Bliss troops (over 43,000 in 2012), and supports joint training with other services and allied nations, and limited weapons testing.

The installation population has grown from 11,400 military personnel in 2005 to 35,411 in 2013 and almost 45,000 dependants. Growth is projected to continue, with recent decisions that support training for as many as 14 brigade-sized Commands. It is the largest mobilization site in the DoD, and the pre-mission training site for Special Forces going to Afghanistan.

Biggs Army Airfield (AAF), adjacent to the cantonment areas and El Paso International Airport (EPIA), is largest airfield in the Army, and site for the marshaling center for an Aerial Port of Embarkation (APOE), with a rail deployment facility, linked to the Sea Port of Embarkation (SPOE) at Beaumont, Texas. The airfield is the home to the 1AD Combat Aviation Brigade (CAB).

Beyond the main cantonment areas in El Paso, Texas, the FBTC has over 1.1 million acres of training lands and associated restricted airspace (see **Figure 5.1**). The FBTC is comprised of three major areas, the South Training Areas (STA) in El Paso County, Texas, and Doña Ana Range and McGregor Range in New Mexico. The training land is divided into 33 training areas that support a unique mix of heavy and light maneuver, making use of varied environments ranging from flat, arid land to mountainous terrain.

FIGURE 5.1 - FORT BLISS TRAINING COMPLEX AND SURROUNDING AREAS





Abrams Tank training on Fort Bliss

A portion of McGregor Range is publicly accessible and supports co-use for cattle ranching, recreation, and other dispersed passive uses. Three range camps, McGregor, Orogrande, and Doña Ana, support troops in small built-up areas away from the main cantonment. Troops rotate in and out of the camps on a regular basis, traveling by convoys primarily along internal trails and roadways. The FBTC has associated restricted airspace (R-5103 A/B/C). FBTC controls movement of helicopters and aircraft throughout the complex, and weapons and surface danger zones around several weapons ranges.

Recent mission expansions have increased the use of training areas north of NM Highway 506 for wheeled and dismounted troop training. Vehicles are allowed off trails and roads only in specific areas. Also, the new High Altitude Mountain Environment Training (HAMET) mission is bringing more activity (both ground troops and helicopters) to the southern end of the Sacramento Mountains where the terrain and desert environment are similar to several global combat areas. This training will likely increase aviation activity in the Organ Mountains. The interface between HAMET uses and public access for grazing operations and recreation has also

been previously noted as a compatibility factor. Other off-post HAMET training operations are currently being analyzed in an Environmental Assessment.

#### **Foreseeable Mission**

Fort Bliss will continue its current mission in the future and anticipates the following operations:

- The training tempo for the current training mission will increase as troops return from combat zones and do not quickly redeploy. This situation is referred to as a “full nest.” Even with force drawdown, this will not translate into less training. On the Army Force Generation (ARFORGEN) model of train/deploy/reset, overlap of units cycling in and out of combat areas will result in a higher portion of troops back in the U.S.
- This increased tempo may heighten the mix of military and non-military users in the northern part of McGregor Range. For example, the HAMET mission may intensify with more units coming from other locations to train in realistic conditions.

- The trend for more use of unmanned aircraft systems (UASs) will continue, using both restricted airspace and the NAS with appropriate approvals from the FAA.
- The FAA, who controls the airspace around El Paso International Airport (EPIA) and Biggs AAF, will not allow military UAVs to operate at Biggs AAF because of proximity to commercial arrival and departure tracks. Instead, a concept for a new UAS airfield in southern Doña Ana Range (known as the Grey Eagle project) within restricted airspace R-5107 A/K is under consideration.
- Fort Bliss may support visiting units returning to FBTC to perform specific skills for the air defense mission because of its unique capabilities to support longer-range weaponry.
- Fort Bliss leadership wants Fort Bliss to be a regional training center in addition to Fort Bliss stationed units.
- In the future with more troops at home, it is likely that more soldiers will use the Orogrande, McGregor, and Doña Ana Range camps (particularly visiting units) to move troops away from the increasingly congested East Bliss cantonment.
- Biggs AAF will see some increase in operations when the Air Force F-16s use this location as an auxiliary airfield for pattern work (projected for 2014).
- A new outdoor machine gun firing range is approved for a location on Loop 375 by the existing Rod and Gun Club. Development of this range has currently been placed on hold.
- The Army may use Centennial Bombing Range for UAV operations, increasing the overall use of this Air Force facility on McGregor Range.
- The U.S. Air Force has announced plans to move its newly configured Security Forces Regional Training Center to Fort Bliss. The consolidated center would bring between 8,000 and 10,000 airmen to the post each year for security forces training beginning in 2014.

#### Compatibility Factors

The primary compatibility concerns from the Fort Bliss mission revolve around noise from weapons firing in specific locations on the installation training areas, increased demands on community services and infrastructure (especially water and transportation) from the influx of population, and indirect impacts on regional water supply and water quality from extensive development and water consumption.

## 5.2 White Sands Missile Range

### Current Mission

WSMR is a tri-service, Major Range and Test Facility Base (MRTFB) managed by the U.S. Army's Installation Management Command and reports directly to the Army Test and Evaluation Command. WSMR supports developmental and operational testing for the Army, Air Force, Navy, allied foreign governments, universities, commercial, and private entities.

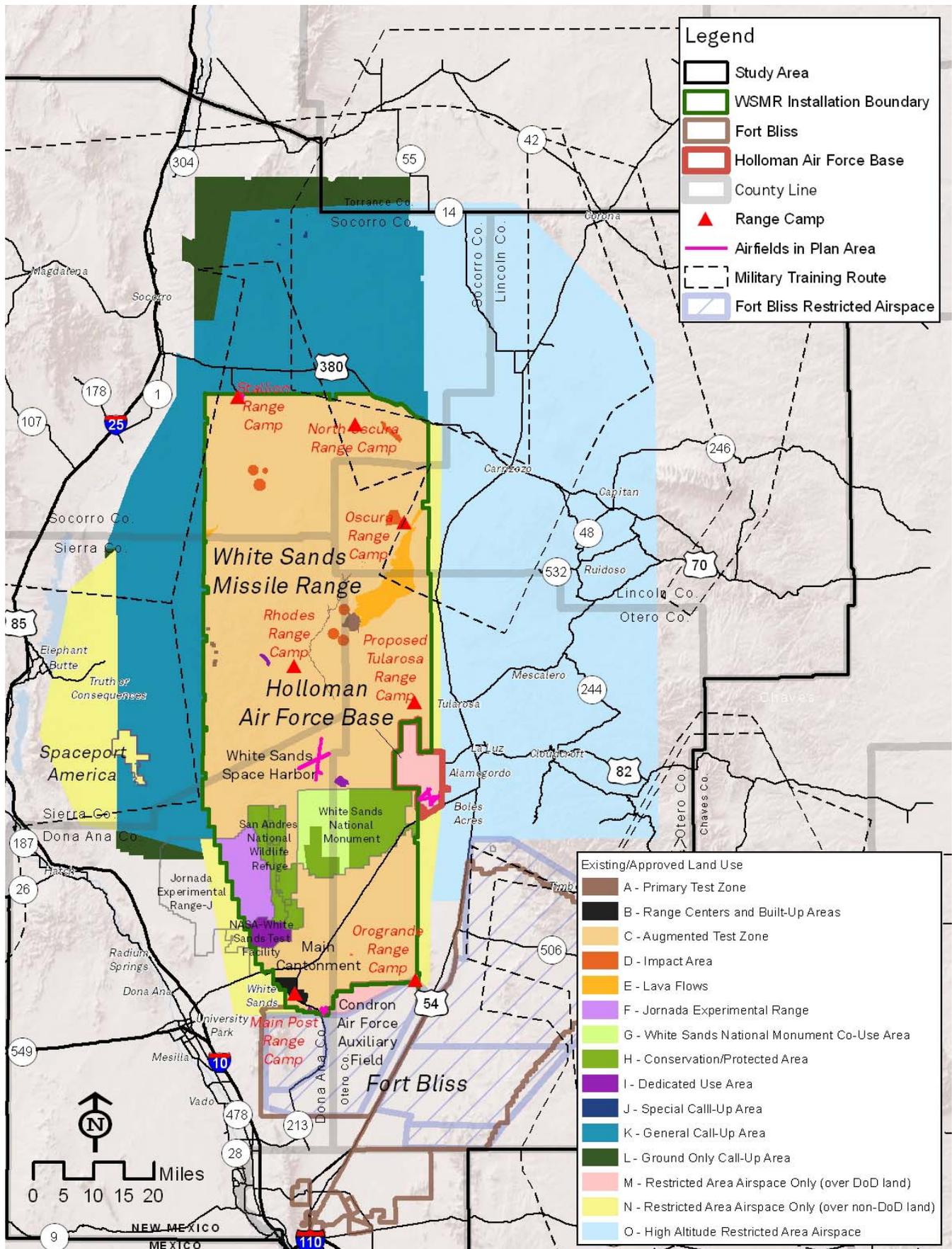
As the largest test range in the U.S., WSMR provides unique infrastructure and test facilities, including a nuclear survivability test reactor, radar test facilities, a high energy laser systems test facility, and a state-of-the-art range control center. WSMR's mission is to provide testing and development of weapons and equipment (both hardware and software) for military use in combat zones and for homeland security. WSMR has historically supported test programs requiring large land areas with controlled access and restricted airspace due to hazards associated with the test objects.

WSMR, consisting of almost 2.2 million acres of land (including WHSA, San Andres National Wildlife Refuge, and Department of Agriculture JER, has associated restricted airspace overlying over 5 million acres. With the adjacent land and airspace of HAFB and Fort Bliss, an unprecedented area is available for military test and training operations. WSMR can further expand its surface area to include land within the Northern Fix and Western call-up areas for use as surface danger zone.

In addition to its test mission, WSMR has taken on a new role in Army Transformation; it will now house and host limited training activities and field exercises for uniformed personnel. The Army and Air National Guard use facilities on WSMR, and the Air Force relies heavily on WSMR airspace and two bombing ranges for training.

The Land Use and Airspace Strategy Plan (LUASP) was prepared by the White Sands Test Center (WSTC) at WSMR to support current and future planning at the installation in order to meet evolving mission requirements and facilitate user access to range resources. The LUASP is a capability-based land and airspace framework for defining the principal elements of the installation, associated mission activities, and a vision for future use and development to support current and future users and missions. Derived from the LUASP, **Figure 5.2** shows the overall functional areas and uses that pose compatibility concerns surrounding WSMR.

FIGURE 5.2 – WHITE SANDS MISSILE RANGE OPERATIONAL USES AND SURROUNDING AREA



The main cantonment is a small area in the south end of WSMR. The main cantonment area contains facilities used for specific controlled test programs and research, such as the Army Research Laboratory and meteorological services, Electromagnetic Radiation Effects (EMRE) facility, Environmental Labs and Chambers, and Nuclear Effects complex.

The U.S. Navy, Air Force, and Army all run key test programs at WSMR. WSMR also provides services and facilities that are available to multiple users on a fee basis, including coordinated range control and a spectrum of test support capabilities for all aspects of test planning, support logistics, and data capture and analysis.

The Air Force manages and uses two bombing ranges, Red Rio and Oscura, on WSMR. The F-22 mission has relied more on the use of restricted airspace for supersonic operations, and air-to-air mission rather than air-to-ground, so that the use of the bombing ranges has diminished in recent years.

#### **Foreseeable Mission**

WSMR will continue its current mission while recognizing that the future will bring changes that respond to research and development needs that are as yet unknown. In general, the following trends will drive the future mission at WSMR.

- WSMR “grew up” as a developmental test range, but will expand its use to include operational testing, training, live-fire, and limited maneuver.
- WSMR’s Strategic Plan specifically identifies the following activity areas as foreseeable: 1) Increased UAV activity by HAFB; 2) Transition of F-22 to F-16 training by HAFB, increasing the use of bombing ranges on WSMR; 3) Testing/training by the Army’s NIE with test requirements growing beyond traditional network testing to include more diverse simultaneous operations using air, ground and radio frequency band width; 4) Expansion of electromagnetic testing capabilities to include a Joint Urban Test Capability with mock urban construction and spectrum “noise” and modernizing and enhancing existing test facilities and spectrum analysis capabilities; 5) Weapons System Evaluation Program (WSEP), which will dramatically increase the use of the range for live fire purposes.
- WSMR foresees developing a dynamic airspace management capability combining Fort Bliss, HAFB, and WSMR management in a centralized system.
- The Range-Wide Mission and Major Capabilities EIS approved the capability to support training of heavy armored vehicle units. Although the Army has not stationed a conventional brigade combat team at WSMR to date, this mission would involve use of more land for off-road maneuver, likely south of U.S. 70.
- Several tenant organizations have increased their testing of systems across greater distances, within high clutter and controlled clutter frequency environments. These tests, involving both traditional missile air-to-ground and air-to-air tests, could use airborne launch platforms and sophisticated tracking and jamming equipment.
- From a compatibility perspective, WSMR will continue to rely on the extensive land and airspace assets it has in place for long-distance testing, including those used by agreements with other agencies and private land owners.
- WSMR is conducting a study to examine a regional approach to military airspace management and look at ways to increase efficiency. Under one concept, the military would provide real time airspace control by a certified Air Traffic Control (ATC) facility rather than the current Military Radar Unit (MRU). This could give more transit/access to civilian aircraft through special use airspace.
- Use of UAVs/RPAs between military installations in the region including Cannon and Holloman AFB will increase and may use new corridors for transit.
- A notional concept could expand special use airspace on the west side of WSMR in the event that the F-16 mission needs more airspace given other users of WSMR airspace.
- WSMR anticipates an increase in laser program operations.
- WSMR anticipates investing in diagnostic instrumentation, emitters, facilities, live and constructive tactical networks, and modeling and simulation, all of which are reliant on spectrum fidelity and access.

#### **Compatibility Factors**

The primary compatibility issues between WSMR and surrounding areas include radio frequency and spectrum issues (stakeholder and military use can affect one another); changes in land use and development or new infrastructure in call-up areas or near sensitive military instrumentation sites; the noise and safety issues affecting surrounding development and wildlife; and the ability of regional airspace to accommodate the needs of both civilian and military users.

### 5.3 Holloman Air Force Base

#### Current Mission

HAFB, comprised of about 60,000 acres of DoD owned and withdrawn land, has supported the Air Combat Command (formerly Tactical Air Command) for several decades (see **Figure 5.3**). Through that time, the base has supported combat-ready crew training for a series of fighter aircraft. In the past three decades, the F-4, F-15, F-117 and F-22 aircraft have stationed at HAFB. Currently, HAFB is home to the 96th Test Group, 49th Wing, and the 44th Fighter Group of the Air Force Reserves. In 2008, the F-117 aircraft were retired and the Wing converted to the F-22 Raptor. The F-22 Raptor trains mostly at higher altitudes and at supersonic speeds. Recently HAFB began training pilots and sensor operators for the MQ-1 Predator and MQ-9 Reaper RPAs.

The 49th Wing also stores and stages Air Transportable Clinics and Basic Expeditionary Airfield Resources (BEAR) Base to remote combat zones world-wide. Most of the facilities on HAFB are in the south part of the installation (see **Figure 5.3**), directly north of U.S. 70.

HAFB has had a long relationship with WSMR, using both facilities on the range and the extensive restricted airspace. Aviation units operate beyond the immediate environs of the base in this regional special use airspace, including Military Training Routes (MTRs), Military Operations Areas (MOAs), restricted airspace, aerial refueling tracks (ARs). **Figure 5.4** shows airspace used by HAFB units. The German Air Force (GAF) has also based and trained aircrews in the Tornado aircraft since the late 1990s.



Training exercise near Holloman Air Force Base

FIGURE 5.3 HOLLOMAN AIR FORCE BASE AND SURROUNDING AREAS

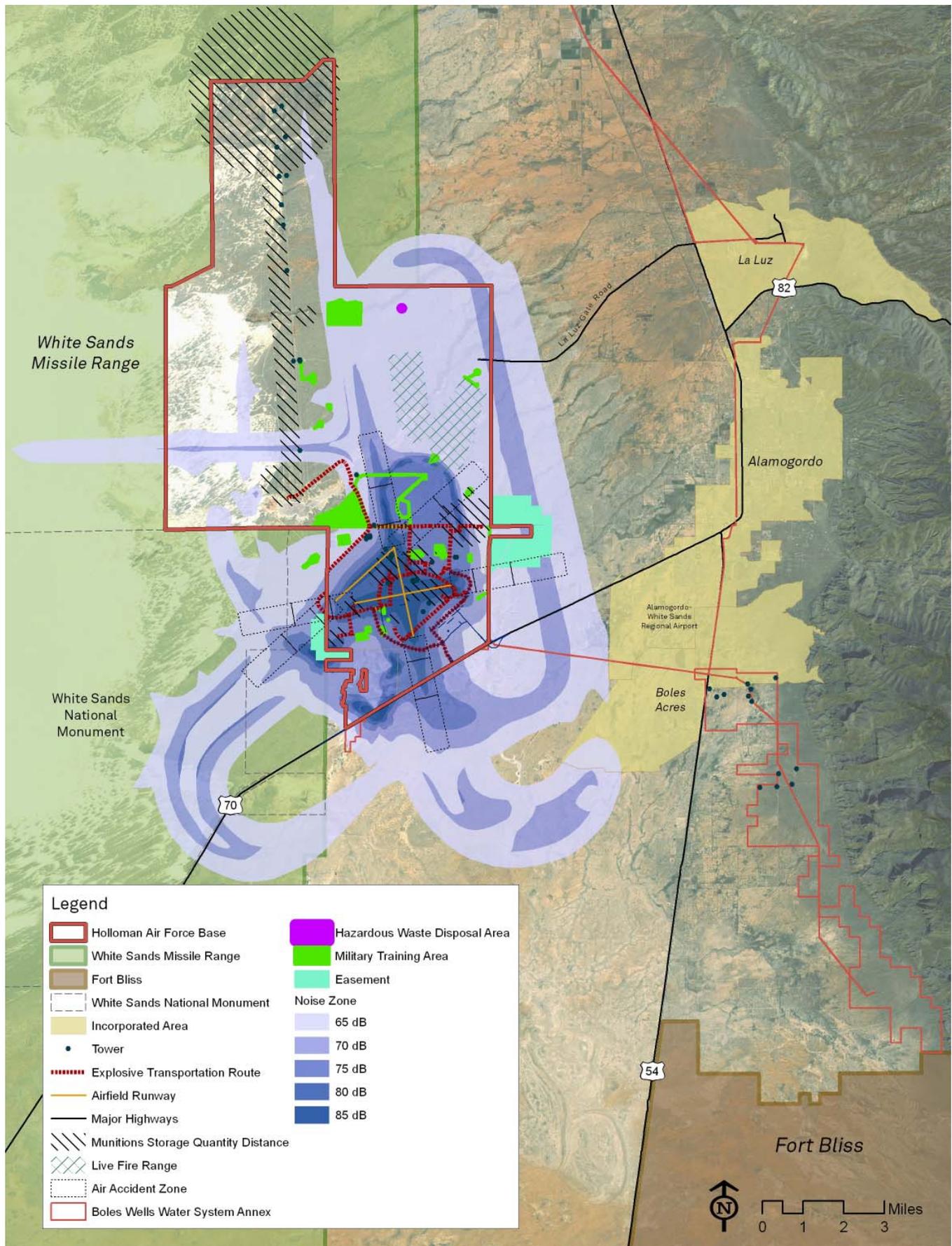
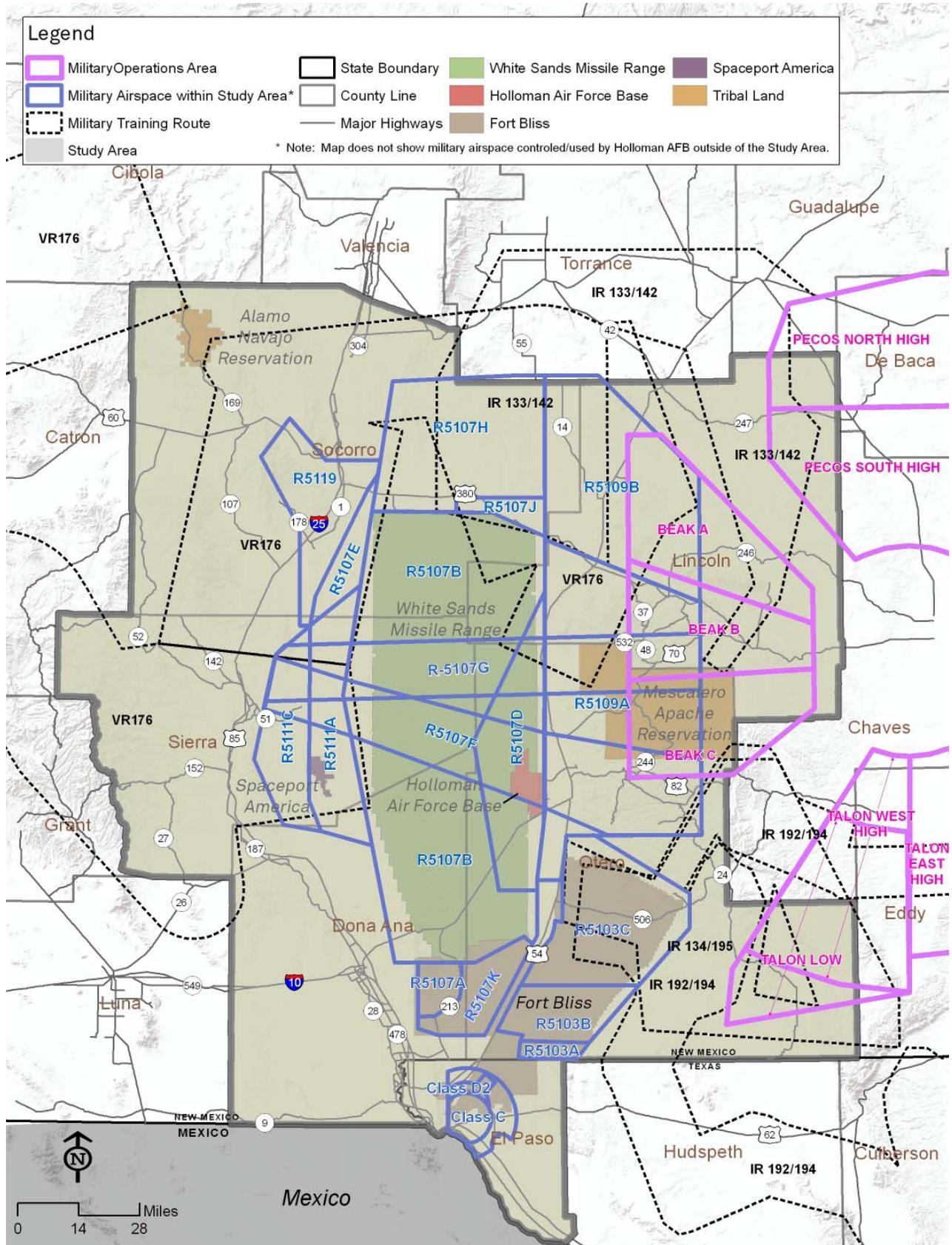


FIGURE 5.4 – REGIONAL AIRSPACE





Holloman Air Force Base

### Foreseeable Mission

Current test and training is expected to continue at HAFB in the future. Foreseeable changes are described below.

- HAFB recently announced that the F-22s will move to Tyndall AFB, and two squadrons of F-16 aircraft will move from Luke AFB to HAFB. The first squadron is planned to arrive in 2014, followed by another in 2015. The new F-16 mission will focus on basic pilot training under the Air Education Training Command (AETC). The F-16 aircraft has an air-to-ground combat role, so that aircrews will spend more of their flying hours at lower altitudes using regional MTRs with less use of high altitude restricted airspace and at bombing ranges on WSMR and McGregor Range on Fort Bliss.
- HAFB is also anticipating expansion of the RPA mission, with beddown of another formal training unit for the MQ-1 Predator and MQ-9 Reaper in the near future in addition to the squadron that arrived in 2009.
- Planning is ongoing for a possible conversion of GAF FTC from the Tornado to Eurofighter aircraft.
- The HAFB population will likely increase due to the foreseeable mission changes, but not above levels seen in the past two decades. The 96th TG will continue its current test programs. Possible facility expansions for the NRTF and RAMS site on WSMR reflect the increase in demand for this program.

### Compatibility Factors

The primary compatibility issue for HAFB as identified in plans and studies has been noise associated with aircraft operations in the local area of Alamogordo and regional special use airspace. Noise also affects residents and some sensitive locations such as national parks and monuments. Secondary issues include water supply and demand and the effects of fluctuations in the base population on the local economy and infrastructure.



F-22 Raptor prepares to take off

## 06 GROWTH TRENDS AND REGIONAL INFRASTRUCTURE



### 6.1 Regional and Community Population Trends

#### 2000 to 2012 Population Growth Rates

In 2010, the six-county JLUS area supported a total population of 1.1 million residents. The region overall saw strong population growth in the previous two decades with an average annual growth rate of 1.61 percent. This rate dipped slightly from 2010 to 2012. The region's major urban centers of Las Cruces and El Paso have anchored most of this population expansion. Active military personnel, civilian workers, and dependents comprise roughly 10 percent of the total regional population.

The unincorporated colonia of Chaparral, which straddles both Doña Ana and Otero Counties, experienced dramatic growth since 1990. The Santa Teresa area of Doña Ana County has also experienced significant growth and ongoing industrial and commercial investment, spurred by the Union Pacific rail facility and the Santa Teresa International Port of Entry.

#### Regional Population Projections, 2015 to 2040

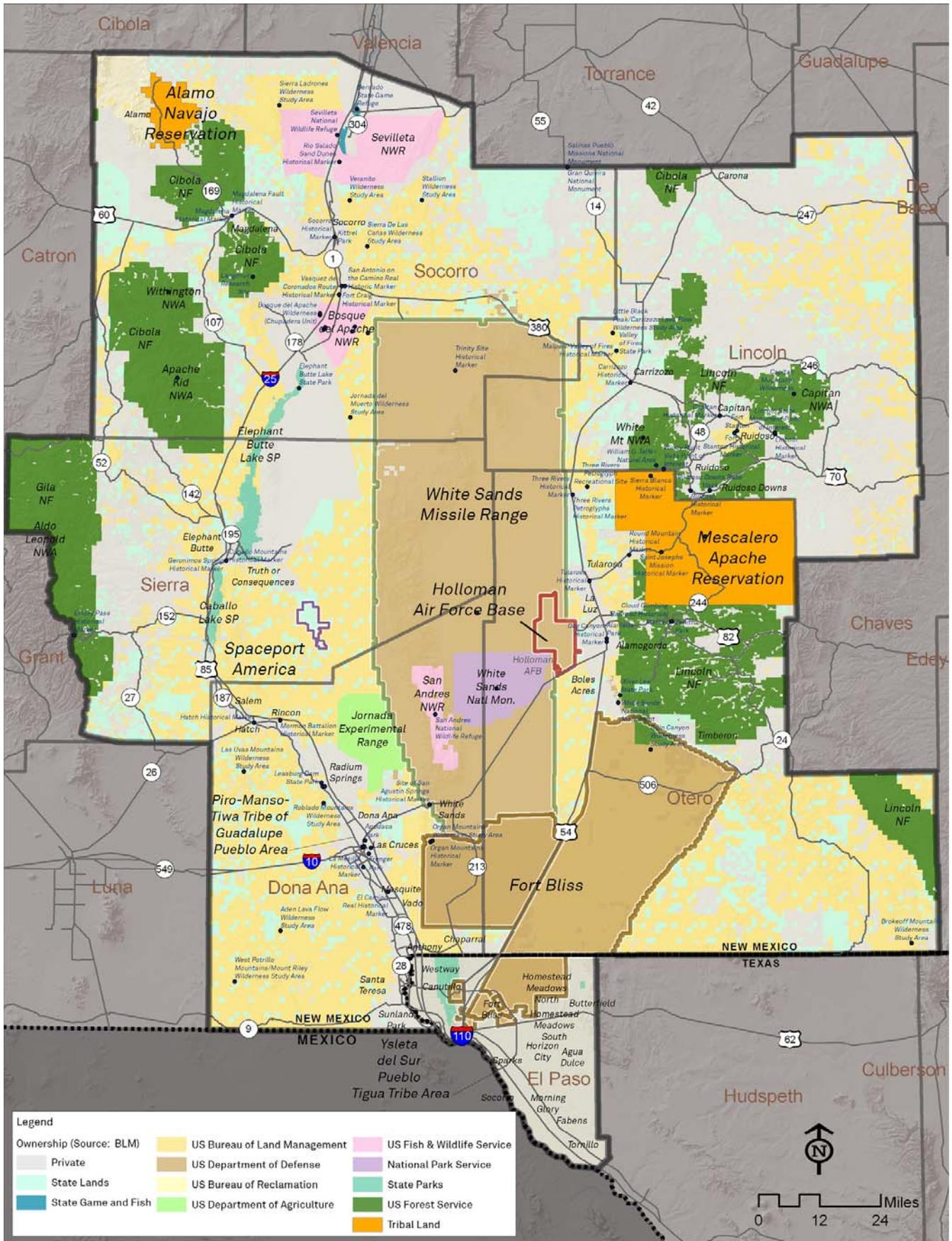
Population projections indicate that growth is likely to continue throughout the region in the decades ahead, particularly within El Paso and Doña Ana Counties. The region is anticipated to approach 1.5 million residents by 2040, an increase of over 30 percent from the 2010 population base.

#### Regional Land Tenure and Existing Land Use

Tenure patterns throughout the JLUS region are a complex mix of private, state, federal and tribal lands (see **Figure 6.1**). Along with local governments, federal and state agencies with land management responsibilities include the BLM, DoD, U.S. Bureau of Reclamation, U.S. Department of Agriculture, U.S. Fish and Wildlife Service, National Park Service, U.S. Forest Service, New Mexico State Land Office (NMSLO), and the New Mexico Department of Game and Fish.

Much of the study area falls into the broad category of open space, which is typically a very compatible use with military operations. Open space in this context, however, may include interspersed ranching or residential uses along with the large, undeveloped stretches prevalent in remote parts of the study area. One of the challenges of land use planning in the SNM-EP region is that any current classification of land ownership or existing use does not fully represent the development potential or the range of actual activities associated with a particular piece of land.

FIGURE 6.1 | REGIONAL LAND OWNERSHIP



### Community Growth Trends

Factors such as topography and land ownership status strongly shape a local community's ability to grow. Given the rugged terrain and large inventory of state and federal lands, growth tends to closely parallel the major interstate and highway corridors of the region. The primary growth area of interest in the JLUS study area begins east of the City of Las Cruces both north and south of U.S. 70 in Doña Ana County and then sweeps south along the I-10 corridor and east toward Chaparral.

In Doña Ana County, growth is anticipated to continue around the U.S. 70/I-25 interchange; intensify east along U.S. 70 toward the Organ Mountains; and then emerge in pockets south toward El Paso. Much of the growth in El Paso has been in the Northwest, East, and Northeast planning areas of the city. Growth in other parts of the region is more scattered and forms a less distinct pattern of future compatibility risk.

## 6.2 Regional Infrastructure

### Transportation

The transportation infrastructure of the region plays a major role in organizing future development and thus setting the land use patterns that affect military-civilian compatibility. Improvements in the transportation system such as the construction of new roads or improvements to existing systems can induce private, commercial or residential investment. The team reviewed major transportation documents to identify the priorities of the region's transportation planning entities and highlighted the planned or proposed projects that could affect growth in areas near the three installations (see the full JLUS document). Of particular focus are areas already noted as high growth and potentially vulnerable to exposure from military activities—the east mesa in Doña Ana County and portions of El Paso County south of Fort Bliss.

### Water

Southern New Mexico-El Paso has an arid climate in which surface evaporation typically exceeds precipitation, thus making water a scarce and critical resource. This built-in deficit in the annual water budget is now worsened by an ongoing drought, which is the most severe in a half century. Projections indicate that hotter and drier conditions are likely to persist, further straining supply. These climatic conditions along with quality issues such as salinity continue to challenge the region's access to long-term water supplies.

Many regional water planning studies emphasize a more balanced and sustainable approach to water resource management, including diversifying the current water supply, exploring long-term supply alternatives such as desalination and reducing demand through conservation and infrastructure efficiency measures. The region has taken several major steps toward long-term water supply diversification, including the joint Fort Bliss/El Paso desalination plant and plans for

an Alamogordo municipal desalination facility. The JLUS framework can assist in identifying other appropriate vehicles for long-term collaborative water resource management, including opportunities for regional water plans or feasibility studies for joint military/civilian water infrastructure projects.

## 6.3 Regional Natural, Cultural, and Recreational Resources

The SNM-EP region abounds with natural, recreational and cultural resources. The landscapes, wildlife habitats, and natural ecologies, as well as a rich history and cultural identity, make it one of the most unique settings in the western United States. With a widely diverse topography, ranging from less than 3,000 feet above sea level in the region's river valleys to almost 12,000 feet above sea level, ecologies span arid lowland deserts, mountainous terrains, and high elevation sub-alpine forests. The extreme geographic and topographic range within the region yields an unmatched geologic, ecological, biological diversity. Significant portions of the land area are federally or state owned, which affords the region a high level of land and natural resource protection.

At over 1.2 million acres in size, the Otero Mesa is the largest expanse of Chihuahuan Desert grassland left on public lands in the U.S. The area, which is southeast of Alamogordo within the JLUS region, is administered by the BLM. The Otero Mesa currently supports an array of natural, cultural, defense, and economic interests. The mesa is also critical for surface danger zone buffers for missile firing and the Air Force use of Centennial Bombing Range. It also offers on-road and dismounted (on foot) training opportunities.

The area's cultural resources include prehistoric and historic archaeological sites, traditional cultural properties, sacred sites, buildings, structures, artifacts, cultural landscapes, and historic districts. Native American culture strongly influences the cultural landscape of the region. Southern New Mexico-El Paso is currently home to multiple Native American tribes, including the Mescalero Apache Tribe, Ysleta del Sur Pueblo, Piro-Manso-Tiwa Tribe of Guadalupe Pueblo, and the Alamo Band Chapter of the Navajo Nation.

The area's landscape, ranging from sub-alpine peaks to river valleys and scrublands, hosts mountain biking, off-roading, hiking, boating, wildlife watching, big and small game hunting, fishing, camping, mountaineering, scenic driving and the viewing of historic and prehistoric sites. The SNM-EP communities have specifically cited the importance of tourism and outdoor recreation as a major economic driver. Activities such as hunting, bird-watching, camping, and lake-based recreation contribute significantly to the local economy.

## 07 INITIAL COMPATIBILITY ANALYSIS



The central purpose of the JLUS is to minimize or, when feasible, eliminate compatibility issues between the military and surrounding civilian land uses. Compatibility challenges occur when:

- Communities experience higher than normal levels of impacts from military activities, such as noise or safety risks, which can then affect quality of life or uses of land; or
- Certain types of development limit the ability of the military to perform its missions or cause changes in training or testing operations that reduce mission effectiveness.

Drawing from stakeholder interviews, the review of previously conducted studies and plans, and additional technical analysis, this section highlights areas of the SNM-EP region in which current and foreseeable military operations and surrounding community activities may overlap and create compatibility challenges.

### **Air Quality**

Military convoys traveling on local dirt roadways and maneuver training activities on the ranges can generate fugitive dust. Compatibility issues arise when the dust affects the surrounding communities by diminishing air quality and reducing visibility.

### *Specific Areas of Sensitivity:*

#### **Chaparral and U.S. 54:**

- Maneuvers on the Doña Ana Range training areas can create dust that affects the community Chaparral and portions of the U.S. 54 corridor.

#### **Airspace Use**

Primary concerns regarding airspace revolve around access to and through military controlled airspace.

### *Specific Areas of Sensitivity:*

#### **Restricted Airspace (R-5103, R-5107, and R-5111):**

- Increases in the scheduled use of restricted airspace for military operations could further reduce the ability of commercial and general aviation air traffic to pass through military controlled airspace.
- An increase in the level and mix of UAV/RPA and military aircraft using restricted airspace above the commercial VFR corridor along U.S. 54 may warrant designation of special corridors that allow flexibility for the aircraft to cross between Doña Ana Range and the DAGIR and DMPRC on McGregor Range.

#### **FAA-Approved Non-DoD Airspace:**

- The increased use of regional airspace for military and non-military operations and UAVs can pose challenges for scheduling.

**Spaceport America:**

- Commercial space operations in WSMR's restricted airspace are compatible with known military missions, but increased activity could affect WSMR's scheduling of test, training, and commercial users, thereby extending the hours of operation or redistributing operations into other restricted or controlled airspace that previously had low use.

**Alamogordo/White Sands Regional Airport/ Alamogordo Interagency Dispatch Center:**

- The turnover of military personnel can pose a challenge for continuity in the coordination of flights related to fire suppression activities.

**Apache Point Observatory:**

- Aircraft overflights require special precautions during the observatory's APOLLO operations. Apache Point coordinates with the FAA and military to issue a Notice to Airmen (NOTAM) regarding the potential hazard.

**Aviation/Testing Safety**

Challenges to aviation and testing safety include the development of physical infrastructure in areas that accommodate hazardous testing activities conducted by WSMR and low-level flight operations associated with HAFB. One of the emerging compatibility issues is the region's potential for solar and wind energy production.

*Specific Areas of Sensitivity:***Northern Fix and Western Call-up Areas:**

- Development and population increases in the call-up areas can threaten the testing and training mission by making existing evacuation agreements with private landowners more cumbersome.
- The call-up areas are highly sensitive to the development of physical infrastructure for resource development (wind energy) and energy distribution (transmission lines). Risks include the potential for infrastructure damage in the event of missile malfunction, the intrusion of tall structures into low-level flight corridors, and frequency spectrum interference.

**Military Training Routes/Low-Level Flight Corridors:**

- Energy and telecommunications infrastructure poses a risk to aircraft due to physical intrusion into low-level flight corridors.

**HAFB AICUZ:**

- Portions of APZ I and APZ II extend beyond HAFB boundaries to the east, west and south, indicating areas of the community in which compatibility guidance calls for uses that do not concentrate people due to the risk of an aircraft accident.

**Community Growth and Development**

Community growth and development reflect the strategic interests of the counties, municipalities, and unincorporated areas of communities in the region. These interests revolve primarily around the physical expansion of communities, including increased residential and commercial activity; the provision of infrastructure and public services to support continued growth and enhance quality of life; and specific economic development initiatives intended to diversify the local economy, create jobs, and increase tax revenue.

*Specific Areas of Sensitivity:***Community Growth - East Mesa/Chaparral/El Paso:**

- In Doña Ana County, growth is anticipated to continue east of the City of Las Cruces and along the I-10 corridor and east toward Chaparral. These areas are exposed to aviation noise (east mesa) and noise from Fort Bliss range operations (Chaparral).
- More than 11,000 acres of state trust land are in or near Las Cruces and the NMSLO is the largest land holder with Planning and Development leases in the area east of the city. The NMSLO also holds approximately 2,000 acres around Chaparral. The convergence of strong growth prospects and compatibility concerns highlights the importance of long-term, coordinated planning in these critical areas.
- Continued residential growth south of Fort Bliss near the Loop 375/Montana Avenue area places development in proximity military operations.

#### **Energy Resource Development - Northern Fix and Western Call-up Areas:**

- Wind energy infrastructure and transmission lines can interfere with missile testing and low-level flight operations.

#### **Tourism Development – Spaceport America:**

- The safety zones for vehicle launches at Spaceport America are based on the number of people in the area and the type and reliability of the vehicle used. The safety zones are designed to minimize the number of people at risk in the event of failure and maintain the safety of the vehicle.
- Increased development in adjacent areas could significantly jeopardize launch operations and heighten safety impacts. Guidance suggesting limited development with safety zones makes the Spaceport a highly compatible use with nearby military operations.

#### **Tourism Development – Special Areas:**

- Recreational, cultural, and natural resources that place a value on relative solitude, including state and federal parks and monuments, wildlife refuges, national forest recreation sites, and Wilderness Areas can be exposed to noise from military operations, particularly aircraft overflights. These resources are a critical part of the local tourism base.
- Public recreational activity in some areas, particularly the co-use area of McGregor Range or WSMR's call-up areas create the potential for inadvertent trespass and safety risks during training and testing operations.

#### **GPS Jamming and Frequency Spectrum Interference**

Issues of frequency spectrum use and deconfliction are a growing regional concern. Radio spectrum is a finite resource and only certain portions of it are useable. Both federal and non-federal agencies and the commercial sector compete for this finite spectrum.

#### *Specific Areas of Sensitivity:*

##### **East Mesa:**

- Increasing residential development could affect spectrum clarity for NASA WSTF.

##### **Highway 70 Area:**

- GPS jamming tests on HAFB and WSMR can affect commercial and private GPS devices in the local airspace and along some stretches of U.S. 70.

#### **Spaceport America:**

- Radio frequency spectrum uses could also increase as development of Spaceport America accelerates. Spaceport seeks to avoid frequencies that conflict with WSMR. However, the tenant/customers are commercial ventures that seek radio frequency access and Wi-Fi.

#### **Northern Fix and Western Call-up Areas:**

- Resource development (wind turbines) can interfere with communication systems, including radar, navigation aids, and infrared instruments.

#### **WSMR Radar and Instrumentation Sites:**

- New frequency uses (e.g. communication towers) can interfere with critical radar and instrumentation sites.

#### **Light Pollution**

Light pollution is the effect of stray or excessive light from artificial lighting sources, such as building exteriors, advertising, streetlights, or outdoor facilities or venues. Compatibility issues can arise when light pollution interferes with the use of night vision training devices (NVD) during military training operations. Light pollution can also affect the region's observatories.

#### *Specific Areas of Sensitivity:*

##### **Regional Observatories:**

- Light pollution from both civilian and military sources can reduce visibility in the surrounding area and limit astronomical observation.
- Apache Point in Sunspot, New Mexico has specifically noted compatibility issues related to ramp lights at HAFB.

##### **Northern WSMR:**

- The Ground-Based Electro-Optical Deep Space Surveillance (GEODSS) facility at the northern end of WSMR is highly sensitive to stray light exposure.

#### **Noise - Aviation**

Historically, training missions at HAFB have generated aviation noise and caused compatibility issues within the surrounding region. Noise and startle effects from low-level high-speed aircraft operations, primarily along MTRs, can affect local activities, including ranching. More recently, supersonic operations (by military aircraft using airspace approved for these operations) with the F-22 aircraft have caused sonic booms in the region.

*Specific Areas of Sensitivity:***East Mesa:**

- Exposure to sonic booms from aircraft operating in WSMR restricted airspace affect existing and developing residential areas in the foothills of the Organ Mountains.

**Communities/Observatories in the Sacramento Mountains:**

- Communities in the Sacramento Mountains are affected by sonic booms and low-flying aircraft operations in MTRs.
- Apache Point Observatory has noted infrequent issues with mirror vibrations caused by sonic booms from HAFB aircraft. Nighttime helicopter operations using spotlights near the observatory have also forced closure of the telescope to avoid damage to sensitive electronic cameras.
- Residents experience some exposure to noise from Army helicopter operations in the Sacramento foothills in northern McGregor Range.

**HAFB AICUZ Noise Contours:**

- Reflected in the noise contours that extend to the east, west, and south of the base boundary, some areas proximate to the HAFB airfield are exposed to higher average noise levels generated by arriving and departing aircraft.

**Special Areas:**

- The following areas can be exposed to noise from aircraft overflights: recreational, cultural, and natural resources that place a value on relative solitude, including Native American religious sites, parks, wildlife refuges, Wilderness Areas, Areas of Critical Environmental Concern, and Protected Activity Centers for threatened species, such as the Mexican Spotted Owl.
- HAFB has adjusted the flight tracks over the years to minimize noise exposure at the WHSA facilities and visitor center.

**Orogrande, NM and the "Keyhole" area:**

- The community of Orogrande and the "Keyhole" area experience noise from Army helicopter operations.

**Noise - Range**

Noise is defined as unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. Fort Bliss has three major live-fire range complexes that generate impulsive noise: Doña Ana, McGregor, and Meyer.

*Specific Areas of Sensitivity:***Chaparral, NM:**

- The community just south of Fort Bliss experiences noise associated with large-caliber weapons training on the Doña Ana Range.

**El Paso, TX:**

- Though generally less in impact and more limited in duration, noise from large-caliber weapons training on the Doña Ana Range could affect residential areas to the south in El Paso during periods of sustained training and operations.
- Noise from the .50-caliber machinegun range in the southern training area along Loop 375 near the Fort Bliss Rod and Gun Club may also affect the adjacent community. Development of this range has currently been placed on hold.

**Orogrande, NM:**

- The community of Orogrande and adjoining areas experience noise from tank and helicopter live-fire and qualification ranges on the McGregor Range Complex.

**Hueco Tanks Area:**

- Operations on Meyer Range expose the Hueco Tanks area to noise.

**Public Trespass/Access**

Public trespass on military land is a concern, especially in areas where military activities could place the trespasser at risk of physical harm (e.g. such as in active firing and bombing ranges or areas previously used for the delivery of ordnance). Also, unauthorized access can pose security concerns considering the high value of some assets on the three installations.

In a number of instances, military activities, mainly vehicle related exercises have resulted in undue and unexpected impacts to resources on public lands. Impacts to cultural resources have occurred due to military vehicles driving off existing roads and trails. A site was left with military related trash (Meals Ready to Eat packaging). Military training exercises south of Deming, NM resulted in numerous military

violations onto public lands, resulting in issuance of a trespass notice. An inventory of impacts to natural and cultural resources was documented and the sites were rehabilitated. The unauthorized use was resolved.

These events and related impacts viewed both as single events and also in a cumulative sense have resulted in the Las Cruces District BLM requesting that organized military training activities remain on withdrawn lands. Under the Federal Lands Policy and Management Act (FLPMA), BLM cannot authorize organized military training activities on public land.

#### *Specific Areas of Sensitivity:*

##### **Otero Mesa and Sacramento Mountain foothills :**

- Increased hunting and recreational activity create the potential for inadvertent public trespass and safety risks in the co-use area of McGregor Range during training operations.

##### **Fillmore Canyon area:**

- The popularity of the Fillmore Canyon area as a recreational site raises the potential for inadvertent public access or trespass onto Doña Ana Range.

##### **Northern Fix and Western Call-up Areas:**

- Recreational users accessing the call-up areas during testing operations are subject to safety risks.

##### **Transportation**

Transportation related impacts from the military mission include periodic road closures due to testing and training activities, military vehicle use of local roadways, and localized traffic impacts resulting from ingress and egress at installation gates.

#### *Specific Areas of Sensitivity:*

##### **New Mexico Highway 506:**

- Convoy crossings result in periodic, brief closure of the roadway.

##### **U.S. 54, El Paso:**

- Significant back-ups at post gates during peak hours can affect level of service and safety along U.S. 54.

##### **U.S. 70 and 380:**

- Testing results in intermittent roadblocks of these highways.

##### **Lisa Drive, Chaparral:**

- Wheeled military vehicles raise safety issues when traveling along a local road with school facilities.

##### **Water**

Multiple, overlapping factors affect the region's water supply, including the current exceptional drought, climate change, water quality issues, damage or overuse of specific water sources, and increased demands from military and civilian growth in specific parts of the study area. *Specific Areas of Sensitivity:*

##### **Mesilla Aquifer:**

- The aquifer level has continued to drop due to the drought, population growth in Las Cruces and Doña Ana County, and growth of water intensive crops, such as pecan trees (Depletion of Aquifer Levels in the Lower Rio Grande, 2012). The potential for litigation between the States of Texas and New Mexico related to the apportionment of water between Doña Ana County and El Paso County and the use of groundwater wells in the Lower Rio Grande could also affect agricultural irrigation.

##### **Hueco Bolson Aquifer:**

- Low recharge and high pumping rates have caused significant water-level declines and decreased groundwater availability in the El Paso area (The Hueco Bolson: An Aquifer at the Crossroads, Zhuping Sheng, Robert E. Mace, and Michael P. Fahy, 2001)
- City of El Paso, El Paso Water Utilities, and Fort Bliss have been aggressive in implementing water conservation measures, as well as reuse and desalination strategies to alleviate groundwater demands.

##### **Tularosa Basin Aquifer:**

- Introduction of pollutants into the groundwater from chemical spills, stormwater runoff, septic and underground storage tank leakage, agricultural runoff, industrial point sources, and contaminated sediment poses water quality concerns.
- Damage to Bonito Lake from the 2012 Little Bear Fire has interrupted surface water supplies to communities, including Carrizozo, Alamogordo, and HAFB.
- The recent collapse of HAFB's main well and the risk of a cumulative drawdown of the aquifer by increasing numbers of private wells from ranchette development in the Taylor Ranch area could affect HAFB's water supply plans.

**Wildfires**

Based on fire history at Fort Bliss, the primary risk of wildfire from the military comes from weapons firing and ordnance use. The majority of military-caused fires have been in the Surface Danger Zones for missile firings on McGregor Range.

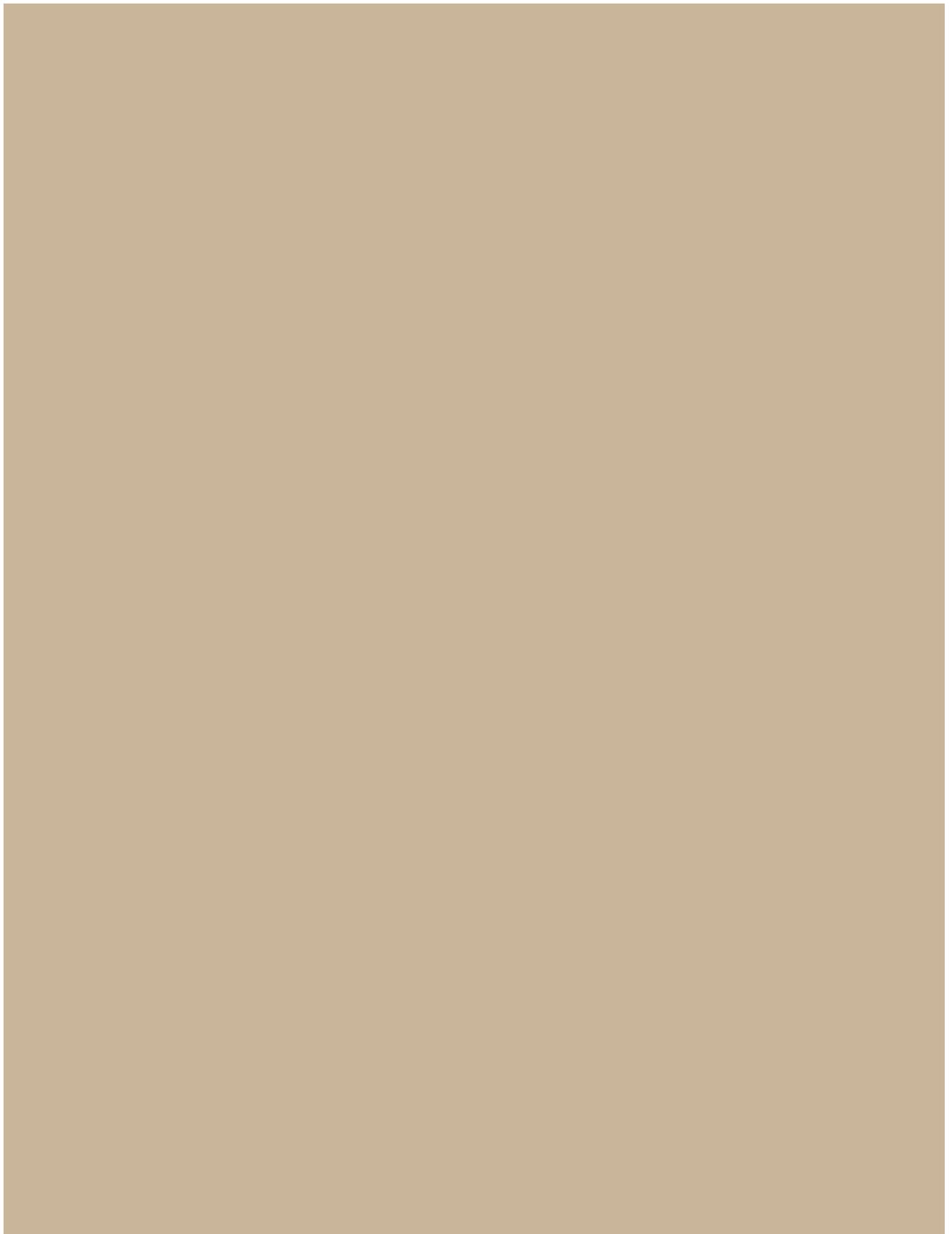
*Specific Areas of Sensitivity:*

**Maneuver areas north of NM Highway 506 and the Sacramento Mountain foothills:**

- An increased presence of military personnel and vehicles can lead to higher fire risk in the area.

**Soledad and Boulder Canyons in Doña Ana County:**

- Portions of the canyons have been previously threatened by the spread of wildfire beyond military lands.



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