

**FINDING OF NO SIGNIFICANT IMPACT**  
**Development, Testing Use and Associated Training**  
**at the Technical Evaluation Assessment Monitor Site**  
**Kirtland Air Force Base, New Mexico**

Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), Title 40 of the Code of Federal Regulations (CFR) §§ 1500-1508; Department of Defense Directive 6050.1 and the Air Force Environmental Impact Analysis Process (EIAP), 32 CFR Part 989, the Defense Threat Reduction Agency (DTRA) in coordination with the Air Force has prepared an Environmental Assessment (EA) to identify and evaluate potential environmental impacts from the proposed development, testing use and associated training at the existing Technical Evaluation Assessment Monitor Site (TEAMS) located on Kirtland Air Force Base (AFB), New Mexico.

***Purpose of and Need for the Proposed Action (EA § 1.2, page 9).*** The purpose and need of the Proposed Action is to enhance and support the ongoing and future testing at the TEAMS location in order to reduce current training shortfalls. These shortfalls include increased customer demand; a lack of a secure, alarmed storage location(s) to store radiological source materials; reduced cohesiveness between the three DTRA sites operating at Kirtland AFB (TEAMS, Giant Reusable Air Blast Simulator (GRABS) site and the Chestnut Test site) and other infrastructure shortcomings (i.e. an additional gathering/training area, over reliance on temporary facilities and other general maintenance issues).

***DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES***

***Proposed Action (EA § 2.1, pages 13–17).*** TEAMS is approximately 24 acres located in a developed area in the northwestern portion of Kirtland AFB (EA Figure 2, page 4). The primary mission is to perform preliminary technical evaluation, assessment, demonstration, calibration, training, fielding, integration and concept of operations development of new and emerging nuclear material, commercial off-the-shelf detection technologies. Part of this mission includes potentially using the TEAMS as a test-bed for other radiological, nuclear and high explosives detection testing and training activities. Under the Proposed Action, DTRA proposes to increase the number of testing and training events and personnel levels by up to 50 percent. The number of on-site, full-time staff levels would remain the same. As part of this action, DTRA would construct additional material storage and support structures, replace temporary buildings with permanent facilities, enhance communication capabilities and improve current maintenance standards within the TEAMS' boundaries. These proposed facilities and activities include:

- Increase testing and training event personnel levels by up to 50 percent over the current level of 400 total personnel per year. Ongoing individual events typically involve 10 to 25 people and an on-site exercise/demonstration can include up to 120 people. The 50 percent increase would result in approximately 15 testing and training events involving 600 personnel per year. No change in on-site full-time staff is proposed; however, there would be a potential to increase on-site staff during specific events by as much as 10 staff members per day.
- Construct a new, secure, alarmed radiological source storage facility (RAD pad), which would be operated in accordance with the Nuclear Regulatory Commission (NRC) criteria and requirements. DTRA proposes to pour a 45-foot by 30-foot concrete pad and relocate several existing, on-site (mobile) radiological storage buildings to this pad. The relocated buildings would be bolted to the pad, connected to the installation's power grid and equipped with a new alarm system tied to the Kirtland's security system to meet NRC requirements. Up to 0.6 acre of previously disturbed ground would be affected.
- Construct a mock train station. The structure would be composed of eight, 40-foot shipping containers locked together in two tiers of four, resulting in a 40-foot by 40-foot base, two stories tall. Up to 0.6 acre of previously disturbed ground would be affected.
- In-kind replacement (same size and function), over time, of up to four on-site temporary buildings with permanent facilities on or adjacent to the existing locations and constructed in accordance with

# Report Documentation Page

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the *Kirtland AFB Architectural Compatibility Plan*. Up to 1.0 acre of previously disturbed ground would be affected during construction of the permanent buildings; however, over the long term, no net additional ground would be required as temporary building locations would be restored to natural conditions following removal.

- Convert an existing on-site building to a Command and Control Center/Very Important Person Monitoring Station for DTRA operations, with only updated radio and microwave connectivity (including an up to 50-foot tall antenna), internal building modifications, new computers and construction of a 50-foot by 25-foot concrete pad with tables, chairs and cover to create an on-site gathering area for on-site personnel and visitors. Less than 0.01 acre would be required to install the antenna and up to 0.5 acre would be required for the gathering area.
- Implement additional on-site weed control efforts to reduce puncture vine, an invasive plant species, found on TEAMS. This mat-forming plant covers testing and training areas, sidewalks, and equipment. Burs with sharp spines capable of puncturing bicycle tires collect on footwear and are tracked into facilities, resulting in a maintenance issue. Previous labor-intensive attempts to manually remove the plants from the site have only resulted in short-term solution; the plants returned after the first subsequent rain event. DTRA, working with the Kirtland AFB, proposes to implement a quarterly on-site puncture vine eradication program that includes both physical and chemical treatment methods.

**No Action Alternative (EA § 2.3, pages 17–18).** The No Action Alternative was analyzed to provide a baseline of the existing environmental, social and economic conditions to compare the Proposed Action against. Under the No Action Alternative, DTRA would not implement the components of the Proposed Action as described above.

**Alternatives Considered but Eliminated from Detailed Analysis (EA § 2.4, page 18).** There were two primary requirements an alternative had to meet in order to be carried forward: (1) Location had to be under DTRA's direct control and (2) Site needed to have an existing rail line and/or space to install a line in order to meet mission training directives. Alternatives initially considered utilizing the GRABS site, which is under control by DTRA, as well as a reduced scale alternative. The mission of GRABS is to conduct various explosive testing. Because these two missions are incompatible with each other coupled with increase construction cost to build a rail line and relocated all the TEAMS assets, such as sensors, structures and other infrastructure to the GRABS site, this alternative was dismissed from further analysis. Under the reduced scale alternative, DTRA would implement only a portion of the Proposed Action. This alternative failed to meet DTRA's purpose and need to reduce current training shortfalls at TEAMS, so it too was dismissed from further analysis. Only enhancing existing capabilities at TEAMS location was carried forward for further analysis.

### ***SUMMARY OF ENVIRONMENTAL IMPACTS***

Environmental analyses focused on the following areas: Noise, Air Quality, Geology/Soils, Water Resources, Biological Resources, Infrastructure, Hazardous Material/Waste and Safety. There would be no impacts to Land Use since implementation of the Proposed Action would not alter ongoing activities currently conducted at TEAMS nor would the site's existing function be altered. Construction of the antenna/communications tower would not introduce a substantial visual intrusion into this military landscape. This structure would not exceed 50 feet in height and be similar to several others located at Kirtland AFB. Construction of permanent buildings would comply with the standards described in the Kirtland AFB's Architectural Compatibility Plan and removal of the puncture vine would improve the long-term visual quality of TEAMS. There are no known cultural resources within the Area of Potential Effect of TEAMS. Through the Section 106 Process, the State Historic Preservation Officer concurred with the Air Force's finding of no effect to historic properties from implementation of the Proposed Action on April 9, 2013 (Appendix B of EA). The temporary increase in construction employees at Kirtland AFB would

represent a small increase in the total number of personnel working on the installation, but no additional facilities would be necessary to accommodate the workforce. Construction and operations of the Proposed Action would occur in developed, controlled areas of the installation; therefore, no populations of minority, low-income and children would be disproportionately impacted. (EA § 3.1, pages 21 – 22)

**Noise (EA § 4.1, pages 63–64).** The local noise environment at TEAMS is dominated by aircraft noise from the Albuquerque International Sunport and vehicles traveling along the four roads bordering the site. TEAMS testing and training activities contribute very little additional noise to the immediate area and are comparable to a residential area. While construction of the facilities would temporarily increase noise levels within the immediate area, these impacts would be temporary, ending once construction was complete. DTRA would not introduce any new testing or training activities at TEAMS that would change the local noise environment over current levels. Overall, the Proposed Action would have no significant impacts on the local noise environment.

**Air Quality (EA § 4.2, pages 64–69).** The Proposed Action is located within Bernalillo County New Mexico, which is designated as attainment/unclassified for all National Ambient Air Quality Standards (NAAQS) criteria pollutants except for carbon monoxide (CO). Construction of the proposed TEAMS facilities would generate CO and fugitive dust emissions, which would end once construction was complete. Approximately 12.4 tons per year (tpy) of CO would be generated during a 1-year period (EA Table 13, page 66). Based on these levels conformity analysis is not required since emissions are below 100 tpy de minimis threshold. It is estimated 0.303 tpy of fugitive dust would be generated and quantities would vary depending on the level of activity and prevailing weather conditions. Because the Proposed Action would disturb approximately 2.7 acres during construction, DTRA is required to obtain a fugitive dust control construction permit from Albuquerque Environmental Health Department - Air Quality Division. This permit would identify the types of best management practices (BMPs) to be used to control dust emissions, which could include frequent application of water over exposed soils, suspension of earth-moving activities during high wind conditions and stabilize previously disturbed areas through mulching if the area would be inactive for several weeks or longer. Construction activities would also release negligible amounts of greenhouse gases (GHG) or carbon dioxide (CO<sub>2</sub>) emissions; 551 metric tons per year (or 607 U.S. tons). Emissions from operation are expected to be of similar magnitude. Total CO<sub>2</sub> emissions from the Proposed Action would be approximately 0.00096 percent of the state of New Mexico's 2008 CO<sub>2</sub> emissions and approximately 0.000009 percent of the entire United States' 2008 CO<sub>2</sub> emissions. This amount represents a negligible contribution toward statewide and national GHG inventories. A current, on-site generator would continue to be operated in accordance with Air Quality Permit #1944; no new generators or other major emissions sources are proposed. There would be no significant impact to Air Quality with implementation of the Proposed Action.

**Geology and Soils (EA § 4.3, pages 69–70).** All proposed construction activities would be confined to the upper, five-foot level of soil and consist of trenching, grading, excavating and re-contouring. A limited amount of vegetation would be removed. Because soils mapped at TEAMS are rated as limited for shallow excavation and/or construction of small commercial buildings, DTRA would conduct site-specific soil surveys prior to implementing the construction activities to determine engineering design and soil limitations. There would be no significant impacts to Geology and Soils from implementation of the Proposed Action.

**Water Resources (EA § 4.4, pages 70–72).** There are no natural lakes or rivers on Kirtland AFB. Six man-made ponds were created at the installation's golf course, which is approximately 1.3 miles southeast of the TEAMS. There are no wetlands located within or near TEAMS nor is site within a floodplain area. The two main surface water drainage channels on Kirtland AFB are the Tijeras Arroyo and the smaller Arroyo del Coyote (EA Figure 6, page 35). TEAMS lie approximately 0.7 mile northwest of Tijeras Arroyo. Within the vicinity of TEAMS, storm water infiltrates into the ground or discharges into improved conveyance ditches / channels and flows toward Tijeras Arroyo. The average depth of groundwater at the site is between 450 to

***Finding of No Significant Impact  
Development, Testing Use, and Associated Training at the TEAMS  
Kirtland AFB, NM***

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550 feet. Because construction would occur at 5 feet or less, no impacts to groundwater are anticipated. Approximately 2.7 acres would be impacted from construction activities resulting in minor disruption of natural drainage patterns and increased potential to contaminate storm water with sediment loading. Kirtland AFB operates under three National Pollutant Discharge Elimination System (NPDES) permits (general storm water permit for industrial activities, watershed municipal separate storm sewer system permit and construction general permit for construction projects). Activities at TEAMS are subject to these requirements. Prior to construction, DTRA would obtain the appropriate NPDES permits, including submission and approval of a site-specific storm water pollution prevention plan (SWPPP) and associated BMPs to control soil erosion and to limit surface water resource impacts during proposed construction activities; therefore no long-term, significant impacts to water resources are expected.

***Biological Resources (EA § 4.5, pages 72–74).*** TEAMS lie within a partially disturbed area of Kirtland AFB. No threatened or endangered species have been identified nor is it designated as critical habitat. Vegetation within the site would be impacted by various ground-disturbing activities. On-site vegetation primarily includes the invasive puncture vine and various grassland species that can tolerate disturbance. Of the 2.7 acres disturbed, only 1.7 acres would be permanently developed. Physical and chemical removal of puncture vine would have long term improvements to biological function and condition. Wildlife present at TEAMS has adapted to a relatively noisy, disturbed environment. There is suitable prairie dog habitat adjacent to the TEAMS' eastern and western boundaries, but not directly on the site. Abandoned prairie dog holes provide nesting habitat for the western burrowing owl, a federal species of concern. Impacts to migratory birds and other wildlife species from installation of the 50-foot antennae would be minimized by constructing a lattice structure or monopole, not installing guy wires or using colored strobe lights. In a scoping response received March 20, 2013, New Mexico Department of Game and Fish (Appendix B of EA) identified mitigations DTRA is required to incorporate into their facility designs to ensure impacts to wildlife are minimized. Overall, there would be no significant impact to biological resources with implementation of the Proposed Action.

***Infrastructure (EA § 4.6, pages 75–77).*** During the construction phase of the Proposed Action, potential short-term impacts may result on existing roads, utilities, water supply systems, storm water systems and solid waste management. Early coordination with Kirtland AFB organizations would ensure necessary safety precautions are taken and would allow ample advance notice to affected personnel. If new potable water lines are to be installed or repaired due to construction, DTRA will coordinate with the Kirtland Drinking Water Working Group to ensure the system is appropriately sanitized prior to being placed back into service. As part of this action, a radio antenna/communications tower would be constructed, which would not exceed 50 feet in height. DTRA will coordinate with and obtain approval from the Federal Aviation Administration prior to constructing the proposed tower. Construction waste would be recycled / reused to reduce the amount going to the landfills. Overall there will be no significant impacts to the various infrastructure systems since they are sufficiently sized to accommodate on-site demand associated with the Proposed Action.

***Hazardous Materials and Waste (EA § 4.7, pages 78–80).*** The Proposed Action would not generate asbestos-containing material, lead-based paint or polychlorinated biphenyls waste. Construction activities would result in negligible quantities of hazardous or petroleum wastes. Eight installation restoration program sites are located within 0.5 mile of the TEAMS. None of these sites are currently active and all have either formally been granted no further action (NFA) status or are considered eligible for NFA status by the New Mexico Environmental Department. Operation of TEAMS, including the proposed 50 percent increase in use, would produce minor amounts of hazardous materials and petroleum products, such as gasoline, diesel fuel, batteries, WD-40, deicer and paint waste. A certified pest applicator would apply various commercial herbicides (2,4-Dichlorophenoxyacetic acid, glyphosate, and dicamba) following Kirtland AFB Integrated Natural Resources Management Plan (INRMP) to control the invasive puncture vine. These herbicides would be properly applied and stored to minimize or avoid exposure. The proposed new radiological storage facility would store radiological materials properly and safely in accordance with

the existing TEAMS NRC License No. 45-25551-01. Overall there would be no significant impacts to hazardous materials and waste with implementation of the Proposed Action.

***Safety (EA § 4.8, pages 80–82).*** No adverse impacts on military personnel or public safety would be anticipated. Non-essential installation personnel would be required to vacate work areas. Construction contractors would be required to establish and maintain health and safety programs for their employees as required by federal, state and local laws. Overall, there would be no significant impacts to safety from implementation of the Proposed Action.

***Best Management Practices (EA Table 10, pages 61 – 63).*** As the proponent for improvements to the TEAMS area, DTRA is responsible for ensuring all BMPs identified above and in the EA as well as within the Kirtland INRMP are fully funded and in place prior to taking any specific action. DTRA will be responsible for submitting all environmental permits/plans identified within this EA to local, state and federal agencies. The 377 MSG/CEIE will oversee and verify these permits and BMPs are fully funded by the proponent and are in place and being carried out, as identified in this FONSI and accompanying EA. The 377 MSG/CEIE will provide a copy of the New Mexico Game and Fish scoping letter to DTRA to incorporate the mitigation identified by this agency into the TEAMS design.

### ***PUBLIC REVIEW AND COMMENT***

The draft EA was available for public review and comment from 30 October to 28 November 2014 at the Central New Mexico Community College, Montoya Library, 4700 Morris NE, Albuquerque, New Mexico 87102 and San Pedro Library, 5600 Trumbull Avenue SW, Albuquerque, New Mexico 87108 and at web link <http://www.kirtland.af.mil>. On 24 November 2014, a representative from the San Felipe Tribe contacted Kirtland AFB requesting an additional 30 days to review and comment on the draft EA. This extended the comment period to 28 December 2014. No public comments were received.

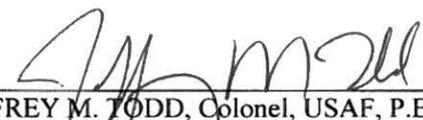
Three responses from government agencies (U.S. Forest Service, Mid-Region Council of Governments and the New Mexico Environment Department [NMED]) and one response from the Navajo Nation were received during the interagency and intergovernmental coordination process. Comments from NMED noted permit requirements associated with activities to the extent relevant to the TEAMS activities. DTRA has or will obtain all necessary permits relevant to the proposed TEAMS activities. All other responses from government and tribal agencies stated they had no concerns with the Proposed Action.

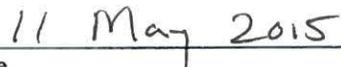
## **FINDING OF NO SIGNIFICANT IMPACT**

Based on review of the facts and analyses contained in the attached EA, DTRA and the Air Force have determined the Proposed Action to begin additional development, testing use and associated training at TEAMS will not have a significant environmental impact on the natural or human environment, either by itself or cumulatively. Accordingly, the requirements of National Environmental Policy Act, the regulations promulgated by the Council on Environmental Quality 40 CFR §§ 1500-1508 and the Air Force EIAP regulations 32 CFR § 989 are fulfilled and an Environmental Impact Statement is not required.

  
\_\_\_\_\_  
SHERRY J. DAVIS  
Director  
Environmental, Safety, and  
Occupational Health (J4E)

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
JEFFREY M. TODD, Colonel, USAF, P.E.  
Command Civil Engineer  
Communications, Installations  
and Mission Support

  
\_\_\_\_\_  
Date

*Final*  
**Environmental Assessment**

Proposed Additional Development, Testing Use, and  
Associated Training at the Technical Evaluation  
Assessment Monitor Site (TEAMS)  
at  
Kirtland Air Force Base, New Mexico



**February 2015**



## ACRONYMS AND ABBREVIATIONS

2,4-D	2, 4-dichlorophenoxyacetic acid	ESA	Endangered Species Act
377 ABW	377th Air Base Wing	FAA	Federal Aviation Administration
377 MSG/	377 Mission Support Group/Civil	FY	fiscal year
CEIE	Engineering Installation Management – Environmental Management	GHG	greenhouse gas
ACAM	Air Conformity Applicability Model	GRABS	Giant Reusable Air Blast Simulator
ACM	asbestos-containing material	HAP	hazardous air pollutant
AEHD-AQD	Albuquerque Environmental Health Department - Air Quality Division	HWMP	Hazardous Waste Management Plan
AFB	Air Force Base	Hz	Hertz
AFI	Air Force Instruction	INF	Intermediate-Range Nuclear Forces (Treaty)
AFMC	Air Force Materiel Command	INRMP	Integrated Natural Resource Management Plan
AFRL	Air Force Research Laboratory	IRP	Installation Restoration Program
AGE	airspace ground equipment	JD	jurisdictional determination
AMRGI	Albuquerque – Mid Rio Grande Intrastate	JP-8	jet propellant – type 8
amsl	above mean sea level	LBP	lead-based paint
AQCB	Air Quality Control Board	LID	Low-Impact Design
AQCR	Air Quality Control Region	MBTA	Migratory Bird Treaty Act
ATV	All-Terrain Vehicle	MGD	million gallons per day
BMP	Best Management Practice	MMRP	Military Munitions Response Program
C&D	Construction and Development	MS4	Municipal Separate Storm Sewer System
CAA	Clean Air Act	NAAQS	National Ambient Air Quality Standards
CEQ	Council on Environmental Quality	NEPA	National Environmental Policy Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	NFA	No Further Action
CFR	Code of Federal Regulations	NMAC	New Mexico Administrative Code
CGP	Construction General Permit	NMDGF	New Mexico Department of Game and Fish
CH <sub>4</sub>	methane	NMED	New Mexico Environmental Department
CO	carbon monoxide	NO <sub>2</sub>	nitrogen dioxide
CO <sub>2</sub>	carbon dioxide	NO <sub>x</sub>	nitrogen oxide
CWA	Clean Water Act	NOA	Notice of Availability
CY	calendar year	NOI	Notice of Intent
dba	A-weighted decibel	NPDES	National Pollutant Discharge Elimination System
DOD	Department of Defense	NRC	Nuclear Regulatory Commission
DODI	Department of Defense Instruction	NSPS	New Source Performance Standard
DOE	Department of Energy	O <sub>3</sub>	ozone
DTRA	Defense Threat Reduction Agency	ODS	Ozone-Depleting Substance
EA	Environmental Assessment	OSH	Occupational Safety and Health
EESOHMIS	Enterprise Environmental, Safety, and Occupational Health Management Information System	OSHA	Occupational Safety and Health Administration
EISA	Energy Independence and Security Act	O/WS	oil/water separator
ELG	Effluent Limitations Guidelines	Pb	lead
EmB	Embudo gravelly fine sandy loam, 0 to 5 percent slopes	PCB	polychlorinated biphenyls
EMS	Environmental Management System	PL	Public Law
EO	Executive Order	PM <sub>2.5</sub>	particulate matter equal to or less than 2.5 microns in diameter
ER	Environmental Restoration	PM <sub>10</sub>	particulate matter equal to or less than 10 microns in diameter
ERP	Environmental Restoration Program		

PPE	Personal Protective Equipment	TMDL	total maximum daily load
PSD	Prevention of Significant Deterioration	TNW	Traditional Navigable Water
RAD	radiological	TOSI	Technical On-Site Inspection
RCRA	Resource Conservation and Recovery Act	tpy	tons per year
RNE	Radiological, Nuclear, and high Explosives	TSCA	Toxic Substances Control Act
RSTD	Radiation Signature Training Device	UFC	Unified Facilities Criteria
SAAQS	State Ambient Air Quality Standards	U.S.	United States
SDWA	Safe Drinking Water Act	USACE	United States Army Corps of Engineers
SHPO	State Historic Preservation Office	USAF	United States Air Force
SIP	State Implementation Plan	USC	United States Code
SNL	Sandia National Laboratories	USEPA	United States Environmental Protection Agency
SO <sub>2</sub>	sulfur dioxide	USFWS	United States Fish and Wildlife Service
SSPP	Strategic Sustainability Performance Plan	USGS	United States Geological Survey
START	Strategic Arms Reduction Treaty	VIP	very important person
SWPPP	Storm Water Pollution Prevention Plan	VOC	volatile organic compound
TEAMS	Technical Evaluation Assessment Monitor Site	WaB	Wink fine sandy loam, 0 to 5 percent slopes
		WeB	Wink-Embudo complex, 0 to 5 percent slopes
		WMD	weapons of mass destruction

**FINAL**  
ENVIRONMENTAL ASSESSMENT

PROPOSED ADDITIONAL DEVELOPMENT, TESTING  
USE, AND ASSOCIATED TRAINING AT THE  
TECHNICAL EVALUATION ASSESSMENT MONITOR  
SITE (TEAMS)  
AT  
KIRTLAND AIR FORCE BASE, NEW MEXICO



DEFENSE THREAT REDUCTION AGENCY  
AND  
UNITED STATES AIR FORCE  
KIRTLAND AIR FORCE BASE, NEW MEXICO

FEBRUARY 2015



## COVER SHEET

### FINAL ENVIRONMENTAL ASSESSMENT

PROPOSED ADDITIONAL DEVELOPMENT, TESTING USE, AND ASSOCIATED TRAINING AT THE  
TECHNICAL EVALUATION ASSESSMENT MONITOR SITE (TEAMS)  
AT KIRTLAND AIR FORCE BASE, NEW MEXICO

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**Proposed Action:** The Defense Threat Reduction Agency (DTRA) and the United States Air Force (USAF) propose additional development, testing use, and associated training at DTRA's approximately 24-acre Technical Evaluation Assessment Monitor Site (TEAMS) at Kirtland Air Force Base (AFB).

**Report Designation:** Final Environmental Assessment (EA).

**Responsible Agency:** DTRA and the USAF, Kirtland AFB.

**Affected Location:** Kirtland AFB, New Mexico.

**Abstract:** DTRA and the USAF propose to enhance the testing and training capabilities and use, as well as the functionality, of the TEAMS to meet DTRA's mission requirements. The mission of the TEAMS is to provide a secure location for DTRA's Radiological, Nuclear, and high Explosives detection testing and training, primarily involving the preliminary technical evaluation and assessment of new and emerging "commercial-off-the-shelf" nuclear detection technologies.

Proposed facilities at the TEAMS include additional training, material storage, support, and improved facilities within the Site's boundaries. These proposed facilities and activities include:

- Potential increase in testing and training event personnel levels by up to 50 percent over the current level of about 400 total personnel per year. Ongoing individual events typically involve 10 to 25 people each, and an on-site exercise or demonstration can include up to 120 people. No change in on-site, full-time staff is proposed. There is potential to increase on-site staff during specific events by as much as 10 staff members per day.
- A new, secure, alarmed radiological source storage facility constructed and operated in accordance with Nuclear Regulatory Commission criteria and requirements.
- Conversion of an existing on-site building to a Command and Control Center/Very Important Person Monitoring Station for DTRA operations at Kirtland AFB, with updated radio and microwave connectivity (including an up to 50-foot tall antenna/communications tower), internal building modifications, construction of a gathering area for on-site personnel and visitors, and new computers.
- A mock train station.
- In-kind replacement (i.e., same size and function), over time, of current TEAMS temporary buildings with permanent buildings on or adjacent to the existing building locations, and constructed in accordance with the Kirtland AFB Architectural Compatibility Plan (Kirtland AFB 2007).
- Additional on-site weed control efforts to reduce puncture vine, an invasive plant species, on the Site.

The analysis in the EA considers the Proposed Action and the No Action Alternative.

For additional information on this EA, please contact the Kirtland AFB NEPA Program Manager by mail at 377 MSG/CEIE, 2050 Wyoming Boulevard SE, Suite 126, Kirtland AFB, New Mexico 87117-5270, or via email to [nepa@kirtland.af.mil](mailto:nepa@kirtland.af.mil).

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FINAL ENVIRONMENTAL ASSESSMENT  
 PROPOSED ADDITIONAL DEVELOPMENT, TESTING USE, AND ASSOCIATED TRAINING  
 AT THE TECHNICAL EVALUATION ASSESSMENT MONITOR SITE (TEAMS)  
 AT KIRTLAND AIR FORCE BASE, NEW MEXICO

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# 1. PURPOSE OF AND NEED FOR ACTION

## 1.1 Introduction

This section describes the purpose of and need for the Proposed Action at Kirtland Air Force Base (AFB); provides summaries of the scope of the environmental review process and the applicable regulatory requirements; and presents an overview of the organization of the document.

Federal agencies are required to consider the environmental consequences of their proposed actions in the decision-making process under the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] §§4321–4370d) and the Council on Environmental Quality's (CEQ) implementing regulations for NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508). Kirtland AFB is also required to consider the United States Air Force (USAF) NEPA-implementing regulation (32 CFR Part 989), and Department of Defense Instruction (DODI) 4715.9, *Environmental Planning Analysis*.

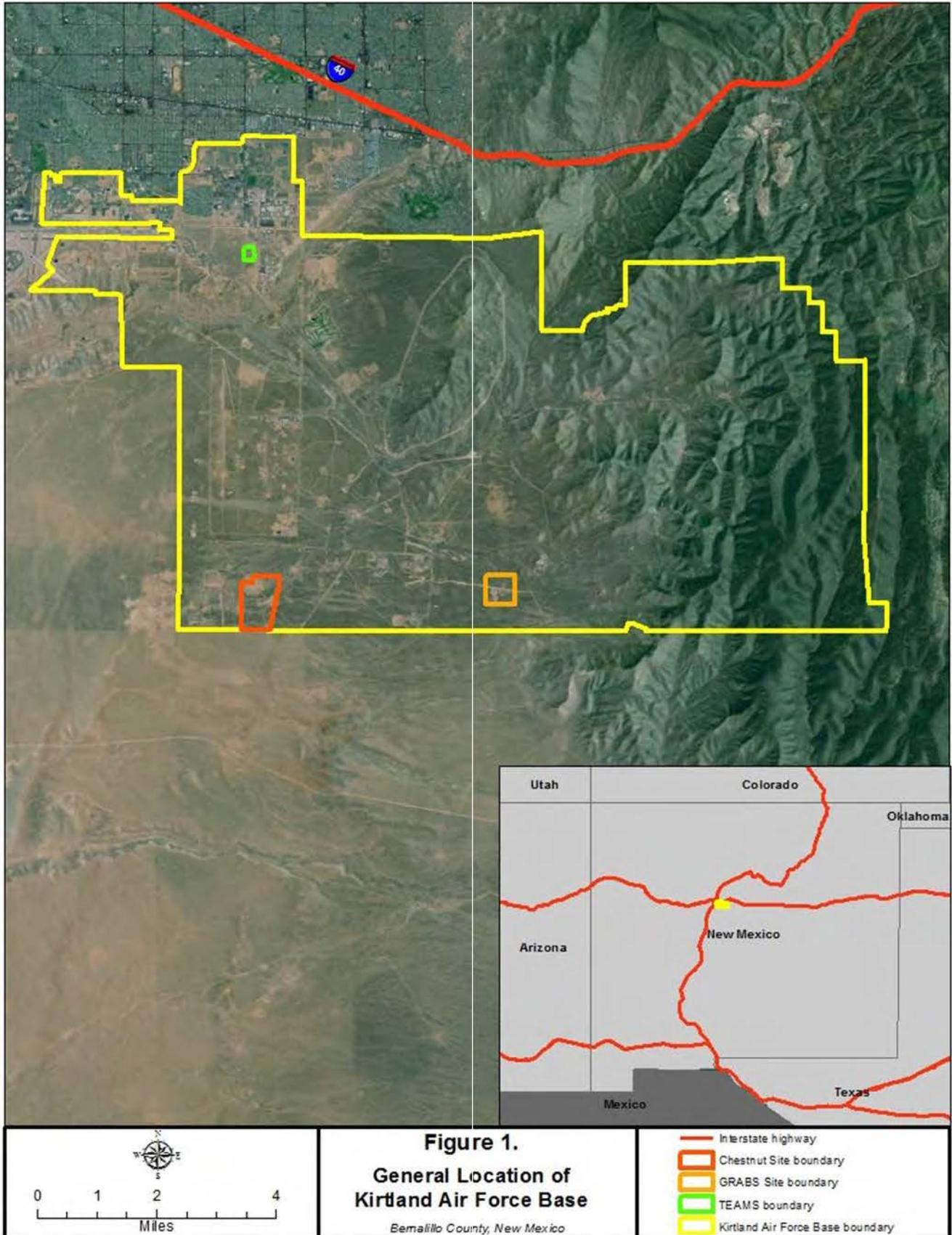
An Environmental Assessment (EA) addressing the proposed additional development, testing use, and associated training at the Technical Evaluation Assessment Monitor Site (TEAMS) at Kirtland AFB has been prepared in accordance with NEPA and the above-referenced regulations. This EA evaluates the potential environmental impacts associated with the construction, operation, and maintenance of new facilities and additional testing and training activities at the Defense Threat Reduction Agency's (DTRA) approximately 24-acre TEAMS at Kirtland AFB.

### 1.1.1 Kirtland AFB Overview

Kirtland AFB is located just southeast of Albuquerque, New Mexico (see **Figure 1**) at the foot of the Manzano Mountains. These mountains define the eastern boundary of an area called the East Mesa. Kirtland AFB encompasses 51,585 acres of the East Mesa and has an average elevation of approximately 5,400 feet above mean sea level (amsl), with a range of 5,200 to almost 8,000 feet amsl. Land uses for areas adjacent to the installation include the Cibola National Forest to the northeast and east; the Isleta Indian Reservation and the Cibola National Forest (including the Manzano Wilderness Area) to the south; and residential and business areas of the city of Albuquerque to the west and north.

Kirtland AFB was established in the late 1930s as a training base for the Army Air Corps. In 1941, construction of permanent barracks, warehouses, and a chapel was completed and a B-18 bomber, Kirtland AFB's first military aircraft, arrived. Troops soon followed, and Kirtland AFB grew rapidly with the United States' involvement in World War II. The installation served as a training site for aircrews for many of the country's bomber aircraft, including the B-17, B-18, B-24, and B-29. After World War II, Kirtland AFB evolved from a training facility to a test and evaluation facility for weapons delivery, working closely with both Los Alamos National Laboratory and Sandia National Laboratories (SNL). In 1971, Kirtland AFB and its adjoining neighbor to the east, Sandia Army Base, were combined. The two divisions of the installation are still referred to as Kirtland West and Kirtland East, respectively. Kirtland AFB is now operated by the 377th Air Base Wing (377 ABW) of the USAF.

The 377 ABW is a unit of the Air Force Materiel Command (AFMC) and is the host unit at Kirtland AFB. The 377 ABW's prime mission is to support more than 150 mission partners with personnel, resources, equipment, and facilities. The installation functions as a test and evaluation center for the Air Force Research Laboratory, Space and Missile Systems Center, and Air Force Operational Test and Evaluation Center; and it is the headquarters for operational organizations, such as the Air Force Inspection Agency and SNL. Kirtland AFB also functions as a training base



for the 58th Special Operations Wing of Air Education and Training Command. The 150th Fighter Wing of the New Mexico Air National Guard is also stationed at the installation. The 377 ABW provides fire protection (including crash and rescue) for Albuquerque International Sunport, located to the immediate west of the northwestern portion of the installation.

### 1.1.2 Defense Threat Reduction Agency Overview

DTRA is a mission partner of the 377 ABW at Kirtland AFB. Specifically, DTRA is the field operations element of the former Defense Nuclear Agency, which was originally the Manhattan Engineer District, formed in 1942 during the Manhattan Project to develop the world's first nuclear weapon. DTRA's research helps ensure that United States (U.S.) Forces are prepared to operate on future battlefields where opponents may possess conventional, nuclear, biological, or chemical warfare capabilities. DTRA maintains the accountability database on all nuclear weapons in the national stockpile; conducts nuclear weapons effects tests using non-nuclear high explosives and thermal, electromagnetic pulse, and radiation simulation facilities; conducts Joint Nuclear Surety Inspections of all Armed Services nuclear-capable units; provides arms control and counter-proliferation support; provides Cooperative Threat Reduction Program support; and operates the Defense Threat Reduction University. The DTRA Test Support Division provides end-to-end test event planning, management, safe execution, and results analysis supporting Department of Defense (DOD), other federal agencies', and friendly nations' programs to counter proliferation and defeat weapons of mass destruction (WMD).

According to DTRA's website, "DTRA is the DOD's official Combat Support Agency for countering weapons of mass destruction. Our people are Subject Matter Experts on WMD, and we address the entire spectrum of chemical, biological, radiological, nuclear and high yield explosive threats. DTRA's programs include basic science research and development, operational support to U.S. warfighters on the front line, and an in-house WMD think tank that aims to anticipate and mitigate future threats long before they have a chance to harm the United States and our allies....We work with the military services, other elements of the United States government, and countries across the planet on counterproliferation, nonproliferation and WMD reduction issues with one goal in mind: Making the World Safer" (DTRA 2013).

Within the boundaries of Kirtland AFB, DTRA operates three separate testing sites: the Giant Reusable Air Blast Simulator (GRABS) Site; the Chestnut Test Site<sup>1</sup>; and the TEAMS. The GRABS and Chestnut Sites are used as explosives detonation testing sites. The TEAMS is not used for explosives detonation testing. The mission of the TEAMS is discussed further below.

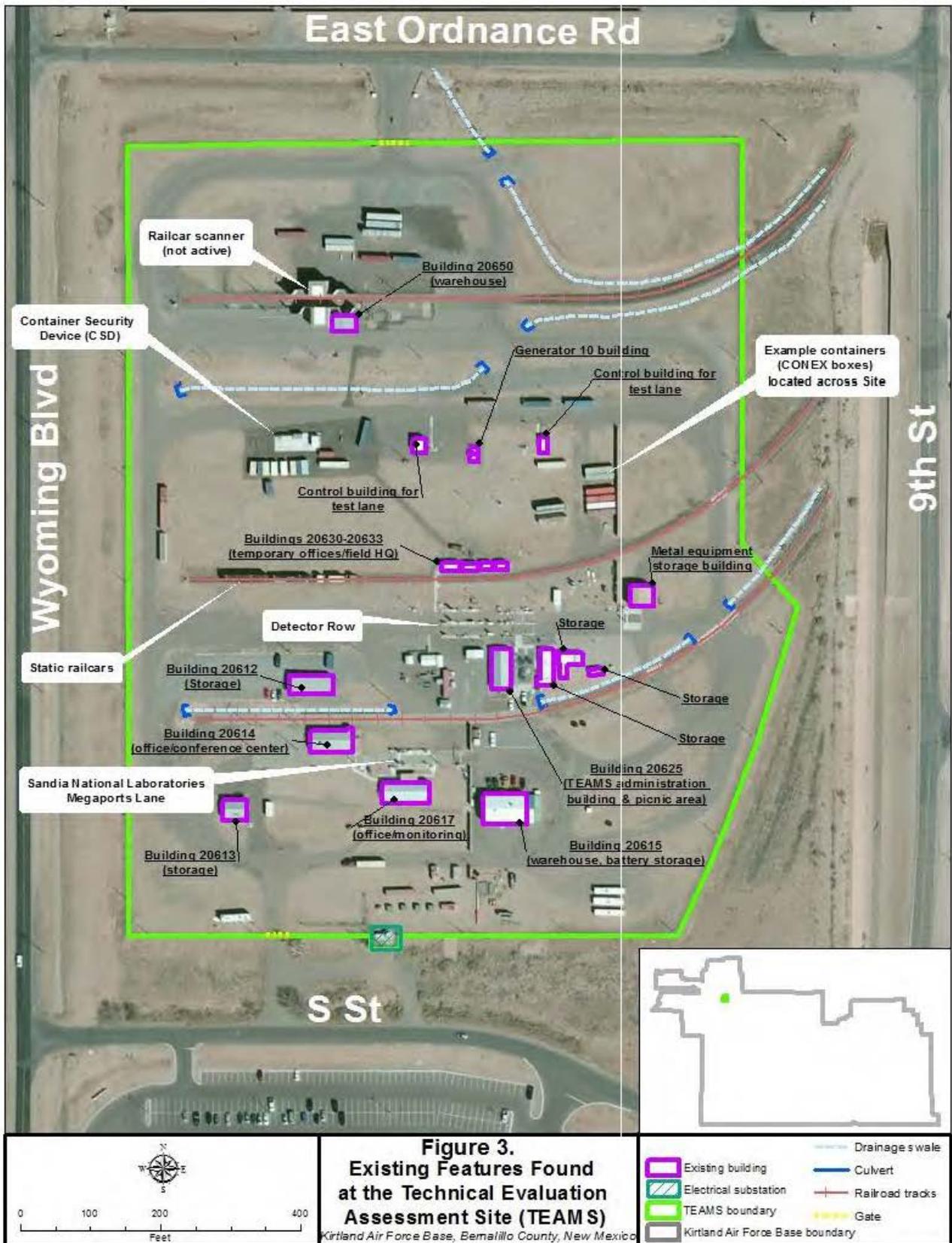
### 1.1.3 TEAMS Overview

The approximately 24-acre TEAMS, located at the southeast corner of East Ordnance Road and Wyoming Boulevard in the developed, northwestern portion of Kirtland AFB, is operated under the direction of DTRA (see **Figures 2** and **3**). The TEAMS was originally called the Technical On-Site Inspection (TOSI) Site and was constructed in the late 1980s to be used as a test-bed for training personnel to observe Strategic Arms Reduction Treaty (START) and the Intermediate-Range Nuclear Forces Treaty (INF) verification actions. After DTRA stopped training personnel for the START and INF missions, TOSI was transferred to DTRA's Test Directorate and used as a calibration lab by Honeywell (a contractor) for work supporting DTRA at White Sands Missile Range and Kirtland AFB. In January 2002, DTRA used the test-bed for supporting the Unconventional Nuclear Weapons Defense program. TOSI was renamed TEAMS in 2004.

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<sup>1</sup> The Chestnut Site is operated by the Air Force Research Laboratory (AFRL), and is a joint use site between DTRA and AFRL.





The primary mission of the TEAMS is to perform preliminary technical evaluation, assessment, demonstration, calibration, training, fielding, integration, and concept of operations development of new and emerging nuclear material, commercial-off-the-shelf detection technologies. DTRA's mission also includes potentially using the TEAMS as a test-bed for other Radiological, Nuclear and high Explosives (RNE) detection testing and training (search/survey) activities.

Currently, activities on the TEAMS primarily include testing and training of various nuclear detection sensors and systems. Various minor radiological sources are stored on the TEAMS. These sources are used to test equipment and to train various personnel in detection techniques. All radiological materials and sources are stored and used in accordance with Nuclear Regulatory Commission (NRC) guidelines and requirements. The NRC oversees and licenses TEAMS activities pursuant to Section 183 of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974 (Public Law [PL] 93-438); and 10 CFR Chapter 1 Parts 30–36, 39–40, and 70. The TEAMS operates under NRC License No. 45-25551-01 (Amend. 18), Docket No. 030-35668, Control No. 579050, dated 21 November 2012 (NRC 2012).

DTRA TEAMS customers include multiple DOD agencies, the National Nuclear Security Administration, the Department of Homeland Security, the Domestic Nuclear Detection Office, various national research laboratories, nuclear event first responders (such as National Guard Civil Support Teams), and government contractors. The modular design of the TEAMS facilities purposely allows for testing and training flexibility in the detection of multiple RNE materials.

The TEAMS is completely fenced, secure, and has an intrusion detection system with 24-hour Site monitoring. The TEAMS includes field offices, conference rooms, 50/60 Hertz (Hz) power infrastructure, Class A phones, a fiber network, resident radiological sources, multiple CONEX (shipping) containers, and other facilities and infrastructure to support testing and training events. Overall, the TEAMS provides a facility where diverse disciplines can come together during the research and development phase to ensure success during the acquisition, production, and fielding phases of RNE detection technologies.

#### 1.1.4 Existing TEAMS Activities

The TEAMS is staffed by two full-time employees responsible for Site operations, maintenance, and coordination of testing and associated training activities. The TEAMS currently supports up to 10 testing and training events per year, with 10 to 25 personnel on-site for each event. An on-site exercise or demonstration can involve up to 120 people; during larger events, personnel are bused to the Site. Annually, up to 400 personnel visit the Site for testing or training events. On average, approximately 20 vehicles per day are present on the Site; during a maximum training load, up to 30 vehicles per day are present on the Site. On-site facilities that support testing and training activities are shown in **Figure 3** and described in **Table 1**.

#### 1.1.5 Environmental Assessment Organization

This EA is organized into six sections and four appendices. **Section 1** states the purpose, need, scope, and public involvement efforts for the Proposed Action. **Section 2** contains a detailed description of the Proposed Action and the alternatives considered. **Section 3** describes the existing conditions of the potentially affected environment. **Section 4** identifies the environmental consequences (impacts) of implementing all reasonable alternatives, including direct, indirect, and cumulative impacts. **Section 5** provides the names of those persons involved in the preparation of the EA. **Section 6** lists the references used to support the analyses.

Table 1. TEAMS Facilities and Associated Activities

Building Number	Facility Name	Date of Construction (approx.)	Use	Comments
20611	Railcar Scanner (TOSI)	1992	Inactive. Facility was used to train personnel to inspect railroad cars for radioactive materials.	Equipment has been removed from the buildings, but the structures still stand. No longer used.
N/A	Warehouse	1992	Formerly part of TOSI and used as an X-ray building, but now used as a warehouse.	Used year-round for storage or special projects.
N/A	Container Security Device	2009	Used to test various shipping container security devices to prevent unauthorized entry. Facility includes storage areas and a shipping container that is used for various testing scenarios.	Used 10 times per year by approximately 6 personnel per event.
N/A	Northern Test Lane and Control Buildings	1992	Used as command and control and data acquisition facilities for the Site, contractor, or Department of Energy (DOE) Laboratory personnel performing special projects or testing adjacent to the facilities.	Used 2 times per year by approximately 12 personnel per event.
N/A	Generator 10	2003	Concrete pad installed in 2003 supports an 88-horsepower, gasoline-powered generator (Air Quality Permit #1944 dated March 2009) that produces 50 Hz (European power) with an 81-gallon gasoline tank.	Used approximately once per month (or approximately 12 times per year) for a total duration of less than 10 hours per year.
N/A	Static Rail Cars (3)	2009	Provided by Burlington Northern Santa Fe, these include a flat car, tanker car, and box car used in support of detection testing and training (search/survey) operations. These cars are stationary; no moving trains are present on the Site.	Used 12 to 18 times per year by approximately 15 personnel per event.
N/A	Temporary offices	2004	Provide temporary offices and field headquarters for customers during on-site testing and training events.	Used 2 to 4 times per year by approximately 3 to 5 personnel per event.
N/A	CONEX Boxes (shipping storage containers; multiple, across site)	Various	Used in support of detection testing and training (search/survey) operations, as well as storage of excess radiation detection equipment and various other DTRA programmatic storage requirements.	Used 8 to 10 times per year by approximately 4 personnel per event. Used year-round for storage.
20638*	Metal Equipment Storage Building	2006	Used to store Site equipment, including three diesel forklifts, four All-Terrain Vehicles (ATVs), and various other equipment.	Used year-round for storage.

Note: \* denotes a temporary building; N/A = Not applicable

Table 1. TEAMS Facilities and Associated Activities (continued)

Building Number	Facility Name	Date of Construction (approx.)	Use	Comments
N/A	Detector Row	2002	Commercial off-the-shelf radiation portals are evaluated, assessed, and tested to ensure their ability to detect gamma and neutron sources. Detector row can support testing for radiation sources in vehicles that are stationary or moving. DTRA detectors can provide baseline test data for comparison to customer tests.	Used 2 to 4 times per year by approximately 6 personnel per event.
20630*	Storage/Administrative Building	1992	Administrative/office building. This facility provides offices for full-time DTRA personnel and is now used for storage.	Used year-round for up to 3 to 6 full-time personnel.
20623*	TEAMS Administrative Building	2003	This building provides offices for full-time Site staff.	Building includes a small adjacent picnic area and serves as the command and control center of the TEAMS. Used year-round by up to 3 to 10 full-time personnel.
20635* 20636* 20637* 20640* 20641*	Radiological (RAD) Material Storage	1992	Secure buildings used to store minor quantities of radiological source materials that support testing and training.	Buildings are designed, constructed, operated, and controlled in accordance with NRC requirements. Used year-round.
20614	Offices/Conference Center	1992	Provides offices and a conference center for Site customers during testing and training events.	Used 18 times per year by approximately 18 to 24 personnel per event.
20613*	Storage Building	1992	Office, administrative, and storage building.	Used year-round to provide programmatic support to up to 4 to 6 full time SNL personnel.
N/A	Sandia National Laboratories "Megaports" Lane	2009	Building 20617 houses offices, a training environment, and software evaluation capabilities to provide radiation detection at shipping ports. Includes advanced radiation identification systems and the integration of software, hardware, and firmware interface and reporting.	Used 4 to 6 times per year by approximately 12 personnel per event.
20615	Warehouse	1992	Warehouse/equipment storage and battery charging/storage building.	Used year-round.
<b>Note: * denotes a temporary building; N/A = Not applicable</b>				

## 1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to enhance and support the ongoing and future testing and training mission of DTRA and the TEAMS at Kirtland AFB with improved training, material storage, support, and other facilities within the boundaries of TEAMS.

The Proposed Action is needed due to current shortfalls in on-site capabilities and infrastructure at the TEAMS to support DTRA's mission. These shortfalls include:

- A need to increase testing and training event personnel levels by up to 50 percent over the current level of approximately 400 total personnel per year, due to increased customer demand and use of the TEAMS.
- A lack of a secure alarmed radiological source storage facility constructed and operated in accordance with NRC criteria and requirements at the TEAMS to properly store new and additional radiological source materials.
- An operational connectivity shortfall between the DTRA's TEAMS, GRABS Site, and Chestnut Site<sup>2</sup>. Specifically, DTRA has the current ability to transmit test-bed activities from the GRABS Site and Chestnut Site remotely; however, no dedicated Command and Control Center/Very Important Person (VIP) Monitoring Station is available to receive and monitor those activities at the TEAMS. The VIP Monitoring Station is required to limit personnel on or near the GRABS Site and Chestnut Site during explosive testing and training activities and to provide remote oversight of specified activities at the safe, secure TEAMS. The current condition does not provide a VIP Monitoring Station, and limits the number of personnel observing the events.
- A shortage of gathering areas on the TEAMS for on-site personnel during training, testing, and demonstration events.
- An incomplete rail training facility, which currently has only three static (stationary) rail cars and lacks an associated train station or equivalent structure.
- A reliance on temporary buildings at the TEAMS that do not comply with the Kirtland AFB Architectural Compatibility Plan and do not provide permanent structures that support DTRA's mission (Kirtland AFB 2007) (see **Table 1** for existing temporary buildings).
- A need to eradicate a prevalence of puncture vine, an invasive plant species, on the Site. This plant causes equipment and general maintenance issues at the TEAMS.

## 1.3 Scope of the Environmental Assessment

Scope consists of the range of actions, alternatives, and impacts to be considered. The scope of the Proposed Action and the range of alternatives to be considered are presented in detail in **Section 2**. This EA identifies appropriate mitigation measures that are not already included in the Proposed Action or alternatives in order to avoid, minimize, reduce, or compensate for adverse environmental impacts.

This EA examines the environmental impacts of the Proposed Action and No Action Alternative on the following resource areas: noise, air quality, geology and soils, water resources, biological resources, infrastructure, hazardous materials and waste, and safety. The characterization of the affected environment, or baseline environmental conditions, is discussed in **Section 3**; however, per CEQ Regulation 40 CFR §1501.7(a)(3), only those resource areas that apply to the Proposed Action are analyzed. As such, land use, visual resources, cultural resources, and socioeconomics and environmental justice are not analyzed within this EA (see **Section 3.1**). An analysis of

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<sup>2</sup> The Chestnut Site is operated by the AFRL, and is a joint use site between DTRA and AFRL.

potential direct, indirect, and cumulative impacts on Kirtland AFB associated with the Proposed Action and No Action Alternative is discussed in **Section 4**.

### 1.3.1 Environmental Laws, Regulations, and Executive Orders

To comply with NEPA (PL 91-190, 42 USC §§4321 *et seq.*), the federal planning and decision-making process involves a study of other relevant environmental laws, regulations, and Executive Orders (EOs). The NEPA process does not replace procedural or substantive requirements of other environmental laws; it addresses them collectively in an analysis, which enables decision-makers to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency practices so that all such procedures run concurrently rather than consecutively” (CEQ Regulation 40 CFR §1500.2).

As required in CEQ Regulation 40 CFR §1500.2(c), this EA contains a list of federal permits, licenses, and coordination that might be required in implementing the Proposed Action or alternatives. **Table 2** presents a sample list of the permits and coordination that might be required for the Proposed Action.

**Table 2. Sample List of Coordination and Permits Associated with the Proposed Action**

Agency	Permit/Approval/Condition
<b>U.S. Fish and Wildlife Service (USFWS)</b>	<ul style="list-style-type: none"> <li>• Endangered Species Act (ESA) Section 7 Coordination</li> <li>• Migratory Bird Treaty Act Coordination</li> </ul>
<b>U.S. Environmental Protection Agency (USEPA)</b>	<ul style="list-style-type: none"> <li>• National Pollutant Discharge Elimination System (NPDES) permit</li> </ul>
<b>Federal Aviation Administration (FAA)</b>	<ul style="list-style-type: none"> <li>• Pre-construction “Obstruction Evaluation” Notice of a proposed structure/tower/antenna (14 CFR §77.9)</li> </ul>
<b>Albuquerque Environmental Health Department - Air Quality Division (AEHD-AQD)</b>	<ul style="list-style-type: none"> <li>• Applicable air quality permit(s)</li> <li>• 20.11.20 New Mexico Administrative Code (NMAC), Fugitive Dust Control</li> <li>• 20.11.40 NMAC, Source Registration</li> <li>• 20.11.41 NMAC, Authority to Construct</li> </ul>
<b>New Mexico Historic Preservation Division</b>	<ul style="list-style-type: none"> <li>• National Historic Preservation Act Section 106 Consultation</li> </ul>
<b>Nuclear Regulatory Commission (NRC)</b>	<ul style="list-style-type: none"> <li>• Atomic Energy Act of 1954, as amended</li> <li>• Energy Reorganization Act of 1974 (Public Law 93-438)</li> <li>• 10 CFR Chapter 1 Parts 30–36, 39–40, and 70</li> <li>• Conditions of NRC License No. 45-25551-01 (Amend. 18), Docket No. 030-35668, Control No. 579050, dated 21 November 2012</li> </ul>

**Appendix A** contains summaries of the environmental laws, regulations, and EOs that might apply to this Proposed Action. Where relevant, these laws are described in more detail in the appropriate resource areas presented in **Section 3** of the EA. The scope of the analysis of potential environmental consequences in **Section 4** considers direct, indirect, and cumulative impacts.

## 1.4 Interagency Coordination and Public Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of federal decisions would be enhanced if proponents provide information to the public

and involve the public in the planning process. The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require federal agencies to cooperate with and consider state and local views in implementing a federal proposal. The USAF implements an agency coordination process, which is used for facilitating and receiving agency input coordination and implements scoping requirements.

Scoping letters were provided to relevant federal, state, and local agencies and Native American tribes notifying them that DTRA and the USAF are preparing an EA to evaluate potential impacts of implementing the Proposed Action at the existing TEAMS. The agencies and tribes were requested to provide information regarding impacts of the Proposed Action to the natural environment or other environmental aspects that they felt should be included and considered in the preparation of this EA. Six responses from government agencies (State Historic Preservation Office [SHPO], Mid-Region Council of Governments, Bernalillo County Water Resources, City of Albuquerque Parks and Recreation Department, U.S. Forest Service, and New Mexico Department of Game and Fish [NMDGF]) were received during the scoping process. The response letter from NMDGF expressed concerns regarding the construction and operation of the proposed communications tower(s) and the concerns are addressed in **Sections 2.1.1** and **4.5.2.1** of this EA. All other responses from government agencies stated they had no concerns with the Proposed Action. Copies of responses received are provided in **Appendix B**.

One response was also received from the Hopi Tribal Council requesting that should any inadvertent discoveries be made during implementation of the Proposed Action they be included in the consultation process. These concerns are addressed in **Section 3.1** of this EA. A copy of this letter is also provided in **Appendix B**.

Through the interagency and intergovernmental coordination process, DTRA and the USAF provided the Draft EA to relevant federal, state, and local agencies to share the analyses of the Proposed Action and alternatives and provide them sufficient time to make known their environmental concerns specific to the action. The interagency coordination process also provided Kirtland AFB with the opportunity to cooperate with and consider state and local views in implementing the federal proposal. Native American tribes were also notified of the Proposed Action, and provided an opportunity to comment on the Proposed Action. Three responses from government agencies (U.S. Forest Service, Mid-Region Council of Governments, and the New Mexico Environment Department [NMED]) and one response from the Navajo Nation were received during the interagency and intergovernmental coordination process. All responses from government and tribal agencies stated they had no concerns with the Proposed Action. All interagency coordination, tribal consultation, and public involvement materials related to this EA are included in **Appendix B**. A listing of the agencies, tribes, and other stakeholders that were contacted is provided in **Appendix B**.

A Notice of Availability (NOA) for the Draft EA was published in *The Albuquerque Journal* and the Draft EA was made available for the public for a 30-day review period from 30 October to 28 November 2014. The NOA was issued to solicit comments on the Proposed Action and involve the local community in the decisionmaking process. On 24 November 2014, a representative from the San Felipe Tribe contacted Kirtland AFB requesting an additional 30 days to review and comment on the Draft EA. This extended the comment period to 28 December 2014. Comments received from the public and other federal, state, and local agencies were addressed in the EA, where applicable.

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## 2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

DTRA proposes to increase testing and training events and personnel levels by up to 50 percent over current levels. As stated in **Section 1.1.4**, the TEAMS currently supports up to 10 testing and training events per year, with 10 to 25 personnel on-site for each event. An on-site exercise or demonstration can involve up to 120 people. Annually, up to 400 personnel visit the Site for testing or training events. The 50 percent increase included in the Proposed Action would result in an annual testing and training load of approximately 15 testing and training events involving 600 personnel per year. Under the Proposed Action, the staffing levels of individual events would not change; only the frequency of testing and training events would change. No change in on-site, full-time staff is proposed. There is potential to increase by up to 10 on-site staff per day during specific testing and training events. This Proposed Action is needed to support increased customer demand and use of the TEAMS and to support the Site's mission as described in **Section 1.1.3**.

### 2.1 Proposed Action

DTRA, working with USAF at Kirtland AFB, New Mexico, is proposing to enhance capabilities at the existing TEAMS in order to meet current and future mission requirements. The mission of the TEAMS and associated ongoing activities are discussed in **Sections 1.1.3** and **1.1.4**.

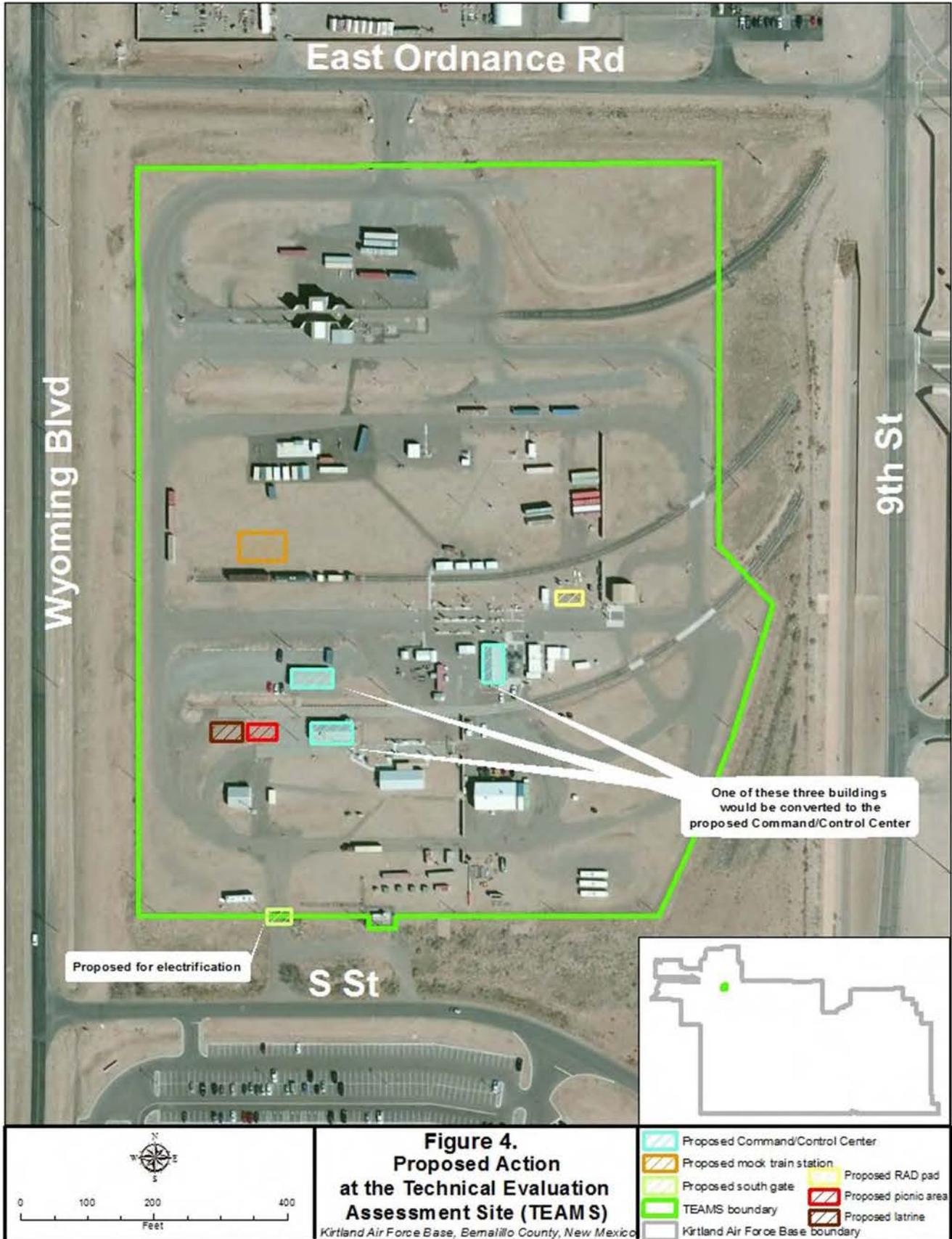
Proposed enhancements include construction of additional material storage and support structures, replacement of temporary buildings with permanent buildings, enhanced communications capabilities, and improvement in current maintenance standards.

#### 2.1.1 Construction Activities

No demolition is proposed; temporary buildings would be removed from the TEAMS as permanent replacement buildings are constructed. All proposed new structures and facilities would be constructed on existing open, previously disturbed, level ground within the fenced boundaries of the TEAMS, or on the same sites as current temporary facilities. Approximately 2.7 acres of the TEAMS would be affected during construction activities.

***New Radiological Source Storage Facility (RAD pad):*** As part of the ongoing radiological materials detection testing and training mission at the TEAMS, DTRA would receive a small quantity of higher-level radioactive material to be used as a source in the testing processes. The new material would be a Radiation Signature Training Device (RSTD), which is a surrogate for Highly Enriched Uranium. The RSTD poses no new or additional health risk, but requires a secure, fully alarmed storage facility that is bolted to a concrete pad. The current on-site storage facilities do not meet this NRC licensing requirement, TEAMS NRC License No. 45-25551-01 (Amend. 18), Docket No. 030-35668, Control No. 579050, dated 21 November 2012 (NRC 2012) (see **Section 1.1.3**).

As such, DTRA proposes to pour a 45-foot by 30-foot concrete pad on which to relocate the existing, on-site (mobile) radiological storage buildings (i.e., RAD pad). The existing, windowless storage buildings were originally purchased to model U.S. START Operation's buildings in Russia. The relocated buildings (i.e., Buildings 20635, 20636, 20637, 20640, and 20641) (see **Table 1** and **Figure 3**) would be bolted to the pad, connected to the installation's power grid, and equipped with a new alarm system tied to the Kirtland AFB security system to meet NRC licensing requirements. Up to 0.6 acre of previously disturbed ground would be affected.



**New Mock Train Station:** As part of the ongoing radiological materials detection testing and training mission at the TEAMS, DTRA proposes to enhance the existing static (three-car) railcar facility by adding an adjacent mock train station to provide a more complete, real-world facility. DTRA proposes to place this modular structure approximately 25 feet north of the static railcar facility, slightly off-centered to the northwest of the box car's western end. A crushed, fine gravel base would provide a non-permanent foundation for the modular structure.

The structure would be composed of eight 40-foot shipping containers locked together in two tiers of four and resulting in a 40-foot by 40-foot base, two stories tall. The interior of the structure would be modified to include two stairwells and paneling, creating the appearance of two rooms per shipping container box. The modified containers would be brought to the TEAMS and erected into a single structure. No electric or water service would be required. Up to 0.6 acre of previously disturbed ground would be affected.

This structure would provide a three-dimensional environment in which military response agencies and teams could train using real-world tactics and techniques. Small radioactive sources, already present on the Site, would be used in the testing and training events and would be removed and properly secured and stored after each event.

**Replacement of Temporary Buildings with Permanent Buildings:** DTRA proposes the in-kind conversion of up to four on-site TEAMS temporary buildings with permanent buildings over time. Permanent buildings would be the same square footage, serve the same function, and be located on the same slab, or adjacent to, the existing temporary buildings; the replaced temporary buildings would be removed from the TEAMS. Buildings that could be replaced include Buildings 20638 (Metal Equipment Storage Building), 20630 (Storage/Administrative Building), 20623 (TEAMS Administrative Building), and 20613 (Storage Building) (see **Table 1**).

The permanent buildings would be constructed in accordance with the Kirtland AFB Architectural Compatibility Plan, which includes complying with all applicable USAF design and construction requirements. Up to 1.0 acre of previously disturbed ground would be affected during construction of the permanent buildings; however, over the long term, no net additional ground would be converted as temporary building locations would be restored to natural conditions following construction. The replacement of temporary structures is needed to support DTRA's long-term mission at the TEAMS with permanent, dedicated buildings.

**Command and Control Center/VIP Monitoring Station Establishment:** DTRA proposes to convert an existing TEAMS building into a Command and Control/VIP Monitoring Station for DTRA testing and training operations at Kirtland AFB and to construct a gathering area for on-site personnel and visitors. This would require internal building modifications and installation of new computers within the selected TEAMS building (see **Figure 4**). This would also require a new, permanent aboveground radio antenna, which would not exceed 50 feet in height, and a base station consisting of two microwave receiving dishes on or adjacent to the selected TEAMS building. Per the guidance provided by the NMDGF in a scoping response dated 20 March 2013 (see **Appendix B**), this new tower would consist of a lattice structure or a monopole in order to reduce avian mortality caused by guy wires. At DTRA's GRABS Site, a portable, trailer-mounted microwave/radio antenna would be placed on the site only during test events to stream secure video to the proposed TEAMS VIP Monitoring Station. Only minimal ground disturbance (i.e., <0.01 acre) would be required to install the required antenna. Prior to DTRA's purchase of an antenna and all associated components, approval would be obtained from the Installation Spectrum Manager.

Under current conditions, DTRA relies on two-way radios and limited cell phone coverage to coordinate and communicate operations between the three testing sites on Kirtland AFB: the

GRABS Site; Chestnut Site<sup>3</sup>; and TEAMS (see **Section 1.1.2**). Currently, DTRA has the ability to transmit test-bed activities from the GRABS Site and Chestnut Site remotely; however, no dedicated Command and Control Center/VIP Monitoring Station is available to receive and monitor those activities at the TEAMS. The VIP Monitoring Station is required to limit personnel on or near the GRABS and Chestnut Sites during explosive testing and training activities and to provide remote oversight of specified activities at the safe, secure TEAMS. The current condition does not provide a VIP Monitoring Station, and limits the number of personnel observing events.

The proposed gathering area would be located near the current Conference Center, Building 20614. Construction activities include a 50-foot by 25-foot concrete pad, tables, chairs, and cover. Up to 0.5 acre of previously disturbed ground would be affected.

### 2.1.2 Improvements to Current Maintenance Standards

The proposed new facilities would be integrated into and enhance the TEAMS testing and training missions, supporting the proposed annual increase in on-site activities. Maintenance activities would include general housekeeping activities performed in accordance with ongoing Site maintenance. No on-site vehicle maintenance is proposed.

***Invasive Plant Removal Program:*** On the TEAMS, the extensive population of puncture vine is a nuisance and adversely affects the Site's mission. This mat-forming plant covers testing and training areas, sidewalks, and equipment, resulting in increased Site maintenance costs. Burs with sharp spines capable of puncturing bicycle tires collect on footwear and are tracked into on-site buildings, resulting in a maintenance issue. Previous labor-intensive attempts to manually remove the plants from the Site have only resulted in a very short-term solution; the plants returned after the first subsequent rain event. The plant reproduces by seeds, which are produced in large quantities. Seeds remain viable for up to 3 to 7 years, making lasting eradication difficult (University of California Statewide Pest Management Program 2011).

DTRA, working with USAF, proposes to implement a regular, periodic, on-site puncture vine eradication program that includes both physical and chemical treatment methods. All chemicals would be applied by a Certified Pest Applicator in accordance with Kirtland AFB's Integrated Natural Resources Management Plan (INRMP), which includes the Integrated Pest Management Program (Section 7.9) and the Nuisance Management Plan (Appendix J) (Kirtland AFB 2012).

Puncture vine control treatments at the TEAMS would likely occur quarterly (every 3 months) and include the following methods:

- ***Physical control.*** Plants and taproots would be removed by hand using simple tools. This requires monitoring the Site and removing the weed throughout the pre-seeding time (spring to late spring). This greatly reduces the prevalence of puncture vine the following year.
- ***Chemical control.*** Plants would be treated with a variety of pre-emergent herbicides that provide partial control of germinating seeds and would be applied prior to germination (late winter to spring). After plants have emerged from the soil (post-emergent), products containing 2,4-dichlorophenoxyacetic acid (2,4-D), glyphosate, and dicamba would be used.
  - **2,4-D.** 2,4-D is a crystalline powder commonly used in many commercially available products; over 1,500 pesticide and herbicide products contain 2,4-D as the main ingredient. USEPA estimates that approximately 46 million pounds of 2,4-D are used in the United States each year. Exposure of adults to high concentrations of 2,4-D has been reported to cause reduced red blood cell counts, decreased liver enzyme activity,

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<sup>3</sup> The Chestnut Site is operated by the AFRL, and is a joint use site between DTRA and AFRL.

increased kidney weight, skin irritation, and eye irritation. This compound is one of 188 hazardous air pollutants (HAPs) listed under Section 112(b) of the 1990 Clean Air Act (CAA) Amendments. However, 2,4-D is readily broken down by microbes in soils (with a half-life of 7 to 10 days) and aquatic (with a half-life of 3 to 28 days) environments (USEPA 2007).

- **Glyphosate.** Glyphosate is the most commonly used pesticide in the United States, with between 103 and 113 million pounds of the chemical applied each year. Symptoms of exposure to herbicides containing glyphosate include eye irritation and inflammation, burning eyes, blurred vision, skin rashes, burning or itchy skin, nausea, sore throat, asthma and difficulty breathing, headache, lethargy, nose bleed, and dizziness. The half-life of glyphosate ranges from 2 to 174 days (Cox 2004).
- **Dicamba.** Dicamba is a common pesticide, found in over 1,100 products in the United States. Dicamba is low in toxicity if inhaled or exposed to skin; if exposed, adults may cough or experience dizziness or skin irritation. Dicamba is moderately toxic if exposed to eyes, and if swallowed, may cause vomiting, loss of appetite, and muscle spasms. Dicamba breaks down in soil, having a half-life of 30 to 60 days (National Pesticide Information Center 2012).

The Invasive Plant Removal Program is needed to reduce on-site maintenance costs and improve personnel at TEAMS ability to support its mission.

## 2.2 Site-Selection Criteria

In accordance with 32 CFR §989.8(c), the development of site-selection criteria is an effective mechanism for the identification, comparison, and evaluation of reasonable alternatives. DTRA developed the following site-selection criteria to be consistent with the purpose of and need for the Proposed Action and to address pertinent mission, environmental, safety, and health factors. DTRA used the following site-selection criteria to identify reasonable alternatives for analysis in this EA:

- Provide a complete set of facilities under DTRA's direct control that meet and support DTRA's current and future testing and training mission.
- The proposed facilities shall be sited to maximize their mission value and ensure personnel protection and safety in accordance with all federal, state, and local laws.
- The proposed facility shall meet the standards outlined in DTRA Instruction 6055.8, *Occupational Radiation Protection Program and Radioactive Source Management*
- The proposed facilities shall include a rail line for the installation of railcars in order to meet DTRA's training mission requirements.

## 2.3 No Action Alternative

Under the No Action Alternative, DTRA would not implement the components of the Proposed Action as described in **Section 2.1**. This would result in the continuation of deficient Site conditions that do not promote optimal testing and training activities, which could potentially compromise DTRA's mission at the TEAMS. Selection of this alternative would prevent DTRA from maintaining the RSTD at Kirtland AFB in accordance with NRC licensing requirements and would compromise DTRA's ability to continue research on equipment necessary to detect radiological materials. The Site's enhanced ability to provide radiological detection and hazard characterization training of all DOD response activities in a three-dimensional environment would not be realized, impeding unit capability and awareness.

While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, this alternative provides a comparative baseline against which to analyze the impacts of the Proposed Action. The No Action Alternative reflects the *status quo* and serves as a benchmark against which the impacts of the Proposed Action can be evaluated.

## 2.4 Alternatives Considered but Eliminated from Detailed Analysis

Alternatives initially considered included utilizing an alternative site controlled by DTRA on Kirtland AFB and a reduced scale (i.e., partial implementation) alternative.

### 2.4.1 Utilizing an Alternative Site on Kirtland AFB Controlled By DTRA

DTRA and the USAF considered the GRABS Site which is also controlled by DTRA as a potential location for the Proposed Action. However, use of the GRABS Site would result in increased construction costs and compromise the existing function of the GRABS Site where explosive testing is conducted.

Per the site-selection criteria, a reasonable site for the Proposed Action must be secure, be already controlled by DTRA, be located within Kirtland AFB, and have existing rail line to support DTRA's mission. No other site within Kirtland AFB meets these criteria; all rail lines have been removed from Kirtland AFB, with the exception of the TEAMS. Furthermore, the replacement or relocation of existing, established TEAMS assets, such as sensors, structures, and other infrastructure, would be cost prohibitive.

For these reasons, this alternative was eliminated from further consideration and is not analyzed in this EA.

### 2.4.2 Reduced-Scale (Partial Implementation) Alternative

Under this alternative, DTRA would implement only a partial set of the Proposed Action components. However, failure to implement any component would result in the continuation of mission shortfalls as identified in **Section 1.2**. DTRA determined that implementation of the reduced-scale alternative would not meet the site-selection criteria of meeting current and future mission requirements at TEAMS. Therefore, this alternative was not carried forward for further detailed analysis in this EA.

## 2.5 Comparative Summary of Impacts

**Table 3** presents a summary of potential impacts resulting from the Proposed Action and the No Action Alternative categorized by resource area. This EA addresses these impacts in more detail within **Section 4**.

**Table 3. Summary of Potential Impacts of the Proposed Action and the No Action Alternative**

Resource Area	Proposed Action	No Action Alternative
Noise	<p>The closest offsite structure to the TEAMS boundary exists over 200 feet to the north. While construction activities would result in short-term increases to the existing noise environment, these impacts would be negligible and temporary in nature.</p> <p>Operation and maintenance of the TEAMS would not introduce new noise sources to the existing noise environment, and would not result in any long-term noise impacts.</p>	<p>No increase in construction activities would occur, and the ambient noise environment would not change from existing conditions.</p>

**Table 3. Summary of Potential Impacts of the Proposed Action and the No Action Alternative (continued)**

Resource Area	Proposed Action	No Action Alternative
<b>Air Quality</b>	<p>Construction activities at the TEAMS would generate air pollutant emissions during ground-disturbing activities and operation of construction equipment and trucks. However, such impacts would be less than significant, as emission amounts would fall below designated <i>de minimis</i> thresholds.</p> <p>Potential impacts from fugitive dust during construction would be less than significant due to the small area of proposed disturbance and conformance with an existing fugitive dust permit.</p> <p>A proposed increase in testing and training activities during operation of the Proposed Action would result in a long-term, negligible, adverse impact on local and regional air quality and emission levels when compared to existing levels.</p>	<p>Existing air emissions from the TEAMS would continue, as permitted under an existing air quality permit. No change to the local or regional air quality environment would occur.</p>
<b>Geology and Soils</b>	<p>Short-term, less-than-significant, adverse impacts may occur during construction activities. No deep excavation is proposed, and all work would be confined to the upper 5 feet of soil.</p> <p>Potential long-term, adverse impacts would be minimized or avoided with proper implementation of appropriate Best Management Practices (BMPs).</p>	<p>No changes to existing geology and soil conditions would occur.</p>
<b>Water Resources</b>	<p>While groundwater resources may be used for dust suppression during construction activities, current annual water use at Kirtland AFB is well below the limit allowed. A short-term, less-than-significant, adverse impact on groundwater may be anticipated.</p> <p>Short-term, less-than-significant, adverse impacts to surface waters would result from ground-disturbing construction activities increasing storm water discharge and sedimentation. These would be minimized or avoided through proper implementation of appropriate BMPs.</p> <p>Operation and maintenance of the Proposed Action would increase on-site water used by approximately 1 percent over 2012 usage. As such, only a negligible impact would be anticipated.</p>	<p>The existing condition of on-site water resources would continue, and no impacts on groundwater or surface water would occur.</p>
<b>Biological Resources</b>	<p>Construction activities associated with the Proposed Action would impact vegetation within proposed construction footprints. Due to the small areas of proposed construction, this would be a short-term, less-than-significant, adverse impact.</p>	<p>Existing conditions of biological resources within the TEAMS would remain unchanged over current conditions. Puncture vine would continue to dominate the landscape of the TEAMS, and no improvements</p>

		to this condition would occur.
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**Table 3. Summary of Potential Impacts of the Proposed Action and the No Action Alternative (continued)**

Resource Area	Proposed Action	No Action Alternative
<b>Biological Resources (continued)</b>	<p>Negligible impacts on wildlife may occur during construction, as existing habitat is limited due to the disturbed nature of the Site and the habituation of wildlife to noise due to the nearby Albuquerque International Sunport.</p> <p>No protected species, critical habitat, or wetlands would be impacted, and operation of the Proposed Action would not result in any additional long-term, adverse impact on biological resources.</p>	
<b>Infrastructure</b>	<p>Short-term, less-than-significant, adverse impacts on transportation, storm water drainage systems, and solid waste management may occur during construction due to increased traffic, ground-disturbance, and generation of construction waste.</p> <p>No additional, noticeable, adverse impacts would be expected to occur during operation of the Proposed Action. Long-term, beneficial impacts on the existing communications system would occur with operation of the proposed radio antenna/communications tower.</p>	<p>Existing infrastructure conditions would remain unchanged from current conditions. While the less-than-significant, adverse impacts of the Proposed Action would occur, the communications system improvements for DTRA on Kirtland AFB also would not occur.</p>
<b>Hazardous Materials and Waste</b>	<p>Construction activities associated with the Proposed Action would result in short-term, less-than-significant, adverse impacts due to an incremental increase in hazardous materials and wastes.</p> <p>No long-term, adverse impacts on hazardous materials and wastes would be anticipated with implementation of the Proposed Action.</p>	<p>Existing conditions would remain unchanged. However, this also means that DTRA would not construct and operate the required radiological storage facility necessary to meet NRC requirements for the storage of the proposed higher-level radioactive material. This would result in DTRA's inability to meet their future test and training mission.</p>
<b>Safety</b>	<p>During construction activities, less-than-significant, adverse impacts on contractor safety may occur simply due to the increased level of activity.</p> <p>Operation of the Proposed Action would not be expected to cause any long-term, adverse impacts, but would have a beneficial impact due to improved communications capabilities in turn improving emergency response capabilities and overall installation safety.</p>	<p>Existing safety conditions at Kirtland AFB would remain unchanged. The long-term, beneficial impacts occurring from improved radiological source storage and communications capabilities would not occur.</p>

### 3. DESCRIPTION OF THE AFFECTED ENVIRONMENT

DTRA initially considered all potentially relevant resource areas for analysis in this EA. In compliance with NEPA and CEQ regulations, the discussions of the affected environment in **Section 3** and the environmental consequences in **Section 4** focus only on those resource areas considered potentially subject to impacts and with potentially significant environmental issues. Resources analyzed in depth within this EA include noise, air quality, geology and soils, water resources, biological resources, infrastructure, hazardous materials and waste, and safety.

#### 3.1 Resources Eliminated from Further Analysis

NEPA, CEQ regulations, and USAF procedures for implementing NEPA specify that an EA should focus only on those resources potentially subject to impacts. In addition, the level of analysis applied to any given resource should be commensurate with the level of impact anticipated for that resource. Applying these guidelines, the following resource areas were not analyzed in this EA: land use, visual resources, cultural resources, and socioeconomic and environmental justice. It is anticipated that impacts would be negligible or nonexistent to these resources.

**Land Use.** Implementation of the Proposed Action would not alter currently ongoing activities at the TEAMS, nor change the existing function or use of the Site. Therefore, no impacts on land use would be anticipated with implementation of the Proposed Action; therefore, this resource is not carried forward for further analysis within this EA.

**Visual Resources.** Short-term construction activities at the TEAMS would be consistent with Kirtland AFB's installation construction practices and would not adversely affect the existing visual landscape. Construction of the proposed antenna/communications tower would not introduce a substantial visual intrusion into the military landscape. This structure, which would not exceed 50 feet in height, would be similar to and smaller than several others located across Kirtland AFB. Construction and operation of permanent, modern buildings that comply with the architectural compatibility standards described in the Kirtland AFB's Architectural Compatibility Plan, coupled with the removal of puncture vine from the Site, would improve the long-term visual quality of the TEAMS. As such, a long-term, beneficial impact would occur. Therefore, visual resources are not carried forward for further analysis within this EA.

**Cultural Resources.** There are no known cultural resources within the Area of Potential Effect of the TEAMS. In addition, the SHPO concurred with DTRA's and USAF's finding of "no effect" to historic properties from this proposed undertaking, pursuant to Section 106 of the NHPA and 36 CFR Part 800. While implementation of the Proposed Action would have no impact on known cultural resources, any ground-disturbing activities would take into consideration the potential for discovery of previously undiscovered cultural resources. Should any archaeological sites be identified during the construction, operation, or maintenance of the Proposed Action, activities would cease, the Kirtland AFB Cultural Resources Program Manager would be notified, and the site(s) would be documented and evaluated for National Register of Historic Places eligibility. Therefore, this resource area is not carried forward for further analysis within this EA.

**Socioeconomics and Environmental Justice.** The temporary increase in construction employees at Kirtland AFB would represent a small increase in the total number of persons working on the installation, but no additional facilities (e.g., housing, transportation) would be necessary to accommodate the workforce. The Albuquerque metropolitan area (i.e., a 50-mile radius around Kirtland AFB) contains elevated minority and low-income populations in comparison to the overall United States, but similar to the state of New Mexico. Construction and operation of the Proposed Action would occur in developed, controlled areas of the installation; therefore no

off-installation minority or low-income populations would be disproportionately impacted. As such, no impacts would be expected with implementation of the Proposed Action, and this resource area is not carried forward for further analysis within this EA.

## 3.2 Noise

### 3.2.1 Definition of the Resource

Sound is defined as a particular auditory impact produced by a given source, for example the sound of rain on a rooftop. Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory impact. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. Noise can be readily identifiable or generally nondescript. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. Affected receptors are specific (e.g., schools, churches, or hospitals) or broad (e.g., nature preserves or designated districts) areas in which occasional or persistent sensitivity to noise above ambient levels exists

**Noise Metrics and Regulations.** Although human response to noise varies, measurements can be calculated with instruments that record instantaneous sound levels in decibels. A-weighted decibel (dBA) is the unit used to characterize sound levels that can be sensed by the human ear. "A-weighted" denotes the adjustment of the frequency range to what the average human ear can sense when experiencing an audible event. The threshold of audibility is generally within the range of 10 to 25 dBA for normal hearing. The threshold of pain occurs at the upper boundary of audibility, which is normally in the region of 135 dBA (USEPA 1981a). **Table 4** compares common sounds and shows how they rank in terms of the impacts on hearing. As shown, a whisper is normally 30 dBA and considered to be very quiet while an air conditioning unit 20 feet away is considered an intrusive noise at 60 dBA. Noise levels can become annoying at 80 dBA and very annoying at 90 dBA. To the human ear, each 10 dBA increase seems twice as loud (USEPA 1981b).

**Table 4. Sound Levels and Human Response**

Noise Level (dBA)	Common Sounds	Impact
10	Just audible	Negligible
30	Soft whisper (15 feet)	Very quiet
50	Light auto traffic (100 feet)	Quiet
60	Air conditioning unit (20 feet)	Intrusive
70	Noisy restaurant or freeway traffic	Telephone use difficult
80	Alarm clock (2 feet)	Annoying
90	Heavy truck (50 feet) or city traffic	Very annoying Hearing damage (8 hours)
100	Garbage truck	Very annoying
110	Pile drivers	Strained vocal effort
120	Jet takeoff (200 feet) or auto horn (3 feet)	Maximum vocal effort
140	Carrier deck jet operation	Painfully loud

Source: USEPA 1981b

Under the Noise Control Act of 1972, the Occupational Safety and Health Administration (OSHA) established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed to is 115 dBA, and exposure to this level must not

exceed 15 minutes within an 8-hour period. These standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that will reduce sound levels to acceptable limits.

**Construction Sound Levels.** Building construction and demolition work can cause an increase in sound that is well above the ambient level. A variety of sounds are emitted from loaders, trucks, saws, and other work equipment. **Table 5** lists noise levels associated with common types of construction equipment. Construction equipment usually exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 30 to 35 dBA in a quiet suburban area.

**Table 5. Predicted Noise Levels for Construction Equipment**

Construction Category and Equipment	Predicted Noise Level at 50 feet (dBA)
<b>Clearing and Grading</b>	
Bulldozer	80
Grader	80–93
Truck	83–94
Roller	73–75
<b>Excavation</b>	
Backhoe	72–93
Jackhammer	81–98
<b>Building Construction</b>	
Concrete mixer	74–88
Welding generator	71–82
Pile driver	91–105
Crane	75–87
Paver	86–88

Source: USEPA 1981b

### 3.2.2 Existing Conditions

**Ambient Noise Environment.** The ambient noise environment at Kirtland AFB is affected mainly by USAF and civilian aircraft operations and military vehicles. The commercial and military aircraft operations at the adjacent Albuquerque International Sunport are the primary source of noise at the installation. Noise from aircraft operations is present throughout the northwestern portion of Kirtland AFB as a result of operations at the Albuquerque International Sunport. Vehicle use associated with military operations at Kirtland AFB consists of passenger vehicles, delivery trucks, and military on- and off-road vehicles. Passenger vehicles comprise most of the vehicles present at Kirtland AFB and the surrounding environment. Periodic blasting test events in the southern portion of the installation represent an infrequent, short-term source of noise in the northern developed portion of the installation, including the TEAMS.

At the TEAMS, the local noise environment is dominated by operations of the Albuquerque International Sunport. Per **Table 4**, noise created by intermittent aircraft flying over the TEAMS could be considered “intrusive” or make telephone use difficult. Also at the TEAMS, local noise attributable to vehicle use results from vehicles traveling along the four roads that border the TEAMS: East Ordnance Road to the north; 9th Street to the east; S Street to the south; and Wyoming Boulevard to the west (see **Figure 3**). Activities at the TEAMS contribute very little, if any, additional noise to the immediate area. The cumulative ambient sound environment of the TEAMS is comparable to a suburban residential area adjacent to an airport. As shown in **Figure 2**, there are no sensitive noise receptors within 0.5 mile of the TEAMS; all lands are within the boundaries of Kirtland AFB.

### 3.3 Air Quality

#### 3.3.1 Definition of the Resource

In accordance with federal CAA requirements, the air quality in a region or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological “air basin”, and the prevailing meteorological conditions.

**Ambient Air Quality Standards.** Under the CAA, USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O<sub>3</sub>), measured as either volatile organic compounds (VOCs) or total nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM<sub>10</sub>] and particulate matter equal to or less than 2.5 microns in diameter [PM<sub>2.5</sub>]), and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. The state of New Mexico has adopted the NAAQS and promulgated additional State Ambient Air Quality Standards (SAAQS) for criteria pollutants. In some cases, the SAAQS are more stringent than the federal primary standards. **Table 6** presents USEPA NAAQS and SAAQS for the federally listed criteria pollutants.

**Attainment versus Non-attainment and General Conformity.** USEPA classifies the air quality in an Air Quality Control Region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are, therefore, designated as either “attainment”, “non-attainment”, “maintenance”, or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; non-attainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated as non-attainment but is now in attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment.

USEPA has delegated the authority for ensuring compliance with the NAAQS in New Mexico to the NMED Air Quality Bureau. The NMED Air Quality Bureau has delegated authority over air quality in Bernalillo County to the AEHD-AQD. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

The General Conformity Rule requires that any federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS. The General Conformity Rule applies only to significant actions in non-attainment or maintenance areas.

**Federal Prevention of Significant Deterioration.** Federal Prevention of Significant Deterioration (PSD) regulations apply in attainment areas to major stationary sources (i.e., sources with the potential to emit 250 tons per year [tpy] of any criteria pollutant), and a significant modification to a major stationary source (i.e., change that adds 15 to 40 tpy to the facility’s potential to emit depending on the pollutant). Additional PSD major source and significant modification thresholds apply for greenhouse gases (GHGs), as discussed in the Greenhouse Gas Emissions subsection.

Table 6. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Standard		Secondary Standard
		Federal	State	
CO	8-hour <sup>(1)</sup>	9 ppm (10 mg/m <sup>3</sup> )	8.7 ppm	None
	1-hour <sup>(1)</sup>	35 ppm (40 mg/m <sup>3</sup> )	13.1 ppm	None
Pb	Rolling 3-Month Average	0.15 µg/m <sup>3(2)</sup>	--	Same as Primary
NO <sub>2</sub>	Annual Arithmetic Mean	53 ppb <sup>(3)</sup>	50 ppb	Same as Primary
	1-hour	100 ppb <sup>(4)</sup>	100 ppb	None
PM <sub>10</sub>	24-hour <sup>(5)</sup>	150 µg/m <sup>3</sup>	--	Same as Primary
PM <sub>2.5</sub>	Annual Arithmetic Mean <sup>(6)</sup>	12 µg/m <sup>3</sup>	--	15 µg/m <sup>3</sup>
	24-hour <sup>(7)</sup>	35 µg/m <sup>3</sup>	--	Same as Primary
O <sub>3</sub>	8-hour <sup>(8)</sup>	0.075 ppm (2008 Standard)	--	Same as Primary
	8-hour <sup>(9)</sup>	0.08 ppm (1997 Standard)	--	Same as Primary
	1-hour <sup>(10)</sup>	0.12 ppm	--	Same as Primary
SO <sub>2</sub>	1-hour	75 ppb <sup>(11)</sup>	--	0.5 ppm (3-hour) <sup>(1)</sup>

Sources: USEPA 2011a; USEPA 2013; State of New Mexico 2009

mg/m<sup>3</sup> – milligrams per cubic meter

ppb – parts per billion

ppm – parts per million

µg/m<sup>3</sup> – micrograms per cubic meter

Notes:

1. Not to be exceeded more than once per year.
2. Final rule signed 15 October 2008. The 1978 lead standard (1.5 µg/m<sup>3</sup> as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
3. The official level of the annual NO<sub>2</sub> standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of cleaner comparison to the 1-hour standard.
4. To attain this standard, the 3-year average of the 98<sup>th</sup> percentile of the daily maximum 1-hour average at each monitor within the area must not exceed 100 ppb (effective 22 January 2010).
5. Not to be exceeded more than once per year on average over 3 years.
6. To attain this standard, the 3-year average of the weighted annual mean PM<sub>2.5</sub> concentrations from single or multiple community-oriented monitors must not exceed 12.0 µg/m<sup>3</sup>.
7. To attain this standard, the 3-year average of the 98<sup>th</sup> percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m<sup>3</sup> (effective 17 December 2006).
8. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective 27 May 2008).
- 9a. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
  - b. The 1997 standard – and the implementation rules for that standard – will remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
  - c. USEPA is in the process of reconsidering these standards (set in March 2008).
- 10a. USEPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard (anti-backsliding).
  - b. The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.
11. Final rule signed on 2 June 2010. To attain this standard, the 3-year average of the 99<sup>th</sup> percentile of daily maximum 1-hour average at each monitor within an area must not exceed 75 ppm.

PSD permitting can also apply to a proposed action if all three of the following conditions exist: (1) the proposed action is a modification with an anticipated net emissions increase to an existing PSD major source; (2) the proposed action is within 10 kilometers of a national park or wilderness area (i.e., a Class I Area); and (3) regulated stationary source pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 microgram per cubic meter ( $\mu\text{g}/\text{m}^3$ ) or more (40 CFR §52.21[b][23][iii]). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's Class designation (40 CFR §52.21[c]).

**Title V Requirements.** Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A Title V major stationary source has the potential to emit more than 100 tpy of any one criteria air pollutant, 10 tpy of a HAP, or 25 tpy of any combination of HAPs. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality. Section 112 of the CAA defines the sources and kinds of HAPs.

**Greenhouse Gas Emissions.** GHGs are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most common GHGs include carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ), and  $\text{NO}_x$ . On 22 September 2009, USEPA issued a final rule for mandatory GHG reporting from large GHG emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate data on  $\text{CO}_2$  and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of  $\text{CO}_2$  equivalent emissions per year, but excludes mobile source emissions. The first emissions report under the GHG Reporting Program was published with 2010 emissions data. For the 2011 reporting year, USEPA added 12 additional emissions sources; during this time frame, approximately 8,000 facilities reported 3.3 billion tons of  $\text{CO}_2$  equivalent direct emissions (USEPA Greenhouse Gas Reporting Program 2013). GHG emissions will also be factors in PSD and Title V permitting and reporting, according to a USEPA rulemaking issued on 3 June 2010 (75 Federal Register 31514). GHG emissions thresholds of significance for permitting of stationary sources are 75,000 tons  $\text{CO}_2$  equivalent per year and 100,000 tons  $\text{CO}_2$  equivalent per year under these permit programs.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, was signed in October 2009 and requires agencies to set goals for reducing GHG emissions. One requirement within EO 13514 is the development and implementation of an agency Strategic Sustainability Performance Plan (SSPP) that prioritizes agency actions based on lifecycle return on investment. Each SSPP is required to identify, among other things, "agency activities, policies, plans, procedures, and practices" and "specific agency goals, a schedule, milestones, and approaches for achieving results, and quantifiable metrics" relevant to the implementation of EO 13514. The SSPP is published annually and describes specific actions the DOD will take to achieve its individual GHG reduction targets, reduce long-term costs, and meet the full range of goals of the EO. All SSPPs segregate GHG emissions into three categories: Scope 1, Scope 2, and Scope 3 emissions. Scope 1 GHG emissions are those directly occurring from sources that are owned or controlled by the agency. Scope 2 emissions are indirect emissions generated in the production of electricity, heat, or steam purchased by the agency. Scope 3 emissions are other indirect GHG emissions that result from agency activities, but from sources that are not owned or directly controlled by the agency. The GHG goals in the DOD SSPP include reducing Scope 1 and Scope 2 GHG emissions by 34 percent by 2020, relative to Fiscal Year (FY) 2008 emissions, and reducing Scope 3 GHG emissions by 13.5 percent by 2020, relative to FY 2008 emissions.

### 3.3.2 Existing Conditions

Kirtland AFB is in Bernalillo County, New Mexico, which is within the Albuquerque-Mid Rio Grande Intrastate (AMRGI) AQCR 152. The AMRGI AQCR also includes portions of Sandoval and Valencia Counties, New Mexico (USEPA 2002a). As defined by 40 CFR §81.332, Kirtland AFB is in an area that is designated as attainment/unclassified for all criteria pollutants except CO. Bernalillo County has been designated as moderate maintenance for CO (USEPA 2002b, USEPA 2011b). According to 40 CFR Part 81, no Class I areas are located within 10 kilometers of Kirtland AFB (USEPA 2011c).

The most recent emissions for Bernalillo County and AMRGI AQCR are shown in **Table 7**. Bernalillo County is considered the local area of influence, and the AMRGI AQCR is considered the regional area of influence for this air quality analysis. The emissions inventory for the AMRGI AQCR includes emissions from all of Bernalillo, Sandoval, and Valencia counties. In actuality, the AMRGI AQCR includes all of Bernalillo County and only portions of Sandoval and Valencia counties.

**Table 7. Local and Regional Air Emissions Inventory for the Proposed Action (2008)**

	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
<b>Bernalillo County</b>	17,245	30,560	99,777	312	58,563	7,639
<b>AMRGI AQCR*</b>	27,436	88,359	149,558	427	133,347	16,255

Source: USEPA 2008  
 Note: \* The emissions inventory for the AMRGI AQCR includes emissions from all of Bernalillo, Sandoval, and Valencia counties. In actuality, the AMRGI AQCR includes all of Bernalillo County and only portions of Sandoval and Valencia counties.

There are various air emissions sources at Kirtland AFB, including emergency generators, boilers, water heaters, fuel storage tanks and fuel dispensing systems, gasoline service stations, surface coating operations, aircraft engine facilities, fire training, remediation activities mulching activities, miscellaneous chemical usage, and open detonation of munitions for military training, emergency remediation, and research and development.

As required by the Albuquerque-Bernalillo County Air Quality Control Board (AQCB) regulations at Title 20, Chapter 11 of the NMAC, installation personnel estimate annual emissions from stationary sources and provide this information to AEHD-AQD. **Table 8** summarizes the 2012 air emissions inventory for Kirtland AFB.

**Table 8. Calendar Year 2013 Air Emissions Inventory for Kirtland AFB**

Actual Emissions	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)
	9.63	76.42	5.66	.57	.81

Source: Kirtland AFB 2013a

Ongoing activities at the TEAMS generate only minor amounts of air emissions. As shown in **Figure 2**, there are no sensitive air quality receptors within 0.5 mile of the TEAMS; all lands are within the boundaries of Kirtland AFB. DTRA currently holds a permit for emissions associated with the Generator 10 building on the TEAMS. Generator 10 is an 88-horsepower, gasoline-powered generator, sited on top of a concrete pad, that is permitted to operate under Air Quality Permit #1944, dated March 2009; this generator produces 50 Hz (European power) with an 81-gallon gasoline tank. This generator operates approximately once per month, or 12 times per year, for a total annual duration of less than 10 hours.

## 3.4 Geology and Soils

### 3.4.1 Definition of the Resource

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, soils, and, where applicable, geologic hazards and paleontology. Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

### 3.4.2 Existing Conditions

**Regional Geology.** The city of Albuquerque and Kirtland AFB are near the junction of five physiographic provinces: the Colorado Plateau, the Basin and Range, the Southern Rocky Mountains, the Rio Grande Rift, and the Great Plains (Grant 1981). Kirtland AFB is located in the eastern margin of the Albuquerque Basin, a major feature of the Rio Grande Rift. The Rio Grande Rift is approximately 620 miles long and is bordered on the west by the Colorado Plateau and on the east by the Great Plains. The Albuquerque Basin is north-trending and is approximately 90 miles long and 31 miles wide. It extends from near the Rio Grande to the foothills of the Sandia and Manzanita Mountains. The Albuquerque Basin is defined to the south by the Socorro Channel, to the north by the Nacimiento Uplift, to the west by the Puerco Plateau and Lucero Uplift, and to the east by the Sandia and Manzanita Mountains. The widest point of the Albuquerque Basin is near Kirtland AFB; this Basin tapers off gradually towards its north and south ends. The Basin was deepened and local mountain ranges were tilted by large-scale faulting that occurred approximately 11.2 to 5.3 million years ago. Geologic formations found within Kirtland AFB range in age from Precambrian granites to present-day windblown sands (Kirtland AFB 2012).

**Topography.** Most of Kirtland AFB is situated on a relatively flat mesa; however, the mesa is cut by the east-west trending Tijeras Arroyo that drains into the Rio Grande and is interrupted by the Manzanita Mountains. Elevations at Kirtland AFB range from 5,200 feet amsl in the western portion of the installation to almost 8,000 feet amsl in the Manzanita Mountains (Kirtland AFB 2012). The elevation of the TEAMS ranges between approximately 5,390 and 5,400 feet amsl, a relief of only 10 feet, at a maximum. The TEAMS is located on very flat land.

**Soils.** Twenty-six soils have been identified at Kirtland AFB (Kirtland AFB 2012). The TEAMS includes three different soil map units: Wink-Embudo complex, 0 to 5 percent slopes (WeB), covers approximately 74 percent of the TEAMS; Embudo gravelly fine sandy loam, 0 to 5 percent slopes (EmB), covers approximately 13 percent of the TEAMS; and Wink fine sandy loam, 0 to 5 percent slopes (WaB), covers approximately 13 percent of the TEAMS (USDA NRCS Web Soil Survey 2013). **Table 9** lists the soil properties at TEAMS; **Figure 5** depicts the location of each soil map unit at the TEAMS.

DTRA determines soil engineering limitations at the TEAMS based on data available from NRCS's Web Soil Survey. DTRA considered engineering limitations for construction of small commercial buildings, roads, and shallow excavations for utilities at the TEAMS, as follows:

- WeB was rated as not limited for small commercial buildings, not limited for roads and streets, and somewhat limited for shallow excavation.
- EmB was rated as very limited for small commercial buildings, somewhat limited for roads and streets, and very limited for shallow excavation.
- WaB was rated as not limited for small commercial buildings, not limited for roads and streets, and somewhat limited for shallow excavation.

**Table 9. Properties of the TEAMS Soils**

Mapping Unit	General Soil Characteristics
<p><b>Wink fine sandy loam, 0 to 5 percent slopes (WaB)</b></p>	<ul style="list-style-type: none"> <li>• Well-drained.</li> <li>• Moderate water capacity.</li> <li>• No flooding.</li> <li>• No ponding.</li> <li>• Seasonal water table at a depth of greater than 80 inches.</li> <li>• Not hydric.</li> </ul>
<p><b>Wink-Embudo complex, 0 to 5 percent slopes (WeB)</b></p>	<ul style="list-style-type: none"> <li>• Well-drained.</li> <li>• Low to moderate water capacity.</li> <li>• No to rare flooding.</li> <li>• No ponding.</li> <li>• Seasonal water table at a depth of greater than 80 inches.</li> <li>• Not hydric.</li> </ul>
<p><b>Embudo gravelly fine sandy loam, 0 to 5 percent slopes (EmB)</b></p>	<ul style="list-style-type: none"> <li>• Well-drained.</li> <li>• Low water capacity</li> <li>• Rare flooding.</li> <li>• No ponding.</li> <li>• Seasonal water table at a depth of greater than 80 inches.</li> <li>• Not hydric.</li> </ul>
<p>Source: USDA NRCS Web Soil Survey 2013</p>	

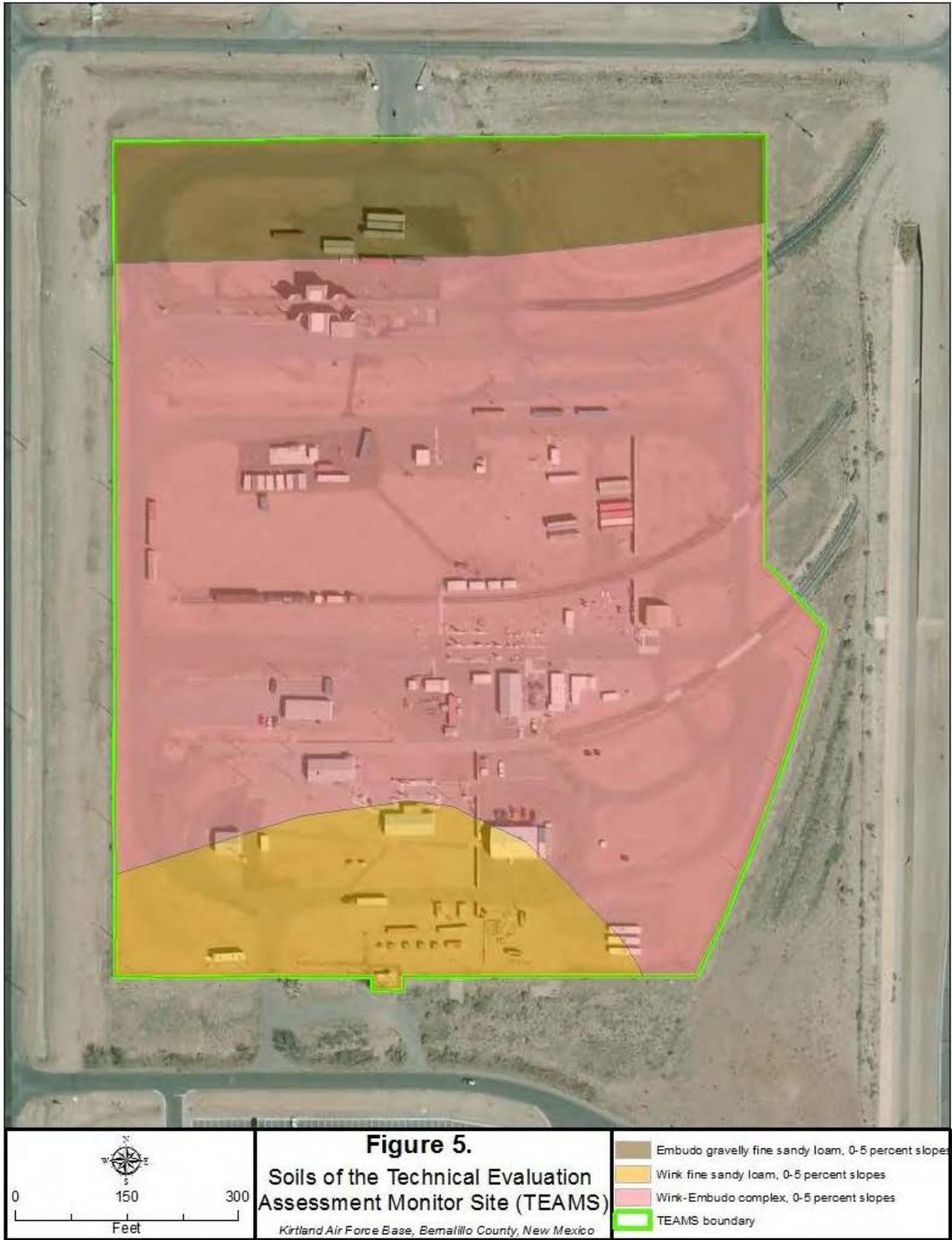
**Prime Farmland.** None of the three soils underlying the TEAMS is a prime farmland soil or farmland soil of statewide importance (USDA NRCS Web Soil Survey 2013). Kirtland AFB is not currently used for agricultural purposes, nor is any agricultural use planned for the future.

**Geologic Hazards.** Geological hazards are defined as a natural geologic event that can endanger human lives and threaten property. Examples of geologic hazards include earthquakes, landslides, sinkholes, tsunamis, and volcanoes. In Albuquerque, the primary geologic hazard that could endanger lives or threaten property is earthquakes. The U.S. Geological Survey (USGS) has classified the Albuquerque area as having a moderate potential for earthquake hazards and has given the region a seismic hazard rating of 16 to 32 percent gravity. This means that, during an earthquake that has a 2 percent chance of occurring during a 50-year period, moderate to major damage would occur (USGS 2008). Overall, this means that an earthquake resulting in moderate to major damage could occur once every approximately 2,500 years in the Albuquerque area.

### 3.5 Water Resources

#### 3.5.1 Definition of the Resource

Water resources are natural and man-made sources of water that are available for use by, and for the benefit of, humans and the environment. Water resources relevant to Kirtland AFB's location in New Mexico include groundwater, surface water, floodplains, and wetlands. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes.



**Groundwater.** Groundwater is water that exists in the saturated zone beneath the earth's surface and includes underground streams and aquifers. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations.

Groundwater quality and quantity are regulated under several programs. The federal Underground Injection Control regulations, authorized under the Safe Drinking Water Act (SDWA), require a permit for the discharge or disposal of fluids into a well. The federal Sole Source Aquifer regulations, also authorized under the SDWA, protect aquifers that are critical to water supply.

**Surface Water.** Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contribution to the economic, ecological, recreation, and human health of a community or locale.

Wetlands perform several hydrologic functions; including water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, storm water attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of the "waters of the United States" under Section 404 of the Clean Water Act (CWA). The term "waters of the United States" has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats (including wetlands). The United States Army Corps of Engineers (USACE) defines wetlands as "those areas that are inundated or saturated with ground or surface water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR Part 329).

A water body can be deemed "impaired" if water quality analyses conclude that exceedances of the water quality standards established under the CWA occur. The CWA requires that states establish a Section 303(d) list to identify impaired waters and establish Total Maximum Daily Loads (TMDLs) for the source(s) causing the impairment. A TMDL is the maximum amount of a substance that can be assimilated by a water body without causing impairment. The CWA also mandated the NPDES program, which regulates the discharge of point (end of pipe) and non-point (storm water) sources of water pollution and requires a permit for any discharge of pollutants into waters of the United States.

Storm water is an important component of surface water systems because of its potential to introduce sediments and other contaminants that could degrade surface waters. Proper management of storm water flows, which can be intensified by high proportions of impervious surfaces associated with buildings, roads, and parking lots, is important to the management of surface water quality and natural flow characteristics. Prolonged increases in storm water volume and velocity associated with development and increased impervious surfaces have potential to impact adjacent streams as a result of stream bank erosion and channel widening or down cutting associated with the adjustment of the stream to the change in flow characteristics. Storm water management systems are typically designed to contain runoff on-site during construction and to maintain redevelopment storm water flow characteristics following development through either the application of infiltration or retention practices. Failure to size storm water systems appropriately to hold or delay conveyance of the largest predicted precipitation event often leads to downstream flooding and the environmental and economic damages associated with flooding.

USEPA published the technology-based Final Effluent Limitations Guidelines (ELGs) and New Source Performance Standards (NSPSs) for the Construction and Development Point Source Category on 1 December 2009 to control the discharge of pollutants from construction sites. The Rule became effective on 1 February 2010. After this date, all USEPA- or state-issued construction general permits were to be revised to incorporate the ELG requirements, with the exception of the

numeric limitation for turbidity, which has been suspended while USEPA further evaluates this limitation. USEPA currently regulates large and small (greater than 1 acre) construction activity through the 2012 Construction General Permit (CGP). The 2012 CGP replaces the 2008 CGP, which expired on 15 February 2012, and provides coverage for new and existing construction projects for a period of 5 years.

The 2012 CGP includes a number of modifications to the 2008 CGP, many of which are necessary to implement the ELGs and NSPSs for Construction and Development point sources, known as the C&D rule. The C&D rule requires construction site operators to meet restrictions on erosion and sediment control, pollution prevention, and stabilization. Permittees must select, install, and maintain effective erosion- and sedimentation-control measures as identified and as necessary to comply with the 2012 CGP, including the following:

- Sediment controls, such as sediment basins, sediment traps, silt fences, vegetative buffer strips
- Offsite sediment tracking and dust control
- Runoff management
- Erosive velocity control
- Post-construction storm water management
- Construction and waste materials management
- Non-construction waste management
- Erosion control and stabilization
- Spill/release prevention.

Construction activities, such as clearing, grading, trenching, and excavating, disturb soils and can create sediment. If not managed properly, disturbed soils can easily be washed into nearby water bodies during storm events, where water quality is reduced and sedimentation is increased. Section 438 of the Energy Independence and Security Act (EISA) (42 USC §17094) establishes into law new storm water design requirements for federal construction projects that disturb a footprint of greater than 5,000 square feet of land. EISA Section 438 requirements are independent of storm water requirements under the CWA. The project footprint consists of all horizontal hard surface and disturbed areas associated with project development. Under these requirements, pre-development site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. Pre-development hydrology shall be modeled or calculated using recognized tools and must include site-specific factors such as soil type, ground cover, and ground slope. Site design shall incorporate storm water retention and reuse technologies such as bioretention areas, permeable pavements, cisterns/recycling, and green roofs to the maximum extent technically feasible.

Post-construction analyses shall be conducted to evaluate the effectiveness of the as-built storm water reduction features (DOD 2010a). These regulations were incorporated into applicable DOD Unified Facilities Criteria (UFC) in April 2010, which stated that low-impact design (LID) features need to be incorporated into new construction activities to comply with the restrictions on storm water management promulgated by EISA Section 438. LID is a storm water management strategy designed to maintain site hydrology and mitigate the adverse impacts of storm water runoff and non-point source pollution. LIDs can management the increase in runoff between pre- and post-development conditions on the project site through interception, infiltration, storage, and evapotranspiration processes before the runoff is conveyed to receiving waters. Examples of the methods that could reduce the potential impacts of a proposed action include bioretention, permeable pavements, cisterns/recycling, and green roofs (DOD 2010b). Additional guidance is

provided in USEPA's *Technical Guidance on Implementing the Storm Water Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act* (USEPA 2009).

**Floodplains.** Floodplains are areas of low, level ground present along rivers, stream channels, or coastal waters that are subject to periodic or infrequent inundation due to rain or melting snow. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and habitat for a diversity of plants and animals. Flood potential is evaluated by the Federal Emergency Management Agency, which defines the 100-year floodplain as an area within which there is a 1 percent chance of inundation by a flood event in a given year. Risk of flooding is influenced by local topography, the frequencies of precipitation events, the size of the watershed above the floodplain, and upstream development. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreation and reservation activities, to reduce the risks to human health and safety. EO 11988, *Floodplain Management*, directs federal agencies to avoid siting development or projects within floodplains unless the agency determines that there is no practicable alternative.

### 3.5.2 Existing Conditions

**Groundwater.** Kirtland AFB is located within the limits of the Rio Grande Underground Water Basin, which is defined as a natural resources area and is designated as a "declared underground water basin" by the state of New Mexico. The basin is regulated by the state as a sole source of potable water, although the Albuquerque area will be supplemented in the future with surface water diverted from the San Juan and Chama rivers to the Rio Grande. The Rio Grande Basin's source of groundwater is the Santa Fe Aquifer, which is most likely recharged east of the installation in the Manzanita Mountains (Kirtland AFB 2012). Two aquifers, a regional aquifer and a perched aquifer, underlie Kirtland AFB.

The regional aquifer is present under all of Kirtland AFB and ranges in depth from near surface to 200 feet below ground surface east of the major fault zones in the eastern portion of the installation, and to depths of 350 to 500 feet below ground surface west of the fault zone. The regional aquifer is used for the installation's water supply. Kirtland AFB has a court decreed<sup>4</sup> water right that allows it to withdraw up to 6,000 acre-feet of water, or approximately 2 billion gallons, per year from the underground aquifer (Kirtland AFB 2011a). In 2012, Kirtland AFB pumped 877 million gallons (2,693 acre-feet) of water from these wells (Kirtland AFB 2013c). The perched aquifer is limited in area, straddling the Tijeras Arroyo northeast of where the Tijeras Arroyo and Arroyo del Coyote meet, and occurs at depths of 200 to 400 feet below ground surface.

The perched aquifer is a result of infiltration of water from both man-made and natural origins, with a flow direction to the southeast. The perched aquifer is not used for any purpose. The average depth to groundwater beneath Kirtland AFB is 450 to 550 feet below ground surface. The presence of faults has a direct bearing on the movement and occurrence of groundwater in the vicinity of Kirtland AFB. The groundwater flow direction is down basin (south), with local variations and even reversals due to groundwater pumping, specific geologic structures, or shallow influences near the Rio Grande (Kirtland AFB 2011a).

**Surface Water.** Kirtland AFB is located within the Rio Grande watershed. The Rio Grande is the major surface hydrologic feature in central New Mexico, flowing north to south through Albuquerque approximately 5 miles west of Kirtland AFB (Kirtland AFB 2012). Water resources on Kirtland AFB reflect its dry climate. The average annual rainfall in Albuquerque is 9 inches, with

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<sup>4</sup> On 3 December 1973 the U.S. District Court Judgment and Order incorporated a 27 November 1973 Stipulation of Parties to allow Kirtland AFB to draw a total of 6,398 acre-feet of groundwater from two wells within the Rio Grande Underground Water Basin (4,500 acre-feet and 1,898 acre-feet), as well as three minor decrees to draw 3 acre-feet per year of groundwater from three domestic wells.

half of the average annual rainfall occurring from July to October during heavy thunderstorms (Kirtland AFB 2012). Surface water generally occurs in the form of storm water sheet flow that drains into small gullies during heavy rainfall (Kirtland AFB 2012). Surface water generally flows across Kirtland AFB in a western direction toward the Rio Grande.

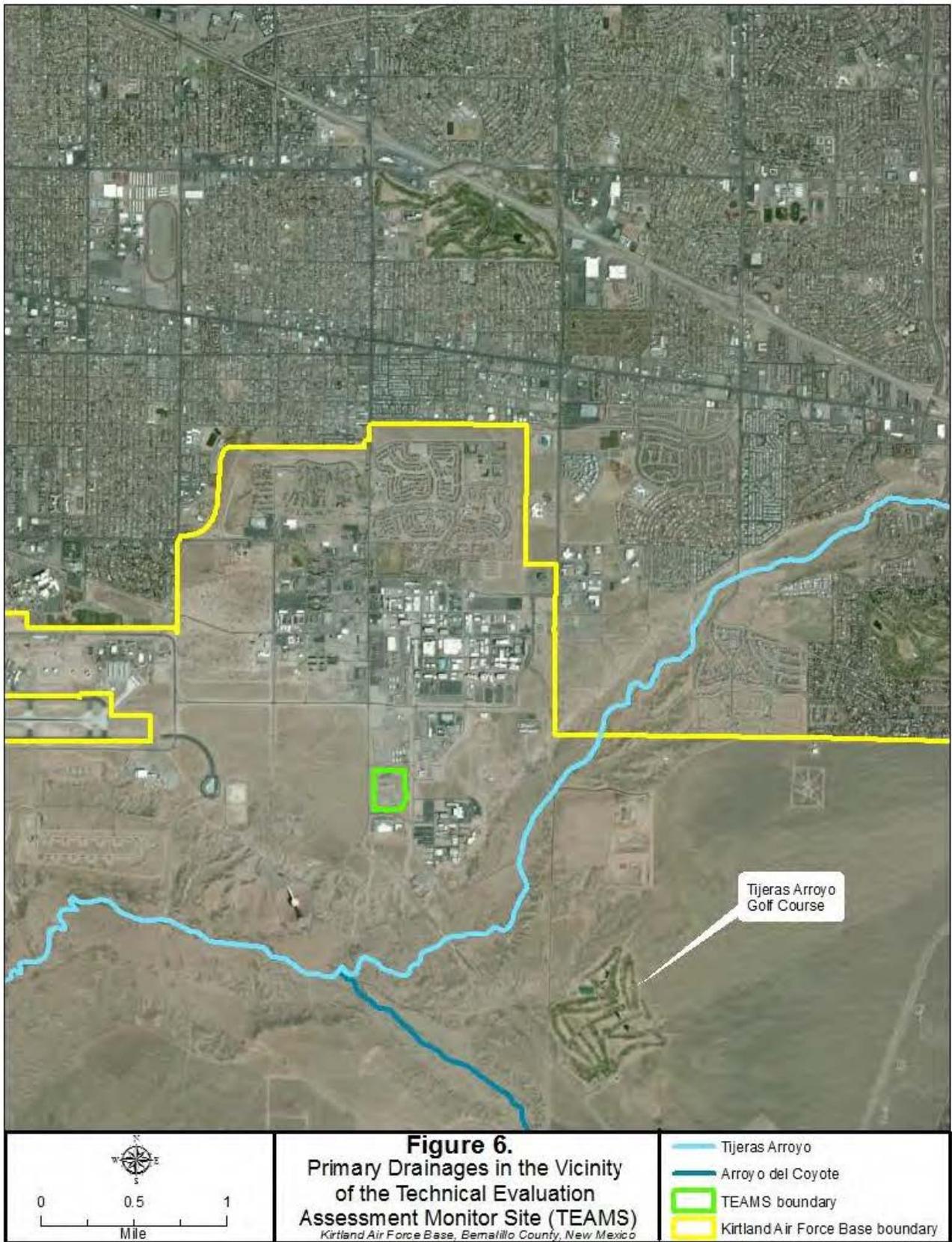
There are no natural lakes or rivers on Kirtland AFB. Six man-made ponds have been created on the Tijeras Arroyo Golf Course, which is located approximately 1.3 miles southeast of the TEAMS. There are 10 wetlands supplied by at least 15 naturally occurring springs on the installation; however none are located on or within 0.5 mile of the TEAMS (Kirtland AFB 2009a). The two main surface water drainage channels on Kirtland AFB are the Tijeras Arroyo and the smaller Arroyo del Coyote, which joins Tijeras Arroyo approximately 1 mile west of the Tijeras Arroyo Golf Course (see **Figure 6**). At its most proximate point, the TEAMS lies approximately 0.7 mile northwest of Tijeras Arroyo. Tijeras Arroyo and Arroyo del Coyote are tributaries to the Rio Grande. Tijeras Arroyo and Arroyo del Coyote flow intermittently during heavy thunderstorms and the spring snowmelt, but most of the water percolates into alluvial deposits or is lost to the atmosphere via evapotranspiration (Kirtland AFB 2011a). Tijeras Arroyo, which is dry for most of the year, is the primary surface channel that drains surface water from Kirtland AFB to the Rio Grande. Precipitation reaches Tijeras Arroyo through a series of storm drains, flood canals, and small, mostly unnamed arroyos. Nearly 95 percent of the precipitation that flows through Tijeras Arroyo evaporates before it reaches the Rio Grande. The remaining 5 percent is equally divided between groundwater recharge and runoff (Kirtland AFB 2011a).

Storm water runoff on Kirtland AFB predominantly flows through the drainage patterns created by natural terrain and paved surfaces. In some areas, runoff is directed through ditches and piping, with direct discharges into a receiving stream or surface water body. Kirtland AFB has a Storm Water Municipal Separate Storm Sewer System (MS4), which collects and conveys storm water from storm drains, pipes, and ditches, and discharges storm water into Tijeras Arroyo and the city of Albuquerque's MS4. Storm water on and within the vicinity of TEAMS infiltrates into the ground or discharges via surface runoff into improved conveyance ditches and channels and flows toward Tijeras Arroyo. See **Figure 3** for a depiction of on-site drainage swales and ditches.

Kirtland AFB has a NPDES General Storm Water Permit for industrial activities and an active program for construction projects that require a NPDES permit. If a project at Kirtland AFB is subject to the CGP requirements, the contractor must develop a Storm Water Pollution Prevention Plan (SWPPP) and provide the SWPPP to the 377 Mission Support Group/Civil Engineering Installation Management – Environmental Management (377 MSG/CEIE) for review prior to submitting a NOI for permit coverage under USEPA CGP. The SWPPP must be developed and the contractor must be issued a CGP before work begins.

Kirtland AFB must also comply with MS4 permit requirements and has developed a Storm Water Management Plan as required by the MS4 permit (Kirtland AFB 2011a). When construction projects are not subject to NPDES CGP requirements (due to the size of the project or waivers), the contractor must submit a list of BMPs to the installation's water quality program that the contractor intends to use to mitigate storm water pollutants. The list of BMPs submitted by the contractor documents compliance with the Kirtland AFB MS4 permit.

**Floodplains.** A 100-year floodplain encompasses Arroyo del Coyote and Tijeras Arroyo. These are the only two arroyos with a floodplain on the installation. Arroyo del Coyote and Tijeras Arroyo floods occur infrequently and are characterized by high peak flows, small volumes, and short durations (Kirtland AFB 2012). The TEAMS is not located within the 100- or 500-year floodplains (Kirtland AFB 2011a).



## 3.6 Biological Resources

### 3.6.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats in which they occur, as well as native or introduced species found in landscaped or disturbed areas. Applicable laws, regulations, and policies regarding biological resources are included in **Appendix A**. Protected species are defined as those listed as threatened, endangered, or proposed or candidate for listing by the USFWS; New Mexico Energy, Minerals, and Natural Resources Department; or NMDGF. Federal species of concern are not protected by law; however, these species could become listed, and therefore are given consideration when addressing biological resource impacts of a proposed federal action.

Sensitive habitats include those areas designated by the USFWS as critical habitat protected under the ESA and sensitive ecological areas as designated by state or federal rulings. Sensitive habitats also include wetlands, plant communities that are unusual or of limited distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, or crucial summer/winter habitats).

The New Mexico Wildlife Conservation Act (New Mexico Statutes Annotated 17-2-37) authorizes the NMDGF to create a list of endangered or threatened wildlife within the state and to take steps to protect and restore populations of species on the list. Actions causing the death of a state-endangered animal are in violation of the Wildlife Conservation Act. In addition, NMDGF maintains a list of species considered to be particularly sensitive or at risk in the state.

Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat provision, and erosion protection. Wetlands have been defined as areas that are “inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (USACE 1987). Wetlands are protected as a subset of “waters of the United States” under Section 404 of the CWA. The term “waters of the United States” has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats, including wetlands. For regulatory purposes, wetlands are defined by three factors: hydrologic regime, soil characteristics, and vegetation. In addition, many states have local regulations governing wetlands and their buffer areas.

In 2006, the U.S. Supreme Court addressed the jurisdictional scope of Section 404 of the CWA, specifically the term “the waters of the United States”, in *Rapanos v. United States* and in *Carabell v. USACE*. As a consequence of the associated U.S. Supreme Court decisions, USEPA and USACE, in coordination with the Office of Management and Budget and the CEQ, developed the *Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in Rapanos v. United States and Carabell v. United States Army Corps of Engineers memorandum* (USEPA and USACE 2007a). The guidance requires a greater level of documentation to support an agency jurisdictional determination (JD) for a particular water body. As a result of these decisions, the agencies now assert jurisdiction over the following categories of water bodies: Traditional Navigable Waters (TNWs), all wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are relatively permanent (i.e., tributaries that typically flow year-round or have continuous flow at least seasonally), and wetlands that directly abut such tributaries. In addition, the agencies assert jurisdiction over every water body that is not a Relatively Permanent Water if that water body is determined (on the basis of a fact-specific analysis) to have a significant nexus with a TNW.

The classes of water bodies that are subject to CWA jurisdiction only if such a significant nexus is demonstrated are: non-navigable tributaries that do not typically flow year-round or have continuous flow at least seasonally; wetlands adjacent to such tributaries; and wetlands adjacent to, but that do not directly abut, a relatively permanent, non-navigable tributary. A significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or an insubstantial impact on the chemical, physical, or biological integrity of a TNW. Principal considerations when evaluating significant nexus include the volume, duration, and frequency of the flow of water in the tributary and the proximity of the tributary to a TNW, plus the hydrologic, ecologic, and other functions performed by the tributary and all of its adjacent wetlands.

An additional memorandum regarding USEPA and USACE coordination on JDs under CWA Section 404 in light of recent Supreme Court Decisions was developed and signed (USEPA and USACE 2007b). Headquarters originally required the districts to request concurrence for only those JDs where the district was considering asserting jurisdiction over a non-navigable, intrastate, isolated water or wetland. The agencies now require that all determinations for non-navigable, isolated waters be elevated for USACE and USEPA Headquarters review prior to the district making a final decision on the JD.

### 3.6.2 Existing Conditions

Kirtland AFB lies at the intersection of four major North American biotic provinces: the Great Plains, Great Basin, Rocky Mountain, and Chihuahuan Desert. Vegetation and wildlife found within Kirtland AFB are influenced by each of these provinces, with the Great Basin being the most dominant influence. Elevations at Kirtland AFB range from approximately 5,200 feet amsl in the west to almost 8,000 feet amsl in the Manzanita Mountains, providing a variety of ecosystems. Five canyons (i.e., the Lurance, Sol se Mete, Bonito, Otero, and Madera) are located in the eastern portion of the installation; a few smaller canyons occur on Manzano Base. Kirtland AFB is situated near three regional natural areas: the Sandia Mountain Wilderness Area, Sandia Foothills Open Space, and Rio Grande Valley State Park. The Sandia Mountain Wilderness Area, encompassing 37,877 acres, lies approximately 5 miles north of the eastern portion of the installation. This area is home to many species of plants and animals and supports an important raptor migration route (Kirtland AFB 2012).

**Vegetation.** Four main natural plant communities occur on Kirtland AFB: grassland (includes sagebrush steppe and juniper woodlands), piñon-juniper woodlands, ponderosa pine woodlands, and riparian/wetland/arroyo. Grassland and piñon-juniper woodlands are the dominant vegetative communities at Kirtland AFB. The riparian/wetland/arroyo community is confined to drainages and isolated areas inundated by surface water during at least some part of the year. The ponderosa pine woodland community is found along the eastern boundary of the installation (Kirtland AFB 2012). A further description of each plant community, as well as improved landscapes, is provided below.

- **Grassland Community.** This community is found between elevations of 5,200 and 5,700 feet amsl at Kirtland AFB. The grassland community of Kirtland AFB is further delineated into two subcommunity types: sagebrush steppe in the western portion of the installation and juniper woodlands in the eastern portion. In the sagebrush steppe subcommunity, the understory is less dense, with cryptogamic crust covering areas of exposed ground. The juniper woodland subcommunity is similar to the grasslands to the east except for the greater abundance of one-seeded juniper. The presence of this shrubby tree creates a savanna-like habitat in an otherwise treeless area. Juniper woodlands are found at a slightly higher elevation than the surrounding grassland. This habitat type provides a transition into piñon-juniper woodlands (Kirtland AFB 2012).

- ***Piñon-Juniper Woodland Community.*** The piñon-juniper woodland community ranges in elevation from 6,300 to 7,500 feet amsl. This plant community is composed primarily of Colorado piñon pine and one-seeded juniper, with an understory of shrubs and grasses (Kirtland AFB 2012).
- ***Ponderosa Pine Woodland Community.*** The ponderosa pine woodland community is typically found in the highest elevations of the eastern portion of the installation (i.e., between 7,600 to 7,988 feet amsl) (Kirtland AFB 2012).
- ***Riparian/Wetland/Arroyo Community.*** The riparian/wetland/arroyo community consists of species that have a greater moisture requirement than species common to the other communities on the installation. These plant communities are found along Tijeras Arroyo, Arroyo del Coyote, and at the various springs located throughout Kirtland AFB. Most of the small scattered wetlands on Kirtland AFB are in good condition and occur in conjunction with other plant communities (Kirtland AFB 2012).
- ***Turf and Landscaped Areas.*** Kirtland AFB promotes water conservation landscaping by using xeriscape methods combined with native plant materials in developed areas (Kirtland AFB 2012).

**Figure 7** depicts the locations and extents of each generalized vegetation type found at Kirtland AFB.

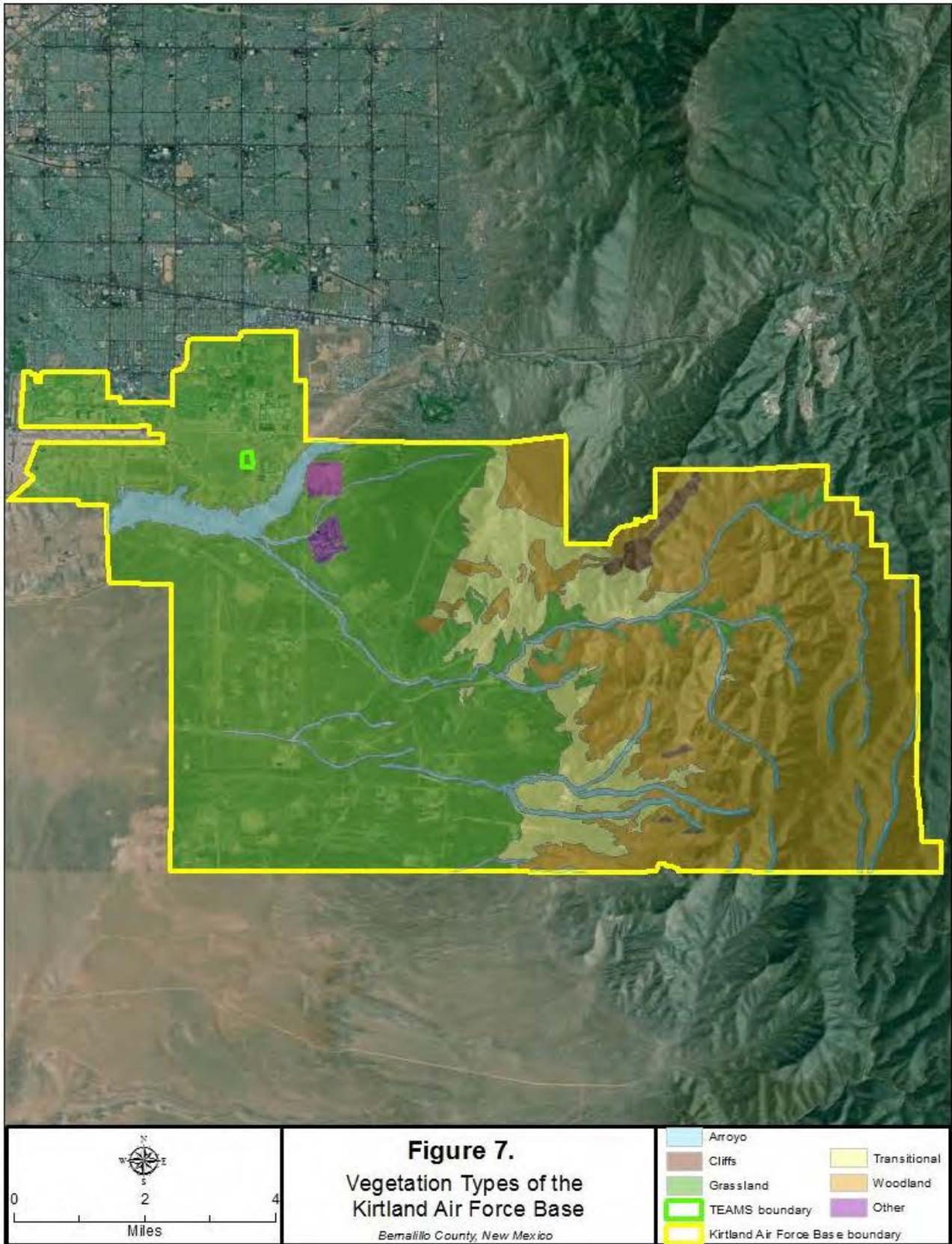
The TEAMS is a semi-improved parcel that consists largely of bare ground, annual weeds, early successional perennials, and some native grasses and very few shrubs. As identified in **Section 2.1.2**, puncture vine, an invasive plant species, is prevalent at the TEAMS. **Appendix C** provides photographs that depict the current, primarily disturbed and developed condition of the vegetation resources at the TEAMS.

Vegetation typical of the surrounding grassland community includes broom snakeweed, Great Plains yucca, Indian ricegrass, purple three-awn, black grama, blue grama, galleta, foxtail barley, fourwing saltbush, sand sagebrush, Mormon tea, New Mexican bitterweed, ring muhly, plains prickly-pear, and bottlebrush squirrel tail (Kirtland AFB 2012).

***Wildlife Species and Habitat.*** Wildlife management falls under the jurisdiction of the NMDGF and the USFWS (for migratory birds and federal-threatened and endangered species). Sensitive and protected species are addressed in this section under “Threatened and Endangered Species”. Laws protecting wildlife include the ESA, the Migratory Bird Treaty Act (MBTA), and the Bald and Golden Eagle Protection Act. See **Appendix A** for additional laws and regulations protecting wildlife and habitat. Wildlife species found on Kirtland AFB are representative of the species’ diversity common to the regional ecosystem (e.g., grassland, juniper woodland, piñon-juniper woodland, and ponderosa pine woodlands) and species common in semi-developed grassland areas. Species can be transient and travel between communities, inhabit several communities, or exist in transitional areas between vegetation communities.

The TEAMS lies within the disturbed, semi-improved developed area of Kirtland AFB. Common birds associated with such landscaped areas include European starling, American robin, band-tailed pigeon, rock dove, great-tailed grackle, and western burrowing owl (Kirtland AFB 2012). Hawks, roadrunners, and quail are also commonly seen on-site.

The local mammal community is dominated by rodents, rabbits, and hares. These include the desert cottontail, white-footed deer mouse, silky pocket mouse, Merriam’s kangaroo rat, and the northern grasshopper mouse. Mammalian predators found in association with these species



include the badger, kit fox, and striped skunk (Kirtland AFB 2012). In 2007, DTRA installed a prairie dog fence around the TEAMS to exclude this species from the TEAMS; this species' holes had created a trip hazard during on-site training and testing events. This fence has been successful in precluding prairie dogs and coyotes from the TEAMS.

Reptiles found in the vicinity of the TEAMS include the coachwhip snake, whiptail lizards, lesser earless lizard, western rattlesnake, and bull snake (Kirtland AFB 2012). Many of these species have extensive periods of dormancy during dry conditions and rapid breeding cycles when temporary ponds occur after rains (Kirtland AFB 2012).

New Mexico spadefoot toads, the recognized state amphibian of New Mexico, breeds in on-site ditches used for cabling at the TEAMS. The staff at TEAMS keeps water in the ditch and maintains the habitat for these toads during the breeding season.

***Threatened and Endangered Species.*** The agencies that have primary responsibility for the conservation of plant and animal species in New Mexico are the USFWS, the NMDGF, and the New Mexico Energy, Minerals, and Natural Resources Department. These agencies maintain lists of plant and animal species that have been classified, or are potential candidates for classification, as threatened or endangered in Bernalillo County. Of those species known to occur in the county, one state threatened species, two federal species of concern, and one rare plant have the potential to occur on Kirtland AFB.

- ***Gray vireo.*** The gray vireo, a state threatened species, occurs on the installation, but has not been encountered on or near the TEAMS. The USFWS considers this bird a sensitive species. In 2003, an installation-wide gray vireo survey was conducted in which 53 territories were mapped (Kirtland AFB 2004a). Territories were found throughout the juniper woodland community in an elevation belt of 5,850 to 6,600 feet amsl. Gray vireos occupied areas with an open canopy (i.e., less than 25 percent canopy cover) with one-seeded juniper as the dominant tree/shrub species (Kirtland AFB 2012). The presence of the gray vireo is highly unlikely at the TEAMS, as suitable habitat is not present.
- ***Western burrowing owl.*** The western burrowing owl, a federal species of concern, is a common resident at Kirtland AFB. It is very closely associated with prairie dog colonies on the installation, as the owls use abandoned prairie dog burrows for nesting during the summer months. Burrowing owls generally occur on the installation from March through October before migrating south, although a few birds might occur on the installation during mild winters. Burrowing owl inventories have been conducted on the installation every year since 1994; in 2005 a migration study was initiated to identify where nesting owls at Kirtland AFB go to winter. Since burrowing owls use abandoned prairie dog burrows for nesting, a Prairie Dog Management Plan was developed for the installation, which takes into account burrowing owl habitat requirements (Kirtland AFB 2012). A catch and release program relocated two owls from the TEAMS in June 2002. At this time, no burrowing owls reside on the TEAMS, and only a few individuals remain within Kirtland AFB. The prairie dog exclusion fence at TEAMS, described above, precludes the development of appropriate burrowing owl nesting sites. The decrease in burrowing owl numbers within the installation is primarily a result of predation.
- ***Mountain plover.*** The mountain plover, a federal species of concern, is not known to occur on the installation. However, in 2003, an adult with two chicks was observed just south of the installation on the Isleta Pueblo Indian Reservation (Kirtland AFB 2004a). Appropriate nesting habitat for this species is limited on the installation; therefore, it is unlikely that the mountain plover uses Kirtland AFB during the nesting season. However, the southern grasslands of the installation might be used as brood-rearing habitat or during migration (Kirtland AFB 2012). The presence of the mountain plover is highly unlikely at the TEAMS, as suitable habitat is not present.

- **Santa Fe milkvetch.** Santa Fe milkvetch, a rare plant in New Mexico, is expected to occur on Kirtland AFB (Kirtland AFB 2008a). Santa Fe milkvetch is found on gravelly hillsides in piñon-juniper woodland or plains-mesa grassland (5,100 to 6,000 feet amsl) (New Mexico Rare Plant Technical Council 1999). The presence of the Santa Fe milkvetch is highly unlikely at the TEAMS, as suitable habitat is not present.

**Critical Habitat.** Critical habitats are those areas of land, air, or water that are essential for maintaining or restoring threatened or endangered plant or animal populations. Neither the NMDGF nor the USFWS has designated or identified any critical habitat on Kirtland AFB. Surveys and literature indicate that important habitats on the installation include wetlands, which are rare in this region, providing water in an otherwise arid environment. Other important habitats on the installation include prairie dog towns, which provide nesting habitat for the burrowing owl, and areas between 5,900 and 6,600 feet amsl containing open juniper woodlands, which are used as nesting habitat by the gray vireo (Kirtland AFB 2012). Suitable prairie dog habitat lies adjacent to the eastern and western boundaries of the TEAMS, but not on the TEAMS, as described above.

**Wetlands.** Wetlands provide an important function in recharging aquifers and buffering streams by filtering sediment and nutrients. Wetlands have been defined by agencies responsible for their management. The term “wetland” as used herein, is defined using USACE conventions. The USACE has jurisdiction to protect wetlands under Section 404 of the CWA in accordance with the following definition:

...areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR §328.3[b]). Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands have three diagnostic characteristics that include: (1) over 50 percent of the dominant species present must be classified as obligate, facultative wetland, or facultative, (2) the soils must be classified as hydric, and (3) the area is either permanently or seasonally inundated, or saturated to the surface at some time during the growing season of the prevalent vegetation (USACE 1987).

Wetlands are considered "waters of the United States" if they are determined to be jurisdictional by the USACE and USEPA. There are several wetlands on Kirtland AFB; however, no JDs have been made concerning these water features. There are no wetlands on or near the TEAMS (see **Figure 6**).

## 3.7 Infrastructure

### 3.7.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. The infrastructure information in this section was primarily obtained from the Kirtland AFB General Plan and provides a brief overview of each infrastructure component and comments on its existing general condition.

The infrastructure components discussed in this section include transportation, utilities, and solid waste management. Transportation is defined as the system of roadways, highways, and transit services that are in the vicinity of the TEAMS and could reasonably be expected to be potentially impacted by the Proposed Action. Utilities include electrical, natural gas, liquid fuel, water supply, sanitary sewage/wastewater, storm water handling, and communications systems. Solid waste

management primarily relates to the availability of landfills to support a population's residential, commercial, and industrial needs.

### 3.7.2 Existing Conditions

**Transportation.** Numerous modes of transportation are available at Kirtland AFB, including air, mass transit, and federal and state highway access. The Albuquerque International Sunport, located along the western boundary of the installation, provides commercial and public aviation and military support, particularly for USAF and Air Force Reserve units. The Albuquerque International Sunport airfield has three commercial carrier runways and one runway dedicated to general aviation (City of Albuquerque 2002). The city of Albuquerque Transit Department, ABQ RIDE, provides and operates public bus services throughout the city and to and from the installation (ABQ RIDE 2012).

Kirtland AFB is situated approximately 4 miles east of Interstate 25 and about 1.5 miles south of Interstate 40. The installation is served from interstate highways and many state and local roads. The city of Albuquerque street grid includes a number of major arterials that tie directly into Kirtland AFB, including Eubank, Wyoming, Louisiana, San Mateo, and Carlisle Boulevards. These roadways serve north-south traffic flows. The east-west trending major arterial directly to the north of the installation is Gibson Boulevard. Other east-west arterials north of the installation include Zuni Boulevard and Central Avenue, the historic Route 66 (Kirtland AFB 2011a).

There are currently seven gated entrances from the city of Albuquerque to Kirtland AFB: the Carlisle Gate at the extension of Carlisle Boulevard, Truman Gate at Truman Street, Maxwell Gate at Maxwell and Gibson Boulevards, Gibson Gate at the intersection of Gibson and Louisiana Boulevards, Wyoming Gate at Wyoming Boulevard, and Eubank Gate at the extension of Eubank Boulevard. The seventh gate is the South Valley Gate, which is located at Ira Sprecker Road south of the Albuquerque International Sunport. The Carlisle, Wyoming, Eubank, and South Valley gates currently have restricted hours due to reduced security manpower and lighter usage (Kirtland AFB 2011a).

There are approximately 429 miles of paved roads and 229 miles of unpaved roads on Kirtland AFB. Major arterials include Wyoming Boulevard, Gibson Boulevard, and Frost Street. Hardin Boulevard and Aberdeen Avenue are major arterials in the east and west portions of the installation, respectively. Minor arterials include Pennsylvania Street and 20th Street, which serve the SNL facilities. The primary transportation route to the southern portion of the installation is via Pennsylvania Street (Kirtland AFB 2011a).

The TEAMS is bounded on all sides by paved roadways, including East Ordnance Road to the north, S Street to the south, 9th Street to the east, and Wyoming Boulevard to the west. Paved, gated access roads enter the TEAMS from the north and south, extending from East Ordnance Road and S Street, respectively. A network of unnamed paved roads extends throughout the TEAMS, providing access to and traffic flow between existing facilities (see **Figure 3**).

Traffic associated with ongoing TEAMS operations includes approximately 20 vehicles per day during a large event, up to 30 vehicles per day may be present at the TEAMS (i.e., approximately 10 times per year). These vehicles, including those of the current 2 full-time staff at the TEAMS and buses to support larger training events, contribute a negligible percentage to local traffic volumes. On an average weekday, over 30,000 vehicles travel to and from Kirtland AFB; the approximate number of vehicles falls to 9,400 on an average weekend (Kirtland AFB 2013b).

**Electrical System.** Kirtland AFB purchases electrical power from the Western Area Power Administration. All electricity to the installation comes through the Sandia Switching Station on an approximately 80 million-volt amperes capacity electrical circuit. The estimated historical maximum electrical load is approximately 79 million-volt amperes (Kirtland AFB 2011a).

Existing TEAMS structures receive electricity through overhead and underground electrical power lines (see **Figure 8a**). On-site overhead electrical cable is comprised of aluminum reinforced with steel and capable of transmitting up to 46 kilovolts of electricity; these overhead lines exist throughout TEAMS, but are not mapped in **Figure 8a**. Underground electrical power lines are copper, but are still able to transmit 46KV of electricity. As shown on **Figure 3**, an electrical substation is present along the TEAMS southern boundary. As shown on **Figure 3** and presented in **Table 1**, the TEAMS Generator 10 includes an 88-horsepower, gasoline-powered generator (Air Quality Permit #1944) that produces 50 Hz (European power) in support of training and testing events.

**Natural Gas and Propane.** Coral Energy supplies Kirtland AFB with natural gas. Natural gas enters the installation through a 60-pound-per-square-inch pipeline just east of Pennsylvania Street. There are approximately 70 miles of natural gas mains at Kirtland AFB that provide natural gas service to select buildings on the installation. The primary buildings that receive natural gas service are in the industrial complex, family housing areas, and heating plants. Rural portions of the installation do not receive natural gas service and rely on propane, which is delivered to and stored in local propane storage tanks. Natural gas demand at Kirtland AFB depends on weather conditions; however, the approximate consumption in 2009 was 871,000 million British thermal units (Kirtland AFB 2011a).

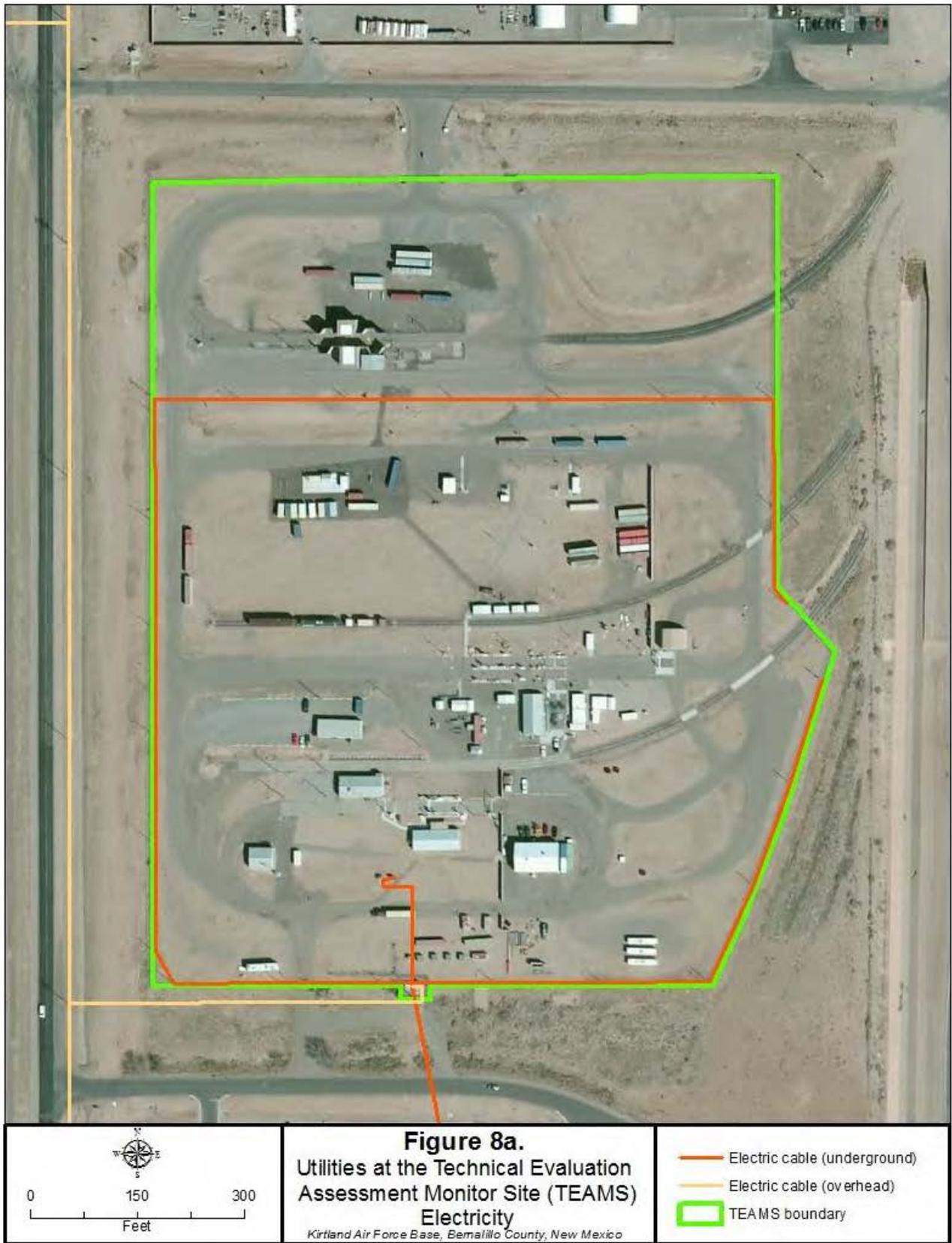
A natural gas service line enters the TEAMS from the south and supplies Buildings 20613, 20615, and 20617 through a 2-inch diameter conduit. An additional, offsite 2-inch diameter main line transports natural gas just beyond the western and southern TEAMS boundaries (see **Figure 8b**).

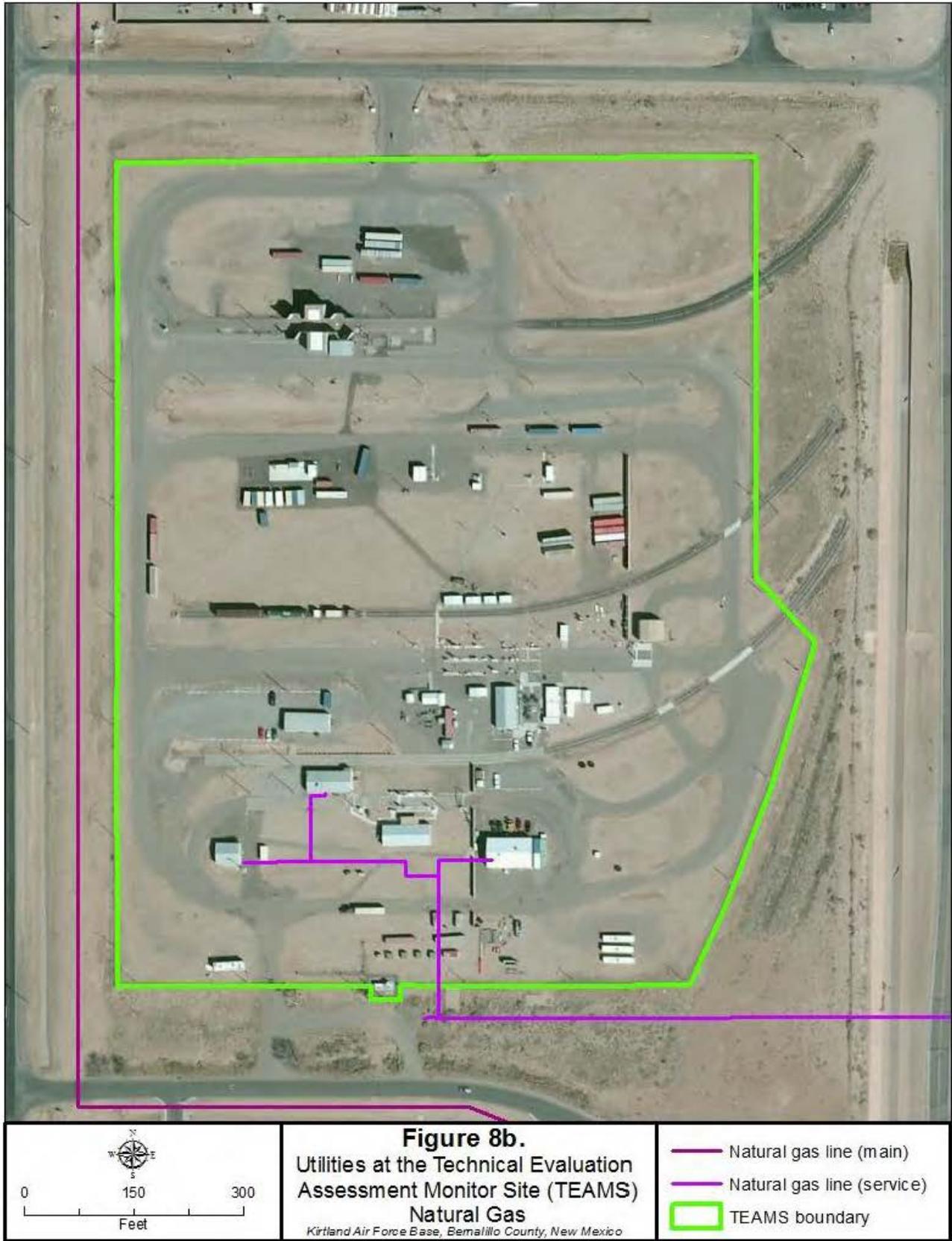
**Liquid Fuel.** Liquid fuels are supplied by an off-base service contract. The primary liquid fuels supplied include JP-8 (jet propellant [fuel] – type 8), diesel, and unleaded gasoline. All of these fuels are purchased in bulk, delivered to the installation by tanker truck, and stored in various-sized storage tanks in specific locations across the installation. Liquid fuels at Kirtland AFB are primarily used to power military aircraft and ground-based vehicles (Kirtland AFB 2011a).

On the TEAMS, an 81-gallon gasoline tank supplies Generator 10 in the central portion of the Site. The only other liquid fuel stored on-site includes gasoline and diesel contained in 1- and 5-gallon cans housed in Buildings 20615 and 20638 (see **Figure 3** and **Table 1**). No bulk storage of liquid fuel is present on the TEAMS.

**Water Supply System.** Water is supplied to Kirtland AFB by six groundwater wells and two separate, but interconnected, distribution systems that have a collective water-pumping maximum of 9.3 million gallons per day (MGD). Kirtland AFB pumps an average of 5.5 MGD of treated, potable water through 160 miles of distribution mains. Depending on the well location, the groundwater obtained is either chlorinated at the individual wellhead or at the Water Plant. Chlorination is accomplished by in-line, automated chlorine pellet dispensing facilities.

Because the local groundwater contains natural fluoride, Kirtland AFB does not fluoridate the water supply. In general, the water supply piping is properly sized and is in good condition, despite being approximately 45 years of age on average. There are also approximately 50 miles of non-potable water pipeline serving the Tijeras Golf Course and providing water for fire protection.





Kirtland AFB has a court decreed water right dating from 1973 to withdraw a total of 6,398 acre-feet (2 billion gallons) of water from two wells within the Rio Grande Underground Water Basin. Three additional minor degrees allow for the drawing of 3 acre-feet. In 2012, Kirtland AFB pumped a total of 2,693 acre-feet (877 million gallons) of water from these wells (Kirtland AFB 2013c).

Kirtland AFB also purchases water from the city of Albuquerque to meet demand during peak periods; however, the amount of water purchased from the city has been negligible since 1998. City water is delivered via three, 12-inch mains fitted with backflow prevention devices. The maximum water supply capacity from the city of Albuquerque is 8.6 MGD, which results in a maximum total water supply to Kirtland AFB of 17.8 MGD. Water is stored in approximately 25 water storage tanks at Kirtland AFB, which have a collective storage capacity of approximately 5.5 million gallons (Kirtland AFB 2011a). Kirtland AFB purchased approximately 167,000 gallons of water from the city of Albuquerque in 2011 (Kirtland AFB 2011b). Current water demand at Kirtland AFB is approximately 6 to 10 MGD during the summer and 1 to 4 MGD during the winter. As such, the installation's groundwater wells generally have sufficient capacity to meet current water demand (Kirtland AFB 2011a).

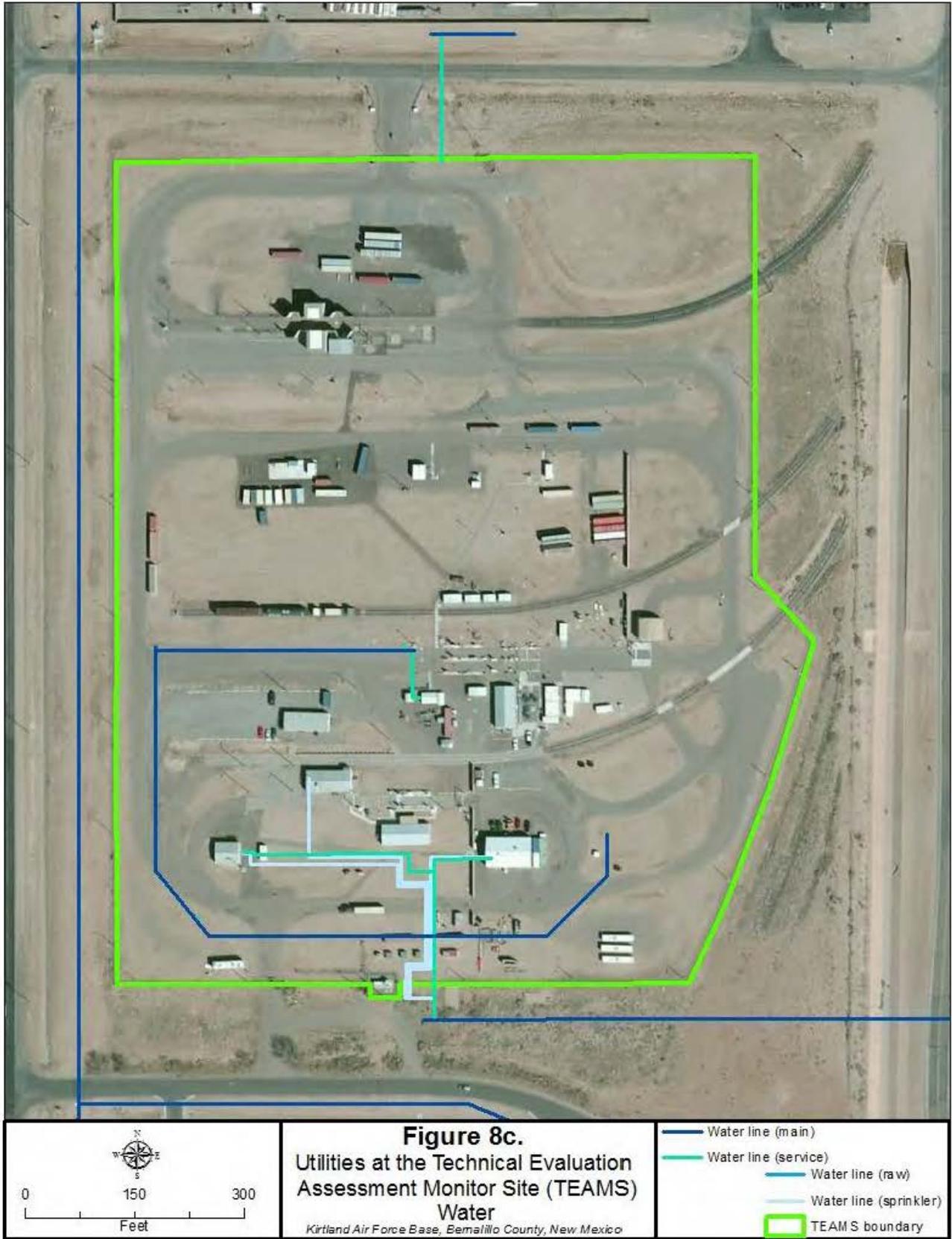
Water at the TEAMS is provided via the installation's potable water infrastructure/system. This water is potable, but of low quality due to the presence of sulfur. Personnel and visitors at the TEAMS currently drink bottled water and from 10 on-site water coolers that are serviced by a local contractor. No water fountains are present at the TEAMS. Water mains of unknown diameter extend adjacent to the western and southern TEAMS boundaries. Within the TEAMS, water mains supply smaller service lines to on-site buildings, as well as sprinkler lines that provide emergency fire control (see **Figure 8c**).

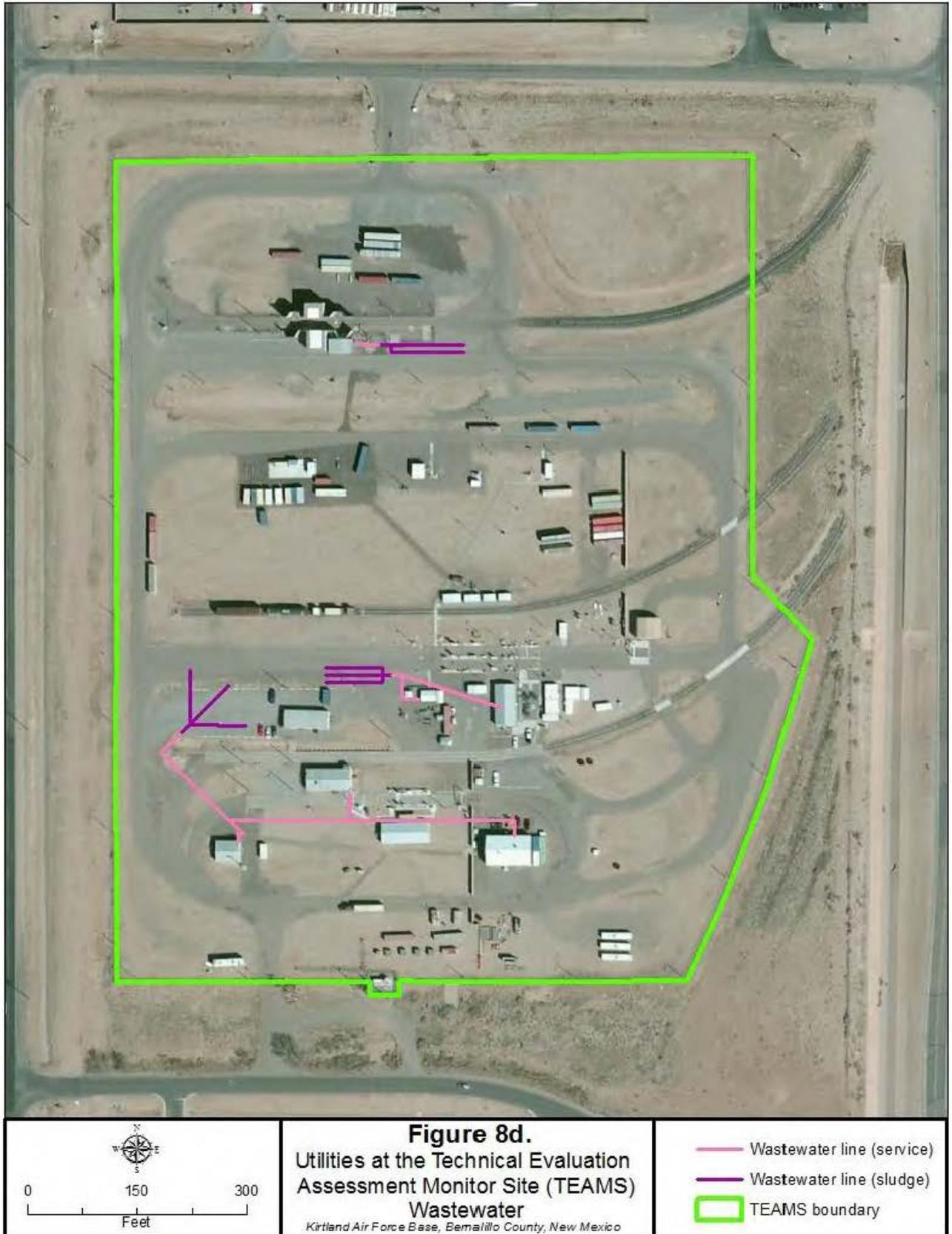
If new utilities are being installed, connected to existing distribution/service lines, or repaired due to construction, the appropriate Kirtland AFB agencies through the Drinking Water Working Group should be coordinated with to ensure the system is appropriately sanitized prior to being placed back into service. This will ensure safety of the water system.

**Sanitary Sewer/Wastewater System.** Kirtland AFB does not have its own sewage treatment plant. Instead, the sanitary sewer system of Kirtland AFB transports wastewater to the city of Albuquerque treatment facility. Kirtland AFB discharges an average of approximately 1.2 MGD; this average includes “effluents from Kirtland AFB laboratories, aircraft maintenance facilities, and production operations, as well as discharges from installation washrooms and personnel housing”. Some facilities in remote and other portions of the installation are not serviced by the sanitary sewer system; these facilities use isolated, on-site septic systems to dispose of wastewater (Kirtland AFB 2011a).

Due to cost considerations, the TEAMS is the only portion of the developed area of Kirtland AFB not connected to the public sanitary sewer/wastewater system. A contractor pumps the three on-site septic tanks at the TEAMS annually. TEAMS Buildings 20613, 20614, 20615, 20623, and an unnamed building located southwest of Detector Row, are connected via a 6-inch septic leach line made of vitrified clay that in turn forks into three branches. These leach lines direct wastewater to a septic field north of Building 20630 (see **Figure 8d**). According to DTRA and Kirtland AFB personnel and records, these three on-site septic systems and tanks have ample capacity to support future proposed increases in use of the TEAMS. No problems associated with the on-site septic systems have been reported.

**Storm Water System.** Man-made storm water drainage systems, which include gutters, culverts, ditches, and underground piping direct storm water to receiving channels and basins in developed portions of Kirtland AFB. Kirtland AFB has a NPDES General Storm Water Permit for industrial activities and an active program for construction projects that require a NPDES permit. In less-





developed portions of Kirtland AFB, man-made storm water drainage systems have not yet been installed and storm water drains by sheet flow to various natural drainageways. Most storm water at Kirtland AFB that does not get absorbed into the ground drains into the Rio Grande, which eventually discharges into the Gulf of Mexico (Kirtland AFB 2011a). Storm water runoff at the TEAMS flows through natural drainage patterns created by natural terrain and paved surfaces, as well as man-made conveyance channels as shown in **Figure 3**.

**Communications System.** Kirtland AFB uses copper and fiber optic cable for telephone and data transmission services. Kirtland AFB operates its own telephone switching system, which is adequately sized to support the current needs of the installation. The data transmission system has been designed to accommodate future growth of the installation (Kirtland AFB 2011a). Personnel at the TEAMS rely on two-way radios and limited cell phone coverage to communicate between the three DTRA testing sites on Kirtland AFB.

**Solid Waste Management.** Solid waste generated at Kirtland AFB is collected by a contractor and disposed of at the city of Albuquerque's Cerro Colorado Landfill. The Cerro Colorado Landfill is located off-installation and receives approximately 2,100 tons per year from Kirtland AFB.

Kirtland AFB operates a construction and demolition waste-only landfill on the installation. This landfill accepts only construction and demolition waste from permitted contractors working on the installation, has a total gross capacity of over 10 million cubic yards, and has a net waste capacity of over 7 million cubic yards. As of 31 December 2012, the remaining capacity of this landfill was approximately 4.9 million cubic yards. In 2011 and 2012, an average of 25,200 tons of construction and demolition waste per year were disposed of at the on-installation landfill; of that total, Kirtland AFB disposed of an average of 16,250 tons (Wheelock 2013). As of June 2012, the recycling of construction and demolition waste has been codified into the Construction Waste Management specification (Section 01 74 19) for all on-base construction projects.

Kirtland AFB manages a recycling program to reduce the amount of solid waste sent to landfills. The Office Curbside Recycling Program, operated under Kirtland AFB's Qualified Recycling Program, is operated by a contractor and collects white paper, shredded paper, mixed paper, plastic beverage containers #1 and #2, aluminum cans, and toner cartridges from pick-up points across the installation. Additionally, Kirtland AFB collects cardboard at numerous drop-off locations across the installation and recycles scrap metal under the Qualified Recycling Program (Kirtland AFB 2011a).

### **3.8 Hazardous Materials and Wastes**

#### **3.8.1 Definition of the Resource**

Hazardous materials are defined by 49 CFR §171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR §172.101), and materials that meet the defining criteria for hazard classes and divisions" in 49 CFR Part 173. Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR Parts 105–180.

Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA) at 42 USC §6903(5), as amended by the Hazardous and Solid Waste Amendments, as: "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in, mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed". Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden

and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR Part 273. Four types of waste are currently covered under the universal waste regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, and hazardous waste lamps.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include asbestos-containing material (ACM), polychlorinated biphenyls (PCBs), and lead-based paint (LBP). USEPA is given authority to regulate these special hazard substances by the Toxic Substances Control Act (TSCA) (15 USC Chapter 53). USEPA has established regulations regarding asbestos abatement and worker safety under 40 CFR Part 763 with additional regulations concerning emissions (40 CFR Part 61). Whether from lead abatement or other activities, depending on the quantity or concentration, the disposal of the LBP waste is regulated by the RCRA at 40 CFR Part 260. The disposal of PCBs is addressed in 40 CFR Parts 750 and 761. The presence of special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

The DOD developed the Environmental Restoration Program (ERP) to facilitate thorough investigation and cleanup of contaminated sites on military installations (i.e., active installations, installations subject to Base Realignment and Closure, and Formerly Used Defense Sites). The Installation Restoration Program (IRP) and the Military Munitions Response Program (MMRP) are components of the ERP. The IRP requires each DOD installation to identify, investigate, and clean up hazardous waste disposal or release sites. The MMRP addresses non-operational rangelands that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituent contamination. Description of ERP activities provides a useful gauge of the condition of soils, water resources, and other resources that might be affected by contaminants. It also aids in identification of properties and their usefulness for given purposes (e.g., activities dependent on groundwater usage might be restricted until remediation of a groundwater contamination plume has been completed).

The DOE developed the Office of Environmental Restoration (ER) and Waste Management in 1989. The goal of this Office is to implement the department's policy of ensuring that DOE's past, present, and future operations do not threaten human health or environmental health and safety. The Environmental Management Office was reorganized in 1999 to implement procedures to meet these goals through five underlying offices. The Office of Site Closure is responsible for achieving closure of ER sites in a manner which is safe, cost-effective, and coordinated with stakeholders. As a facility operated for DOE under the Albuquerque Operations Office, SNL is part of this program. The current investigation being conducted at SNL under the ER program is intended to determine the nature and extent of hazardous and radioactive contamination and restore any sites where such materials pose a threat to human health or the environment.

The information provided in this section focuses on the presence and management of hazardous materials and wastes associated with the proposed construction areas and other areas of effect at and in the vicinity of the TEAMS.

For the USAF, Air Force Policy Directive 32-70, *Environmental Quality*, and the Air Force Regulation 32-7000 series incorporate the requirements of all federal regulations and other AFIs and DOD Directives for the management of hazardous materials, hazardous wastes, and special hazards.

### 3.8.2 Existing Conditions

***Environmental Management System.*** Kirtland AFB has implemented an Environmental Management System (EMS) program in accordance with ISO 14001 Standards, EO 13423,

*Strengthening Federal Environmental, Energy, and Transportation Management*, and AFI 32-7001, *Environmental Management*. The EMS Policy prescribes to protect human health, natural resources, and the environment by implementing operational controls, pollution prevention environmental action plans, and training. TEAMS is part of DTRA and is required to meet the EMS policy, aspects, targets, and objectives. Personnel at TEAMS are required to complete the EMS Awareness training provided through the International Center for Leadership Development. The EMS program and associated training are managed by the 377 MSG/CEIE EMS Coordinator.

***Hazardous Materials and Petroleum Products.*** AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF to be in compliance with the Emergency Planning and Community Right to Know Act. AFI 32-7086 applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities.

USAF has identified the 377 MSG/CEIE as the responsible entity to oversee hazardous material tracking on Kirtland AFB. Part of the 377 MSG/CEIE's responsibilities is to control the procurement and use of hazardous materials to support USAF missions, ensure the safety and health of personnel and surrounding communities, and minimize USAF dependence on hazardous materials. The 377 MSG/CEIE is charged with managing hazardous materials to reduce the amount of hazardous waste generated on Kirtland AFB in accordance with the Kirtland Hazardous Waste Management Plan (HWMP) (Kirtland AFB 2004b).

Building 20638 at the TEAMS is used to store three diesel forklifts, four ATVs, and various other equipment. Gasoline and diesel fuel are stored on-site in 1- and 5-gallon containers in Buildings 20615 and 20638 at the TEAMS (see **Figure 3** and **Table 1**). Building 20615 is also used to store and charge vehicle and other batteries. Additional products stored on-site include WD-40, deicer, and paint. No bulk storage of liquid fuel is present on the TEAMS.

The TEAMS has participated in the Enterprise Environmental, Safety, and Occupational Health Management Information System (EESOHMIS) since 2007. The EESOHMIS is a system used at Kirtland AFB to monitor and track hazardous materials-related processes and use on the installation.

***Hazardous and Petroleum Wastes.*** The USAF maintains a HWMP as directed by AFI 32-7042, *Waste Management* (Kirtland AFB 2004b). The HWMP describes the roles and responsibilities of all entities at Kirtland AFB with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The HWMP establishes the procedures to comply with applicable federal, state, and local standards for solid waste and hazardous waste management.

Kirtland AFB is a large-quantity generator of hazardous waste (Handler Identification #NM9570024423). Currently, there are no hazardous or petroleum wastes produced at the TEAMS due to ongoing testing and training activities. Historic and ongoing testing and training activities at the TEAMS have not resulted in any spills or releases to the environment and have complied with applicable pollution prevention plans. As described above, on-site operations use only minor quantities of hazardous materials and fuels and do not generate hazardous waste. TEAMS personnel have available the Hazardous Material Emergency Planning and Response Plan and Spill Prevention, Control, and Countermeasures Plan (Kirtland AFB 2008b, Kirtland AFB 2009b).

***Environmental Restoration Program.*** There are no IRP or MMRP sites located within the boundaries of the TEAMS. A review of the *Kirtland Air Force Base, Albuquerque, New Mexico Comprehensive Site Evaluation Phase I Report, Air Force Military Munitions Response Program*, prepared for Kirtland AFB in 2007, identified that the TEAMS is not within any surface danger

zones associated with present or former defense ranges or munitions response areas (USACE 2007). The most proximate surface danger zone lies approximately 2.3 miles west of the TEAMS and is associated with a small arms range. As such, no MMRP sites are located on or in the vicinity of the TEAMS. **Figure 9** depicts and describes the eight IRP sites located within 0.5 mile of the TEAMS. Each of these identified IRP sites is described below:

- **SS-61** (formerly ST-275) – **Fuel Shop Waste Battery Storage Area**. Located southwest of Building 20677. This concrete pad was used for the storage of used vehicle batteries between 1985 and 1988. SS-61 currently houses a storage tank that serves as a collection point for used motor oil. Chromium, copper, and vanadium were all detected at SS-61, but available data indicate that these metals are naturally occurring and that no contaminants have been released to the environment from this site. Based on NMED's No Further Action (NFA) Criterion 3 (no release to the environment has occurred or is likely to occur in the future from the site), SS-61 was granted an NFA designation in August 2005 (NMED 2005a).
- **SS-65** (formerly ST-338) – **Horizontal Polarized Dipole Drum Rack**. Located on the west side of Pennsylvania Avenue, approximately 1 mile south of Hardin Boulevard. This site served as a storage facility for 55-gallon drums of solvents, lubricants, and diesel fuel. Facility personnel discovered a spill at the site in 1991, and use of the concrete pad was discontinued. Approximately 70 cubic yards of contaminated soil were excavated from SS-65 in 1991 and eventually disposed of in Kirtland AFB's construction and demolition landfill in 1996. Based on NMED's NFA Criterion 5 (the site has been characterized and remediated in accordance with applicable state regulations, and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use), SS-65 was granted an NFA designation in August 2005 (NMED 2005a).
- **SS-83 – Skeet Range and Landfill Road**. SS-83 is located along Pennsylvania Avenue, approximately 0.25 mile southeast of the intersection of Wyoming Boulevard and Pennsylvania Avenue. SS-83 consists of a drainage channel (i.e., arroyo), Landfill Road, and a former recreational skeet range comprised of a clubhouse building and four shooting stations. The four shooting stations were removed in 2000. Lead shot was visible on the ground surface over an area from approximately 230 feet beyond the firing stations to the east bank of the adjacent drainage channel. However, the lead shot did not affect the surface water quality within the drainage channel. Broken clay pigeons containing lead shot were removed from the skeet range on at least three occasions to be used as bedding material for Landfill Road. Remediation measures taken at SS-83 include installation of silt fencing, removal of contaminated surface soils from two areas of Landfill Road, removal of lead shot from surface soil at the former skeet range, and restoration of the site. Confirmatory samples indicate that all remaining lead concentrations fall below the NMED site-specified action level of 400 milligrams per kilogram. Based on NMED's NFA Criterion 5, SS-83 received an NFA designation in August 2003 (NMED 2003).
- **ST-70F** (formerly ST-247) – **Building 2637 Oil/Water Separator (O/WS)**. ST-70F received inflow from an outdoor wash rack that was used for washing aircraft and airspace ground equipment (AGE) from 1961 until 2000. Since 2000, the wash rack has only been infrequently used to wash AGE. Investigations at ST-70F identified levels of total petroleum hydrocarbons, organic compounds, and inorganic compounds exceeding anticipated background levels, but below the NMED residential soil screening level. As such, no significant release of contamination is likely to have occurred at ST-70F. NMED considered ST-70F eligible for NFA status in March 2008 (NMED 2008).



- **ST-70I (formerly ST-260) – Building 20422 O/WS.** ST-70I consists of an O/WS associated with a heavy equipment wash rack located to the east of Building 20422, a metal shed used to store sprayers and hoses. While past studies of ST-70I have detected multiple contaminants, including semi-volatile organic compounds, concentrations of these contaminants remained well below applicable screening levels. As such, available data does not support a release to the environment, and ST-70I appears eligible for an NFA designation under NMED NFA's Criterion 3 (NMED 2004).
- **ST-335 – Paint Shop Floor Drain, Building 20681.** ST-335 consists of a floor drain, which formerly discharged approximately 50 gallons per month of wastewater to the sanitary sewer system, and a gravel covered soil area on the north side of Building 20681 that formerly received approximately 10 gallons per month of used paint thinners. In 1986, new painting practices were implemented at Building 20681, and the floor drain was capped. While the paint shop remains in use, the adjacent gravel bed is no longer used as a painting area or for the disposal of paint and thinner. While site investigations have identified VOCs, diesel range hydrocarbons, and metals at ST-335, these contaminants were not present at concentrations requiring remedial action. As such, NMED granted ST-335 an NFA determination in August 2003 (NMED 2003).
- **WP-38 – Building 20687, Entomology Shop Drain and Outflow Line.** Investigations of WP-38 have not detected any VOCs, semi-volatile organic compounds, or gasoline or diesel range hydrocarbons. Arsenic was the only metal identified at a concentration exceeding an applicable action level, but this elevated concentration seems to be naturally occurring across Kirtland AFB. USEPA granted WP-38 an NFA determination in October 1991 (USEPA 1991).
- **WP-58 – Building 20451, East Laundry.** WP-58, located at 2251 Wyoming Boulevard SW, formerly served as the Sandia Army Base laundry facility, but was renovated for office use in 1983. A 500-gallon concrete sump and all associated lines were removed from the area to the east of Building 20451 in the 1990s. This sump received discharged effluent from the laundry facility. Investigations of WP-58 have identified 17 semi-volatile organic compounds in surface and subsurface soils in this area. A second sump was located inside the building, but was reportedly abandoned in place; its current status remains unknown. In 1998, approximately 210 cubic yards of semi-volatile organic compound-contaminated soils were excavated, characterized, and removed for disposal. The NMED approved WP-58's NFA status in September 2005 under Criterion 5 (NMED 2005b).

Based on available data, none of these IRP sites have adversely affected the environmental condition of the TEAMS.

**Asbestos-Containing Material.** Asbestos is regulated by USEPA under the CAA, TSCA, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). USEPA has established that any material containing more than 1 percent asbestos is considered an ACM. Friable ACM is any material containing more than 1 percent asbestos, and that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM is any ACM that does not meet the criteria for friable ACM. Guidelines and procedures for record-keeping, removal, encapsulation, enclosure, and repair activities associated with ACM-abatement projects are conducted in accordance with all federal, state, and local rules and regulations.

The practice of using ACM in building construction was largely phased out during the 1970s and 1980s. The oldest existing on-site structure at the TEAMS was constructed in 1992. As such, no ACM is expected to be present at the TEAMS.

**Lead-Based Paint.** Federal agencies are required to comply with applicable federal, state, and local laws related to LBP activities and hazards. With the passing of The Consumer Product Safety Act in 1977, the federal government required all paint manufactured after February 1978 to be

below a maximum amount of 0.06 percent lead by weight for use in commercial and residential facilities. Any paint with amounts of lead exceeding that 0.06 percent threshold is considered LBP. The Air Force incorporated The Consumer Product Safety Act into Air Force Manual 85-3, *Paints and Protective Coatings*, in 1981 (Headquarters Air Force Material Command 2000).

The oldest existing on-site structure at the TEAMS was constructed in 1992. As such, no LBP is expected to be present at the TEAMS.

**Polychlorinated Biphenyls.** PCBs are a group of chemical mixtures used as insulators in electrical equipment, such as transformers and fluorescent light ballasts. Chemicals classified as PCBs were widely manufactured and used in the United States throughout the 1950s and 1960s. PCBs can be present in products and materials produced before the 1979 ban. Common products that might contain PCBs include electrical equipment (e.g., transformers and capacitors), hydraulic systems, and fluorescent light ballasts.

The oldest existing on-site structure at the TEAMS was constructed in 1992. As PCBs were banned in 1979, no PCBs are expected to be present at the TEAMS.

**Radiological Materials.** As described in **Section 1.1.3**, current activities on the TEAMS primarily include testing and training of various nuclear detection sensors and systems. Various minor radiological sources are stored on the TEAMS. These sources are used to test equipment and to train various personnel in detection techniques. All radiological materials and sources are stored and used in accordance with NRC guidelines and requirements. The NRC oversees and licenses these activities at the TEAMS pursuant to Section 183 of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974 (PL 93-438); and 10 CFR Chapter 1 Parts 30–36, 39–40, and 70. The TEAMS operates under NRC License No. 45-25551-01 (Amend. 18), Docket No. 030-35668, Control No. 579050, dated 21 November 2012 (NRC 2012).

In accordance with the site-specific NRC license, DTRA has established and implements an active radiological monitoring and health and safety program associated with its facilities, equipment, and staff at the TEAMS. Applicable plans and procedures include:

- TEAMS Health and Safety Risk Analysis, dated 14 November 2012 (Martinez and Duke 2012).
- TEAMS Operating Procedure for Radioactive Source Use and Emergency Notification Procedures, dated 2 July 2009 (Taylor 2009).
- TEAMS RSTD Standard Operating Procedure, dated 23 December 2011 (Taylor 2011).
- Conditions of NRC License No. 45-25551-01 (Amend. 18), Docket No. 030-35668, Control No. 579050, dated 21 November 2012 (Lawyer 2012).

Through compliance with these plans and procedures, radiological materials and sources are properly stored, used, and controlled at the TEAMS. No radiological exposure above regulatory requirements has ever been detected at the TEAMS.

## 3.9 Safety

### 3.9.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety address workers' health and safety during construction and demolition activities, as well as public health and safety during and following construction and demolition activities.

Construction site safety requires adherence to regulatory requirements imposed for the benefit of employees. Construction site safety includes implementation of engineering and administrative practices that aim to reduce risks of illness, injury, death, and property damage. The health and safety of on-site military and civilian workers are safeguarded by numerous DOD and military requirements, the amount and type of training required for workers, the use of personal protective equipment (PPE), administrative controls, engineering controls, and permissible exposure limits for workplace stressors.

Health and safety hazards can often be identified and reduced or eliminated before an activity begins. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Hazards include transportation, maintenance, and repair activities, and the creation of a noisy environment or a potential fire hazard. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments due to noise or fire hazards for nearby populations. Noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

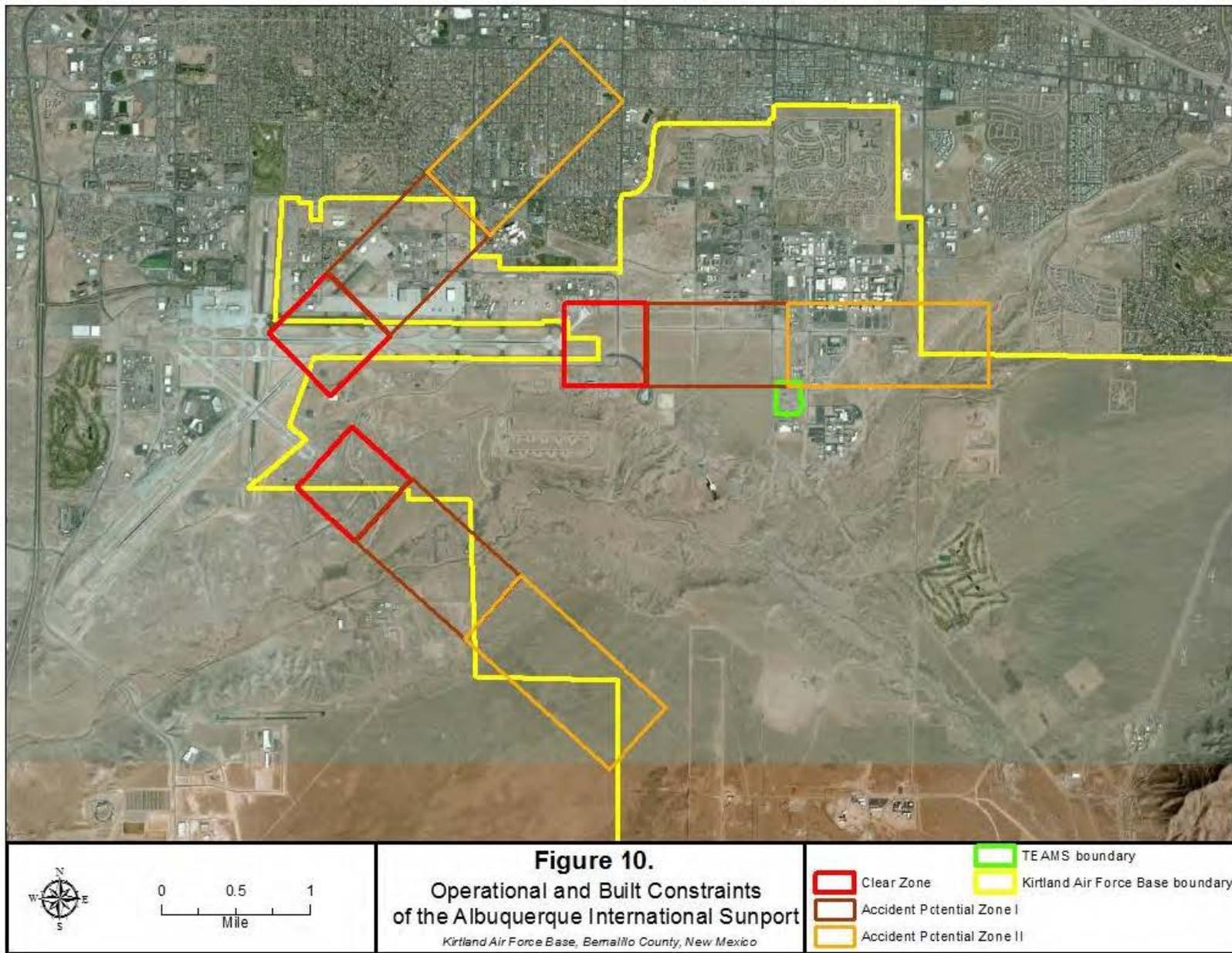
### 3.9.2 Existing Conditions

**Airport and Aviation Safety.** According to the 2010 Kirtland AFB General Plan, safety areas (i.e., operational and built constraints) must comply with criteria established in UFC 3-260-01, *Airfield and Heliport Planning and Design*, including airfield clearances. These areas have a high potential for accidents and are governed by criteria restricting the location and height of structures near the airfield. See **Figure 10** for a depiction of the three different safety areas associated with the Albuquerque International Sunport. These safety areas are described below (Kirtland AFB 2011a):

- **Clear Zone.** Shown in bright red in **Figure 10**, Clear Zones are required areas located at the take-off end of each runway. Due to the high potential for accidents, these areas remain free from obstructions and are managed by air traffic control. Their use is restricted to be compatible with aircraft operations. Clear Zones consist of two components: 1) a graded area which is prepared and maintained as an aircraft safety area; and 2) a land use control area intended to protect people on the ground. DODI 4165.57 also discusses Clear Zones.
- **Accident Potential Zones (I and II).** Shown in dark red (Accident Potential Zone I) and orange (Accident Potential Zone II) in **Figure 10**, Accident Potential Zones are areas located beyond the Clear Zone of each runway. Due to the high potential for accidents, these areas are restricted in accordance with DODI 4165.57, *Air Installations Compatible Use Zones*. DODI 4165.57 outlines the list of acceptable and unacceptable land uses within each Accident Potential Zone. However, the runway used by the USAF at the Albuquerque International Sunport is owned by the city of Albuquerque and regulated by the FAA; the USAF takes Accident Potential Zones into consideration during planning, but defers to FAA regulations.

As shown in **Figure 10**, the extreme northern portion of the TEAMS is located within the Accident Potential Zone I and II of the Albuquerque International Sunport.

**Contractor Safety.** All contractors performing construction and demolition activities at Kirtland AFB are responsible for following federal, state of New Mexico, and USAF safety regulations and are required to conduct construction and demolition activities in a manner that does not increase risk to workers or the public.



New Mexico is one of several states that administers their own occupational safety and health (OSH) program according to the provision of the Federal OSHA of 1970, which permits a state to administer its own OSH program if it meets all of the federal requirements regarding the program's structure and operations. The New Mexico Occupational Health and Safety Bureau program has the responsibility of enforcing Occupational Health and Safety Regulations within New Mexico. Its jurisdiction includes all private and public entities such as city, county, and state government employees. Federal employees are excluded as they are covered by federal OSHA regulations.

OSH programs address the health and safety of people at work. OSH regulations cover potential exposure to a wide range of chemical, physical, and biological hazards, and ergonomic stressors. The regulations are designed to control these hazards by eliminating exposure to the hazards via administrative or engineering controls, substitution, or use of PPE. OSH is the responsibility of each employer, as applicable. Employer responsibilities are to review potentially hazardous workplace conditions; monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous substances), physical (e.g., noise propagation, falls), and biological (e.g., infectious waste, wildlife, poisonous plants) agents, and ergonomic stressors; recommend and evaluate controls (e.g., prevention, administrative, engineering, PPE) to ensure exposure of personnel is eliminated or adequately controlled; and ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to the use of respiratory protection, engaged in hazardous waste work, asbestos, lead, or other work requiring medical monitoring.

**Military Personnel Safety.** Each branch of the military has its own policies and regulations that act to protect its workers, despite their work location. AFI 91-202, *The U.S. Air Force Mishap Prevention Program*, "establishes mishap prevention program requirements, assigns responsibilities for program elements, and contains program management information". In order to meet the goals of minimizing loss of Air Force resources and protecting Air Force personnel, mishap prevention programs should address: groups at increased risk for mishaps, injury of illness; a process for tracking incidents; funding for safety programs; metrics for measuring performance; safety goals; and methods to identify safety BMPs.

**Public Safety.** Kirtland AFB has its own emergency services department. The emergency services department provides Kirtland AFB with fire suppression, crash response, rescue, emergency medical response, hazardous substance protection, and emergency response planning and community health and safety education through the dissemination of public safety information to the installation. A Veterans Affairs hospital and the 377th Medical Groups' Outpatient Clinic are the primary military medical facilities at Kirtland AFB (Kirtland AFB undated). A number of other hospitals and clinics, which are devoted to the public, are located off-installation in the city of Albuquerque. These facilities include the Heart Hospital of New Mexico, University of New Mexico Hospital, and Presbyterian Kaseman Hospital (Google Maps 2013).

The Fire and Rescue Emergency Services Division for the city of Albuquerque provides fire suppression, crash response, rescue, emergency medical response, and hazardous substance response to the nearby city of Albuquerque. The Fire and Rescue Emergency Services Division includes 23 fire engine companies, 7 fire ladder companies, 3 hazardous material response units, and 18 medical response ambulances (City of Albuquerque 2013). The city of Albuquerque also has approximately 992 police officers available to provide law enforcement services (Albuquerque Police Department 2012). The Southeast Area Command (Phil Chacon Memorial Substation) borders the northwest corner of Kirtland AFB. A mutual service agreement is in place between the city of Albuquerque and USAF at Kirtland AFB.

**Radiological Safety.** DTRA implements an active radiological health and safety program at the TEAMS, in accordance with a variety of site-specific health and safety plans, procedures, and NRC license requirements. The TEAMS and staff are monitored using Thermo-Luminescent

Dosimeters, and have been monitored quarterly since 2002. There is also a Central Badge on the TEAMS for continuous site monitoring. Every 6 months, DTRA conducts comprehensive radiological surveys, including swiping all on-site radiological sources. Through this active monitoring and source control program, no radiation exposure above regulatory requirements has ever been measured at the TEAMS, and all exposures are within the guiding principles to keep exposures as low as reasonable achievable.

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## 4. ENVIRONMENTAL CONSEQUENCES

This section describes the potential environmental consequences on the affected environment of implementing the Proposed Action and the No Action Alternative. In **Sections 4.1** through **4.8**, each alternative is evaluated for its potential to affect physical, biological, cultural, and socioeconomic resources in accordance with CEQ Regulation 40 CFR §1508.8. Potential impacts for each resource area are described in terms of their significance. The magnitude of impacts on each resource shall be described as significant, less than significant, or no impact. Significant impacts are those impacts that would result in substantial changes to the environment (as defined by CEQ Regulation 40 CFR §1508.27) and should receive the greatest attention in the decision-making process. Potential impacts would be reduced or avoided with implementation of the BMPs identified in **Table 10**.

**Table 10. Best Management Practices Incorporated into the Proposed Action**

Technical Resource Area	Best Management Practice/Environmental Protection Measure
Noise	Comply, to the extent practical, with local noise ordinances.
	Limit, to the extent possible, construction and associated heavy truck traffic to occur Monday through Friday between 8:00 am and 6:00 pm, or during normal, weekday, work hours. This measure would reduce noise impacts during sensitive nighttime hours.
	Locate stationary equipment as far away from sensitive receptors as possible.
	Select material transportation routes as far away from sensitive receptors as possible.
	Shut down noise-generating heavy equipment when it is not needed.
	Maintain noise equipment per manufacturer's recommendations.
	Encourage construction personnel to operate equipment in the quietest manner practicable (e.g., speed restrictions, retarder brake restrictions, engine speed restrictions, etc.).
Air Quality	Use appropriate dust suppression methods during on-site construction activities. Available methods include application of water, dust palliative, or soil stabilizers; use of enclosures, covers, silt fences, or wheel washers; and suspension of earth-moving activities during high wind conditions.
	Maintain an appropriate speed to minimize dust generated by vehicles and equipment on unpaved surfaces.
	Cover haul trucks with tarps.
	Stabilize previously disturbed areas through mulching if the area would be inactive for several weeks or longer.
	Visually monitor all construction activities regularly, particularly during extended periods of dry weather, and implement dust control measures when appropriate.
	Shut down machinery and equipment when not in use for extended periods to reduce vehicle emissions.
	Prior to construction, obtain a fugitive dust control construction permit from the AEHD-AQD and comply with permit requirements.
Geology and Soils	Prior to any ground-disturbing activities, obtain and comply with an appropriate NDPES permit, including submission and approval of a NOI and a SWPPP. Manage storm water runoff and erosion using earth berms, sedimentation/storm water detention basins, vegetative buffers and filter strips, and spill prevention and management techniques, as detailed in the approved SWPPP.
	Use existing topography to the maximum extent possible.
	Limit the areas of soil disturbance to the minimum area required to accomplish objectives. Restore temporarily disturbed areas to pre-project conditions upon completion of the activity.
	Minimize any ground-disturbing activities during construction and operation of the TEAMS.

**Table 10. Best Management Practices Incorporated into the Proposed Action (continued)**

<b>Technical Resource Area</b>	<b>Best Management Practice/Environmental Protection Measure</b>
<b>Water Resources</b>	Comply with Section 438 of the EISA. Ensure that any federal facility with a proposed disturbance area exceeding 5,000 square feet maintain or restore the pre-development hydrology of the property to the maximum extent technically feasible, with regard to temperature, rate, volume, and duration of flow. Comply with DOD's policy regarding implementation of Storm Water Requirements under Section 438 of the EISA (Office of the Under Secretary of Defense 2010) and USEPA's Technical Guidance on Implementing the Storm Water Runoff Requirements for Federal Projects under Section 438 of the EISA.
	Design the Proposed Action to meet UFC LID requirements to maintain or restore the natural hydrologic functions of the Site.
<b>Biological Resources</b>	Time construction to avoid nesting periods (1 March to 31 August) of migratory birds on the Site and protected under the MBTA. If it is not practical to clear the Site outside of this timeframe, employ a qualified biologist to survey the Site prior to clearing to ensure that no active nests are disturbed.
	Use directional lighting to minimize lighting impacts to adjacent, offsite areas.
	Use native plant species to the extent practicable, if revegetation is performed, to avoid the potential introduction of non-native or invasive species.
	Comply with all requirements and management measures concerning migratory birds, raptors, fish and wildlife, wildlife fire management, invasive species management and control, and other sensitive biological resources as identified in the Kirtland AFB INRMP.
<b>Infrastructure</b>	Ensure construction activities do not adversely affect traffic flow on local roadways. Time construction activities and traffic to avoid peak travel hours.
	Ensure debris or soil is not deposited on public roadways during any proposed activities.
	Closely coordinate with utility provider(s) during the design and implementation of all utility connections for the Proposed Action.
	Prior to the installation of underground utilities or any other construction, identify all existing underground utilities within the proposed construction footprint and avoid or relocate existing or proposed utility infrastructure, as appropriate.
	At least 45 days prior to construction of any antenna/tower, file with the FAA a Pre-construction "Obstruction Evaluation" Notice of a proposed structure/tower/antenna per 14 CFR §77.9. Comply with FAA regulations and requirements during tower construction and operation.
<b>Hazardous Materials and Waste</b>	Ensure vehicles are properly serviced and are not leaking. Implement secondary containment measures to ensure that contamination from a spill would not occur.
	Ensure all construction and operational debris is collected and disposed of quickly and appropriately, in accordance with applicable laws and regulations.
	Comply with existing Kirtland AFB Standard Operating Procedures (SOPs) and applicable federal and state laws governing the use, generation, storage, or transportation of solid or hazardous materials.
	In the event of a spill, comply with Kirtland AFB's Hazardous Material Emergency Planning and Response Plan.
<b>Safety</b>	Comply with all NRC regulations and requirements concerning the storage and use of radiological materials, including complying with the conditions of NRC License No. 45-25551-01 (Amend. 18), Docket No. 030-35668, Control No. 579050, dated 21 November 2012.
	In accordance with AFOSH Standard 48-9, all new radio antennas will be coordinated through the Installation Frequency Manager and all precautionary measures taken to ensure the safety of all personnel (i.e., correct signage, training, etc.).

## 4.1 Noise

### 4.1.1 Evaluation Criteria

Noise impact analyses typically evaluate potential changes to the existing noise environment that would result from implementation of a proposed action. Potential changes in the acoustical environment can be beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels or reduce the ambient sound level), negligible (i.e., if the total number of sensitive receptors to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased sound exposure to unacceptable noise levels or ultimately increase the ambient sound level). Projected noise impacts were evaluated qualitatively for the alternatives considered.

### 4.1.2 Proposed Action

As analyzed below, construction and operation/maintenance of the Proposed Action would not result in significant noise impacts based on the above criteria.

#### 4.1.2.1 Construction

Noise from construction activities varies depending on the type of equipment being used, the area in which the action occurs, and the distance from the noise source. To predict how construction activities would impact adjacent populations, noise from the proposed construction activities was estimated. For example, as shown in **Table 5**, construction usually involves several pieces of equipment (e.g., backhoe and dump truck) that can be used simultaneously. Under the Proposed Action, the cumulative noise from the construction equipment, during the busiest day, was estimated to determine the total impact of noise from construction activities at a given distance. Examples of expected construction noise during daytime hours at specified distances are shown in **Table 11**. These sound levels were predicted at 100, 200, 400, 800, and 1,200 feet from the source of the noise.

Even under the “worst case scenario” noise levels described in **Table 11**, people within 100 to 200 feet of the noise source would only find the noise “annoying” or “very annoying” (see **Table 4**). The closest offsite structure to the TEAMS boundary exists over 200 feet to the north; the distance to the most proximate proposed construction site is greater. As such, while construction activities would result in short-term increases to the existing noise environment, these impacts would be negligible and temporary in nature. In addition, as identified in **Section 3.2**, the noise environment of the TEAMS is dominated by aircraft noise associated with the Albuquerque International Sunport. Potential construction noise from the Proposed Action would be equivalent to existing local sources of noise. In addition, any potential construction noise impacts would be further reduced or avoided with implementation of the BMPs identified in **Table 10**. As such, only short-term, negligible, adverse noise impacts would be expected during the construction period.

**Table 11. Predicted Noise Levels from Construction Activities**

Distance from Noise Source (feet)	Predicted Noise Level (dBA)
100	86
200	80
400	74
800	68
1,200	64

#### 4.1.2.2 Operation and Maintenance

Operation and maintenance of the TEAMS would not introduce new noise sources to the existing noise environment. The Proposed Action would not introduce any new testing or training activities to the TEAMS that would change the local noise environment over current levels. Should the alarm on the proposed radiological source storage facility be triggered, only short-term noise would be produced until the condition is resolved. Therefore, operation and maintenance of the TEAMS would not result in any long-term, adverse impacts on noise.

#### 4.1.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. There would be no increase in construction activities and consequently, the ambient noise environment would not change from existing conditions. Therefore, no additional impacts would be expected from implementation of the No Action Alternative.

### 4.2 Air Quality

#### 4.2.1 Evaluation Criteria

The impacts on local and regional air quality conditions near a proposed federal action are determined based upon the anticipated increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS “attainment” areas may be considered significant if the net increases in pollutant emissions from the federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any NAAQS or SAAQS.
- Expose sensitive receptors to substantially increased pollutant concentrations.
- Exceed any Evaluation Criteria established by a SIP or permit limitation.

Impacts on air quality in NAAQS “non-attainment” or “maintenance” areas are considered significant if the net changes in project-related pollutant emissions would result in any of the following scenarios:

- Exceed the General Conformity *de minimis* threshold emissions rates established by USEPA.
- Cause or contribute to a violation of any NAAQS or SAAQS.
- Increase the frequency or severity of a violation of any ambient air quality standard.
- Delay the attainment of any standard or other milestone contained in the SIP or permit limitations.

USEPA established federal *de minimis* threshold emissions rates in the General Conformity Rule to focus analytical requirements on those federal actions with the potential to substantially affect air quality. **Table 12** presents those thresholds, by regulated pollutant. As shown in **Table 12**, *de minimis* thresholds vary depending on the severity of the non-attainment area classification.

With respect to the General Conformity Rule, impacts on air quality would be considered significant if the proposed federal action would result in an increase of a non-attainment or maintenance area’s emissions inventory above the *de minimis* threshold levels established in 40 CFR §93.153(b) for individual non-attainment pollutants or for pollutants for which the area has been re-designated as a maintenance area.

Table 12. Conformity *de minimis* Emissions Thresholds

Pollutant	Status	Classification	<i>de minimis</i> Limit (tpy)
O <sub>2</sub> (measured as NO <sub>x</sub> or VOCs)	Non-attainment	Extreme Severe Serious Moderate/marginal (inside ozone transport region) All others	10 25 50 50 (VOCs)/100 (NO <sub>x</sub> ) 100
	Maintenance	Inside ozone transport region Outside ozone transport region	50 (VOCs)/100 (NO <sub>x</sub> ) 100
CO	Non-attainment/maintenance	All	100
PM <sub>10</sub>	Non-attainment/maintenance	Serious Moderate Not Applicable	70 100 100
PM <sub>2.5</sub> (measured directly, as SO <sub>2</sub> , or as NO <sub>x</sub> )	Non-attainment/maintenance	All	100
SO <sub>2</sub>	Non-attainment/maintenance	All	100
NO <sub>x</sub>	Non-attainment/maintenance	All	100

Source: 40 CFR §93.153

In addition to the *de minimis* emissions thresholds, federal PSD regulations define air pollutant emissions to be significant if: (1) a proposed project is a modification with a net emissions increase to an existing PSD major source; and (2) the source is within 10 kilometers of any Class I area, and (3) stationary source emissions would cause an increase in the concentration of any regulated pollutant in the Class I area of 1 µg/m<sup>3</sup> or more (40 CFR §52.21[b][23][iii]). PSD regulations do not apply to the Proposed Action at TEAMS because Kirtland AFB is not an existing PSD major source and only negligible, if any, increases in stationary source emissions would be associated with the Proposed Action. In addition, as stated in **Section 3.3.2**, no Class I areas are located within 10 kilometers of Kirtland AFB.

Per the New Mexico Air Quality Control Act and 20.11.41 NMAC, any person planning to construct a new stationary source or modify an existing stationary source of air contaminants in Bernalillo County, including the city of Albuquerque, where the stationary source emits one or more regulated air contaminants that exceed a rate of 10 pounds per hour or 25 tpy, would be required to obtain a permit to construct from the AQCB. A permit from the Albuquerque-Bernalillo County AQCB would also be required if an emissions source was subject to federal NSPSs or National Emissions Standards for HAPs.

#### 4.2.2 Proposed Action

The implementation of the Proposed Action would result in impacts on air quality resources; however, these impacts are expected to be less than significant. Emissions from construction and operation/maintenance of the Proposed Action are discussed below.

##### 4.2.2.1 Construction

**Emission Estimates.** Construction of the proposed facilities at the TEAMS would generate air pollutant emissions because of ground-disturbing activities such as grading, filling, compacting, and trenching; operation of construction equipment; and operation of trucks hauling materials and

waste to and from the work site(s). Construction activities would also generate particulate emissions as fugitive dust from ground-disturbing activities and from the combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day-to-day depending on the construction phase, level of activity, and prevailing weather conditions.

Criteria pollutant emissions from construction activities are estimated in **Appendix D** and summarized in **Table 13**. It is assumed that construction occurs in calendar year (CY) 2014 and operation and maintenance begins in CY 2015 and beyond. Emissions were estimated using the Air Force Air Conformity Applicability Model (ACAM) with the assumptions and methodology presented in the detail report included in **Appendix D**.

**Table 13. Construction Emissions for the Proposed Action**

	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
<b>2014</b>	1.346	0.935	12.417	0.011	0.254	0.049
Source: Air Force ACAM 5.0						

Per the New Mexico Air Quality Control Act and 20.11.20 NMAC, *Fugitive Dust Control*, a fugitive dust control construction permit is required for projects disturbing 0.75 acre or more, as well as the demolition of buildings containing more than 75,000 cubic feet of space. As stated in 20.11.20.12 NMAC, *General Provisions*, each person shall use reasonably available control measures or any other effective control measure during active operations or on inactive disturbed surface areas, as necessary to prevent the release of fugitive dust, whether or not the person is required by 20.11.20 NMAC to obtain a fugitive dust control permit.

This regulation also contains a provision for buildings containing ACM, as stated in 20.11.20.22 NMAC, *Demolition and Renovation Activities; Fugitive Dust Control Construction Permit and Asbestos Notification Requirements*: "All demolition and renovation activities shall employ reasonably available control measures at all times, and, when removing ACM, shall also comply with the federal standards incorporated into 20.11.64 NMAC, *Emission Standards for Hazardous Air Pollutants for Stationary Sources*. A person who demolishes or renovates any commercial building, residential building containing five or more dwellings, or a residential structure that will be demolished in order to build a nonresidential structure or building shall file an asbestos notification with the department no fewer than 10 calendar days before the start of such activity. Written asbestos notification certifying to the presence of ACM is required even if regulated ACM is not or may not be present in such buildings or structures".

The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. As shown in **Table 10**, the Proposed Action would disturb up to approximately 2.7 acres, of which about 1.7 acres would be disturbed during operation. Prior to construction, DTRA would obtain a fugitive dust control construction permit from the AEHD-AQD (as greater than 0.75 acre of land would be disturbed) and would implement permit conditions and BMPs to control dust emissions during construction activities (see **Table 10**). In addition, none of the buildings on the TEAMS contain ACM (see **Section 3.10.2**), and no structures would be demolished under the Proposed Action; existing temporary structures would be removed from the Site. DTRA would comply with the requirements of 20.11.20.22 NMAC as part of the construction process.

Additionally, construction vehicles are assumed to be well-maintained and could use diesel particle filters to reduce emissions. Construction workers commuting daily to and from the construction site in their personal vehicles would also result in minor criteria pollutant air emissions (see **Appendix D**). With the proper implementation of the appropriate BMPs identified in **Table 10**, it is

not expected that emissions from construction activities would contribute to or affect local or regional attainment status with the NAAQS. Consequently, a short-term, less-than-significant, adverse impact to air quality is identified.

**General Conformity.** Kirtland AFB is located in an area that is designated as attainment/unclassified for all criteria pollutants. Although Bernalillo County is in attainment for CO, the county is considered a maintenance area because it has a Limited Maintenance Plan for CO. Based on this designation, the General Conformity Rule requirements are applicable to the Proposed Action for CO.

In 1996, Bernalillo County was redesignated from a carbon monoxide (CO) nonattainment area to an attainment area with a maintenance plan (commonly called a maintenance area). The maintenance area designation is for the 20-year period beginning 13 June 1996 and continuing until 13 June 2016. The AEHD-AQD was required to revise its CO Maintenance Plan and incorporate the plan into the New Mexico SIP to show Albuquerque/Bernalillo County will meet the CO NAAQS for the remainder of the 20-year maintenance period (the 10-year period beginning 13 June 2006). Because CO has been steadily declining and the area has had no recent violations, the AEHD-AQD submitted a CO Limited Maintenance Plan, an option provided by the USEPA if monitored CO levels can remain below 85 percent of the CO NAAQS (AEHD-AQD 2004).

Kirtland AFB is currently subject to general conformity rule requirements because of the maintenance area classification; however, Bernalillo County has received approval from the USEPA for its CO Limited Maintenance Plan, which eliminates the conformity requirements found in 20.11.04 NMAC General Conformity. This plan took effect in June 2006 and makes conformity analyses unnecessary since there are no upper emissions limits to which federal projects must conform. As long as no violations of the CO NAAQS occur, Bernalillo County will be officially designated as attainment for CO in the year 2016 (AEHD-AQD 2004).

Conformity refers to consistency between a project or plan and the emission budgets in the SIP for air quality. This requires that emissions resulting from a project or plan will not contribute to or cause a violation of the NAAQS. General Conformity requirements apply to federal actions, such as construction projects and new land use developments, and stipulate that such actions will not cause or contribute to a violation of the NAAQS (AEHD-AQD 2004).

Although a formal conformity analysis is not required for the Proposed Action, 32 CFR Part 989, *Environmental Impact Analysis Process*, and AFI 32-7040, *Air Quality Compliance*, requires sufficient documentation of air quality impacts. All emissions from the Proposed Action were estimated and compared to the *de minimis* thresholds in **Table 12**. Proposed construction activities would emit approximately 12.4 tpy CO during the construction phase of the project, including emissions from commuting construction workers. This total is well below the 100 tpy *de minimis* threshold and is considered a less-than-significant impact.

**Greenhouse Gas Emissions.** Construction activities associated with the Proposed Action would contribute directly to emissions of GHGs from the combustion of fossil fuels. Because CO<sub>2</sub> emissions account for approximately 92 percent of all GHG emissions in the United States, they are used for analyses of GHG emissions in this assessment. Implementation of the GHG goals outlined in the DOD SSPP would assist Kirtland AFB in complying with EO 13514 (see **Section 3.3.1**).

The U.S. DOE, Energy Information Administration estimates that in 2008 gross CO<sub>2</sub> emissions in the state of New Mexico were 57.6 million metric tons and in 2008 gross CO<sub>2</sub> emissions in the entire United States were 5,814.4 million metric tons (U.S. DOE Energy Information Administration 2010). The Proposed Action would emit approximately 551 metric tons of CO<sub>2</sub>

(or 607 U.S. tons) during the year of construction, which would be temporary. Operation emissions are expected to be of similar magnitude. Total CO<sub>2</sub> emissions from the Proposed Action would be approximately 0.00096 percent of the state of New Mexico's 2008 CO<sub>2</sub> emissions and approximately 0.000009 percent of the entire United States' 2008 CO<sub>2</sub> emissions. Therefore, the Proposed Action would represent a negligible contribution toward statewide and national GHG inventories.

The estimated CO<sub>2</sub> emissions from the Proposed Action are included in **Appendix D**.

#### 4.2.2.2 Operation and Maintenance

Operation and maintenance of the TEAMS would release negligible amounts of GHG emissions and NAAQS/SAAQS criteria pollutants as compared with current conditions. The on-site generator would continue to be operated in accordance with Air Quality Permit #1944 (see **Section 3.3.2**); no new generators or other major emissions sources are proposed. The new proposed, permanent structures would be more modern and energy efficient than existing structures, potentially resulting in decreased air quality emissions over current conditions from heating and cooling equipment. Although an increase in testing and training activities is proposed at the TEAMS, the additional load of up to 200 personnel per year (spread out over more days of the year as opposed to more personnel per training or testing event) would contribute negligible additional air emissions from additional commuting vehicles and on-site activities. Therefore, operation and maintenance of the TEAMS is anticipated to result in a long-term, negligible, adverse impact on local and regional air quality and GHG emission levels.

Criteria pollutant emissions from operation and maintenance activities are estimated in **Appendix D** and summarized in **Table 14**. It is assumed that construction would occur in CY 2014 and operations and maintenance would begin in CY 2015. Emissions were estimated using the Air Force ACAM with the assumptions and methodology presented in the detail report included in **Appendix D**.

**Table 14. Operation and Maintenance Emissions for the Proposed Action**

CY 2015 +	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
	0.625	0.814	11.911	0.009	0.029	0.013

Source: Air Force ACAM 5.0

Operation and maintenance of the Proposed Action would release negligible additional amounts of GHG emissions and criteria pollutants as compared with current conditions. The on-site generator would continue to be operated in accordance with Air Quality Permit #1944 (see **Section 3.3.2**); no new generators or other major emissions sources are proposed. The new proposed, permanent structures would be more modern and energy efficient than existing structures, potentially resulting in decreased air quality emissions over current conditions from heating and cooling equipment. Although an increase in testing and training activities is proposed at the TEAMS, the additional load of up to 200 personnel per year (spread out over more days of the year as opposed to more personnel per training or testing event) would contribute negligible additional air emissions from additional commuting vehicles and on-site activities. Therefore, operation and maintenance of the Proposed Action is anticipated to result in a long-term, negligible, adverse impact on local and regional air quality.

#### 4.2.3 No Action Alternative

The No Action Alternative would result in the continuation of existing air emissions from the TEAMS, as permitted under Air Quality Permit #1944 and as described in **Section 3.3.2**. Construction of new and permanent replacement facilities at the TEAMS would not take place, and no change to the local or regional air quality environment would occur with implementation of the No Action Alternative.

## 4.3 Geology and Soils

### 4.3.1 Evaluation Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on geological resources. Generally, adverse impacts can be avoided or minimized if proper construction techniques, erosion control measures and storm water management measures, and structural engineering design are incorporated into project development.

Impacts on geology and soils may be significant if they would:

- Alter the lithology, stratigraphy, and geological structures that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability.
- Substantially change the soil composition, structure, or function within the environment.

### 4.3.2 Proposed Action

As analyzed below, construction and operation/maintenance of the Proposed Action would not result in significant impacts on geology or soils based on the above criteria.

#### 4.3.2.1 Construction

Construction activities associated with the Proposed Action is expected to result in short-term, less-than-significant, adverse impacts on geological resources. No deep excavation and no new wells are proposed; all work would be confined to the upper approximately 5 feet of soil at the TEAMS. In addition, existing septic systems would be used and underground utilities would be installed at a depth of no more than approximately 4 feet below ground surface. No significant geologic hazards are present at the TEAMS.

Short-term, less-than-significant, adverse impacts on soils would be expected from the construction activities associated with the Proposed Action. Construction activities would require the removal of existing (limited) vegetation and the disturbance of soil in the form of trenching, grading, excavating, and re-contouring. These actions would temporarily increase the potential for erosion and sedimentation until long-term storm water handling methods are reestablished. Soil erosion and associated sedimentation would be minimized during all construction operations by following an approved sediment and erosion control plan (i.e., SWPPP), the *Kirtland Air Force Base Final Pollution Prevention Management Action Plan* (Kirtland AFB 1999), and Section 438 of the EISA (see **Section 4.5** for a description of Section 438 of the EISA).

As described in **Section 2.1.1** and shown in **Table 10**, the Proposed Action would disturb up to approximately 2.7 acres, of which about 1.7 acres would be disturbed during operation. Prior to construction, DTRA would obtain an appropriate NPDES permit, including submission and approval of a NOI and a SWPPP<sup>5</sup>. DTRA would implement NPDES permit conditions, the site-specific SWPPP, and BMPs to control soil erosion and to limit soils impacts during proposed construction activities (see **Table 3**). With implementation of these BMPs, soils and soil erosion impacts would be minimized and properly controlled. See **Section 4.5.2** for additional discussion.

Further, use of properly designed storm water-control measures and construction BMPs would minimize the potential for associated sedimentation resulting from storm events during construction activities associated with the Proposed Action. Erosion- and sediment-control BMPs could include installing silt fencing and sediment traps, applying water to disturbed soil, phasing construction

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<sup>5</sup> Prior to submission of the NOI to the USEPA, which is the NPDES permitting authority in New Mexico, DTRA would be required to submit the SWPPP to 377 MSG/CEIE for review. The SWPPP must be developed and the contractor must have a permit issued by USEPA before work begins.

where possible, and restoring disturbed areas as soon as possible with native plant species following the disturbance, as appropriate; these measures would be detailed in the project-specific SWPPP. **Table 10** identifies appropriate BMPs that would be incorporated into the Proposed Action to reduce or avoid potential adverse impacts on soils.

The soils mapped at the TEAMS are neither hydric nor prime farmland soils. However, these soils are rated as somewhat to very limited for shallow excavation or construction of small commercial buildings. DTRA would conduct site-specific soil surveys prior to implementing the proposed construction activities to determine the engineering limitations and appropriate design considerations or BMPs to offset potential adverse impacts.

#### 4.3.2.2 Operation and Maintenance

Disturbance of the existing soil structure and the addition of approximately 1.7 acres of new impervious surface from the construction of the proposed facilities at the TEAMS could affect post-construction storm water runoff patterns by increasing its volume and velocity. Increased storm water runoff volume and velocity could locally increase the velocity of flows into on-site and nearby drainage swales during storm events (see **Figure 13**). This could increase bank erosion and downstream sedimentation as conveyance channels adjust to accommodate the increased flow volume and velocity.

To minimize post-construction erosion and sediment production, DTRA would incorporate soil erosion and sediment control measures into all site design plans. DTRA would also comply with Section 438 of the EISA to ensure that pre- and post-development hydrology would be equivalent. Further details regarding potential surface water resource impacts are presented in **Section 4.6**. Consequently, no long-term, adverse impacts on soils are anticipated through implementation of proper site design and long-term maintenance of the TEAMS.

The use of storm water-control measures and other BMPs identified in **Table 10**, that favor infiltration would minimize the potential for erosion and sediment production as a result of future storm events, thereby further reducing or avoiding potential adverse impacts. Future details regarding surface water are presented in **Section 4.6**.

#### 4.3.3 No Action Alternative

The No Action Alternative would result in the continuation of existing geology and soils conditions at the TEAMS. No changes to existing geology and soils conditions, as described in **Section 3.5.2**, would occur. Ongoing operations at the TEAMS are producing no adverse impacts on these resources.

### 4.4 Water Resources

#### 4.4.1 Evaluation Criteria

Evaluation criteria for impacts on water resources are based on water availability, quality, use, and associated regulations. A proposed action may have a significant impact on water resources if it would:

- Substantially reduce water availability or supply to existing users.
- Overdraft groundwater basins.
- Exceed the safe annual yield of water supply sources.
- Substantially adversely affect water quality.
- Endanger public health by creating or worsening health hazard conditions.
- Threaten or damage unique hydrologic characteristics.
- Violate established laws or regulations adopted to protect water resources.

The potential impact of flood hazards on a proposed action is important if such an action occurs in an area with a high probability of flooding.

#### 4.4.2 Proposed Action

As analyzed below, construction and operation/maintenance of the Proposed Action would not result in significant impacts on water resources based on the above criteria.

##### 4.4.2.1 Construction

**Groundwater.** Because the annual water use (i.e., approximately 2,693 acre-feet) at Kirtland AFB is well below the 6,000 acre-feet withdrawal allowed per year in the court decreed water right<sup>6</sup>, short-term, less-than-significant, adverse impacts on groundwater availability would be expected during construction activities associated with the Proposed Action. Groundwater might be temporarily used for dust suppression during construction activities, depending on site conditions. If water applications are required for dust suppression, sufficient water resources are available on the installation; therefore, short-term, less-than-significant, adverse impacts on groundwater availability would be expected during proposed construction activities.

No impacts on groundwater quality are anticipated from construction activities associated with the Proposed Action. The average depth to groundwater beneath Kirtland AFB and the TEAMS is 450 to 550 feet; therefore, groundwater would not be encountered during construction, which is not anticipated to occur at depths below approximately 5 feet. Due to the depth to groundwater, it is also not anticipated that any potential petroleum or hazardous material spills during construction would reach the groundwater. Proper housekeeping, maintenance of equipment, and containment of fuels and other potentially hazardous materials would be conducted to minimize the potential for a release of fluids (see **Table 10**).

No impacts on groundwater recharge are anticipated from construction activities associated with the Proposed Action. Recharge of the Albuquerque Basin Regional Aquifer most likely occurs east of the installation in the Manzanita Mountains and, therefore, would not be affected by the Proposed Action.

**Surface Water.** Short-term, less-than-significant, adverse impacts on surface water and surface water quality could occur from disturbance and exposure of soils over approximately 2.7 acres of the TEAMS due to proposed construction activities. Soil disturbance from construction activities has the potential to result in minor disruption of natural drainage patterns, contamination of storm water discharge, and heavy sediment loading.

As described in **Section 2.1.1** and shown in **Table 10**, the Proposed Action would disturb up to approximately 2.7 acres, of which approximately 1.7 acres would be disturbed during operation. Prior to construction, DTRA would obtain an appropriate NPDES permit, including submission and approval of a NOI and a SWPPP. DTRA would implement NPDES permit conditions, the site-specific SWPPP, and BMPs to control soil erosion and to limit surface water resource impacts during proposed construction activities (see **Table 10**). In addition, DTRA would comply with Section 438 of the EISA and would design the Proposed Action to meet UFC LID requirements, resulting in the maintenance and restoration of the natural hydrologic functions of the TEAMS between pre- and post-construction conditions. With implementation of these BMPs, impacts on surface water resources would be minimized and properly controlled.

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<sup>6</sup> On 3 December 1973 the U.S. District Court Judgment and Order incorporated a 27 November 1973 Stipulation of Parties to allow KAFB to draw a total of 6,398 acre-feet of groundwater two wells within the Rio Grande Underground Water Basin (4,500 acre-feet and 1,898 acre-feet), as well as three minor decrees to draw 3 acre-feet per year of groundwater from three domestic wells.

Further, BMPs would be developed as part of the SWPPP to manage storm water during and after construction. During construction, heavy equipment (e.g., bulldozers, backhoes, dump trucks, concrete mixers, asphalt vehicles) and generators would be on the Site. Fuels, hydraulic fluids, and other lubricants would likely be stored on the Site during proposed construction activities to support contractor vehicles and machinery. However, no other hazardous materials are anticipated to be stored on the Site during construction activities. Construction personnel would be required to follow appropriate BMPs to protect against potential petroleum or hazardous material spills (see **Table 10**). Proper housekeeping, maintenance of equipment, and containment of fuels and other potentially hazardous materials would be conducted to minimize the potential for a release of fluids into surface waters. In the event of a spill, procedures outlined in Kirtland AFB's Hazardous Material Emergency Planning and Response Plan would be followed to quickly contain and clean up a spill. See **Section 4.9** for more information regarding potential hazardous material and waste impacts.

Following construction, re-stabilization of the TEAMS, along with other BMPs to abate potential runoff and erosion concerns would minimize potential impacts of erosion and runoff ultimately downstream to the Arroyo del Coyote. Proper housekeeping and retention of debris within the Site boundaries would prevent construction debris from entering waterways.

**Floodplains.** No portion of the TEAMS falls within the Arroyo del Coyote and Tijeras Arroyo 100- and 500-year floodplains. As such, no impacts on floodplains would be anticipated.

#### 4.4.2.2 Operation and Maintenance

Operation and maintenance of the TEAMS is not anticipated to result in any adverse impacts on water resources. Annual water use (i.e., approximately 2,693 acre-feet in 2012) at Kirtland AFB is well below the 6,000 acre-feet withdrawal allowed per year in the court decreed water right. In 2012, Kirtland AFB employed 20,083 individuals. Per Kirtland AFB's 2012 water quality report, six groundwater wells produced approximately 877,363,000 gallons of water (Kirtland AFB 2013c), or approximately 43,687 gallons per person. Assuming the same water usage per person, the proposed increase of 200 personnel at Kirtland AFB would require an additional 8,737,370 gallons of water, or approximately 1 percent of the total amount of water drawn from on-site wells in 2012. As such, increased testing and training use of the TEAMS under the Proposed Action would result in a negligible increase in water use. Restoration of the TEAMS following construction would result in no additional adverse impacts on water resources.

#### 4.4.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and the existing conditions discussed in **Section 3.5.2** would continue. Implementation of the No Action Alternative would not result in any new or additional impacts on water resources.

### 4.5 Biological Resources

#### 4.5.1 Evaluation Criteria

The level of impact on biological resources is based on the:

- Importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource.
- Proportion of the resource that would be affected relative to its occurrence in the region.
- Sensitivity of the resource to the proposed action.
- Duration of ecological ramifications.

Impacts on biological resources may be considered significant if species or habitats of high concern are adversely affected over relatively large areas, or disturbances cause reductions in

population size or distribution of a species of special concern. A habitat perspective is used to provide a framework for analysis of general classes of impacts (i.e., removal of critical habitat, noise, human disturbance).

Determination of the significance of impacts on wetland is based on the:

- Function and value of the wetland.
- Proportion of the wetland that would be affected relative to the occurrence of similar wetlands in the region.
- Sensitivity of the wetland to proposed activities.
- Duration of ecological ramifications. Impacts on wetland resources are considered significant if high-value wetlands would be adversely affected.

Ground disturbance and noise associated with proposed construction activities might directly or indirectly cause potential impacts on biological resources. Direct impacts from ground disturbance were evaluated by identifying the types and locations of potential ground-disturbing activities in relation to important biological resources. Mortality of individuals, habitat removal, and damage or degradation of habitats are impacts that might be associated with ground-disturbing activities.

Noise associated with a proposed action might be of sufficient magnitude to result in the direct loss of individuals and reduce reproductive output within certain ecological settings. Ultimately, extreme cases of such stresses could have the potential to lead to population declines or local or regional extinction. To evaluate impacts, considerations were given to the number of individuals or critical species involved, amount of habitat affected, relationship of the area of potential impact to total available habitat within the region, type of stressors involved, and magnitude of the impacts.

As a requirement under the ESA, federal agencies must provide documentation that ensures that agency actions do not adversely affect the existence of any federally listed threatened or endangered species. The ESA requires that all federal agencies avoid “taking” threatened or endangered species, which includes jeopardizing threatened or endangered species habitat. Section 7 of the ESA establishes a consultation process with the USFWS that ends with USFWS concurrence or a determination of the risk of jeopardy from a federal agency project.

#### **4.5.2 Proposed Action**

As analyzed below, construction and operation/maintenance of the Proposed Action would not result in significant impacts on biological resources based on the above criteria.

##### **4.5.2.1 Construction**

**Vegetation.** On-site vegetation primarily includes invasive species (i.e., puncture vine) and grassland species that can tolerate disturbance. Direct, less-than-significant, adverse impacts on vegetation would be expected from the disturbance of 2.7 acres on the TEAMS due to implementation of the Proposed Action, 1.7 acres of which would be permanently developed.

**Wildlife Species and Habitat.** Noise created during proposed construction activities could result in adverse impacts on nearby wildlife. These impacts would be subtle, widespread impacts from the overall elevation of ambient noise levels, potentially resulting in reduced communication ranges, interference with predator/prey detection, or habitat avoidance. More intense impacts could include behavioral changes, disorientation, or hearing loss. Predictors of wildlife response to noise include noise type (i.e., continuous or intermittent), prior experience with noise, proximity to a noise source, stage in the breeding cycle, activity, age, and sex. Prior experience with noise is the most important factor in the response of wildlife to noise, because wildlife can adapt to the noise. The rate of adaptation to short-term construction noise is not known.

Overall, construction noise impacts on wildlife associated with implementation of the Proposed Action are anticipated to be negligible. The TEAMS is located in an area dominated by aircraft noise associated with the Albuquerque International Sunport (see **Sections 3.2.2** and **4.1.2**). Wildlife present on the TEAMS, including associated wildlife habitat, are adapted to a relatively noisy, disturbed environment.

In addition and as shown in **Table 10**, construction would be timed or conducted to avoid adverse impacts on migratory bird species, directional lighting would be used to minimize lighting impacts on offsite areas, and the requirements and measures of the Kirtland AFB INRMP would be addressed. Therefore, no significant, adverse impacts on local wildlife species and habitat are anticipated.

As identified by the NMDGF in their scoping response (see **Appendix B**), the proposed communication tower would be less than 50 feet in height, constructed using a lattice structure or monopole, have no guy wires, use white strobe lights, and would not adversely affect local wildlife species.

**Threatened and Endangered Species.** As described in **Section 3.6.2**, no federally listed special status species are present at the TEAMS. Construction activities associated with the Proposed Action would not result in impacts on federally listed species.

**Critical Habitat.** As described in **Section 3.6.2**, no portion of Kirtland AFB has been identified by the NMDGF or the USFWS as critical habitat. While other important habitats (i.e., wetlands, suitable prairie dog habitat) do occur within the boundary of Kirtland AFB, such areas do not exist within the TEAMS. As such, no impacts on critical habitat would be expected under the Proposed Action.

**Wetlands.** No wetlands are present on or near the TEAMS; therefore, no impacts on wetlands would be expected under the Proposed Action.

#### 4.5.2.2 Operation and Maintenance

Once proposed construction activities are complete, proposed ongoing operation and maintenance of the TEAMS would result in no significant impacts on biological resources. Physical and chemical removal of puncture vine, as described in **Section 2.1.2**, would result in a net improvement in the biological function and condition of the TEAMS over the long-term. As the Proposed Action would only enhance ongoing on-site activities and would not alter current operations at the TEAMS, no additional long-term, adverse impacts on biological resources would be expected under the Proposed Action.

#### 4.5.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and existing biological resources conditions would remain the same as discussed in **Section 3.7.2**. No additional adverse impacts on biological resources would be expected from implementation of the No Action Alternative. Puncture vine would continue to dominate the TEAMS, and no improvements to this condition would occur.

### 4.6 Infrastructure

#### 4.6.1 Evaluation Criteria

Impacts on infrastructure are evaluated based on a proposed action's potential for disruption, excessive use, or improvement of existing level of service for transportation resources, energy (electric, natural gas, and liquid fuels) and water consumption, sanitary sewer and wastewater systems, storm water systems, communications, and solid waste management. Impacts might

arise from physical changes to traffic circulation and utility needs created by either direct or indirect workforce and population changes related to installation activities. An impact may be significant if implementation of the Proposed Action resulted in the following impacts on electrical power, natural gas, liquid fuels, water, sanitary sewer/wastewater, storm water, communications, or solid waste systems:

- Exceeded capacity of a utility or transportation artery.
- A long-term interruption of the utility or transportation artery.
- A violation of a permit condition.
- A violation of an approved plan for that utility.

#### 4.6.2 Proposed Action

As analyzed below, construction and operation/maintenance of the Proposed Action would not result in significant impacts on infrastructure based on the above criteria.

##### 4.6.2.1 Construction

**Transportation.** Construction activities have the potential to impact the transportation system through traffic delays. Early coordination with Kirtland AFB organizations would ensure necessary safety precautions are taken and would allow ample advance notice to affected commuters and personnel; these measures, or BMPs, are identified in **Table 10**. Impacts on the transportation system would be expected to be short-term and less than significant during the construction period.

**Electrical System.** During the construction phase of the Proposed Action, existing electric infrastructure would be extended to the proposed RAD pad and proposed picnic area. Utility infrastructure would also be reconnected from the temporary buildings to the proposed, in-kind permanent buildings as buildings are replaced. As identified in **Section 3.7.2**, existing utility infrastructure is sufficient to accommodate on-site demand associated with the Proposed Action. In addition, DTRA would implement the BMPs identified in **Table 10** to ensure that existing utilities are avoided during construction, and that design and implementation of proposed utility connections are carefully and properly coordinated with utility providers.

**Natural Gas and Propane.** During the construction phase of the Proposed Action, utility infrastructure would be reconnected from the temporary building (i.e., Building 20613) to the proposed, in-kind permanent building as buildings are replaced. As identified in **Section 3.7.2**, existing utility infrastructure is sufficient to accommodate on-site demand associated with the Proposed Action. In addition, DTRA would implement the BMPs identified in **Table 10** to ensure that existing utilities are avoided during construction, and that design and implementation of proposed utility connections are carefully and properly coordinated with utility providers.

**Liquid Fuel.** Construction at the TEAMS would not alter the quantities of liquid fuels (e.g., JP-8, diesel, gasoline) used at Kirtland AFB nor would it affect their handling and storage. Construction contractors would use liquid fuel for their vehicles and equipment and may have a liquid fuel storage tank on the Site during construction activities; however, this would not affect Kirtland AFB's liquid fuel supply because it would come from off-installation. Therefore, no impacts on liquid fuels would be expected from proposed construction activities.

**Water Supply System.** Construction at the TEAMS would require minimal amounts of water, primarily for dust-suppression purposes. This water would be obtained from the Kirtland AFB water supply system. Because the annual water use (approximately 2,693 acre-feet) on Kirtland AFB is well below the 6,000 acre-feet withdrawal allowed per year in the court decreed water right, less-than-significant, adverse impacts on the water supply system are anticipated from construction activities associated with the Proposed Action.

**Sanitary Sewer/Wastewater System.** Construction at the TEAMS would likely use portable latrines for construction workers during proposed construction activities. These facilities would be serviced by the construction contractor, and waste would be properly disposed of by the contractor. As such, no impacts on the sanitary sewer or wastewater systems are anticipated from construction activities associated with the Proposed Action.

**Storm Water System.** Construction activities associated with the Proposed Action at the TEAMS would require ground disturbance as heavy equipment would clear, grade, and contour land surfaces. These activities could temporarily disrupt man-made storm water drainage systems on the Site and increase the potential for storm water runoff to erode soil during construction activities. Soil erosion and sediment production would be minimized during construction periods by following an approved, site-specific SWPPP and implementing BMPs in accordance with the construction NPDES permit (see **Section 4.5** and **Table 10**). With implementation of these BMPs, adverse impacts on the storm water system would be minimized and properly controlled.

**Communications System.** The Proposed Action includes the construction of a radio antenna/communications tower, which would not exceed 50 feet in height. As described in **Section 2.1.1**, DTRA would coordinate with, and obtain approval from, the FAA prior to constructing the proposed tower. Through this process, no impacts on the local communications system would occur; however, long-term, beneficial impacts on the existing communication system between the various DTRA sites would result. As described in **Section 4.6**, the proposed tower would comply with the requests of the NMDGF in their scoping response (see **Appendix B**) to avoid adverse impacts on local wildlife species. Prior to DTRA's purchase of an antenna and all associated components, approval will be acquired from the Installation Spectrum Manager.

**Solid Waste Management.** To reduce the amount of construction waste disposed of at the landfill from the Proposed Action, materials that could be recycled or reused would be diverted from landfills to the greatest extent possible during the construction period, in strict accordance with the Construction Waste Management specification (Section 01 74 19). Site-generated scrap metals, wiring, clean ductwork, and structural steel would be separated and recycled off site. Cardboard wastes would be recycled as a function of the Kirtland AFB Qualified Recycling Program. Miscellaneous salvageable metals would be transported to the Defense Reutilization and Marketing Office for recycling or reuse. Clean fill material, ground-up asphalt, and broken-up cement would be diverted from the landfills and reused whenever possible. This would result in an adverse impact on the solid waste management resources; however, these impacts would be expected to be less than significant.

In addition, as described in **Section 2.1.1**, temporary buildings proposed to be replaced by in-kind, permanent buildings at the TEAMS would be removed from the Site; no demolition is proposed.

The weights of all materials diverted for recycling or reuse would be reported to the Kirtland AFB Qualified Recycling Program to be credited toward the DOD-mandated construction and demolition diversion rate. Per the DOD Strategic Sustainability Performance Plan, the diversion rate goal is 60 percent by FY 2015 and thereafter through FY 2020. Nonhazardous construction and demolition waste that is not recyclable or reusable would be transported to the Kirtland AFB construction and demolition waste landfill for disposal. Receptacles would be provided for municipal solid waste generated by construction worker activity.

#### 4.6.2.2 Operation and Maintenance

**Transportation.** No existing roadways would be altered, and no new roadways would be constructed under the Proposed Action. As such, operation of the TEAMS would not likely result in significant transportation impacts. While use and testing and training event levels would increase by up to 50 percent during operation of the TEAMS, only the frequency of such events would increase, not the number of on-site personnel and vehicles per event. The additional load of up to

200 personnel per year (spread out over more days of the year as opposed to more personnel per training or testing event) would contribute negligible additional transportation impacts. As such, no long-term, adverse impacts on transportation would be anticipated during operation of the TEAMS.

**Utilities/Water Supply/Wastewater.** During operation of the TEAMS, the proposed new RAD pad and Command and Control Center would consume minor amounts of electricity. Proposed additional usage of the TEAMS by approximately 200 personnel each year would also consume minor quantities of electricity, water, and natural gas, and generate additional wastewater treated through the on-site septic systems. Conversely, replacement of temporary structures with new, more energy-efficient LID permanent structures would be anticipated to decrease consumption of electricity and natural gas. As on-site infrastructure is of sufficient capacity to accommodate these minor increases in utility usage, and permanent structures would be anticipated to lower utility demand, only negligible, adverse impacts on utilities would result during operation of the TEAMS.

**Liquid Fuel.** Operation of the TEAMS would only enhance ongoing on-site testing and training activities and would not substantially alter current operations at the TEAMS. Due to the proposed 50 percent increase (i.e., approximately 200 personnel per year) in use of the TEAMS, minor additional quantities of liquid fuel might be consumed, however, this impact would be negligible. No additional on-site storage or disposal of liquid fuel would occur during operation of the TEAMS. As such, no long-term, adverse impacts would be expected.

**Storm Water System.** Proposed construction at the TEAMS would result in approximately 1.7 acres of new impervious surfaces consisting primarily of building foundations. This increase in impervious surface would reduce the amount of surface area for storm water to permeate into the ground and increase the amount of storm water runoff. Long-term storm water management techniques, which might include the use of pipes, channels, culverts, and impoundment basins, would be incorporated into the design and operation of the TEAMS in accordance with Section 438 of the EISA and UFC LID requirements (see **Table 10**). These BMPs would ensure no long-term, adverse impacts on storm water occur.

**Communications System.** During operation of the TEAMS, the proposed radio antenna/communications tower would improve communication between the TEAMS and other DTRA training sites at Kirtland AFB (i.e., the GRABS Site and Chestnut Site). As such, a long-term, beneficial impact on on-site communications would occur under the Proposed Action.

**Solid Waste Management.** Operation of the TEAMS, including a proposed 50 percent increase (i.e., approximately 200 personnel per year) in use, would generate additional, minor volumes of solid waste. However, this impact is anticipated to be negligible.

#### 4.6.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and existing infrastructure conditions would remain the same as discussed in **Section 3.8.2**. While the less-than-significant, adverse impacts on infrastructure (e.g., utility consumption, solid waste generation) with implementation of the Proposed Action would not occur, the communications system improvements for DTRA on Kirtland AFB also would not occur.

## 4.7 Hazardous Materials and Waste

### 4.7.1 Evaluation Criteria

DTRA assessed impacts on hazardous materials and waste by evaluating the degree to which the Proposed Action:

- Could cause worker, resident, or visitor exposure to hazardous materials or waste.

- Would lead to noncompliance with applicable federal and state regulations.
- Would increase the amounts of hazardous materials and wastes generated or procured beyond Kirtland AFB's current waste management procedures and capacities.
- Would disturb an Environmental Restoration Program site or create or contribute to an Environmental Restoration Program site resulting in adverse impacts on human health or the environment.

#### 4.7.2 Proposed Action

As analyzed below, construction and operation/maintenance of the Proposed Action would not result in significant impacts on hazardous materials and wastes based on the above criteria.

##### 4.7.2.1 Construction

**Environmental Management System.** Short-term, less-than-significant, adverse impacts on the EMS Program, including the Pollution Prevention Program, at Kirtland AFB would be expected from construction activities associated with the Proposed Action. As discussed below, an incremental increase in hazardous materials and wastes would be expected during construction activities. Adherence to the EMS Program and associated plans at Kirtland AFB, particularly the Hazardous Materials Emergency Planning and Response Plan (see **Section 3.8.2**), would reduce adverse impacts resulting from construction activities. Further, standard BMPs used at DTRA construction sites would minimize impacts on the natural environment (see **Table 10**).

**Hazardous Materials and Petroleum Products.** Short-term, less-than-significant, adverse impacts on hazardous materials management during construction activities would be expected. Contractors would be responsible for the management of hazardous materials and petroleum product usage, which would be handled in accordance with federal, state, and USAF regulations. Contractors must report the use of hazardous materials to 377 MSG/CEIE to be input into the EESOHMIS. If a material that is less hazardous can be used, the 377 MSG/CEIE would make these recommendations. Use of the EESOHMIS would also ensure that ozone-depleting substances (ODSs) are not used. Use of ODSs in such products as refrigerants, aerosols, and fire suppression systems is not permitted by the DOD without a formal request for a waiver. There would be no new chemicals or toxic substances used or stored at Kirtland AFB in conjunction with the Proposed Action.

**Hazardous and Petroleum Waste.** Short-term, less-than-significant, adverse impacts would be expected from the generation of hazardous or petroleum wastes during proposed construction activities with implementation of the BMPs identified in **Table 10**. It is anticipated that the quantity of hazardous and petroleum wastes generated from the proposed construction activities would be negligible and thus less-than-significant, adverse impacts on the installation's hazardous waste management program would be expected. Constructors would be responsible for the disposal of hazardous waste in accordance with federal and state laws and regulations and the installation's HWMP. If however, a spill does occur, the Hazardous Materials Emergency Planning and Response Plan outlines the appropriate measures for spill situations (Kirtland AFB 2008b).

**Environmental Restoration Program.** As identified in **Section 3.8.2**, eight ERP sites are located within 0.5 mile of the TEAMS. However, none of these site are currently active, and all have either formally been granted NFA status by the USEPA or the NMED. Refer to **Section 3.8.2** for a description of each nearby ERP site. As such, construction activities associated with the Proposed Action would have no adverse impacts on these sites.

**Asbestos-Containing Material.** As identified in **Section 3.8.2**, no such materials are expected to be present at the TEAMS, and no adverse impacts are anticipated.

**Lead-Based Paint.** As identified in **Section 3.8.2**, no such materials are expected to be present at the TEAMS, and no adverse impacts are anticipated.

**Polychlorinated Biphenyls.** As identified in **Section 3.8.2**, no such materials are expected to be present at the TEAMS, and no adverse impacts are anticipated.

**Radiological Materials.** During proposed construction activities, existing on-site radiological materials would be properly controlled and monitored in accordance with applicable plans and procedures (see **Section 3.8.2**). Construction activities would not affect or encounter these materials, which would remain properly secured on-site by DTRA. In addition, proposed construction activities would not involve the use, handling, or storage of radiological materials. Consequently, no adverse impacts are anticipated.

#### 4.7.2.2 Operation and Maintenance

**Environmental Management System.** DTRA would continue to participate in Kirtland AFB's EMS program to ensure continuous process improvement and to further reduce the use of hazardous materials on the Site. As identified in **Table 10**, DTRA would implement standard BMPs, including continuing to comply with existing SOPs and applicable federal and state laws governing the use, generation, storage, and transportation of solid and hazardous materials during operation and maintenance of the Proposed Action. Adherence to these BMPs, the EMS Program, and associated plans at Kirtland AFB, particularly the Hazardous Materials Emergency Planning and Response Plan (see **Section 3.8.2**), would reduce potential adverse impacts to the natural environment resulting from operation and maintenance of the TEAMS.

**Hazardous Materials and Petroleum Products.** DTRA would continue to participate in the EESOHMIS (see **Section 3.8.2**). Through ongoing participation in the EESOHMIS at Kirtland AFB, the specific types and quantities of hazardous materials and fuels present at the TEAMS would continue to be monitored and tracked.

Operation of the TEAMS, including a proposed 50 percent increase (i.e., approximately 200 personnel per year) in use, would consume minor additional amounts of hazardous materials and petroleum products. This would result in a long-term, negligible impact.

Implementation of a more robust invasive plant removal program at the TEAMS would include increased chemical treatment applications at the Site. As discussed in **Section 2.1.2**, proposed chemical controls (i.e., herbicides) include 2,4-D, glyphosate, and dicamba. All chemicals would be applied by a Certified Pest Applicator in accordance with Kirtland AFB's INRMP (Kirtland AFB 2012) (see **Section 2.1.2**). Each of the chemical controls proposed for use at the TEAMS are common, commercially available herbicides used by homeowners across the United States. These herbicides would be properly stored and applied to minimize or avoid exposure. Therefore, no long-term, adverse impacts on hazardous materials are anticipated due to this Proposed Action component.

**Hazardous and Petroleum Waste.** Ongoing and proposed future operations at the TEAMS would not generate hazardous or petroleum wastes.

**Environmental Restoration Program.** All eight ERP sites occurring within 0.5 mile of the TEAMS have either obtained NFA status or are considered eligible for a NFA determination under NMED. As such, operation and maintenance of the TEAMS would not affect any of these sites.

**Asbestos-Containing Material.** As stated in **Section 3.8.2**, the practice of using ACM in building construction was largely phased out during the 1970s and 1980s. No ACM would be incorporated into the construction phase of the Proposed Action, so operation and maintenance of the TEAMS would have no adverse impacts.

**Lead-Based Paint.** As stated in **Section 3.8.2**, LBP (i.e., exceeding 0.06 percent lead by weight) was banned in 1978. No LBP would be included in the construction phase, so operation and maintenance of the TEAMS would have no adverse impacts.

**Polychlorinated Biphenyls.** As stated in **Section 3.8.2**, PCBs were banned in 1979. Construction of the TEAMS would not include PCBs, so operation and maintenance of the TEAMS would have no adverse impacts.

**Radiological Materials.** During operation of the TEAMS, the proposed new radiological storage facility (RAD pad) would ensure existing and proposed additional radiological materials are properly and safely stored in accordance with NRC requirements, including the TEAMS NRC License No. 45-25551-01 (NRC 2012). This would result in a long-term, beneficial impact on the storage of radiological materials at the TEAMS.

#### 4.7.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and existing conditions would remain the same as discussed in **Section 3.8.2**. The minor increase in use of hazardous materials and petroleum products at the TEAMS would not occur. In addition, DTRA would not construct and operate the required radiological storage facility necessary to meet NRC requirements for the storage of the proposed higher-level radioactive material and comply with TEAMS NRC License No. 45-25551-01 (NRC 2012). This would result in DTRA's inability to meet their future test and training mission.

## 4.8 Safety

### 4.8.1 Evaluation Criteria

A significant adverse safety impact may occur if implementation of the Proposed Action would:

- Substantially increase risks associated with the safety of construction personnel, contractors, military personnel, or the local community.
- Substantially hinder the ability to respond to an emergency.
- Introduce a new health or safety risk for which the installation is not prepared or does not have adequate management and response plans in place.

### 4.8.2 Proposed Action

As analyzed below, construction and operation/maintenance of the Proposed Action would not result in significant impacts on safety based on the above criteria.

#### 4.8.2.1 Construction

**Airport and Aviation Safety.** No impacts on airport or aviation safety would result from the proposed construction activities. DTRA would file a pre-construction "Obstruction Evaluation" Notice with the FAA in accordance with Federal Aviation Requirement at 14 CFR §77.9 at least 45 days prior to construction of the antenna/communications tower. Per the FAA's Notice Criteria Tool, DTRA must file this Notice with the FAA because the proposed tower would exceed the following notice criteria:

- The proposed tower would exceed an instrument approach area by 4 feet and aeronautical study is needed to determine if it would exceed a standard of Subpart C of 14 CFR Part 77.
- The proposed tower is in close proximity to a navigation facility and may impact the assurance of navigation signal reception.
- The proposed tower exceeds 14 CFR §77.9(b) by 2 feet.

Through this notification and approval process, FAA would approve the location, height, and frequencies of the proposed tower to ensure that the tower would not interfere with the operations of the Albuquerque International Sunport. Through this process, DTRA would ensure that the Proposed Action is compatible with the airport use, and would not threaten airport or aviation safety, including not conflicting with airport safety areas as described in **Section 3.10.2**. As shown in **Figure 10**, the extreme northern portion of the TEAMS is located within Accident Potential Zones I and II of the Albuquerque International Sunport. However, no new activities are proposed in this location (see **Figure 4**).

**Contractor Safety.** Implementation of the proposed construction activities would slightly increase the health and safety risk to construction contractors at the TEAMS during the normal workday because the level of such activity would increase. Construction contractors would be required to establish and maintain health and safety programs for their employees. Implementation of the Proposed Action would result in adverse impacts on contractor safety; however these impacts would be expected to be less than significant with implementation of effective health and safety programs.

**Military Personnel Safety.** No adverse impacts on military personnel health and safety would be expected during the proposed construction activities. Installation personnel would be required to vacate construction areas. The construction work sites would be fenced and appropriate signs posted to further reduce safety risks to installation personnel.

**Public Safety.** No adverse impacts on public health and safety would result from the proposed construction activities. Construction activities would not pose a safety risk to the public or to off-installation areas; the construction work sites located within the TEAMS are not publicly accessible.

**Radiological Safety.** As described in **Section 4.9.2.1**, no adverse impacts would be anticipated during proposed construction activities; on-site radiological materials would be properly controlled and monitored in accordance with applicable plans and procedures during all construction activities. Construction workers would not be exposed to or handle radiological materials.

#### 4.8.2.2 Operation and Maintenance

**Airport and Aviation Safety.** DTRA would ensure that the proposed radio antenna/communications tower is only operated at the frequencies agreed upon during the FAA notification and approval process described in **Sections 2.1.1** and **4.8.2.1**. Through close coordination with the FAA and the Albuquerque International Sunport, no adverse impacts on airport operations or safety resulting from operation and maintenance of the TEAMS would be expected.

**Contractor Safety.** Operation and maintenance of the TEAMS would not affect contractor safety. It is expected that all construction contractors would leave the Site after completing the construction phase of the Proposed Action and would not be present during the operation phase. Contractors present during the operation of the Site would be briefed regarding on-site safety practices prior to conducting their approved activities.

**Military Personnel Safety.** As stated in **Section 3.10.2**, AFI 91-202, *The U.S. Air Force Mishap Prevention Program*, addresses ways to protect personnel and resources and establishes safety

goals. DTRA would continue to implement appropriate and effective health and safety plans, as identified in **Sections 3.8.2** and **3.9.2**. Operation of the TEAMS, including a proposed 50 percent increase in use (i.e., approximately 200 personnel per year), would not be anticipated to result in adverse impacts on safety or adversely affect emergency response capabilities at Kirtland AFB.

Implementation of the Proposed Action would result in improved communications capabilities on the installation as identified in **Section 4.8.2.2**. This improved communication capability would simultaneously improve emergency response capabilities and further enhance safety at Kirtland AFB, resulting in a long-term, beneficial impact.

**Public Safety.** No adverse impacts on public health and safety would result from the Proposed Action. Operation and maintenance of the TEAMS would not pose a safety risk to the public or to off-installation areas. The TEAMS is not publicly accessible.

**Radiological Safety.** No adverse impacts would be anticipated during proposed operation and maintenance activities. DTRA would continue to implement appropriate and effective health and safety plans, including radiological safety measures as identified in **Sections 3.8.2** and **3.9.2**. DTRA would continue to comply with all requirements of the TEAMS NRC License No. 45-25551-01 (NRC 2012), including improved storage of radiological materials at the Site due to the proposed new radiological source storage facility.

#### 4.8.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and existing safety conditions would remain the same as discussed in **Section 3.10.2**. The long-term, beneficial impacts on safety with implementation of the Proposed Action (i.e., due to improved radiological source storage and communications capabilities) would not occur.

### 4.9 Cumulative Impacts

CEQ defines cumulative impacts 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 regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR §1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time by various agencies (i.e., federal, state, and local) or individuals. Informed decision-making is served by the consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future. Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with regard to their impacts.

This section briefly summarizes past, present, and reasonably foreseeable future actions within the same general geographic and time scope as the Proposed Action. The geographic scope of the analysis varies by resource area. For example, the geographic scope of the cumulative impacts on noise, geology and soils, and safety is very narrow and focused on the location of the resource. The geographic scope of land use, air quality, infrastructure, and socioeconomics is much broader and considers more county- or region-wide activities.

The past, present, and reasonably foreseeable future actions, identified below, make up the cumulative impact scenario for the Proposed Action. The cumulative impact scenario is then added to the Proposed Action’s impacts on the individual resource areas analyzed in **Sections 4.1** through **4.11** to determine the cumulative impacts of the Proposed Action. In accordance with CEQ guidance, the current impacts of past actions are considered in aggregate as appropriate for each resource area without delving into the historical details of individual past actions.

## 4.9.1 Impact Analysis

### 4.9.1.1 Past Actions

Kirtland AFB has been used for military missions since the 1930s and has continuously been developed as DOD missions, organizations, needs, and strategies have evolved. Development and operation of training ranges have impacted thousands of acres with synergistic and cumulative impacts on soil, wildlife habitats, water quality, and noise. Beneficial impacts also have resulted from the operation and management of Kirtland AFB including increased employment and income for Bernalillo County, the city of Albuquerque, and its surrounding communities; restoration and enhancement of sensitive resources such as Coyote Springs wetland areas; consumptive and non-consumptive recreation opportunities; and increased knowledge of the history and pre-history of the region through numerous cultural resources surveys and studies.

### 4.9.1.2 Present and Reasonably Foreseeable Actions

Kirtland AFB is a large military installation that is continually evolving. Projects that were examined for potential cumulative impacts are included in **Table 15**. These projects include the construction of facilities totaling approximately 769,700 square feet and the demolition of substandard facilities totaling approximately 682,900 square feet, resulting in a net increase of approximately 86,800 square feet of upgraded, energy-efficient building space on the installation.

**Table 15. Present and Reasonably Foreseeable Actions at Kirtland AFB**

Project Name	Description
Hercules Tanker Plane Recapitalization	The 58th Special Operations Wing proposes to recapitalize existing Special Operations Force tanker aircraft and flight simulators and increase the number of their training fleet. Existing HC/MC-130P/N fixed-wing tanker planes and flight simulators are approaching their service life limits and need to be replaced. The Special Operations Force training force would increase by 171 and the average daily student population would increase by 37. As part of this project, six military construction projects are planned for the installation totaling 146,440 square feet.
Manzano Small Arms Range formerly the Heavy Weapons Range	The USAF proposes to establish and use a Small Arms Range in the southeastern section of Kirtland AFB, approximately 0.25 mile east of the Starfire Optical Range facilities along Mount Washington Road. The proposed range would encompass the existing M60 range. It would include two firing positions and firing lines and will use the existing targets at the M60 range. Firing distance will be approximately 7,300 feet. Firing position two would be used for sniper heavy weapons (0.50 caliber) and would fire in a more southerly direction to the existing target area, approximately 3,800 feet.
Construct New Hot Cargo Pad	The USAF proposes to construct, operate, and maintain a hot cargo pad at Kirtland AFB to ensure reliable support and backup for the existing hot cargo pad (Pad 5). Other components include construction of a new taxiway to the proposed hot cargo pad; replacement of the deteriorating taxiway to Pad 5; addition of new and relocation of existing anti-ram barriers, defensive fighting positions, and personal shelters surrounding the proposed hot cargo pad and Pad 5; addition of new lighting at the proposed hot cargo pad and Pad 5; and removal of existing lighting at Pad 5. The new pad would consist of 18-inch Portland cement concrete and would add an additional 6-inch asphalt taxiway to the existing taxiway at Pad 5. The new pad would adjoin the existing Pad 5 to minimize enlargement of the clear zone and impacts on other critical facilities.

Table 15. Present and Reasonably Foreseeable Actions at Kirtland AFB (continued)

Project Name	Description
Construction and Demolition of Military Support Facilities	The USAF proposes to demolish and construct several military personnel support facilities in the developed area in the northwestern portion of the installation. The areas include the Visiting Office Quarters Complex, the Main Enlisted Dormitory Campus, the Noncommissioned Office Academy, and Dormitory Campus 2. This project would include the demolition of facilities totaling approximately 498,000 square feet and construction of facilities totaling approximately 389,000 square feet, resulting in a net decrease of approximately 109,000 square feet of building space on the installation.
Construct New Military Working Dog Facility	The USAF proposes to construct a new Military Working Dog facility at Kirtland AFB. The proposed facility would consist of 14 indoor/outdoor kennels, 4 isolation kennels, storage and staff space, restrooms, food storage room, a covered walkway, and a veterinarian examining room, total 8,000 square feet. A parking area with 25 spaces and new access roads would also be constructed as part of the project. Demolition of facilities totaling 2,520 square feet would also be included in this project, resulting in a net increase of 5,480 square feet of building space on the installation.
Ongoing and Enhanced Use of the Giant Reusable Air Blast Simulator (GRABS) Site	The USAF proposes enhanced testing and associated training use of the GRABS Site. The mission of the GRABS Site is to test the blast resistance of various components by simulating a nuclear blast. In addition to the continuation of ongoing activities, proposed new mission testing requirements include the use of a biological simulant (i.e., <i>Bacillus thuringiensis</i> ), improved "housekeeping", and periodic ground disturbance for construction of a variety of test structures.
498th Nuclear System Wing Facility	The USAF proposes to construct a 32,400-square-foot facility to house the newly formed 498th Nuclear Systems Wing. This facility would be a two-story, steel-framed structure with reinforced concrete foundation, floors, and reinforced masonry walls. The construction further includes tying into utilities and communications and parking for 120 vehicles. The facility would accommodate approximately 200 personnel. The new facility location is proposed between G and H Avenues, west of Wyoming Boulevard, directly behind the Nuclear Weapons Center (Building 20325).
Air Force Nuclear Weapons Center Sustainment Center	The USAF proposes to construct a 15,946-square-foot sustainment center for the Nuclear Weapons Center. This facility will be a two-story, steel-framed structure built as a Sensitive Compartmented Information Facility with reinforced concrete foundation, floors, and reinforced masonry walls. The construction further includes tying into utilities and communications and parking for vehicles. The facility will accommodate approximately 36 personnel. The new facility location is proposed between G and H Avenues west of Wyoming Boulevard directly behind the Nuclear Weapons Center (Building 20325) and south of the proposed 498th Nuclear Systems Wing facility.
Building Demolition at Kirtland AFB	The USAF is in the process of demolishing 23 buildings totaling approximately 105,000 square feet on Kirtland AFB to make space available for future construction and to fulfill its mission as installation host through better site utilization. None of the buildings proposed for demolition are currently occupied or used by installation personnel. General demolition activities would include removing foundations; removing floor, wall, ceiling, and roofing materials; removing electrical substations providing power to these facilities; and removing, capping, and rerouting sewer, gas, water, and steam lines outside of the work areas. Equipment such as bulldozers, backhoes, front-end loaders, dump trucks, tractor-trailers, and generators would be required to support the proposed demolition activities.

**Table 15. Present and Reasonably Foreseeable Actions at Kirtland AFB (continued)**

Project Name	Description
Security Forces Complex	The USAF proposes to construct, operate, and maintain a 42,500 square foot security forces complex at Kirtland AFB to provide adequate space and modern facilities to house all 377 Security Forces Squadron administrative and support functions in a consolidated location. The 377 Security Forces Squadron functions that will be transferred to the new security forces complex include a base operations center with command and control facility, administration and office space, training rooms, auditorium or assembly room, guard mount, hardened armory for weapons and ammunition storage, confinement facilities, law enforcement, logistics warehouse, general storage, vehicle garage with maintenance area, and associated communications functions. One existing building (879 square feet) within the footprint of the security forces complex will be demolished. This project will result in an increase of 41,621 square feet of building space on the installation.
21st Explosive Ordnance Division Expansion	The 21st Explosive Ordnance Division proposes facility expansion and site improvements for the 21st Explosive Ordnance Division Weapons of Mass Destruction Company Complex at Kirtland AFB. 21st Explosive Ordnance Division currently operates from a 90-acre property leased by the Army within Kirtland AFB. The current site has seven structures, six of which are substandard and do not have adequate fire protection. 21st Explosive Ordnance Division proposes to expand this site to a total of 280 acres, add three permanent structures totaling 40,000 square feet, demolish five of the six substandard structures (75,000 square feet), add two temporary storage containers, tie in to nearby utilities, construct water tanks for fire suppression, and construct several concrete pads for training tasks. This project would result in a decrease of 35,000 square feet of building space on the installation.
Construction, Operation, and Maintenance of a New Fire Station	The USAF proposes to construct, operate, and maintain a new Fire Station south of the intersection of Pennsylvania Street and Power Line Road. The proposed 7,320-square foot facility would consist of a non-combustible, one-story structure with three high-bay, drive-through apparatus stalls; separate men's and women's restroom with lockers and showers; separate men's and women's sleeping rooms; a separate captain's sleeping room and restroom; and a day room with a kitchen.

#### 4.9.2 Cumulative Impact Analysis by Resource Area

**Noise.** The construction noise generated by the Proposed Action would be less than significant. The noise impacts generated by the proposed and future projects would result in only temporary increases in ambient noise levels during construction activities. When the noise impacts generated by the Proposed Action are considered in combination with noise impacts of other past, present, and reasonably foreseeable projects on Kirtland AFB (see **Table 15**), it would not be considered a significant cumulative impact.

**Air Quality.** The Proposed Action would result in low levels of air emissions below *de minimis* threshold limits. The Proposed Action would generate emissions below 10 percent of the emissions inventory for the AMRGI AQCR, and the majority of emissions would be short-term. Therefore, the Proposed Action, when combined with other past, present, and reasonably foreseeable projects at Kirtland AFB (see **Table 15**), would not contribute significantly to adverse cumulative impacts on air quality at Kirtland AFB or within the surrounding region.

**Geology and Soils.** The Proposed Action and other local actions would neither reduce prime farmland soils nor agricultural production. The Proposed Action would not affect local or regional geology. BMPs outlined in **Table 10**, including the development and implementation of a site-specific SWPPP, would be implemented to control erosion during construction activities, which would minimize impacts. The Proposed Action, when combined with other past, present, and reasonably foreseeable projects at Kirtland AFB (see **Table 15**), would not result in significant cumulative impacts on geology and soils.

**Water Resources.** The annual water use (2,693 acre-feet in 2012) on Kirtland AFB is well below the 6,000 acre-feet withdrawal allowed per year in the court decreed water right. Implementation of the Proposed Action would result in only a negligible (i.e., approximately 1 percent) increase in groundwater use, would not impact groundwater quality, and would not impact any designated floodplains. Impacts on surface waters would be controlled through implementation of the BMPs identified in **Table 10**. Therefore, the Proposed Action, when considered with potential disturbances on water resources from past, present, and reasonably foreseeable actions at Kirtland AFB (see **Table 15**), would not be expected to have a significant cumulative impact on water resources.

**Biological Resources.** The Proposed Action would occur in areas that have either been previously disturbed or areas that are sparsely vegetated and offer low biological values. The Proposed Action would remove invasive plant species from the TEAMS. No wetlands or federally listed species would be affected. Consequently, primarily beneficial, long-term impacts are anticipated with implementation of the Proposed Action. Within Kirtland AFB, impacts on biological resources are managed and minimized through compliance with and ongoing implementation of the Kirtland AFB INRMP (Kirtland AFB 2012). Although growth and development can be expected to continue outside of Kirtland AFB and within the surrounding natural areas, significant adverse impacts on these resources would not be expected. Overall, the cumulative impacts of implementing the Proposed Action and other past, present, and reasonably foreseeable actions at Kirtland AFB (see **Table 15**) on the biological resources of the area would be less than significant; the Proposed Action would contribute a minor, beneficial incremental cumulative impact on biological resources.

**Infrastructure.** The Proposed Action would result in negligible increases in the demand on installation infrastructure, and would result in an improved installation-wide communication system for DTRA. Modern, energy-efficient, permanent replacement buildings would reduce on-site utility consumption, likely off-setting any increase due to proposed increased Site usage. Upgrade of any infrastructure to support additional projects at Kirtland AFB would largely result in beneficial impacts for the installation due to increased energy efficiency. The General Plan addresses the capacity and the need to update all elements of the installation infrastructure to support additional projects at Kirtland AFB (Kirtland AFB 2011a). When considered with potential changes from past, present, and reasonably foreseeable actions at Kirtland AFB (see **Table 15**), the Proposed Action would not be expected to contribute to a significant cumulative impact on the installation's infrastructure.

**Hazardous Materials and Waste.** The Proposed Action would result in negligible short-term increases in the generation of waste and negligible long-term increases in the use of hazardous materials and petroleum products. Implementation of the Proposed Action would improve radiological material storage and safety at the Site, a long-term beneficial impact. The Proposed Action, as well as future projects at Kirtland AFB, would incorporate measures to limit or control hazardous materials and waste into their design and operation plans. Therefore, the impacts from the Proposed Action, when combined with other ongoing and proposed projects on Kirtland AFB, would not be anticipated to result in a significant cumulative impact.

**Safety.** No adverse cumulative impacts on health and safety would be expected. The implementation of effective health and safety plans, which comply with federal, state, and local OSHA requirements, at the TEAMS (and across Kirtland AFB) during construction and operation of proposed projects would reduce or eliminate health and safety impacts on contractors, military personnel, and the general public. Pre-construction coordination with, and approval by, the FAA of the proposed tower at the TEAMS would ensure airport and aviation safety are not adversely impacted. Also coordination with the Installation Frequency Manager and Kirtland AFB Weapons Safety and ensuring correct safety measures are implemented (i.e., signage, training) if needed.

Operation of the TEAMS would improve communication capabilities on the installation, a long-term beneficial safety impact. The improved radiological source storage facility would ensure DTRA continues to operate safely and in accordance with the TEAMS NRC License (NRC 2012). As such, the Proposed Action would not contribute to cumulative adverse safety impacts.

#### **4.9.3 Unavoidable Adverse Impacts**

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

**Energy.** The use of non-renewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action would require the use of fossil fuels, a non-renewable natural resource, during construction (e.g., oil, fuel) and operation (e.g., natural gas) of the proposed facilities.

**Geology and Soils.** Construction activities would result in temporary soil disturbance; however, implementation of BMPs and erosion-control measures would limit the environmental impacts. Although soil disturbance would be unavoidable, the impact on geology and soils would be negligible.

**Hazardous Materials and Waste.** The use and generation of hazardous materials and wastes during construction activities would be unavoidable; however, these materials and wastes would be handled in accordance with federal, state, and local policies and would not be expected to result in significant impacts.

#### **4.9.4 Compatibility of the Proposed Action with the Objectives of Federal, Regional, and Local Land Use Plans, Policies, and Controls**

The Proposed Action would occur entirely within Kirtland AFB. Construction, operation, and maintenance activities would not be incompatible with any current land uses on Kirtland AFB. The Proposed Action would not conflict with any applicable off-installation land use ordinances. The Proposed Action would follow all applicable permitting, building, and safety requirements, including obtaining pre-construction review and approval of the FAA to ensure no off-installation impacts on the Albuquerque International Sunport occur.

#### **4.9.5 Relationship between Short-Term Uses and Long-Term Productivity**

Short-term uses of the biophysical components of the human environment include direct construction-related disturbances and direct impacts associated with an increase in population and activity that occurs over a period of less than 5 years. Long-term uses of the human environment include those impacts occurring over a period of more than 5 years, including permanent resource loss.

Implementation of the Proposed Action would not require short-term resource uses that would result in long-term compromises of productivity. The Proposed Action would not result in intensification of land use at Kirtland AFB or within the surrounding area. Implementation of the Proposed Action would not represent a loss of open space. Therefore, it is anticipated that the Proposed Action would not result in any adverse cumulative impacts on land use or aesthetics.

#### **4.9.6 Irreversible and Irretrievable Commitment of Resources**

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the impacts that the use of these resources will have on future generations. Irreversible impacts primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals). The irreversible and

irretrievable commitments of resources that would result from implementation of the Proposed Action involve the consumption of material resources used for construction, energy resources, biological resources, and human labor resources. The use of these resources is considered to be permanent.

**Material Resources.** Material resources used for the Proposed Action include building materials, concrete and asphalt, and various construction materials and supplies. The materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

**Energy Resources.** Energy resources used for the Proposed Action would be irretrievably lost. This includes petroleum-based projects (e.g., gasoline, diesel, and natural gas) and electricity. During construction activities, gasoline and diesel would be used for the operation of construction vehicles. During the operational phase, natural gas would be used for heating. Electricity would also be used during operation and maintenance of the proposed facilities. Consumption of these energy resources would not place a significant demand on their availability in the region; therefore, less-than-significant impacts would be expected.

**Biological Resources.** The Proposed Action would result in a negligible loss of vegetation and wildlife habitat. Because the project area consists primarily of bare ground and minimal vegetation, the loss would be minimal and not considered significant.

**Human Resources.** The use of human resources for construction, operation, and maintenance activities is considered an irretrievable loss only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities and is considered beneficial.

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## **APPENDIX A**

### **APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA**



## Appendix A

### Applicable Laws, Regulations, Policies, and Planning Criteria

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When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws and Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

*NOTE: This is not a complete list of all applicable laws, regulations, policies, and planning criteria potentially applicable to documents, however, it does provide a general summary for use as a reference.*

#### Airspace Management

Airspace management procedures assist in preventing potential conflicts or accidents associated with aircraft using designated airspace in the United States, including restricted military airspace. Airspace management involves the coordination, integration, and regulation of the use of airspace. The Federal Aviation Administration (FAA) has overall responsibility for managing airspace through a system of flight rules and regulations, airspace management actions, and air traffic control procedures. All military and civilian aircraft are subject to Federal Aviation Regulations. The FAA's *Aeronautical Information Manual* defines the operational requirements for each of the various types or classes of military and civilian airspace.

Some military services have specific guidance for airspace management. For example, airspace management in the U.S. Air Force (USAF) is guided by Air Force Instruction (AFI) 13-201, *Air Force Airspace Management*. This AFI provides guidance and procedures for developing and processing special use airspace. It covers aeronautical matters governing the efficient planning, acquisition, use, and management of airspace required to support USAF flight operations. It applies to activities that have operational or administrative responsibility for using airspace, establishes practices to decrease disturbances from flight operations that might cause adverse public reaction, and provides flying unit commanders with general guidance for dealing with local problems. The U.S. Army, per Army Regulation (AR) 95-2, *Airspace, Airfields/Heliport, Flight Activities, Air Traffic Control and Navigational Aids*, provides similar guidance and procedures for U.S. Army airspace operations.

#### Noise

Federal, state, and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. The Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978, requires compliance with state and local noise laws and ordinances.

The U.S. Department of Housing and Urban Development (HUD), in coordination with the Department of Defense (DOD) and the FAA, has established criteria for acceptable noise levels for aircraft operations relative to various types of land use.

The U.S. Army, through AR 200-1, *Environmental Protection and Enhancement*, implements federal laws concerning environmental noise from U.S. Army activities. The USAF's Air Installation Compatible Use Zone (AICUZ) Program, (AFI 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near USAF installations.

## Land Use

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activities occurring on a defined parcel of land. In many cases, land use descriptions are codified in local zoning laws. However, there is no nationally recognized convention or uniform terminology for describing land use categories.

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVX, 1 August 1986). This document provides for the use of 12 basic land use types found on a USAF installation. In addition, land use guidelines established by the HUD and based on findings of the Federal Interagency Committee on Noise are used to recommend acceptable levels of noise exposure for land use. The U.S. Army uses the 12 land use types for installation land use planning, and these land use types roughly parallel those employed by municipalities in the civilian sector.

## Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation’s air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQS) that regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance and leadership from the Federal Government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by the USEPA as being in attainment or nonattainment for pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCRs). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassified. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action might have on NAAQS due to short-term increases in air pollution during construction and long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a federal agency could also be subject to USEPA’s Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives federal immunity from complying with the CAA and states all federal agencies will comply with all federal- and state-approved requirements.

The General Conformity Rule requires that any federal action meet the requirements of a State Implementation Plan or Federal Implementation Plan. More specifically, CAA conformity is ensured when a federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

The General Conformity Rule applies only to actions in nonattainment or maintenance areas and considers both direct and indirect emissions. The rule applies only to federal actions that are considered “regionally significant” or where the total emissions from the action meet or exceed the *de minimis* thresholds presented in 40 Code of Federal Regulations (CFR) §93.153. If a federal

action does not meet or exceed the *de minimis* thresholds and is not considered regionally significant, then a full Conformity Determination is not required.

On 13 May 2010, the USEPA issued the Greenhouse Gas (GHG) Tailoring Rule that sets thresholds for GHG emissions from large stationary sources. The new GHG emissions thresholds for large stationary sources define when permits under the New Source Review Prevention of PSD and Title V Operating Permit programs are required for new and existing industrial facilities. Beginning 2 January 2011, large industrial facilities that have CAA permits for non-GHG emissions must also include GHGs in these permits. Beginning 1 July 2011, all new construction or renovations that increase GHG emissions by 75,000 tons of carbon dioxide or equivalent per year or more will be required to obtain construction permits for GHG emissions. Operating permits will be needed by all sources that emit GHGs above 75,000 tons of carbon dioxide or equivalent per year beginning in July 2011.

## Health and Safety

Human health and safety relates to workers' health and safety during demolition or construction of facilities, or applies to work conditions during operations of a facility that could expose workers to conditions that pose a health or safety risk. The federal Occupational Safety and Health Administration (OSHA) issues standards to protect persons from such risks, and the DOD and state and local jurisdictions issue guidance to comply with these OSHA standards. Safety also can refer to safe operations of aircraft or other equipment.

AFI 91-202, *USAF Mishap Prevention Program*, implements Air Force Policy Directive 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information.

U.S. Army regulations in AR 385-10, *Army Safety Program*, prescribe policy, responsibilities, and procedures to protect and preserve U.S. Army personnel and property from accidental loss or injury. AR 40-5, *Preventive Medicine*, provides for the promotion of health and the prevention of disease and injury.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (23 April 1997), directs federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Federal agencies must also ensure that their policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks.

## Geology and Soil Resources

Recognizing that millions of acres per year of prime farmland are lost to development, Congress passed the Farmland Protection Policy Act (FPPA) to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland (7 CFR Part 658). Prime farmland is described as soils that have a combination of soil and landscape properties that make them highly suitable for cropland, such as high inherent fertility, good water-holding capacity, and deep or thick effective rooting zones, and that are not subject to periodic flooding. Under the FPPA, agencies are encouraged to conserve prime or unique farmlands when alternatives are practicable. Some activities that are not subject to the FPPA include federal permitting and licensing, projects on land already in urban development or used for water storage, construction for national defense purposes, or construction of new minor secondary structures such as a garage or storage shed.

## Water Resources

The Clean Water Act (CWA) of 1977 is an amendment to the federal Water Pollution Control Act of 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into United States' waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers. Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

Section 303(d) of the CWA requires states and USEPA to identify waters not meeting state water quality standards and to develop Total Maximum Daily Loads (TMDLs). A TMDL is the maximum amount of a pollutant that a waterbody can receive and still be in compliance with state water quality standards. After determining TMDLs for impaired waters, states are required to identify all point and nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source to meet the state standards. The TMDL program is currently the Nation's most comprehensive attempt to restore and improve water quality. The TMDL program does not explicitly require the protection of riparian areas. However, implementation of the TMDL plans typically calls for restoration of riparian areas as one of the required management measures for achieving reductions in nonpoint source pollutant loadings.

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect, and develop, and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines, including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, including the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone through the development of land and water use programs in cooperation with federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Under Section 307, federal agency activities that affect any land or water use or natural resource of a coastal zone must be consistent to the maximum extent practicable with the enforceable policies of the state's coastal management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Wild and Scenic Rivers Act of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate

environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of state legislature, or by the Secretary of the Interior upon the recommendation of the governor of the state(s) through which the river flows.

EO 11988, *Floodplain Management* (24 May 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

EO 11990, *Protection of Wetlands* (24 May 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (5 October 2009), directed the USEPA to issue guidance on Section 438 of the Energy Independence and Security Act (EISA). The EISA establishes into law new storm water design requirements for federal construction projects that disturb a footprint of greater than 5,000 square feet of land. Under these requirements, predevelopment site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. Predevelopment hydrology would be calculated and site design would incorporate storm water retention and reuse technologies to the maximum extent technically feasible. Post-construction analyses will be conducted to evaluate the effectiveness of the as-built storm water reduction features. These regulations are applicable to DOD Unified Facilities Criteria. Additional guidance is provided in the USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act*.

EO 13514 also requires federal agencies to improve water efficiency and management by reducing potable water consumption intensity by 2 percent annually, or by 26 percent, by Fiscal Year (FY) 2020, relative to a FY 2007 baseline. Furthermore, federal agencies must also reduce agency industrial, landscaping, and agricultural water consumption by 2 percent annually, or 20 percent, by FY 2020, relative to a FY 2010 baseline.

EO 13547, *Stewardship of the Ocean, Our Coasts, and the Great Lakes* (19 July 2010), establishes a national policy to ensure the protection, maintenance, and restoration of the health of ocean, coastal, and Great Lakes ecosystems and resources; enhance the sustainability of ocean and coastal economies; preserve our maritime heritage; support sustainable uses and access; provide for adaptive management to enhance our understanding of and capacity to respond to climate change and ocean acidification; and coordinate with our national security and foreign policy interests.

## Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species that can be obtained by calling the appropriate state Fish and Wildlife office. Some species also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess; offer to or sell, barter, purchase, or deliver; or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport, or carry from one state, territory, or district to another; or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

The Sikes Act (16 United States Code [USC.] §§670a–670o, 74 Stat. 1052), as amended, Public Law (PL) 86-797, approved 15 September 1960, provides for cooperation by the Departments of the Interior and Defense with state agencies in planning, development, and maintenance of fish and wildlife resources on military reservations throughout the United States. In November 1997, the Sikes Act was amended via the Sikes Act Improvement Amendment (PL 105-85, Division B, Title XXIX) to require the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. To facilitate this program, the amendments require the Secretaries of the military departments to prepare and implement Integrated Natural Resources Management Plans (INRMPs) for each military installation in the United States unless the absence of significant natural resources on a particular installation makes preparation of a plan for the installation inappropriate. INRMPs must be reviewed by the USFWS and applicable states every 5 years. The National Defense Authorization Act of 2004 modified Section 4(a)(3) of the ESA to preclude the designation of critical habitat on DOD lands that are subject to an INRMP, if the Secretary of the Interior determines in writing that such a plan provides a benefit to the species for which critical habitat is proposed for designation.

EO 11514, *Protection and Enhancement of Environmental Quality* (5 March 1970), states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 13112, *Invasive Species* (3 February 1999), provides direction to use relevant programs and authorities to prevent introduction of invasive species, detect and respond rapidly to control populations of invasive species, monitor invasive species populations, provide restoration of native species and habitat conditions in ecosystems that have been invaded, conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species, and promote public education on invasive species with means to address them. EO 13112 was created to minimize the economic, ecological, and human health impacts that invasive species cause.

EO 13186, *Conservation of Migratory Birds* (10 January 2001), creates a more comprehensive strategy for the conservation of migratory birds by the Federal Government. EO 13186 provides a specific framework for the Federal Government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a Memorandum of Understanding (MOU). EO 13186 will be coordinated and implemented by the USFWS. The MOU will outline how federal agencies will promote conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

## Cultural Resources

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public and American Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs), and the National Register of Historic Places (NRHP). The ACHP advises the President, Congress, and federal agencies on historic preservation issues. Section 106 of the NHPA directs federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions that qualify for a categorical exclusion under NEPA might still require

Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

The Native American Graves Protection and Repatriation Act of 1990 establishes rights of American Indian tribes to claim ownership of certain “cultural items”, defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by federal agencies. Cultural items discovered on federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, and then the tribe owning the land where the items were discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on federal or tribal land must be reported to the appropriate American Indian tribe and the federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, *Protection and Enhancement of the Cultural Environment* (13 May 1971), directs the Federal Government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all federal sites under their jurisdiction or control that might qualify for listing on the NRHP. Agencies must allow the ACHP to comment on the alteration, demolition, sale, or transfer of property that is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

EO 13007, *Indian Sacred Sites* (24 May 1996), provides that agencies managing federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate American Indian religious practitioners’ access to and ceremonial use of American Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13175, *Consultation and Coordination with Indian Tribal Governments* (6 November 2000), was issued to provide for regular and meaningful consultation and collaboration with Native American tribal officials in the development of federal policies that have tribal implications, and to strengthen the United States government-to-government relationships with Native American tribes. EO 13175 recognizes the following fundamental principles: Native American tribes exercise inherent sovereignty over their lands and members, the United States Government has a unique trust relationship with Native American tribes and deals with them on a government-to-government basis, and Native American tribes have the right to self-government and self-determination.

EO 13287, *Preserve America* (3 March 2003), orders federal agencies to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal Government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. EO 13287 established new accountability for agencies with respect to inventories and stewardship.

## **Socioeconomics and Environmental Justice**

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (11 February 1994), directs federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address the adverse human health or environmental effects that its activities have on minority and low-income populations, and develop

agencywide environmental justice strategies. The strategy must list “programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations”. A copy of the strategy and progress reports must be provided to the federal Working Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each federal agency.

## Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a federal “Superfund” to respond to emergencies immediately. Although the “Superfund” provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters. Section 120(h) of CERCLA requires federal agencies to notify prospective buyers of contaminated federal properties about the type, quantity, and location of hazardous substances that would be present.

The Pollution Prevention Act of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes; redesigning products; substituting raw materials; and making improvements in management techniques, training, and inventory control. Consistent with pollution prevention principles, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (24 January 2007 [revoking EO 13148]), sets a goal for all federal agencies to promote environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products; and use of paper of at least 30 percent post-consumer fiber content. In addition, EO 13423 sets a goal that requires federal agencies to ensure that they reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of; increase diversion of solid waste, as appropriate; and maintain cost-effective waste prevention and recycling programs at their facilities. Additionally, in *Federal Register* Volume 58 Number 18 (29 January 1993), CEQ provides guidance to federal agencies on how to “incorporate pollution prevention principles, techniques, and mechanisms into their planning and decisionmaking processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA”.

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for “cradle-to-grave” management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA strengthens control of both hazardous and nonhazardous waste and emphasizes the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act, which requires

facility operators with “hazardous substances” or “extremely hazardous substances” to prepare comprehensive emergency plans and to report accidental releases. If a federal agency acquires a contaminated site, it can be held liable for cleanup as the property owner/operator. A federal agency can also incur liability if it leases a property, as the courts have found lessees liable as “owners”. However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim the “innocent purchaser” defense under CERCLA. According to Title 42 USC §9601(35), the current owner/operator must show it undertook “all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice” before buying the property to use this defense.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated biphenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and could cause adverse health effects in humans. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II provides statutory framework for “Asbestos Hazard Emergency Response”, which applies only to schools. TSCA Title III, “Indoor Radon Abatement”, states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, “Lead Exposure Reduction”, directs federal agencies to “conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards”. Further, any federal agency having jurisdiction over a property or facility must comply with all federal, state, interstate, and local requirements concerning lead-based paint.

## Energy

The Energy Policy Act (EPA) of 2005, PL 109-58, amended portions of the National Energy Conservation Policy Act and established energy management goals for federal facilities and fleets. Section 109 of EPA directs that new federal buildings (commercial or residential) be designed 30 percent below American Society of Heating, Refrigerating, and Air-Conditioning Engineers standards or the International Energy Code. Section 109 also includes the application of sustainable design principles for new buildings and requires federal agencies to identify new buildings in their budget requests that meet or exceed the standards. Section 203 of EPA requires that all federal agencies’ renewable electricity consumption meet or exceed 3 percent from FY 2007 through FY 2009, with increases to at least 5 percent in FY 2010 through FY 2012 and 7.5 percent in FY 2013 and thereafter. Section 203 also establishes a double credit bonus for federal agencies if renewable electricity is produced onsite at a federal facility, on federal lands, or on Native American lands. Section 204 of EPA establishes a photovoltaic energy commercialization program for federal buildings.

EO 13514, *Federal Leadership In Environmental, Energy, And Economic Performance* (5 October 2009), directs federal agencies to improve water use efficiency and management; implement high performance sustainable federal building design, construction, operation and management; and advance regional and local integrated planning by identifying and analyzing impacts from energy usage and alternative energy sources. EO 13514 also directs federal agencies to prepare and implement a Strategic Sustainability Performance Plan to manage its GHG emissions, water use, pollution prevention, regional development and transportation planning, sustainable building design and promote sustainability in its acquisition of goods and services. Section 2(g) requires new construction, major renovation, or repair and alteration of

buildings to comply with the Guiding Principles for federal Leadership in High Performance and Sustainable Buildings. The CEQ regulations at 40 CFR §1502.16(e) directs agencies to consider the energy requirements and conservation potential of various alternatives and mitigation measures.

Section 503(b) of EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, instructs federal agencies to conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. EO 13423 sets goals in energy efficiency, acquisition, renewable energy, toxic chemical reduction, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Sustainable design measures such as the use of “green” technology (e.g., photovoltaic panels, solar collection, heat recovery systems, wind turbines, green roofs, and habitat-oriented storm water management) would be incorporated where practicable.

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## **APPENDIX B**

### **INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING AND PUBLIC INVOLVEMENT MATERIALS**



## Appendix B

### Interagency and Intergovernmental Coordination for Environmental Planning and Public Involvement Materials

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The 377 ABW and DTRA solicited comments on the Draft Environmental Assessment (EA) by distributing letters (example follows) to potentially interested federal, state, and local agencies; Native American tribes; and other stakeholder groups or individuals. The following is a list of potentially interested parties:

#### **Federal, State, and Local Agencies – Scoping Letters**

Dr. Benjamin Tuggle, Regional Director  
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Southwest Regional Office  
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Ms. Peg Sorenson  
Southwestern Region NEPA Coordinator  
U.S. Forest Service  
Ecosystem Analysis and Planning, Watershed,  
and Air Management  
333 Broadway Boulevard SE  
Albuquerque NM 87102

Ms. Julie Alcon  
Chief of Environmental Resources Section  
U.S. Army Corps of Engineers  
4101 Jefferson Plaza NE  
Albuquerque NM 87109

Mr. Ron Curry, Regional Administrator  
U.S. Environmental Protection Agency,  
Region 6  
1445 Ross Avenue, Suite 1200  
Dallas TX 75202

Mr. Josh Sherman, District Conservationist  
Natural Resources Conservation Service  
Albuquerque Service Center  
6200 Jefferson NE, Room 125  
Albuquerque NM 87109

The Honorable Martin Heinrich  
United States Senate  
625 Silver Avenue SW, Suite 130  
Albuquerque NM 87102

The Honorable Tom Udall  
United States Senate  
219 Central Avenue NW, Suite 120  
Albuquerque NM 87102

The Honorable Michelle Lujan Grisham  
United States House of Representatives  
505 Marquette Avenue NW  
Albuquerque NM 87102

The Honorable Steve Pearce  
United States House of Representatives  
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The Honorable Ben Lujan  
United States House of Representatives  
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Mr. Ed Singleton, District Manager  
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New Mexico State Office  
Albuquerque District Office  
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Mr. Matt Wunder, Chief  
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Mr. Jeff M. Witte, Director/Secretary  
New Mexico Department of Agriculture  
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Cabinet Secretary John Bemis  
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Resources Department  
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Commissioner Ray Powell  
Commissioner of Public Lands  
New Mexico State Land Office  
310 Old Santa Fe Trail  
Santa Fe NM 87501

Dr. Jeff Pappas, PhD  
State Historic Preservation Officer and Director  
Department of Cultural Affairs  
Historic Preservation Division  
Bataan Memorial Building  
407 Galisteo Street, Suite 236  
Santa Fe NM 87501

Mr. Bill Walker, Regional Director  
Bureau of Indian Affairs  
Southwest Regional Office  
1001 Indian School Road NW  
Albuquerque NM 87104

Bernalillo County Open Space  
111 Union Square SE, Suite 200  
Albuquerque NM 87102

Bernalillo County Zoning, Building, and  
Planning Department  
111 Union Square SE, Suite 100  
Albuquerque NM 87102

Ms. Barbara Baca, Director  
City of Albuquerque Parks and Recreation Dept  
1801 4th Street NW  
Albuquerque NM 87102

Bernalillo County Water Resources Program  
2400 Broadway SE, Building N  
Albuquerque NM 87102

Ms. Suzanne Lubar, Director  
City of Albuquerque Planning Department  
Plaza del Sol  
600 Second Street  
Albuquerque NM 87102

Mr. Ken Hughes  
Local Government Division  
State Single Point of Contact  
Bataan Memorial Building  
407 Galisteo Street, Room 201  
Santa Fe NM 87501

Board of Directors  
Mid Region Council of Governments  
809 Copper Avenue NW  
Albuquerque NM 87102

Commissioner  
Bernalillo County Board of Commissioners  
One Civic Plaza NW, 10th Floor  
Albuquerque NM 87102

Councilmember  
Albuquerque City Councilmembers  
One Civic Plaza NW, 9th Floor, Room 9087  
Albuquerque NM 87102

Bernalillo County Environmental Health Office  
111 Union Square SE, Suite 300  
Albuquerque NM 87102

Ms. Mary Lou Leonard, Director  
City of Albuquerque Environmental Health  
Department  
400 Marquette NW  
Albuquerque NM 87102

Ms. Sue Hansen Putze, District Manager  
Ciudad Soil and Water Conservation District  
6200 Jefferson NE, Room 125  
Albuquerque NM 87109

## Example Scoping Letter



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 377TH AIR BASE WING (AFMC)

Colonel John C. Kubinec  
377 ABW/CC  
2000 Wyoming Blvd SE Suite E-3  
Kirtland AFB NM 87117-5000

FEB 18 2013

The Honorable Martin Heinrich  
United States Senate  
625 Silver Avenue SW Suite 130  
Albuquerque NM 87102

Dear Senator Heinrich

The Defense Threat Reduction Agency (DTRA) at Kirtland Air Force Base (KAFB), Bernalillo County, New Mexico is preparing an Environmental Assessment (EA) addressing the potential physical, environmental, cultural, and socioeconomic effects of proposed additional development at the approximately 24-acre Technical Evaluation Assessment Monitor Site (TEAMS). The proposed additional development would support ongoing Radiological, Nuclear, and High Explosives (RNE) sensor detection testing and associated training activities at the TEAMS. The TEAMS, located within the greater boundaries of KAFB, has been used in this same capacity since January 2002, a period of more than 11 years (see Figure 1).

The primary mission of the TEAMS is to perform preliminary technical evaluation, assessment, calibration, and concept of operations development of new and emerging nuclear material detection technologies. DTRA's mission also includes using the TEAMS as a test-bed for other RNE detection testing and associated training (search/survey) activities. Currently, activities on the TEAMS primarily include testing and training of various nuclear detection sensors and systems. The entire TEAMS is fenced, controlled, and secure.

No new harmful materials are proposed at the TEAMS. Proposed facilities would serve to support and enhance the current DTRA and TEAMS missions. Proposed development includes additional testing, associated training, material storage, support, and improved facilities within the TEAMS boundaries. These proposed facilities and activities include:

- A new, secure, alarmed radiological source storage facility constructed and operated in accordance with Nuclear Regulatory Commission (NRC) criteria and requirements.
- A new 3-stall latrine and associated picnic area for staff and visitors.
- A mock train station.

- Improvements, electrification, and new remote control operation of the Site's South Gate.
- Conversion of an existing onsite TEAMS building to a Command and Control Center/Very Important Person (VIP) Monitoring Station for DTRA test events at KAFB. This would require internal building modifications and new computers within the selected TEAMS building. This would also require a new, permanent, up to 50-foot tall (above ground level) radio antenna and a base station consisting of two microwave receiving dishes at TEAMS on or adjacent to the selected TEAMS building. At the DTRA's Giant Reusable Air Blast Simulator (GRABS) Site at KAFB, a portable, trailer-mounted microwave/radio antenna would be placed on the GRABS Site only during test events to stream secure video to the proposed TEAMS VIP Monitoring Station.
- In-kind replacement (i.e., same size and function), over time, of current TEAMS temporary buildings with permanent buildings on or adjacent to the existing building locations, and constructed in accordance with the KAFB Architectural Compatibility Plan (2007).
- Potential increase of up to 50% in testing and training event personnel levels, from the current level of about 400 total personnel per year. Ongoing individual events typically involve 10 to 25 people each, and an onsite exercise or demonstration can include up to 120 people. No change in onsite full-time staff is proposed. There is potential to increase onsite staff during specific events by as much as 10 staff members per day.
- Additional onsite weed control efforts to reduce puncturevine (*Tribulus terrestris*), an invasive plant species, on the Site.

The locations of the TEAMS and existing and proposed facilities are shown on the attached Figures 1 and 2. Please note that the locations of proposed facilities may change; however, all proposed facilities would be contained within the fenced, 24-acre TEAMS footprint.

The EA is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and the Air Force NEPA regulation (32 CFR Part 989). This EA will evaluate the potential impacts of the proposed action and alternatives, to include the no-action alternative, on humans and the natural environment.

If you have additional information regarding impacts of the proposed action to the natural environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. We look forward to and welcome your participation in this NEPA process. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

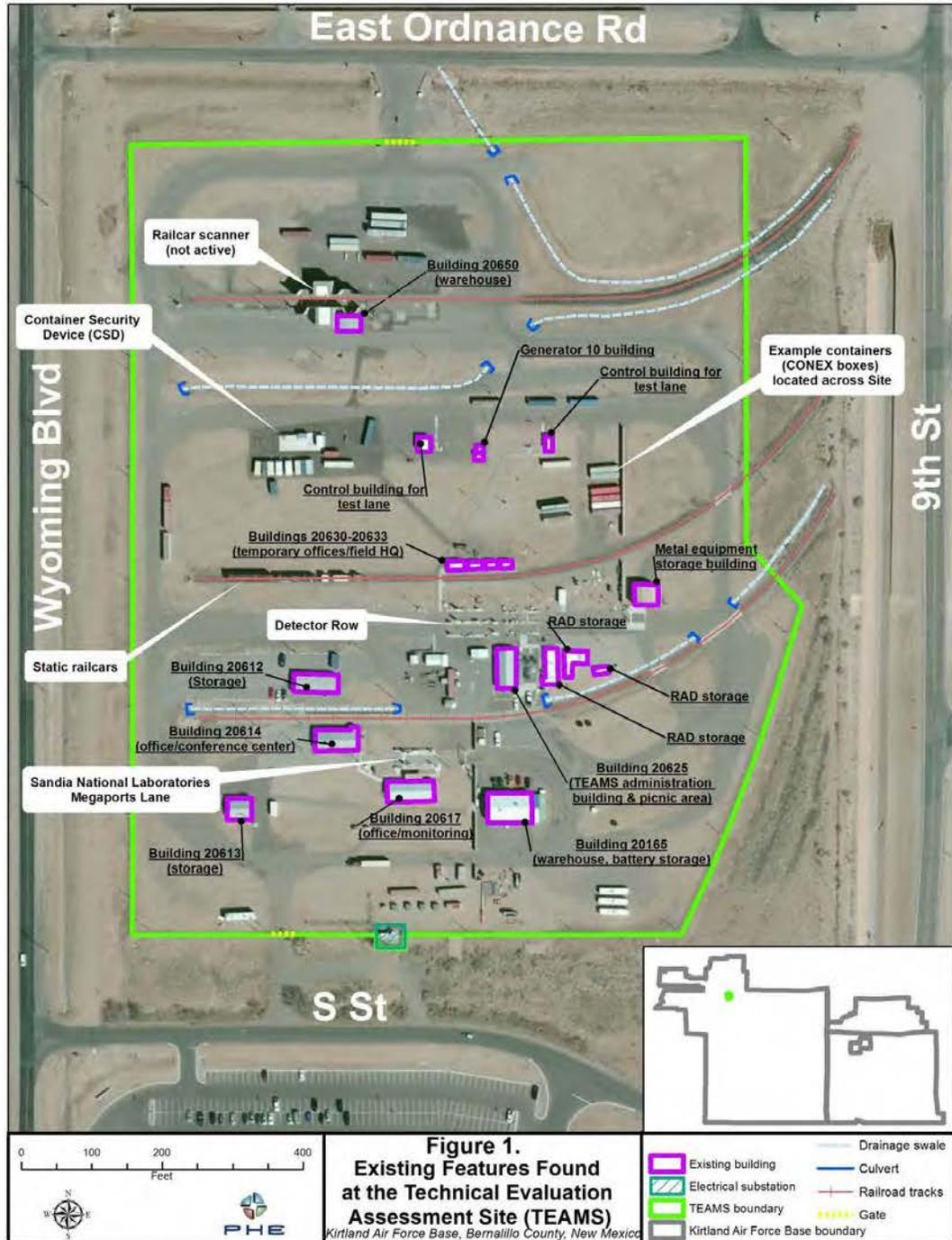
Please send your written responses to the NEPA Program Manager, 377 MSG/CEIE, 2050 Wyoming Boulevard SE, Suite 126, Kirtland AFB NM 87117, or via email to [nepa@kirtland.af.mil](mailto:nepa@kirtland.af.mil).

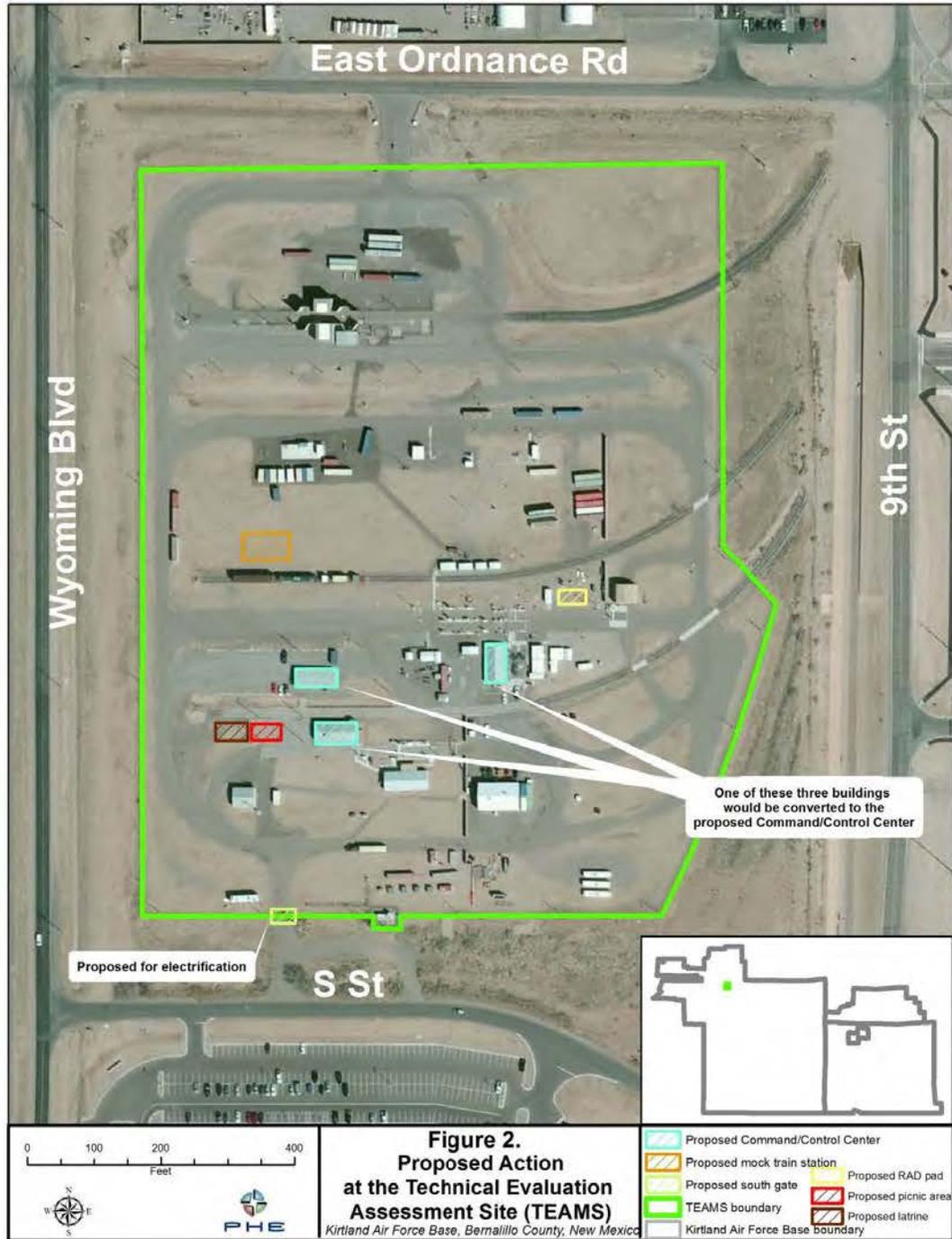
Sincerely



JOHN C. KUBINEC, Colonel, USAF  
Commander

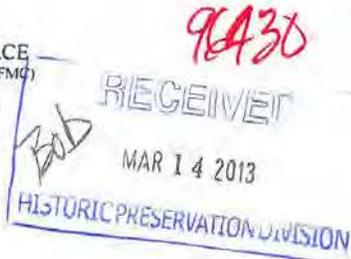
Attachments:  
Figure 1. TEAMS Site - Site Location and Existing Features.  
Figure 2. TEAMS Site - Proposed Action.





Scoping Response Letter

DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 377TH AIR BASE WING (AFMW)



Colonel John C. Kubinec  
377ABW/CC  
2000 Wyoming Blvd SE Suite E-3  
Kirtland AFB New Mexico 87117-5000

Dr. Jeff Pappas, PhD  
State Historic Preservation Officer and Director  
Department of Cultural Affairs  
Historic Preservation Division  
Bataan Memorial Building  
407 Galisteo Street Suite 236  
Santa Fe New Mexico 87501

Dear Dr. Pappas

The Defense Threat Reduction Agency (DTRA) at Kirtland Air Force Base (KAFB), Bernalillo County, New Mexico is preparing an Environmental Assessment (EA) addressing the potential physical, environmental, cultural, and socioeconomic effects of proposed additional development at the approximately 24-acre Technical Evaluation Assessment Monitor Site (TEAMS). The proposed additional development would support ongoing Radiological, Nuclear, and High Explosives (RNE) sensor detection testing and associated training activities at the TEAMS. The TEAMS, located within the greater boundaries of KAFB, has been used in this same capacity since January 2002, a period of more than 11 years (see Figure 1).

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No new harmful materials are proposed at the TEAMS. Proposed facilities would serve to support and enhance the current DTRA and TEAMS missions. Proposed development includes additional testing, associated training, material storage, support, and improved facilities within the TEAMS boundaries. These proposed facilities and activities include:

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- A new 3-stall latrine and associated picnic area for staff and visitors.
- A mock train station.
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The locations of the TEAMS and existing and proposed facilities are shown on the attached Figures 1 and 2. Please note that the locations of proposed facilities may change; however, all proposed facilities would be contained within the fenced, 24-acre TEAMS footprint.

The EA is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), the National Historic Preservation Act (NHPA) and regulations at 36 CFR Part 800, and the Air Force NEPA regulation (32 CFR Part 989). This EA will evaluate the potential impacts of the proposed action and alternatives, to include the no-action alternative, on humans and the environment.

Pursuant to Section 106 of the NHPA and 36 CFR Part 800, DTRA and KAFB have identified and evaluated the Area of Potential Effect (APE), and have determined there are no National Register of Historic Places (NRHP) listed or eligible sites ("historic properties") located within the APE. All proposed ground-disturbing activities would occur on previously disturbed areas within the TEAMS fence line. The likelihood that previously unknown/undocumented sites will be encountered if either the proposed action or the no-action alternative is implemented is very low. Thus, DTRA and KAFB have concluded that the proposed action would not affect historic properties. We respectfully request that you indicate in writing whether you concur with our determination of "No Historic Properties Affected."

If your agency has additional information regarding impacts to historic properties or other environmental aspects of which we are unaware, we would appreciate receiving that information for inclusion and consideration during the NEPA process. Please forward your written comments and/or information within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

Written responses should be sent to the NEPA Program Manager, 377 MSG/CEIE, 2050 Wyoming Boulevard SE, Suite 126, Kirtland AFB NM 87117, or via email to [nepa@kirtland.af.mil](mailto:nepa@kirtland.af.mil). We look forward to hearing from you in the near future.

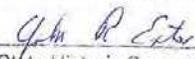
Sincerely



JOHN C. KUBINEC, Colonel, USAF  
Commander

Attachments:  
Figure 1. TEAMS Site - Site Location and Existing Features.  
Figure 2. TEAMS Site - Proposed Action.

Concur with recommendations as proposed

 7 April 2017  
for NM State Historic Preservation Officer

**From:** [Sorensen, Peg -FS](#)  
**To:** [377 MSG/CEAN NEPA Environmental Assessment](#)  
**Subject:** Environmental Reviews  
**Date:** Thursday, April 11, 2013 1:43:31 PM

---

Thank you for the opportunity to participate and comment on several of the Air Force's projects.

The US Forest Service does not have concerns or comments regarding the 24-acre Technical Evaluation Assessment Monitor Site (TEAMS).

The US Forest Service does not have concerns or comments regarding the 155 Giant Reusable Air Blast Simulator Site (GRABS).

We appreciate your efforts to keep us informed of projects with potential impacts Federal Resources managed by the National Forest Service.

Peg Sorensen, Regional Environmental Coordinator (NEPA)  
Southwestern Region, USDA Forest Service  
333 Broadway Blvd. SE  
Albuquerque, NM 87102 505-842-3256

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GOVERNOR  
Susana Martinez



DIRECTOR AND SECRETARY  
TO THE COMMISSION  
James S. Lane, Jr.

Daniel E. Brooks, Deputy Director

STATE OF NEW MEXICO  
DEPARTMENT OF GAME & FISH

One Wildlife Way  
Santa Fe, NM 87507  
Post Office Box 25112  
Santa Fe, NM 87504  
Phone: (505) 476-8008  
Fax: (505) 476-8124

Visit our website at [www.wildlife.state.nm.us](http://www.wildlife.state.nm.us)  
For information call: (888) 248-6866  
To order free publications call: (800) 862-9310

STATE GAME COMMISSION

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Las Cruces, NM

DR. TOM ARVAS  
Albuquerque, NM

SCOTT BIDEKAIN  
Tucumcari, NM

ROBERT ESPINOZA, SR.  
Farmington, NM

PAUL M. KIENZLE III  
Albuquerque, NM

BILL MONTOYA  
Alto, NM

March 20, 2013

NEPA Program Manager  
377 MSG/CEIE  
2050 Wyoming Boulevard SE, Suite 126  
Kirtland AFB, NM 87117

*Kirtland AFB TEAMS Development; NMDGF No. 15523*

Dear NEPA Program Manager:

The Department of Game and Fish (Department) has reviewed your letter for the above-referenced project. Because of the potential for communications towers to cause significant impacts to night-migrating migratory bird populations, we submit the following recommendations:

- We recommend co-locating communications equipment, antennas, etc. on existing towers or buildings (e.g. water towers), or within existing groups of towers or "antenna farms", if feasible.
- Research has shown that lights on towers attract night-migrating birds, and can cause large mortality events when birds strike the tower or guy cables. It is our understanding that towers taller than 200 feet (61 m) above ground level (AGL) are required by the Federal Aviation Administration (FAA) to have lighting for aircraft safety. Therefore, if construction of new towers is required, we recommend that they be less than 200 feet AGL, if possible, so lighting is not necessary.
- Research has also shown that solid or pulsating red lights attract night-migrating birds at a much higher rate than white strobe lights. Therefore, where permissible by FAA and local zoning regulations, we recommend that white strobe lights be used and solid or pulsating red incandescent warning lights be avoided. Also, the minimum amount of lighting required by the FAA should be used, with minimum intensity and number of flashes per minute (i.e., the longest duration between flashes, currently three seconds) allowed by the FAA.
- To the extent possible, construction techniques should be used which do not require guy wires, as these components are thought to be a primary cause of tower-caused bird mortality. More acceptable construction techniques include using a lattice structure or a monopole.
- If possible, towers should not be located in or near wetlands, riparian areas, playas, lakes, or other known bird concentration areas (e.g., state or federal waterfowl refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened

NEPA Program Manager

Page - 2 -

March 20, 2013

or endangered bird species that could be prone to tower-caused mortality (i.e. night-migrating species). If location near or within one of these areas is deemed necessary, the Department requests the opportunity for additional consultation.

- Local meteorological conditions should be reviewed, and areas with an especially high incidence of fog, mist, and low cloud ceilings should be avoided, if possible.
- Towers using guy wires for support constructed in known raptor, waterfowl or shorebird concentration areas, stopover sites, daily movement or migratory routes, should install daytime visual markers (i.e., bird diverter devices) on the guy wires to prevent collisions by diurnally active bird species. (For guidance on markers, see *Avian Power Line Interaction Committee, 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C., 78 pp*, and *Avian Power Line Interaction Committee, 1996. Suggested Practices for Raptor Protection on Power Lines. Edison Electric Institute/Raptor Research Foundation, Washington, D.C., 128 pp*. Copies can be obtained by calling 1-800/334-5453).
- If significant numbers of breeding, feeding, or roosting birds are known to habitually use a proposed tower construction site, relocation to an alternate site is recommended. If this is not an option, seasonal restrictions on construction may be advisable in order to avoid disturbance during nesting (i.e., not during spring and summer).
- If possible, new towers should be designed structurally and electrically to accommodate the applicant's antenna(s), and comparable antennas for at least two additional users, to reduce the number of future towers, unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.
- Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site and minimize its potential attraction for birds.
- Tower construction, including road access and fencing, should be implemented to minimize habitat loss and fragmentation, and to reduce above-ground obstacles that might impact birds in flight. A larger tower footprint, however, is preferable to construction of a guy-supported tower.
- If constructing multiple towers, project proponents should consider the cumulative impacts of all of those towers on migratory birds, as well as the impacts of each individual tower.
- Towers no longer in use or determined to be obsolete should be removed within 12 months of the cessation of use.

For your convenience, we have enclosed a copy of New Mexican Wildlife of Concern for Bernalillo County. Species accounts and habitat associations can be accessed from the Department's Biota Information System of New Mexico (BISON-M) electronic database via the internet at [bison-m.org](http://bison-m.org).

Thank you for the opportunity to review and comment on your project. If you have any questions, please contact Ellen Heilhecker, Northwest Regional Habitat Biologist at (505) 222-4708 or [ellen.heilhecker@state.nm.us](mailto:ellen.heilhecker@state.nm.us).



Sincerely,

Kenneth K. Cunningham  
Assistant Chief, Technical Guidance Section  
Conservation Services Division

xc: USFWS NMES Field Office  
Ellen Heilhecker, NW Regional Habitat Biologist, NMDGF  
Donald Auer, Habitat Manager, NMDGF

## NEW MEXICO WILDLIFE OF CONCERN BERNALILLO COUNTY

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service NM Ecological Services Field Office website at <http://www.fws.gov/southwest/es/NewMexico/SBC.cfm>. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to <http://nmrareplants.unm.edu/>. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information. E = Endangered; T = Threatened; s = sensitive; SOC = Species of Concern; C = Candidate; Exp = Experimental non-essential population; P = Proposed

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical habitat</u>
Rio Grande Chub	<i>Gila pandora</i>	s		
Rio Grande Silvery Minnow	<i>Hybognathus amarus</i>	E	E	Y
Brown Pelican	<i>Pelecanus occidentalis</i>	E		
Neotropic Cormorant	<i>Phalacrocorax brasilianus</i>	T		
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T		
Northern Goshawk	<i>Accipiter gentilis</i>	s	SOC	
Common Black-Hawk	<i>Buteogallus anthracinus</i>	T	SOC	
Aplomado Falcon	<i>Falco femoralis</i>	E	Exp	
Peregrine Falcon	<i>Falco peregrinus</i>	T	SOC	
Mountain Plover	<i>Charadrius montanus</i>	s	SOC	
Black Tern	<i>Chlidonias niger surinamensis</i>		SOC	
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	s	C	
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	s	T	Y
Burrowing Owl	<i>Athene cunicularia</i>		SOC	
Black Swift	<i>Cypseloides niger</i>	s		
Broad-billed Hummingbird	<i>Cynanthus latirostris</i>	T		
White-eared Hummingbird	<i>Hylocharis leucotis</i>	T		
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E	E	Y
Loggerhead Shrike	<i>Lanius ludovicianus</i>	s		
Bell's Vireo	<i>Vireo bellii</i>	T	SOC	
Gray Vireo	<i>Vireo vicinior</i>	T		
Baird's Sparrow	<i>Ammodramus bairdii</i>	T	SOC	
Sprague's Pipit	<i>Anthus spragueii</i>		C	
Western Small-footed Myotis Bat	<i>Myotis ciliolabrum melanorhinus</i>	s		
Yuma Myotis Bat	<i>Myotis yumanensis yumanensis</i>	s		
Occult Little Brown Myotis Bat	<i>Myotis lucifugus occultus</i>	s		
Long-legged Myotis Bat	<i>Myotis volans interior</i>	s		
Fringed Myotis Bat	<i>Myotis thysanodes thysanodes</i>	s		
Spotted Bat	<i>Euderma maculatum</i>	T		
Pale Townsend's Big-eared Bat	<i>Corynorhinus townsendii pallescens</i>	s	SOC	
Big Free-tailed Bat	<i>Nyctinomops macrotis</i>	s		
Gunnison's Prairie Dog (prairie)	<i>Cynomys gunnisoni</i>	s		
New Mexican Jumping Mouse	<i>Zapus hudsonius luteus</i>	E	C	
Red Fox	<i>Vulpes vulpes</i>	s		
Ringtail	<i>Bassariscus astutus</i>	s		
Black-footed Ferret	<i>Mustela nigripes</i>		E	

## NEW MEXICO WILDLIFE OF CONCERN BERNALILLO COUNTY

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<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical habitat</u>
Western Spotted Skunk	<i>Spilogale gracilis</i>	s		
Socorro Mountainsnail	<i>Oreohelix neomexicana</i>	s		
Slate Millipede	<i>Comanchelus chihuanus</i>		SOC	



## Mid-Region Council of Governments

Debbie O'Malley  
Chair, Board of Directors  
Commissioner, Bernalillo County

March 22, 2013

Dewey V. Cave  
Executive Director

### MEMBER GOVERNMENTS

City of Albuquerque  
Albuquerque Public Schools  
Albuquerque Metropolitan  
Arroyo Flood Control  
Authority  
City of Belen  
Bernalillo County  
Town of Bernalillo  
Village of Bosque Farms  
Village of Corrales  
Village of Cuba  
Town of Edgewood  
Village of Encino  
Town of Estancia  
Village of Jemez Springs  
Village of Los Lunas  
Los Lunas Schools  
Village of Los Ranchos  
de Albuquerque  
Middle Rio Grande  
Conservancy District  
City of Moriarty  
Town of Mountainair  
Town of Peralta  
City of Rio Rancho  
Rio Rancho Public Schools  
Sandoval County  
Southern Sandoval  
County Arroyo Flood  
Control Authority  
Village of Tijeras  
Torrance County  
Valencia County  
Village of Willard

NEPA Program Manager  
377 MSG/CEAIE  
2050 Wyoming Boulevard SE Suite 126  
Kirtland AFB NM 87117

Re: Technical Evaluation Assessment Monitor Site (TEAMS)

Dear Sir:

On behalf of the Mid-Region Council of Governments (MRCOG), I would like to give my support for the Kirtland Air Force Base mission in regards to the proposed additional development at the TEAMS facility on the base.

It is my understanding that the proposal would support ongoing testing and training activities within the boundaries of the Kirtland Air Force Base. At this time the MRCOG does not anticipate major impacts. However, as part of the Joint Land Use Study (JLUS) implementation plan, the KAFB should notify the City of Albuquerque Planning Department as to the proposed development.

The mission of the Kirtland Air Force is very important in this region and the MRCOG communities. This application for funding in no way conflicts with local or regional plans.

Please let me know if my staff or I can support you further.

Sincerely,

Dewey V. Cave  
Executive Director

DC/SG

809 Copper Ave. NW, Albuquerque, NM 87102  
Phone: (505) 247-1750 Fax (505) 247-1753 Web: www.mrcog-nm.gov

# CITY OF ALBUQUERQUE

*Parks and Recreation Department*



April 2, 2013

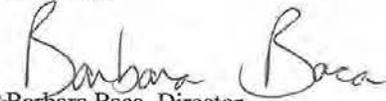
Colonel John C. Kubinec  
377 ABW/CC  
2000 Wyoming Blvd. SE Suite E-3  
Kirtland AFB NM 87117-5000

Dear Colonel Kubinec:

The City of Albuquerque Parks and Recreation Department has reviewed the letter regarding the NEPA process for the Defense Threat Reduction Agency (DTRA). We see no negative impacts to the environment, our property or programs.

Thank you for the opportunity to review the request.

Sincerely,

  
Barbara Baca, Director  
Parks and Recreation Department

PO Box 1293 BB224

Albuquerque

NM 87103

[www.cabq.gov](http://www.cabq.gov)

*Albuquerque - Making History 1706-2006*

**Native American Tribes – Scoping Letters**

Pueblo of Isleta  
Governor E. Paul Torres  
PO Box 1270  
Isleta Pueblo NM 87022

Pueblo of Zuni  
Governor Arlen P. Quetawki, Sr.  
PO Box 339  
Zuni NM 87327

Jicarilla Apache Nation  
President Ty Vicenti  
PO Box 507  
Dulce NM 87528

Mescalero Apache Tribe  
President Frederick Chino, Sr.  
PO Box 227  
Mescalero NM 88340

Pueblo of Nambe  
Governor Phillip A. Perez  
Route 1, Box 117-BB  
Santa Fe NM 87506

The Navajo Nation  
President Ben Shelly  
PO Box 9000  
Window Rock AZ 86515

Ohkay Owingeh  
Governor Marcelino Aguino  
PO Box 1099  
San Juan Pueblo NM 87566

Pueblo of Acoma  
Governor Gregg Shutiva  
PO Box 309  
Acoma NM 87034

Pueblo of Cochiti  
Governor J. Leroy Arquero  
PO Box 70  
Cochiti Pueblo NM 87072

Pueblo of Jemez  
Governor Vincent Toya, Sr.  
PO Box 100  
Jemez Pueblo NM 87024

Pueblo of Laguna  
Governor Richard B. Luarkie  
PO Box 194  
Laguna Pueblo NM 87026

Pueblo of Picuris  
Governor Richard Mermejo  
PO Box 127  
Peñasco NM 87553

Pueblo of Pojoaque  
Governor George Rivera  
78 Cities of Gold Road  
Santa Fe NM 87506

Pueblo of San Felipe  
Governor Jimmy Cimarron  
PO Box 4339  
San Felipe Pueblo NM 87001

Pueblo of San Ildefonso  
Governor Terry L. Aguilar  
Route 5, Box 315-A  
Santa Fe NM 87506

Navajo Nation Council, Office of the Speaker  
Speaker Johnny Naize  
PO Box 3390  
Window Rock AZ 86515

Pueblo of Sandia  
Governor Victor Montoya  
481 Sandia Loop  
Bernalillo NM 87004

Pueblo of Santa Ana  
Governor Myron Armijo  
2 Dove Road  
Santa Ana Pueblo NM 87004

Pueblo of Santa Clara  
Governor J. Bruce Tafoya  
PO Box 580  
Española NM 87532

Santo Domingo Pueblo  
Governor Felix Tenorio, Jr.  
PO Box 99  
Santo Domingo Pueblo NM 87052

Pueblo of Taos  
Governor Ernesto C. Luhan  
PO Box 1846  
Taos NM 87571

Hopi Tribal Council  
Chairman LeRoy N. Shingoitewa  
PO Box 123  
Kykotsmovi AZ 86039

Ysleta del Sur Pueblo  
Governor Frank Paiz  
117 S. Old Pueblo Road  
(PO Box 17579)  
El Paso TX 79907

Eight Northern Indian Pueblos Council  
Director Rob Corabi  
PO Box 969  
San Juan Pueblo NM 87566

Pueblo of Zia  
Governor Harold Reid  
135 Capital Square Drive  
Zia Pueblo NM 87053-6013

All Indian Pueblo Council  
Chairman Chandler Sanchez  
2401 12th Street NW  
Albuquerque NM 87103

Pueblo of Tesuque  
Governor Mark Mitchell  
Route 42, Box 360-T  
Santa Fe NM 87506

White Mountain Apache Tribe  
Chairman Ronnie Lupe  
PO Box 700  
White River AZ 85941

Five Sandoval Indian Pueblos  
Director James Roger Madalena  
1043 Highway 313  
Bernalillo NM 87004

## Example Tribal Scoping Letter



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 377TH AIR BASE WING (AFMC)

Colonel John C. Kubinec  
377 ABW/CC  
2000 Wyoming Blvd SE Suite E-3  
Kirtland AFB, New Mexico 87117-5000

FEB 28 2012

President Frederick Chino, Sr.  
Mescalero Apache Tribe  
P.O. Box 227  
Mescalero NM 88340

Dear President Chino, Sr.

The Defense Threat Reduction Agency (DTRA) at Kirtland Air Force Base (KAFB), Bernalillo County, New Mexico is preparing an Environmental Assessment (EA) addressing the potential physical, environmental, cultural, and socioeconomic effects of proposed additional development at the approximately 24-acre Technical Evaluation Assessment Monitor Site (TEAMS). The proposed additional development would support ongoing Radiological, Nuclear, and High Explosives (RNE) sensor detection testing and associated training activities at the TEAMS. The TEAMS, located within the greater boundaries of KAFB, has been used in this same capacity since January 2002, a period of more than 11 years (see Figure 1).

The primary mission of the TEAMS is to perform preliminary technical evaluation, assessment, calibration, and concept of operations development of new and emerging nuclear material detection technologies. DTRA's mission also includes using the TEAMS as a test-bed for other RNE detection testing and associated training (search/survey) activities. Currently, activities on the TEAMS primarily include testing and training of various nuclear detection sensors and systems. The entire TEAMS is fenced, controlled, and secure.

No new harmful materials are proposed at the TEAMS. Proposed facilities would serve to support and enhance the current DTRA and TEAMS missions. Proposed development includes additional testing, associated training, material storage, support, and improved facilities within the TEAMS boundaries. These proposed facilities and activities include:

- A new, secure, alarmed radiological source storage facility constructed and operated in accordance with Nuclear Regulatory Commission (NRC) criteria and requirements.
- A new 3-stall latrine and associated picnic area for staff and visitors.
- A mock train station.

- Improvements, electrification, and new remote control operation of the Site's South Gate.
- Conversion of an existing onsite TEAMS building to a Command and Control Center/Very Important Person (VIP) Monitoring Station for DTRA test events at KAFB. This would require internal building modifications and new computers within the selected TEAMS building. This would also require a new, permanent, up to 50-foot tall (above ground level) radio antenna and a base station consisting of two microwave receiving dishes at TEAMS on or adjacent to the selected TEAMS building. At the DTRA's Giant Reusable Air Blast Simulator (GRABS) Site at KAFB, a portable, trailer-mounted microwave/radio antenna would be placed on the GRABS Site only during test events to stream secure video to the proposed TEAMS VIP Monitoring Station.
- In-kind replacement (i.e., same size and function), over time, of current TEAMS temporary buildings with permanent buildings on or adjacent to the existing building locations, and constructed in accordance with the KAFB Architectural Compatibility Plan (2007).
- Potential increase of up to 50% in testing and training event personnel levels, from the current level of about 400 total personnel per year. Ongoing individual events typically involve 10 to 25 people each, and an onsite exercise or demonstration can include up to 120 people. No change in onsite full-time staff is proposed. There is potential to increase onsite staff during specific events by as much as 10 staff members per day.
- Additional onsite weed control efforts to reduce puncturevine (*Tribulus terrestris*), an invasive plant species, on the Site.

The locations of the TEAMS and existing and proposed facilities are shown on the attached Figures 1 and 2. Please note that the locations of proposed facilities may change; however, all proposed facilities would be contained within the fenced, 24-acre TEAMS footprint.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA; 36 Code of Federal Regulations [CFR] Parts 800.2, 800.3, and 800.4) and Executive Order 13175, the Air Force would like to initiate government to government consultation concerning the proposed project to allow you the opportunity to identify any comments, concerns, and/or suggestions that you might have. Additionally, as we move forward through the process, various draft documents will be forwarded for your review and comment.

Please contact my office at (505) 846-7377 if you would like to meet to discuss the proposed project and/or proceed with Section 106 consultation.

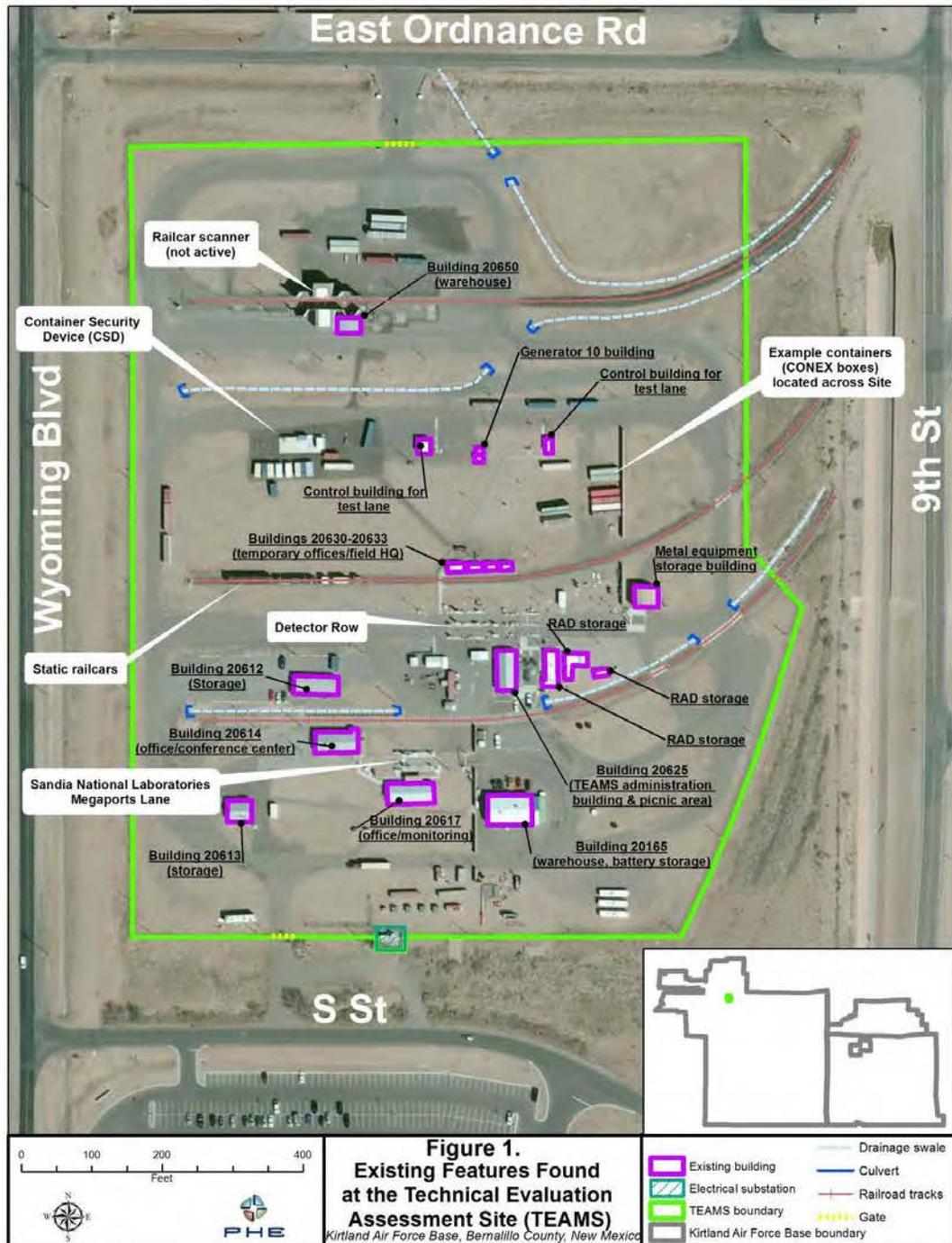
Sincerely

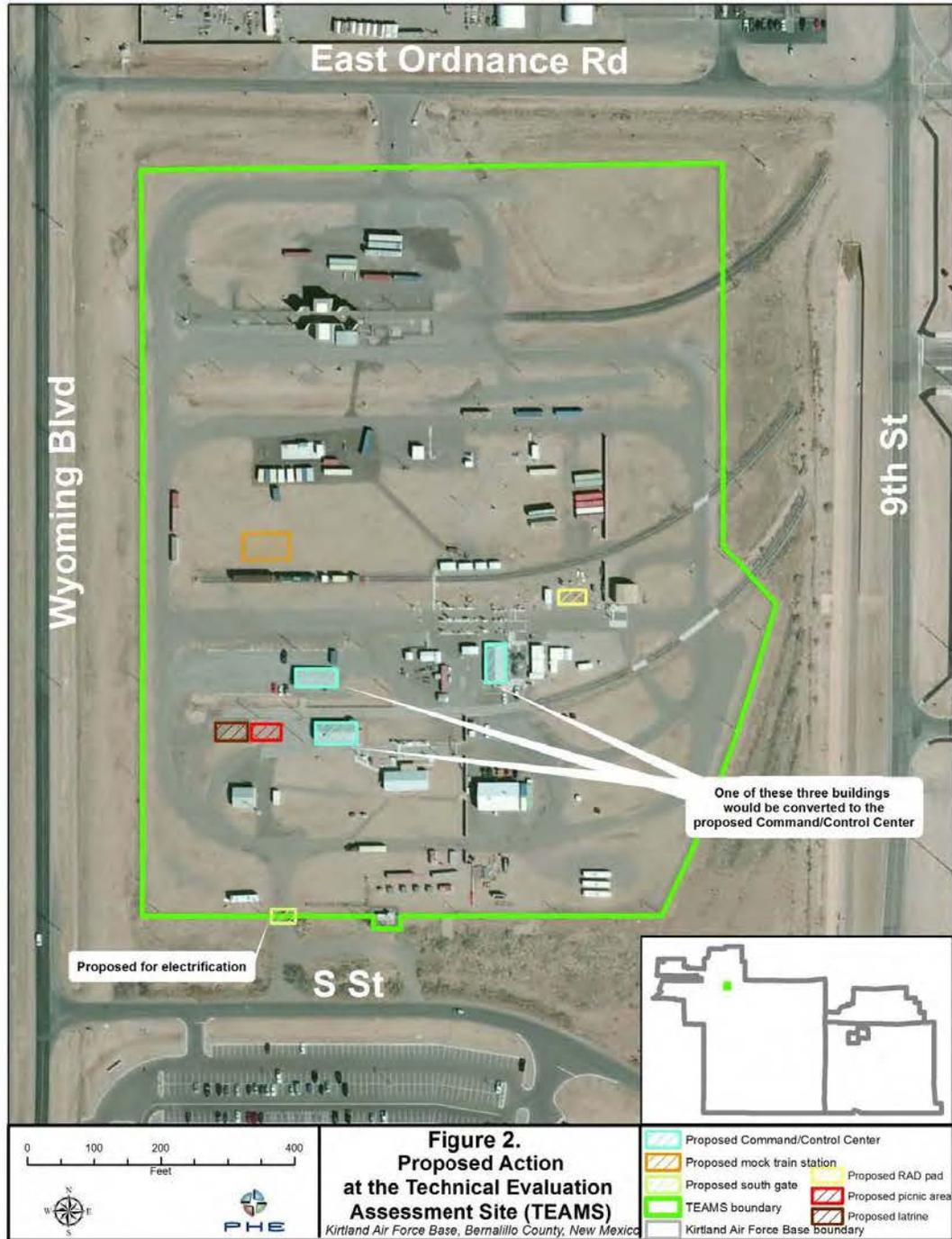
  
JOHN C. KUBINEC, Colonel, USAF  
Commander

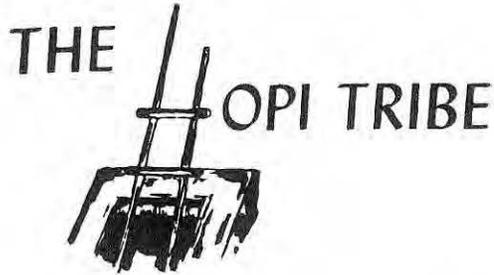
Attachments:

Figure 1. TEAMS Site - Site Location and Existing Features.

Figure 2. TEAMS Site - Proposed Action.





**Tribal Scoping Letter Response**

LeRoy N. Shingoitewa  
CHAIRMAN

Herman G. Honanie  
VICE-CHAIRMAN

March 26, 2013

Colonel John C. Kubinec, Commander  
Department of the Air Force, Headquarters 377<sup>th</sup> Air Base Wing (AFMC)  
377 ABW/CC  
2000 Wyoming Blvd., SE Suite E-3  
Kirtland AFB, New Mexico 87117-5000

Dear Colonel Kubinec,

This letter is in response to your correspondence dated February 28, 2013, regarding Kirtland Air Force Base preparing an environmental assessment of the 24 acre Technical Evaluation Assessment Monitor Site. The Hopi Tribe claims cultural affiliation to the prehistoric cultural groups in New Mexico. The Hopi Cultural Preservation Office supports the identification and avoidance of prehistoric archaeological sites, and we consider the prehistoric archaeological sites of our ancestors to be "footprints" and Traditional Cultural Properties. Therefore, we request consultation on any proposal that has the potential to adversely affect prehistoric cultural resources in New Mexico, and therefore, we appreciate the Department of the Air Force's continuing solicitation of our input and your efforts to address our concerns.

Because this is a federal undertaking involving ground disturbing activities, if prehistoric sites are identified by the cultural resources survey of the area of potential effect that will be adversely affected by project activities, please provide us with copies the cultural resources survey report and any proposed draft treatment plans for review and comment. In addition, we recommend that if any cultural features or deposits are encountered during project activities, these activities must be discontinued in the immediate area of the remains, and the State Historic Preservation Office must be consulted to evaluate their nature and significance. If any Native American human remains or funerary objects are discovered during construction they shall be immediately reported as required by law.

If you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office at 928-734-3619 or [tmorgart@hopi.nsn.us](mailto:tmorgart@hopi.nsn.us). Thank you for your consideration.

Respectfully,



Leigh J. Kuwanwiswima, Director  
Hopi Cultural Preservation Office

xc: New Mexico State Historic Preservation Office

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**Federal, State, and Local Agencies – Public Notice Letters**

Dr. Benjamin Tuggle, Regional Director  
U.S. Fish and Wildlife Service  
Southwest Regional Office  
PO Box 1306  
Albuquerque NM 87103-1306

Ms. Peg Sorenson  
Southwestern Region NEPA Coordinator  
U.S. Forest Service  
Ecosystem Analysis and Planning, Watershed,  
and Air Management  
333 Broadway Boulevard SE  
Albuquerque NM 87102

Ms. Julie Alcon  
Chief of Environmental Resources Section  
U.S. Army Corps of Engineers  
4101 Jefferson Plaza NE  
Albuquerque NM 87109

Mr. Ron Curry, Regional Administrator  
U.S. Environmental Protection Agency,  
Region 6  
1445 Ross Avenue, Suite 1200  
Dallas TX 75202

Ms. Pearl Armijo, District Conservationist  
National Resources Conservation Service  
Albuquerque Service Center  
6200 Jefferson NE, Room 125  
Albuquerque NM 87109

Mr. Ed Singleton, District Manager  
Bureau of Land Management  
New Mexico State Office  
Albuquerque District Office  
435 Montaño Road NE  
Albuquerque NM 87107

The Honorable Martin Heinrich  
United States Senate  
625 Silver Avenue SW, Suite 130  
Albuquerque NM 87102

The Honorable Tom Udall  
United States Senate  
219 Central Avenue NW, Suite 210  
Albuquerque NM 87102

The Honorable Michelle Lujan Grisham  
United States House of Representatives  
505 Marquette Avenue NW, Suite 1605  
Albuquerque NM 87102

The Honorable Steve Pearce  
United States House of Representatives  
3445 Lambros Loop NE  
Los Lunas NM 87031

The Honorable Ben Luján  
United States House of Representatives  
1611 Calle Lorca, Suite A  
Santa Fe NM 87505

Mr. Jeff Robbins  
NNSA Service Center/Albuquerque  
Kirtland AFB East, Building 401  
PO Box 5400  
Albuquerque NM 87185-5400

Mr. Tim Tandy  
Federal Aviation Administration  
Southwest Region Regional Office  
2601 Meacham Boulevard  
Fort Worth TX 76137

Mr. Morgan Nelson  
Office of General Counsel & Environmental  
Policy  
New Mexico Environment Department  
1190 St Francis Drive, Suite N4050  
Santa Fe NM 87505

Mr. Matt Wunder, Chief  
Conservation Services  
New Mexico Department of Game and Fish  
1 Wildlife Way  
Santa Fe NM 87507

Mr. Jeff M. Witte, Director/Secretary  
New Mexico Department of Agriculture  
3190 S. Espina  
Las Cruces NM 88003

Mr. F. David Martin  
Cabinet Secretary-Designate  
New Mexico Energy, Minerals and Natural  
Resources Department  
1220 South St Francis Drive  
Santa Fe NM 87505

Mr. Ray Powell, Commissioner  
Commissioner of Public Lands  
New Mexico State Land Office  
310 Old Santa Fe Trail  
Santa Fe NM 87501

Dr. Jeff Pappas, PhD  
State Historic Preservation Officer and Director  
New Mexico Office of Cultural Affairs  
New Mexico Historic Preservation Division  
Bataan Memorial Building  
407 Galisteo Street, Suite 236  
Santa Fe NM 87501

Mr. Bill Walker, Regional Director  
Bureau of Indian Affairs  
Southwest Regional Office  
1001 Indian School Road NW  
Albuquerque NM 87104

Mr. Tom Zdunek, Bernalillo County Manager  
Bernalillo County Manager's Office  
One Civic Plaza NW, 10th Floor  
Albuquerque NM 87102

Ms. Erin Thompson  
Director of Communications  
City of Albuquerque Office of the Mayor  
One Civic Plaza NW, 11th Floor  
Albuquerque NM 87102

Board of Directors  
Mid Region Council of Governments  
809 Copper Avenue NW  
Albuquerque NM 87102

Commissioner  
Bernalillo County Board of Commissioners  
One Civic Plaza NW, 10th Floor  
Albuquerque NM 87102

Councilmember  
Albuquerque City Councilmembers  
One Civic Plaza NW  
9th Floor, Suite 9087  
Albuquerque NM 87102

Mr. Don Britt  
Assistant Commissioner for Commercial  
Resources  
New Mexico State Land Office  
PO Box 1148  
Santa Fe NM 87504

City of Albuquerque Planning Department  
PO Box 1293  
Albuquerque NM 87103

Development Management/Department Director  
Bernalillo County Planning Section  
111 Union Square SE, Suite 100  
Albuquerque NM 87102

## Example Public Notice Letter



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 377TH AIR BASE WING (AFMC)

Colonel Tom D Miller  
377 ABW/CC  
2000 Wyoming Blvd SE Suite E-3  
Kirtland AFB NM 87117-5000

The Honorable Tom Udall  
United States Senate  
219 Central Avenue NW Suite 210  
Albuquerque NM 87102

Dear Senator Udall

The Defense Threat Reduction Agency (DTRA) is preparing an Environmental Assessment (EA) for proposed enhancements to testing and training capabilities and use, as well as functionality, of the Technical Evaluation Assessment Monitor Site (TEAMS) to meet DTRA's mission requirements. DTRA is preparing the EA to evaluate potential environmental impacts associated with additional training material storage, support, and improved facilities within the Site's boundaries.

The primary mission of the TEAMS is to perform preliminary technical evaluation, assessment, demonstration, calibration, training, fielding, integration, and concept of operations development of new and emerging nuclear material, commercial-off-the-shelf detection technologies. DTRA's mission also includes potentially using the TEAMS as a test-bed for other Radiological, Nuclear, and high Explosives (RNE) detection testing and training (search/survey) activities. Currently, activities on the TEAMS primarily include testing and training of various nuclear detection sensors and systems. The TEAMS is completely fenced, secure, and has an intrusion detection system with 24-hour monitoring.

No new materials are proposed to be used at the TEAMS. Proposed facilities would serve to support and enhance the current DTRA missions. Proposed development includes additional testing, associated training, material storage, support, and improved facilities within the TEAMS boundaries. These proposed facilities and activities include:

- A new, secure, alarmed radiological source storage facility constructed and operated in accordance with Nuclear Regulatory Commission criteria and requirements.
- A new picnic area for staff and visitors.
- A mock train station.
- Conversion of an existing on-site building to a Command and Control Center/Very Important Person Monitoring Station for DTRA operations at Kirtland Air Force Base (AFB), with only updated radio and microwave connectivity (including an up to 50-foot tall antenna/communications tower), internal building modifications, and new computers.

- In-kind replacement (i.e., same size and function), over time, of current TEAMS temporary buildings with permanent buildings on or adjacent to the existing building locations, and constructed in accordance with the Kirtland AFB Architectural Compatibility Plan).
- Potential increase in testing and training event personnel levels by up to 50 percent over the current level of about 400 total personnel per year. Ongoing individual events typically involve 10 to 25 people each, and on-site exercises and demonstrations can include up to 120 people. No change in on-site full-time staff is proposed. There is potential to increase on-site staff during specific events by as much as 10 staff members per day.
- Additional on-site weed control efforts to reduce puncture vine, an invasive plant species, on the Site.

The locations of Kirtland AFB, the TEAMS, and existing and proposed facilities are shown on the attached Figures 1, 2, and 3.

This EA is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] §4371 et.seq.), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and the Air Force NEPA regulation (32 CFR Part 989). This EA will evaluate the potential impacts of the proposed action and alternatives, to include the no action alternative, on humans and the natural environment. Additionally, Executive Order 12372, *Intergovernmental Review of Federal Programs*, requires federal agencies to solicit other federal agency participation in the NEPA process. Accordingly, I am requesting your participation in the review and comment process. Copies of the Draft EA and the proposed Finding of No Significant Impact are available at <http://www.kirtland.af.mil> under the environmental issues tab.

If you have additional information regarding impacts of the proposed action to the natural environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. Please provide your written comments on the Draft EA and proposed FONSI or other information regarding this specific action within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

Please send your written responses to the NEPA Program Manager, 377 MSG/CEIE, 2050 Wyoming Boulevard SE, Suite 116, Kirtland AFB, NM 87117, or via email to [nepa@us.af.mil](mailto:nepa@us.af.mil).

Sincerely



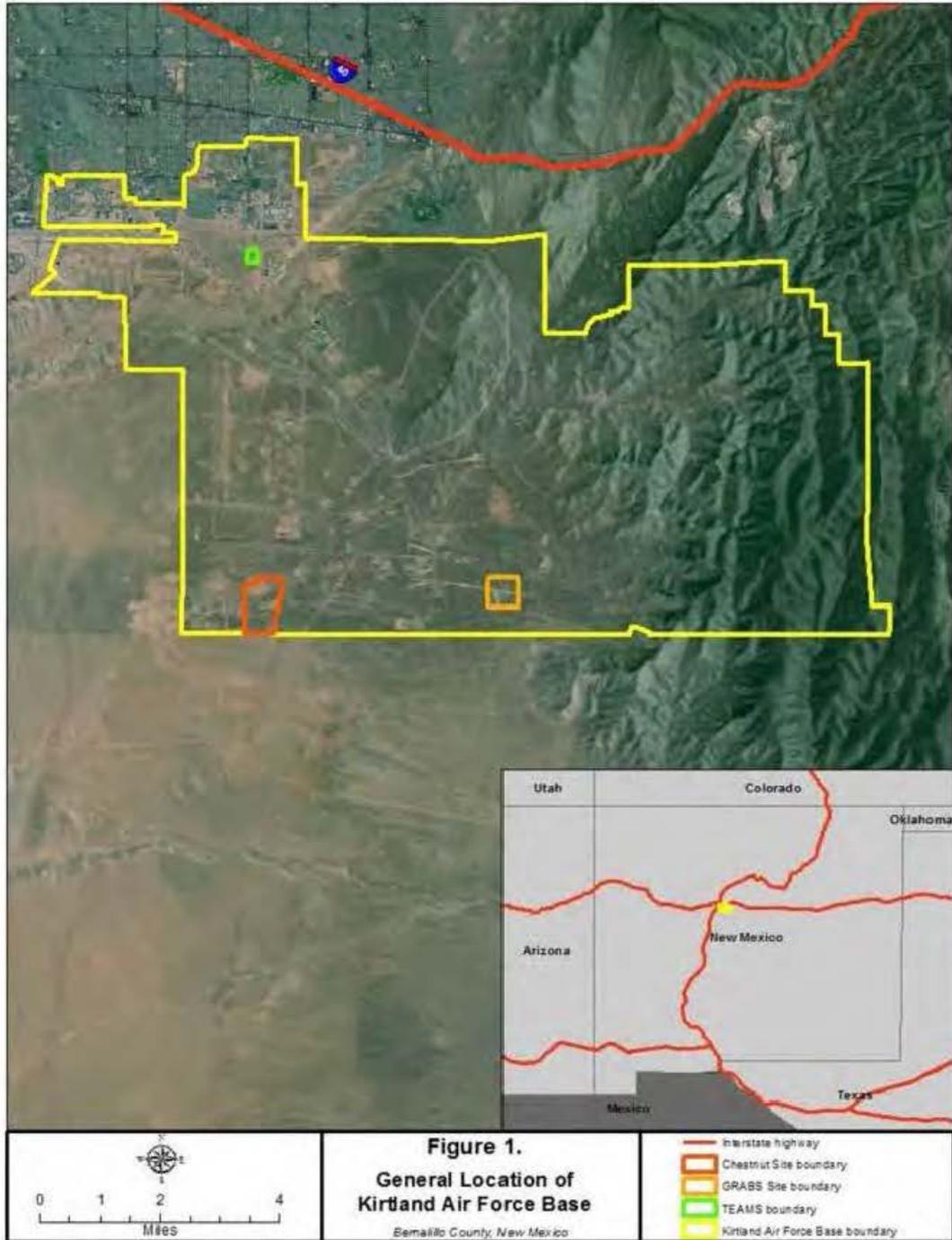
TOM D. MILLER, Colonel, USAF  
Commander

Attachments:

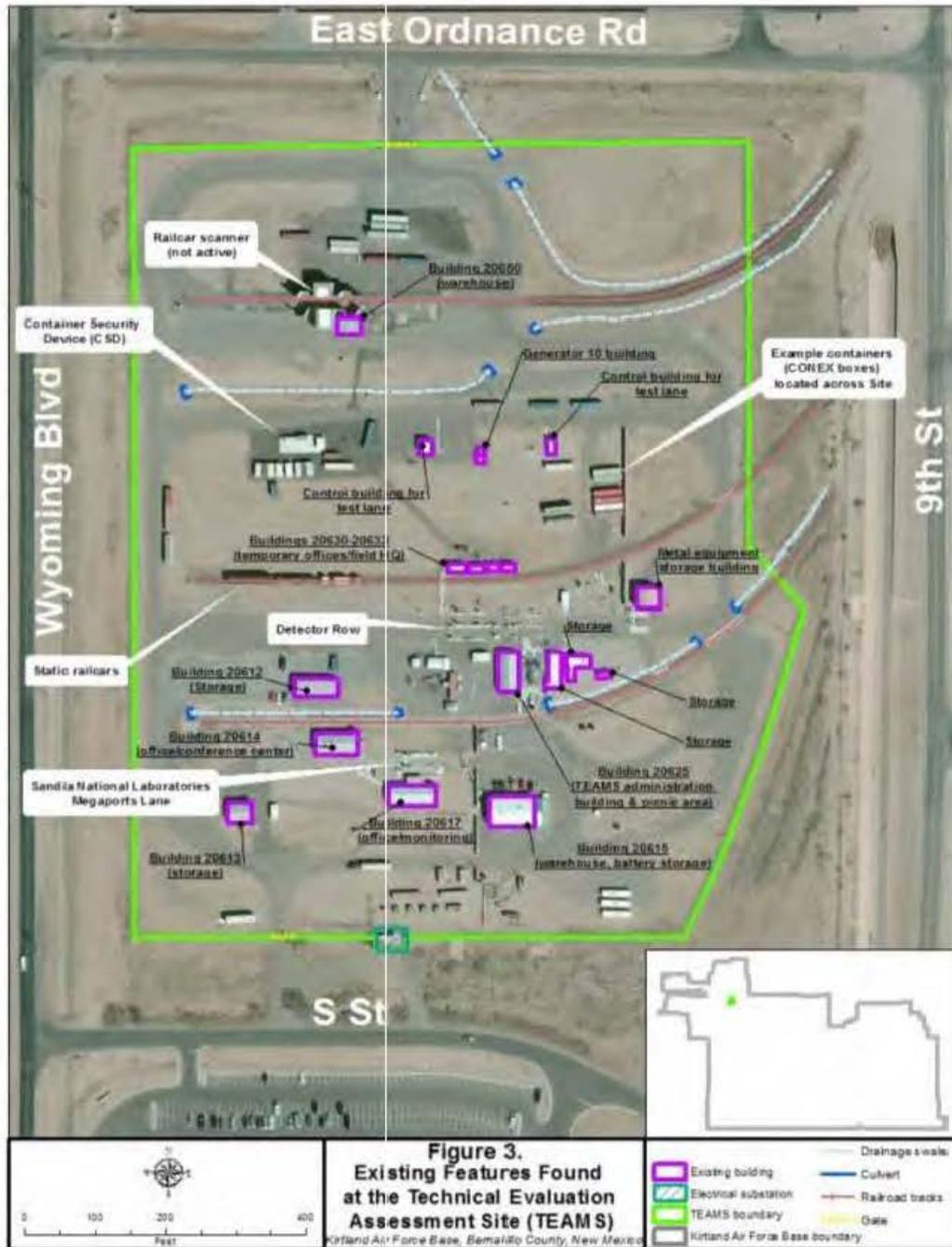
Figure 1. General Location of Kirtland Air Force Base

Figure 2. General Location of the Technical Evaluation Assessment Monitor Site (TEAMS)

Figure 3. Existing Features Found at the Technical Evaluation Monitor Assessment Site (TEAMS)







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**Public Notice Response Letter****Mid-Region Council of Governments**

Steve Anaya  
Chair, Board of Directors  
Councillor, City of Moriarty

October 30, 2014

**Dewey V. Cave**  
Executive Director

## MEMBER GOVERNMENTS

City of Albuquerque  
Albuquerque Public Schools  
Albuquerque Metropolitan  
Arroyo Flood Control  
Authority  
City of Belen  
Bernalillo County  
Town of Bernalillo  
Village of Bosque Farms  
Village of Corrales  
Village of Cuba  
Town of Edgewood  
Village of Encino  
Town of Estancia  
Village of Jemez Springs  
Laguna Pueblo  
Village of Los Lunas  
Los Lunas Schools  
Village of Los Ranchos  
de Albuquerque  
Middle Rio Grande  
Conservancy District  
City of Moriarty  
Town of Mountainair  
Town of Peralta  
City of Rio Rancho  
Rio Rancho Public Schools  
Sandoval County  
Southern Sandoval  
County Arroyo Flood  
Control Authority  
Village of Tijeras  
Torrance County  
Valencia County  
Village of Willard

NEPA Program Manager  
377 MSG/CEIE  
2050 Wyoming Boulevard SE Suite 116  
Kirtland AFB, NM 87117

Re: DTRA/TEAMS

Dear Sir/Madame,

On behalf of the Mid-Region Council of Governments (MRCOG), I would like to give my support for your efforts for the proposed enhancements to testing and training capabilities and use, as well as functionality, of the Technical Evaluation Assessment Monitor Site to meet the Defense Threat Reduction Agency's mission requirements.

It is my understanding that the proposed action includes new programming of space at the TEAM site as well as the conversion of some existing buildings. At this time the MRCOG does not anticipate major impacts. However, as part of the Joint Land Use Study (JLUS) implementation plan and subsequent memorandums of understanding (MOUs), the KAFB should consider notifying the City of Albuquerque Planning Department, the Bernalillo County Planning Department, and the Isleta Pueblo as to the proposed modifications of the site and any potential impacts.

The mission of the Kirtland Air Force is very important in this region and the MRCOG communities. This proposal for this project in no way conflicts with local or regional plans.

Please let me know if my staff or I can support you further.

Sincerely,

Dewey V. Cave  
Executive Director

DC/DW

809 Copper Ave. NW, Albuquerque, NM 87102  
Phone: (505) 247-1750 Fax (505) 247-1753 Web: www.mrcog-nm.gov

**BARE, MICHELLE P CTR USAF AFMC 377 MSG/CEIE**

---

**From:** 377 MSG/CEAN NEPA Environmental Assessment  
**Sent:** Thursday, December 11, 2014 2:11 PM  
**To:** BARE, MICHELLE P CTR USAF AFMC 377 MSG/CEIE  
**Subject:** FW: TEAMS and GRABS

Martha E. Garcia  
Kirtland AFB NEPA Program Manager  
377 MSG/CEIE  
(505) 846-6446  
DSN: 246-6446

---

**From:** Sorensen, Peg -FS [mailto:psorensen@fs.fed.us]  
**Sent:** Thursday, December 11, 2014 2:03 PM  
**To:** 377 MSG/CEAN NEPA Environmental Assessment  
**Subject:** TEAMS and GRABS

Dear Sir;

The Southwestern Region of the USDA Forest Service has no responsive comments or issues on the TEAMS or GRABS project proposals. Thank you for including us in your public participation efforts.

Peg Sorensen, Regional Environmental Coordinator (NEPA)  
Southwestern Region, USDA Forest Service  
333 Broadway Blvd. SE  
Albuquerque, NM 87102 505-842-3256

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SUSANA MARTINEZ  
Governor  
JOHN A. SANCHEZ  
Lieutenant Governor

*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

*Office of the Secretary*

Harold Runnels Building  
1190 Saint Francis Drive, PO Box 5469  
Santa Fe, NM 87502-5469  
Telephone (505) 827-2855 Fax (505) 827-2836  
www.nmenv.state.nm.us



RYAN FLYNN  
Cabinet Secretary  
BUTCH TONGATE  
Deputy Secretary

December 16, 2014

NEPA Program Manager  
377 MSG/CEIE  
2050 Wyoming Blvd SE, STE 116  
Kirtland AFB, NM 87117  
nepa@us.af.mil

RESPONSE BY EMAIL

**RE: DTRA Technical Evaluation Assessment Monitor Site Project**

To Whom It May Concern:

Your letter regarding the above named project was received by the New Mexico Environment Department (NMED) and was sent to various bureaus for review and comment. Comments were provided by the Ground Water Quality, Hazardous Waste, and Surface Water Quality Bureaus, and are as follows.

**Ground Water Quality Bureau**

New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) staff reviewed the above-referenced letter as requested, focusing specifically on the potential effect to ground water resources in the area of the proposed project.

The letter states that the United States Air Force is preparing an Environmental Assessment (EA) to evaluate potential environmental impacts associated with the development of additional material storage, training and support facilities within the Technical Evaluation Assessment Monitor Site (TEAMS) at Kirtland Air Force Base. The proposed improvements include 1) a new radiological source storage facility, 2) a new picnic area, 3) a mock train station, and 4) the conversion of an existing building into a Command & Control Center/Very Important Person Monitoring Station for various operations. The letter does not provide any details on the proposed disposal method for domestic waste generated from the new facilities.

If domestic wastewater is to be discharged to an onsite wastewater disposal system, then the onsite system must operate under the appropriate permit from the NMED (either a liquid waste permit issued pursuant to 20.7.3 NMAC or a ground water discharge permit issued pursuant to 20.6.2 NMAC) depending upon the daily discharge volume. The US Air Force is encouraged to contact NMED's Liquid Waste Program Albuquerque Office at (505) 222-9500 for assistance in

determining the appropriate permit for the proposed project. However, if domestic wastewater is to be delivered offsite to a municipal or regional wastewater treatment system, then a permit for the discharge domestic wastewater will not be required.

#### **Hazardous Waste Bureau**

The Hazardous Waste Bureau does not have any comments on the EIR #5225 - Draft Environmental Assessment Proposed Additional Development, Testing Use, and Associated Training at the Technical Evaluation Assessment Monitor Site (TEAMS) at Kirtland Air Force Base, New Mexico.

#### **Surface Water Quality Bureau**

Information is provided below if a project requires discharge of dredged/fill material or discharge of storm water from construction activities into Waters of the U.S.

#### Clean Water Act, Section 404 USACE/Section 401 Certification

Information is provided below if the project (or associated construction support areas during construction) requires discharge of dredged/fill material into Waters of the U.S., including wetlands.

Section 404 of the Clean Water Act requires approval from the U.S. Army Corp of Engineers (USACE) prior to discharging dredged or fill material into waters of the United States (U.S.). Any person, firm, or agency (including Federal, state, tribal and local governmental agencies) planning to work in waters of the United States should first contact the USACE regarding the need to obtain a permit from the Regulatory Division. Failure to receive and implement proper permit coverage would be a violation of the Clean Water Act. More information on the §404 permitting process, including applicability of Nationwide Permits, mitigation requirements, requirements for certification for any discharges on state, private or tribal land, can be obtained from the USACE at:

<http://www.spa.usace.army.mil/Missions/RegulatoryProgramandPermits.aspx>

NMED Surface Water Quality Bureau Watershed Protection Section coordinates the state's §401 certification of §404 dredged/fill material permits with the USACE. In response to the §404 reissued nationwide permits on April 13, 2012, a Conditional §401 Certification for discharges to State of New Mexico surface water has been issued and is available at the following web site: <ftp://ftp.nmenv.state.nm.us/www/swqb/WPS/401-404/NWPCertificationNotice04-13-2012.pdf>.

For additional information, including permitting procedures and jurisdictional water determination, contact the USACE, Albuquerque District, 4101 Jefferson Plaza NE, Albuquerque, New Mexico 87109-343, 505-342-3262.

#### Clean Water Act, Section 402 NPDES Industrial Storm Water Construction General Permit (CGP)

The U.S. Environmental Protection Agency (USEPA) requires National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) coverage for stormwater discharges from construction activities (such as clearing, grading, excavating, and stockpiling) that disturb (or re-disturb) one or more acres, or smaller sites that are part of a larger common plan of development or sale. Prior to discharging storm water, construction operators must obtain coverage under an NPDES permit.

Among other things, this permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for the site, including support and staging areas, and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This permit also requires that permanent stabilization measures (re-vegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters.

Part 9 of the 2012 CGP includes permit conditions applicable to specific states, Indian country lands, or territories. In the State of New Mexico, except on tribal land, permittees must ensure that there is no increase in sediment yield and flow velocity from the construction site (both during and after construction) compared to pre-construction, undisturbed conditions (see Subpart 9.4.1.1 of the 2012 CGP).

**USEPA requires that all "operators" (see Appendix A of the 2012 CGP) obtain NPDES permit coverage by submitting a Notice of Intent (NOI) for construction projects. Generally, this means that at least two parties will require permit coverage.** The owner/developer of this construction project who has operational control over project specifications, the general contractor who has day-to-day operational control of those activities at the site, which are necessary to ensure compliance with the SWPPP and other permit conditions, and possibly other "operators" will require appropriate NPDES permit coverage for this project.

The CGP was re-issued effective February 16, 2012. The CGP, NOI, deadlines for submitting an NOI, Fact Sheet, and Federal Register notice is available at:

<http://efpub.epa.gov/npdes/stormwater/cgp.cfm>

I hope this information is helpful.

Sincerely,

**Morgan R. Nelson**

Morgan R. Nelson  
Environmental Impact Review Coordinator  
NMED File Number: EIR 5225

Digitally signed by Morgan R. Nelson  
DN: cn=Morgan R. Nelson, o=New Mexico Environment Department,  
ou=Office of General Counsel, email=morgan.nelson@state.nm.us, c=US  
Date: 2014.12.16 10:06:23 -0700

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**Native American Tribes – Public Notice Letters**

Pueblo of Isleta  
Governor E. Paul Torres  
PO Box 1270  
Isleta NM 87022

Pueblo of Zuni  
Governor Arlen P. Quetawki, Sr.  
PO Box 339  
Zuni NM 87327

Jicarilla Apache Nation  
President Ty Vicenti  
PO Box 507  
Dulce NM 87528

Mescalero Apache Tribe of the Mescalero  
Apache Reservation  
President Danny Breuninger, Sr.  
PO Box 227  
Mescalero NM 88340

Pueblo of Nambe  
Governor Phillip A. Perez  
Route 1, Box 117-BB  
Santa Fe NM 87506

Navajo Nation  
President Ben Shelly  
PO Box 9000  
Window Rock AZ 86515

Ohkay Owingeh  
Governor Marcelino Aguino  
PO Box 1099  
San Juan Pueblo NM 87566

Pueblo of Acoma  
Governor Fred S. Vallo, Sr.  
PO Box 309  
Acoma Pueblo NM 87034

Pueblo of Cochiti  
Governor Joseph H. Suina, PhD  
PO Box 70  
Cochiti Pueblo NM 87072

Pueblo of Jemez  
Governor Joshua Madalena  
PO Box 100  
Jemez Pueblo NM 87024

Pueblo of Laguna  
Governor Richard B. Luarkie  
PO Box 194  
Laguna NM 87026

Pueblo of Picuris  
Governor Richard B. Mermejo  
PO Box 127  
Peñasco NM 87553

Pueblo of Pojoaque  
Governor George Rivera  
78 Cities of Gold Road  
Santa Fe NM 87506

Pueblo of San Felipe  
Governor Joseph E. Sandoval  
PO Box 4339  
San Felipe Pueblo NM 87001

Pueblo of San Ildefonso  
Governor Terry L. Aguilar  
Route 5, Box 315-A  
Santa Fe NM 87506

22nd Navajo Nation Council  
Office of the Speaker  
Speaker Johnny Naize  
PO Box 3390  
Window Rock AZ 86515

Pueblo of Sandia  
Governor Stuart Paisano  
481 Sandia Loop  
Bernalillo NM 87004

Pueblo of Santa Ana  
Governor George M. Montoya  
2 Dove Road  
Santa Ana Pueblo NM 87004

Pueblo of Santa Clara  
Governor J. Michael Chavarria  
PO Box 580  
Española NM 87532

Pueblo of Santo Domingo  
Governor Oscar K. Lovato  
PO Box 99  
Santo Domingo Pueblo NM 87052

Pueblo of Taos  
Governor Clyde M. Romero  
PO Box 1846  
Taos NM 87571

Hopi Tribal Council  
Chairman Herman G. Honanie  
PO Box 123  
Kykotsmovi AZ 86039

Ysleta del Sur Pueblo  
Governor Frank Paiz  
117 S. Old Pueblo Road  
(PO Box 17579)  
El Paso TX 79907

Eight Northern Indian Pueblos Council  
Executive Director Gil L. Vigil  
PO Box 969  
San Juan Pueblo NM 87566

Pueblo of Zia  
Governor David Pino  
135 Capitol Square Drive  
Zia Pueblo NM 87053-6013

All Pueblo Council of Governors  
Chairman Terry L. Aguilar  
2401 12th Street NW  
Albuquerque NM 87103

Pueblo of Tesuque  
Governor Robert Mora, Sr.  
Route 42 Box 360-T  
Santa Fe NM 87506

White Mountain Apache Tribe of the  
Fort Apache Reservation  
Chairman Ronnie Lupe  
PO Box 700  
Whiteriver AZ 85941

Five Sandoval Indian Pueblos  
Executive Director James Roger Madalena  
1043 Highway 313  
Bernalillo NM 87004

## Example Tribal Public Notice Letter



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 377TH AIR BASE WING (AFMC)

Colonel Tom D Miller  
377 ABW/CC  
2000 Wyoming Blvd SE Suite E-3  
Kirtland AFB NM 87117-5000

President Danny Breuninger, Sr.  
Mescalero Apache Tribe of the  
Mescalero Apache Reservation  
PO Box 227  
Mescalero NM 88340

Dear President Breuninger

The Defense Threat Reduction Agency (DTRA) is preparing an Environmental Assessment (EA) for proposed enhancements to testing and training capabilities and use, as well as functionality, of the Technical Evaluation Assessment Monitor Site (TEAMS) to meet DTRA's mission requirements. DTRA is preparing the EA to evaluate the potential environmental impacts associated with additional training, material storage, support, and improved facilities within the Site's boundaries.

The primary mission of the TEAMS is to perform preliminary technical evaluation, assessment, demonstration, calibration, training, fielding, integration, and concept of operations development of new and emerging nuclear material, commercial-off-the-shelf detection technologies. DTRA's mission also includes potentially using the TEAMS as a test-bed for other Radiological, Nuclear, and high Explosives (RNE) detection testing and training (search/survey) activities. Currently, activities on the TEAMS primarily include testing and training of various nuclear detection sensors and systems. The TEAMS is completely fenced, secure, and has an intrusion detection system with 24-hour monitoring.

No new materials are proposed to be used at the TEAMS. Proposed facilities would serve to support and enhance the current DTRA missions. Proposed development includes additional testing, associated training, material storage, support, and improved facilities within the TEAMS boundaries. These proposed facilities and activities include:

- A new, secure, alarmed radiological source storage facility constructed and operated in accordance with Nuclear Regulatory Commission criteria and requirements.
- A new picnic area for staff and visitors.
- A mock train station.
- Conversion of an existing on-site building to a Command and Control Center/Very Important Person Monitoring Station for DTRA operations at Kirtland Air Force Base (AFB), with only updated radio and microwave connectivity (including an up to 50-foot tall antenna/communications tower), internal building modifications, and new computers.

- In-kind replacement (i.e., same size and function), over time, of current TEAMS temporary buildings with permanent buildings on or adjacent to the existing building locations, and constructed in accordance with the Kirtland AFB Architectural Compatibility Plan.
- Potential increase in testing and training event personnel levels by up to 50 percent over the current level of about 400 total personnel per year. Ongoing individual events typically involve 10 to 25 people each, and on-site exercises or demonstrations can include up to 120 people. No change in on-site, full-time staff is proposed. There is potential to increase on-site staff during specific events by as much as 10 staff members per day.
- Additional on-site weed control efforts to reduce puncture vine, an invasive plant species, on the Site.

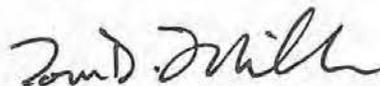
The location of Kirtland AFB, the TEAMS, and existing and proposed facilities are shown on the attached Figures 1, 2, and 3.

This EA is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code §4371 et. seq.), the Council on Environmental Quality regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and the Air Force NEPA regulation (32 CFR Part 989). This EA will evaluate the potential impacts of the proposed action and alternatives, to include the no action alternative, on humans and the natural environment. Additionally, Executive Order (EO) 12372, Intergovernmental Review of Federal Programs, requires federal agencies to solicit other federal agency participation in the NEPA process. Accordingly, I am requesting your participation in the review and comment process. Copies of the Draft EA and the proposed Finding of No Significant Impact are available at <http://www.kirtland.af.mil> under the environmental issues tab.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA; 36 CFR Parts 800.2, 800.3, and 800.4) and EO 13175, the Air Force would like to initiate government to government consultation concerning the proposed project to allow you the opportunity to identify any comments, concerns, and/or suggestions that you might have. Additionally, as we move forward through the process, various draft documents will be forwarded for your review and comment.

Please contact my office at (505) 846-7377 if you would like to meet to discuss the proposed project and/or proceed with Section 106 consultation.

Sincerely



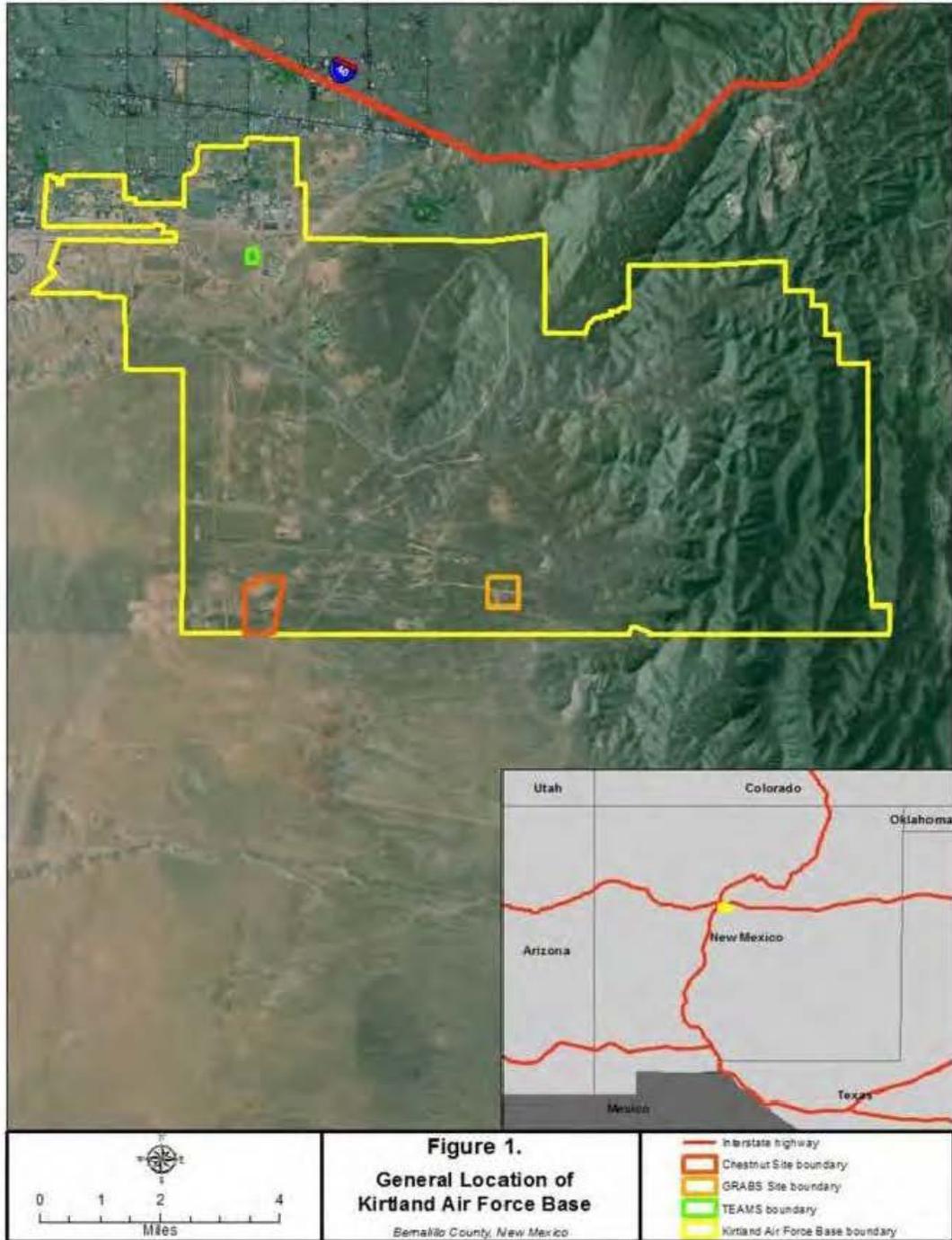
TOM D. MILLER, Colonel, USAF  
Commander

Attachments:

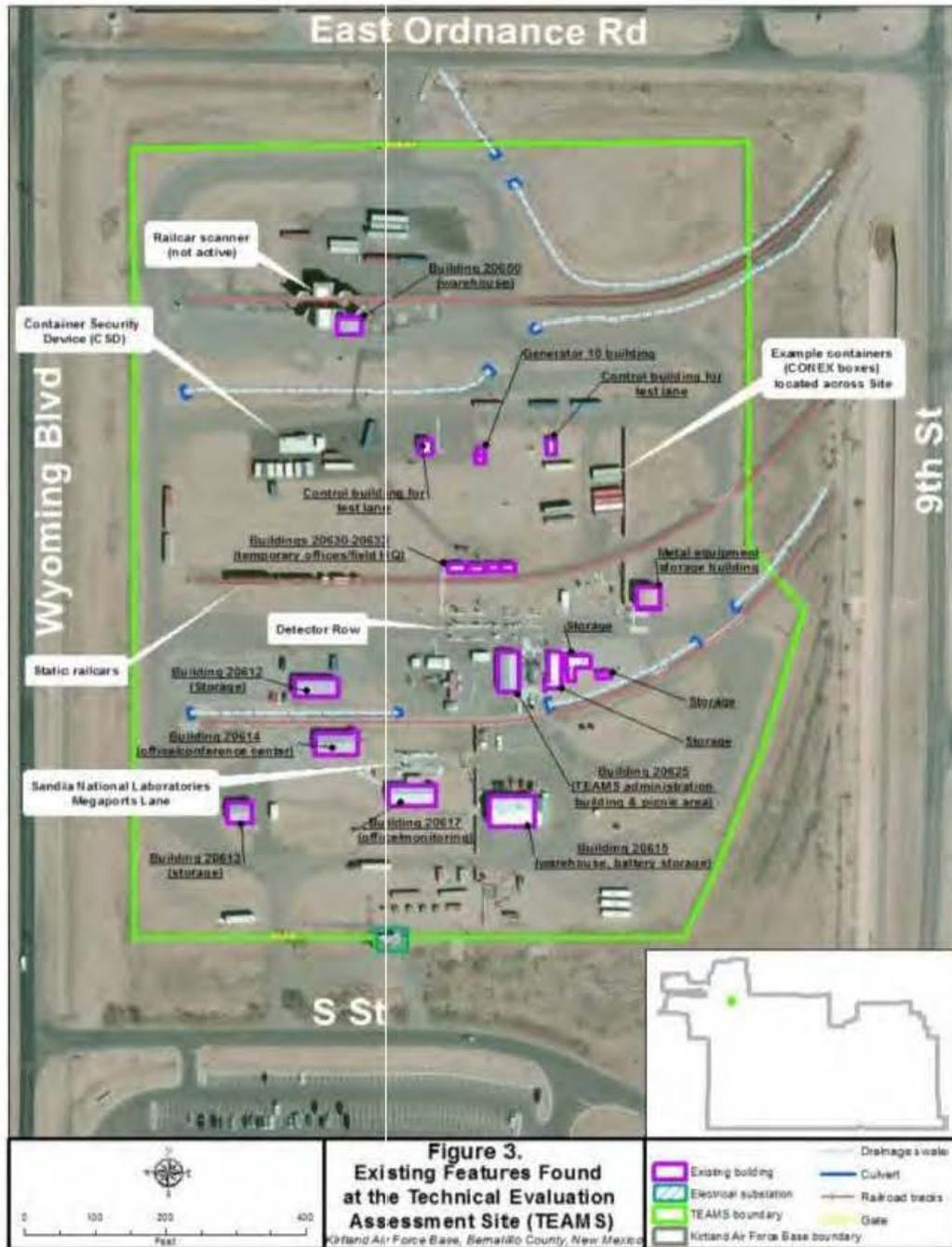
Figure 1. General Location of Kirtland Air Force Base

Figure 2. General Location of the Technical Evaluation Assessment Monitor Site (TEAMS)

Figure 3. Existing Features Found at the Technical Evaluation Assessment Monitor Site (TEAMS)







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**Tribal Public Notice Letter Response**

THE  
NAVAJO  
NATION

BEN SHELLY  
PRESIDENT

Historic Preservation Department, POB 4950, Window Rock, AZ 86515 • PH: 928.871-7198 • FAX: 928.871.7886



REX LEE JIM  
VICE-PRESIDENT

December 10, 2014

Tom D. Miller, Colonel Commander  
Department of the Air Force  
Headquarters 377<sup>th</sup> Air Base Wing  
2000 Wyoming Blvd SE Suite E-3  
Kirtland AFB, NM 87117

Subject: **C# 7012 1010 0000 6719 7956-TECHNICAL EVALUATION ASSESSMENT MONITOR SITE**

Dear: Mr. Miller,

The Historic Preservation Department-Traditional Culture Program, hereafter (HPD-TCP) is in receipt of the letter notification for the proposed enhancements to testing and training capabilities and use, as well as functionality, of the Technical Evaluation Assessment Monitor Site to meet DTRA's mission requirements within the monitor site located in Albuquerque, New Mexico.

After reviewing the information documents provided, HPD-TCP has concluded that this particular initiative **will not have** adverse affects to Navajo Traditional Cultural Properties. HPD-TCP on behalf of the Navajo Nation has no concerns at this time.

If the proposed application inadvertently discovers habitation sites, plant gathering areas, human remains and objects of cultural patrimony, HPD-TCP request that we be notified respectively in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA). *(The Navajo Nation claims cultural affiliation to all Anasazi people (periods from Archaic to Pueblo IV) of the southwest. The Navajo Nation makes this claim through Navajo oral history and ceremonial history, which has been documented as early as 1880 and taught from generation to generations).*

The HPD-TCP appreciates the Department of the Air Force's consultation efforts regarding this document. Should you have any additional concerns and/or questions do not hesitate to contact me electronically at [tony@navajohistoricpreservation.org](mailto:tony@navajohistoricpreservation.org) or telephone at 928-871-7750.

Sincerely,

A handwritten signature in black ink, appearing to read "Tony H. Joe, Jr.".

Tony H. Joe, Jr., Supervisory Anthropologist  
Section 106 Consultation  
Traditional Culture Program  
Historic Preservation Department

TCP File: 14-562

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## **APPENDIX C**

### **AIR QUALITY SUPPORTING DOCUMENTATION**



## Appendix C

### Air Quality Supporting Documentation

**Calculates Air Emissions from Prescribed Burning**

Emission Factors from AP-42, Chapter 13.1	PM10 Source: (1)	PM2.5 Source: (2)	CO Source: (1)	VOC Source: (2)	NOX Source: (3)
	(g/kg)	(g/kg)	(g/kg)	(g/kg)	(g/kg)
Emission Factor	13.0	13.0	101.0	6.9	4.0

Sources:

- 1 = USEPA 1996. AP-42. Wildfires and Prescribed Burning. Table 13.1-4. Page 13.1-10. Pacific Southwest region, Average for the region.
- 2 = USEPA 1996. AP-42. Wildfires and Prescribed Burning. Table 13.1-3. Page 13.1-8. Sagebrush, Fire phase.
- 3 = USEPA 1996. AP-42. Wildfires and Prescribed Burning. Page 13.1-6. Paragraph 3.

Emissions of sulfur oxides are negligible

Total area to be burned (acres/year): 1,000 Assumption based on likely conditions  
 Acres in a hectare: 2.47  
 Total area to be burned (hectare/year): 404.69

Mass of fuel consumed per hectare (kg/hectare): 22,000 Source: USEPA 1996. AP-42. Wildfires and Prescribed Burning. Table 13.1-1. Page 13.1-2 Region 3: Southwestern.

Yearly Emissions	PM10	PM2.5	CO	VOC	NOX
grams per year	115,740,272.4	115,740,272.4	899,212,885.2	61,431,375.3	35,612,391.5

Grams in a Ton: 907,185

Yearly Emissions	PM10	PM2.5	CO	VOC	NOX
tons per year	127.6	127.6	991.2	67.7	39.3

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