

*Final*

**FINDING OF NO SIGNIFICANT IMPACT  
FOR THE ENVIRONMENTAL ASSESSMENT ADDRESSING IMPLEMENTATION  
OF THE INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN  
FOR  
KIRTLAND AIR FORCE BASE**



**September 2014**

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## FINAL

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)**  
**ADDRESSING IMPLEMENTATION OF THE**  
**INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN FOR**  
**KIRTLAND AIR FORCE BASE**

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## Introduction

The U.S. Air Force (USAF) has recently updated the Integrated Natural Resources Management Plan (INRMP) for Kirtland Air Force Base (AFB). The INRMP provides natural resources management strategies for Kirtland AFB. The USAF prepared the Environmental Assessment (EA) to identify and evaluate potential environmental impacts of implementing the updated INRMP at Kirtland AFB. The EA was prepared in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [U.S.C.] §§4321–4347), as amended, and the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations Parts 1500–1508). The INRMP is consistent with the Sikes Act Improvement Act of 1997 (SAIA), as amended through 2010 (16 U.S.C. §§670a et seq.), which requires the preparation, implementation, update, and review of an INRMP for each military installation in the United States and its territories with significant natural resources.

Based on the analysis contained in the *Environmental Assessment Addressing Implementation of the Integrated Natural Resources Management Plan for Kirtland Air Force Base*, which is herewith incorporated by reference, the USAF has determined that the Proposed Action has the potential to result in less than significant adverse environmental impacts.

## 1. Description of Proposed Action and Alternatives

**Proposed Action.** The USAF proposes to conduct integrated ecosystem management of natural resources at Kirtland AFB under the updated INRMP. The Proposed Action is to implement the INRMP, which is consistent with the SAIA (as amended). The updated INRMP would be reviewed annually and updated as needed to maximize its usefulness to installation natural resources personnel.

The Proposed Action includes continuing some of Kirtland AFB's existing natural resources management practices along with several new practices to include prairie dog management, nuisance management, wildland fire management, golf course environmental management, management of sick and injured wildlife, and burrowing owl management. All management practices would be integrated and implemented in the context of the installation's mission support needs and regional setting, including general planning, comprehensive range planning, cultural resources management planning, Bird/Wildlife Aircraft Strike Hazard planning, and pest management planning.

In addition to the Proposed Action, the No Action Alternative of not implementing the updated INRMP was analyzed in the EA.

### 1.1 Alternatives Considered but Eliminated from Detailed Analysis

A compliance-driven management alternative to the Proposed Action was initially considered, which would take a minimal approach to management and only manage natural resources components that are required by laws or regulations. Under this alternative, an ecosystem-based approach would not be

implemented; rather, management actions would only be implemented if there were a possibility of violating a law, such as the Clean Water Act or Endangered Species Act (ESA). While this alternative would make it unlikely for Kirtland AFB to receive a notice of violation for noncompliance with natural resources regulations, it would not comply with the spirit of the SAIA for natural resources management. The SAIA requires that the INRMP be developed to ensure that the management approach for resources is ecosystem-based, and, therefore, often requires more than just compliance. According to the SAIA, the vision of an installation INRMP is to ensure the sustainability of all ecosystems within and near the installation, and to ensure a no net loss of the capability of the installation to support the military mission. To meet the intent of the SAIA, the Department of Defense (DOD) adopted an ecosystem-based management approach as the basis for future management of DOD lands and waters through applying the principles of adaptive management and through collaborating with internal and external parties (DOD Instruction 4715.03).

## 2. Environmental Analysis

The following summarizes the results of the EA.

**Air Quality.** Short-term, moderate, adverse impacts on air quality would result from the prescribed burns; however, these impacts would not be significant. The prescribed burns would generate emissions of criteria air pollutants directly from the combustion of vegetation. The prescribed burns are assumed to occur annually and burn a maximum of 1,000 acres each year. The estimated annual air emissions would be below all applicable significance criteria. Per the Albuquerque-Bernalillo County Air Quality Control Board and 2011.21 New Mexico Administrative Code, any person who plans to conduct open burning shall obtain all applicable permits from Albuquerque Environmental Health Department prior to burning. Open burning shall be suspended during declared “no burn periods” during the winter pollution advisory season or when an air pollution health alert is issued. Prescribed burns would be conducted in accordance with a smoke management program. Such a program would include best management practices (BMPs) and environmental-control measures to minimize the air quality impacts from the prescribed burns. The smoke management program must meet the requirements of the U.S. Environment Protection Agency’s (USEPA) Interim Air Quality Policy on Wildland and Prescribed Fires or an equivalent replacement USEPA policy and Bernalillo County Air Quality Control Board requirements for prescribed burns.

The Proposed Action would not change the number of personnel or vehicles accessing the installation, change stationary source air emissions, or require the operation of construction and demolition equipment. Therefore, air emissions would not be produced from any other sources under the Proposed Action.

**Geology and Soils.** Short-term, minor, adverse impacts on soil resources could occur with habitat improvement activities. Implementation of certain projects described in the INRMP could result in minor, but temporary, soil disturbance; however, these projects would be beneficial in the long term. Some mission activities result in soil disturbance, which could be minimized through seeding and revegetation. As part of the Grounds Maintenance and Land Management objects and projects, Kirtland AFB is currently updating the installation’s natural resources inventory, which includes identifying areas of erosion and areas in need of revegetation. Monitoring of soil conditions at Kirtland AFB to identify potential problem areas, the implementation of conservation measures in areas where exposure of soils is necessary, and, when possible, the avoidance of activities likely to result in erosion would minimize potential impacts on the soil resources and result in a reduction in erosion at Kirtland AFB.

Additionally, the Kirtland AFB Land Management Plan would be reviewed and updated, as necessary, as part of the INRMP. The Land Management Plan addresses land management practices that protect



natural resources and minimize impacts from military activities. By implementing an effective soil erosion and sedimentation program, impacts on geologic resources and soils associated with erosion and sedimentation on Kirtland AFB would be minimized. In the long term, implementation of the INRMP would increase soil stabilization.

**Water Resources.** Long-term, beneficial impacts on surface waters would be expected as a result of the Proposed Action. As part of the Water Resources Protection objectives and projects, the minimization of fertilizer and herbicide use would result in beneficial effects by reducing nonpoint source impacts on surface water resources. The long-term reduction of soil erosion could reduce sedimentation of water resources on the installation. In addition, repair and conversion of guzzlers could decrease or eliminate degradation of the springs that provide water to the guzzlers.

Long-term, beneficial impacts on wetlands would be expected as a result of the Proposed Action. As part of the Wetland Protection objectives and projects, the installation would continue to restore and enhance the Coyote Springs Wetland Complex. The noxious weed inventory and management plan could work toward elimination of salt cedars and other species that adversely impact area wetlands. Removal of salt cedars from the Coyote Springs wetland would increase the amount of water available to the wetland. Update of the wetland delineation for Kirtland AFB to reflect current conditions would also benefit the installation.

No impacts on floodplains would be expected as a result of the Proposed Action.

**Biological Resources.** Long-term, beneficial impacts on wildlife species and their habitat would be expected. Several projects described in the INRMP consist of conducting surveys or inventories of the installation's wildlife. Information obtained from these efforts would help installation personnel properly manage wildlife resources. Assessment of wildlife populations at Kirtland AFB (e.g., bats, birds, predators, and herptiles) would provide a baseline that could be used in tracking conditions and trends, which would allow management practices to be applied where and when needed. As part of the Fish and Wildlife objectives and projects, completion of Coyote Springs Restoration Phase II and the revegetation action plans would improve the installation's vegetation. Other projects, such as the baseline natural resources inventory, noxious weed inventory and management plan, wetland flora inventory, and Phase II of the vegetation manual would provide Kirtland AFB personnel with information that would facilitate proper management of installation vegetation. Implementation of the Proposed Action would result in conservation of native habitat and the reestablishment of native vegetation would result in the protection of habitat for wildlife species.

Short-term, minor, adverse impacts on wildlife habitat could occur with the habitat improvement activities; however, these projects would benefit wildlife species occupying those areas in the long term. Implementation of certain projects described in the INRMP (e.g., prairie dog relocation and habitat enhancement, brush control, road closures, bike trail) could result in minor, but temporary, disturbance to vegetation. In the long term, however, implementation of the INRMP would result in improved habitat conditions. Raptor-proofing power poles would displace the raptors but ultimately reduce raptor mortality. Brush control may adversely impact some animals, depending upon the role of brush in their habitat.

Long-term, beneficial impacts on all special status species, including listed species, candidate species, and species of concern, at the installation would be expected. Implementation of the Proposed Action would provide protection and management for species not protected by the ESA (e.g., burrowing owl, mountain plover, gray vireo). Implementation of formal management plans and routine assessment and monitoring for these special status species provides a method for protecting these species and provides a baseline of data that could be used to prioritize projects and identify the most efficient allocation of resources.

**Safety.** Overall, the long-term safety impacts of implementing the Proposed Action would be beneficial. Short-term, negligible to minor, adverse impacts could be expected while conducting certain activities under the Proposed Action. Increased risks are associated with relocating, tagging, collaring, and tracking of wildlife; however, the specialists involved are trained and certified by the U.S. Department of Agriculture in how to conduct these activities in a safe manner. All prescribed burns would be conducted by installation firefighting personnel and activities would be coordinated through the Controlled Firing Area Committee to ensure the safety of firefighters with respect to mission activities. Brush control would reduce the potential for uncontrolled wildfires, which would also improve safety on the installation resulting in a long-term, beneficial impact.

Long-term, moderate, beneficial impacts could be expected by relocating prairie dogs from active areas of the installation. Prairie dogs would be separated from areas with high concentration of human activities to reduce the risk of trip and fall hazards from their burrows, of infection and disease (i.e., rabies), and of bites to children playing nearby.

**Socioeconomics and Environmental Justice.** Long-term, negligible, beneficial impacts on socioeconomics could be expected from implementation of the Proposed Action. The Proposed Action would include the addition of two Conservation Law Enforcement Officers to patrol the Withdrawn Areas on the installation for trespassers and poachers of wildlife and cultural resources. Implementation of the Proposed Action would have no impacts on environmental justice and protection of children. The Proposed Action would not create any advantage or disadvantage for any group or individual, and is not expected to create disproportionately high or adverse human health or environmental effects on children or on minority or low-income populations or communities at or surrounding Kirtland AFB.

**BMPs/Mitigation.** BMPs associated with implementing the Proposed Action are discussed throughout the EA. Potential BMPs and environmental-control measures associated with a smoke management program could include restricting burning on days with poor air quality, limiting the amount of land burned, and reducing the frequency of burns to the minimum necessary to meet objectives. Management measures established to protect or enhance aquatic and riparian habitats would include limiting pesticide and fertilizer use and minimizing erosion and sedimentation.

### **3. Regulations**

The Proposed Action would not violate federal, state, or local environmental regulations.

### **4. Commitment to Implementation**

The USAF affirms their commitment to implement this Proposed Action in accordance with NEPA. Implementation is dependent on funding. The USAF would ensure that adequate funds are requested in future years' budgets to achieve the goals and objectives set forth in this EA.

### **5. Public Review and Comment**

The Draft EA was available for public review and comment from 28 April to 28 May 2014 at Central New Mexico Community College, Montoya Library, 4700 Morris NE, Albuquerque, New Mexico 87102 and San Pedro Library, 5600 Trumbull Avenue SE, Albuquerque, New Mexico 87108, and <http://www.kirtland.af.mil/>. No public comments were received during this review period. Four responses were received from agencies and their comments were incorporated into the analysis of potential environmental impacts performed as part of this EA, where applicable.

## 6. Finding of No Significant Impact

Based on the findings of the EA and as stated above, the USAF believes that the Proposed Action would not generate significant controversy or have a significant impact on the quality of the human or natural environment. The Draft EA and proposed Finding of No Significant Impact (FONSI) were made available for a 30-day public review and comment period. After reviewing the comments, if the final determination is that the Proposed Action would have no significant impact, the FONSI will be signed and the action will be implemented. An Environmental Impact Statement will not be prepared. This analysis fulfills the requirements of NEPA and the CEQ Regulations.

6 Sep 14  
Date

TOM D. MILLER  
TOM D. MILLER, Colonel, USAF  
Commander  
Kirtland Air Force Base

Attachment: Environmental Assessment





*Final*

**ENVIRONMENTAL ASSESSMENT**  
**ADDRESSING IMPLEMENTATION**  
**OF THE INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN**  
**FOR**  
**KIRTLAND AIR FORCE BASE**



**September 2014**

## ACRONYMS AND ABBREVIATIONS

377 ABW	377th Air Base Wing	NO <sub>2</sub>	nitrogen dioxide
AEHD	Albuquerque Environmental Health Department	NO <sub>x</sub>	nitrogen oxides
AFB	Air Force Base	NPDES	National Pollutant Discharge Elimination System
AFI	Air Force Instruction	NRCS	Natural Resources Conservation Service
AQCB	Air Quality Control Board	NSR	New Source Review
AQCR	Air Quality Control Region	O <sub>3</sub>	ozone
BASH	Bird/Wildlife Aircraft Strike Hazard	OSH	occupational safety and health
BMP	best management practice	OSHA	Occupational Safety and Health Administration
CAA	Clean Air Act	Pb	lead
CEQ	Council on Environmental Quality	PIF	Partners in Flight
CFAC	Controlled Firing Area Committee	PIT	Passive Integrated Transponder
CFR	Code of Federal Regulations	PM <sub>2.5</sub>	particulate matter equal to or less than 2.5 microns in diameter
CGP	Construction General Permit	PM <sub>10</sub>	particulate matter equal to or less than 10 microns in diameter
CO	carbon monoxide	ppb	parts per billion
CO <sub>2</sub>	carbon dioxide	PPE	personal protective equipment
CWA	Clean Water Act	ppm	parts per million
DOD	Department of Defense	PSD	Prevention of Significant Deterioration
DOE	Department of Energy	SAAQS	State Ambient Air Quality Standards
EA	Environmental Assessment	SAIA	Sikes Act Improvement Act
ELG	Effluent Limitations Guideline	SDWA	Safe Drinking Water Act
EO	Executive Order	SHPO	State Historic Preservation Office
EOD	Explosive Ordnance Disposal	SIP	State Implementation Plan
ESA	Endangered Species Act	SO <sub>2</sub>	sulfur dioxide
FPPA	Farmland Protection Policy Act	SOF	Special Operations Force
GHG	greenhouse gas	TMDL	Total Maximum Daily Load
GIS	Geographic Information System	TNW	Traditional Navigable Water
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning	tpy	tons per year
INRMP	Integrated Natural Resources Management Plan	µg/m <sup>3</sup>	micrograms per cubic meter
JD	jurisdictional determination	USACE	U.S. Army Corps of Engineers
MAPS	Monitoring Avian Productivity and Survivorship	USAF	U.S. Air Force
MBTA	Migratory Bird Treaty Act	U.S.C.	United States Code
mg/m <sup>3</sup>	milligrams per cubic meter	USDA	U.S. Department of Agriculture
MOU	Memorandum of Understanding	USEPA	U.S. Environmental Protection Agency
MSA	Metropolitan Statistical Area	USFS	U.S. Forest Service
NAAQS	National Ambient Air Quality Standards	USFWS	U.S. Fish and Wildlife Service
NEPA	National Environmental Policy Act	VOC	volatile organic compound
NMDGF	New Mexico Department of Game and Fish	WNS	White-Nose Syndrome
NOA	Notice of Availability		

*Final*

**ENVIRONMENTAL ASSESSMENT**

**ADDRESSING**

**IMPLEMENTATION OF THE INTEGRATED NATURAL**

**RESOURCES MANAGEMENT PLAN**

**FOR**

**KIRTLAND AIR FORCE BASE**

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**377th Air Base Wing**  
**Kirtland Air Force Base, New Mexico**

**SEPTEMBER 2014**



**COVER SHEET**

**FINAL**  
**ENVIRONMENTAL ASSESSMENT**  
**ADDRESSING**  
**IMPLEMENTATION OF THE INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN**  
**FOR KIRTLAND AIR FORCE BASE**

**Proposed Action:** The U.S. Air Force (USAF) proposes to implement the Updated 2012 Integrated Natural Resources Management Plan (INRMP) for Kirtland Air Force Base (AFB)

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

**Responsible Agency:** USAF, 377th Air Base Wing (377 ABW), Kirtland AFB

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

**Abstract:** The USAF recently updated the INRMP for Kirtland AFB. The updated INRMP will provide natural resources management strategies for Kirtland AFB. The Proposed Action is to modify the existing natural resources management plans and practices at Kirtland AFB by implementing an updated INRMP consistent with the military-essential use of the installation and its land and the goals and objectives established in the Sikes Act Improvement Act of 1997, as amended. The analysis in the EA considers the Proposed Action and the No Action Alternative, and will aid in determining whether a Finding of No Significant Impact can be prepared or whether an Environmental Impact Statement is needed.

**Written comments** on this EA should be submitted to the Kirtland AFB NEPA Program Manager by mail to 377 MSG/CEIE, 2050 Wyoming Boulevard SE, Suite 116, Kirtland AFB, NM 87117-5270, or by email to *nepa@us.af.mil*.

**Privacy Advisory**

Your comments on this document are requested. Letters or other written comments will be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the EA.





**FINAL  
ENVIRONMENTAL ASSESSMENT ADDRESSING  
IMPLEMENTATION OF THE INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN  
FOR KIRTLAND AIR FORCE BASE**

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# 1. Purpose of and Need for the Action

## 1.1 Introduction

This Environmental Assessment (EA) is intended to be an appendix to the *Integrated Natural Resources Management Plan For Kirtland Air Force Base (Final Year Revision-October 2012)*, hereafter referred to as the Integrated Natural Resources Management Plan (INRMP). This EA provides an analysis of the environmental impacts of implementing the updated INRMP. 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.

The U.S. Air Force (USAF) has recently updated the INRMP for Kirtland AFB. The INRMP provides natural resources management strategies for Kirtland AFB (KAFB 2012). The Proposed Action is to implement the updated INRMP. The INRMP is consistent with the Sikes Act Improvement Act of 1997 (SAIA), as amended (16 United States Code [U.S.C.] §§670a et seq.), which requires the preparation, implementation, update, and review of an INRMP for each military installation in the United States and its territories with significant natural resources. The purpose of this EA is to evaluate potential environmental impacts associated with each alternative.

Federal agencies are required to consider the environmental consequences of proposed actions in the decisionmaking process under the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. §§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 USAF NEPA-implementing regulations (32 CFR Part 989, *Environmental Impact Analysis Process*), and Department of Defense (DOD) Instruction 4715.9, *Environmental Planning Analysis*. The EA has been prepared in accordance with these laws, regulations, and agency instructions and serves as a planning document to evaluate environmental impacts, develop alternatives and mitigation measures, and allow for agency and public participation.

## 1.2 Location of the Installation

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

## 1.3 Installation History and Mission

A detailed description of the installation history and mission at Kirtland AFB are included in Sections 3.2 and 3.3 of the INRMP, respectively.

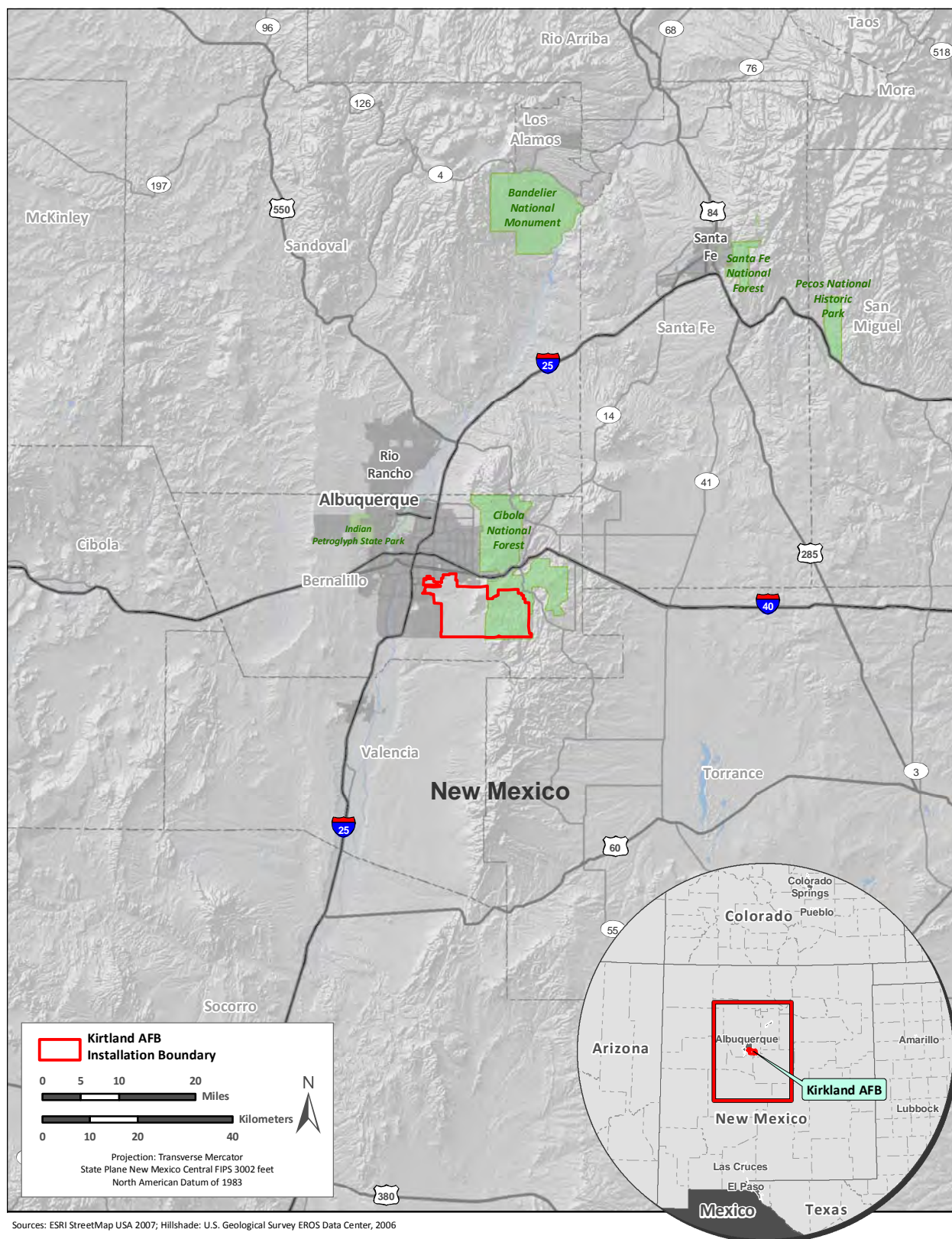


Figure 1-1. Kirtland AFB Location Map

## 1.4 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to implement the projects and plans identified in the INRMP. The Proposed Action is needed to comply with the SAIA, as amended, which governs the planning and implementation of conservation programs on military installations. According to the SAIA, the purpose of a military conservation program is conservation and rehabilitation of natural resources; sustainable multipurpose use of those resources; and public access to military lands, subject to safety requirements and military security (16 U.S.C. §§670a et seq.). Moreover, the conservation program must be consistent with the mission-essential use of the installation and its lands and cause a no net loss of military land use. Both the INRMP and the natural resources program that it supports must meet the guidance and regulations provided in DOD Instruction 4715.03, *Environmental Conservation Program*, and Air Force Instruction (AFI) 32-7064, *Integrated Natural Resources Management*. These guidance documents collectively require a plan and management approach consistent with mission support, multipurpose use, integration, ecosystem or landscape-level management, and environmental compliance and stewardship.

The updated INRMP was developed in cooperation with the U.S. Fish and Wildlife Service (USFWS), the New Mexico Department of Game and Fish (NMDGF), and the U.S. Forest Service (USFS). The updated INRMP reflects the mutual agreement of all parties concerning conservation, protection, and management of natural resources on Kirtland AFB. Finally, the SAIA requires that the INRMP be reviewed annually with the USFWS and NMDGF as to its operation and effect.

## 1.5 Scope of the EA

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**. In accordance with CEQ regulations implementing NEPA (40 CFR §1502.14), the No Action Alternative will be analyzed to provide a baseline against which the environmental impacts of implementing the proposed alternatives addressed can be compared. This EA identifies appropriate mitigation measures and best management practices (BMPs) not already included in the Proposed Action 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: air quality, geology and soils, water resources, biological resources, safety, and socioeconomics and environmental justice. The characterization of the affected environment, or baseline environmental condition, is discussed in **Section 3**; however, per CEQ regulations (40 CFR §1501.7 [a][3]), only those resources that apply to the Proposed Action are analyzed. An analysis of potential direct, indirect, and cumulative impacts on Kirtland AFB associated with the Proposed Action and No Action Alternative is discussed in **Section 4**.

This EA is organized into six sections and three 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, including the No Action Alternative. **Section 3** describes the existing conditions of the potentially affected environment. **Section 4** identifies the environmental consequences of implementing all reasonable alternatives, including direct, indirect, and cumulative impacts. **Section 5** provides the names of those who prepared the EA. **Section 6** lists the references used to support the analyses.

### 1.5.1 Issues and Concerns Eliminated from Detailed Study

The Air Force initially considered a broad range of potential environmental impacts associated with the implementation of the Proposed Action and alternatives. The scope of the Proposed Action and



alternatives is limited, however, and does not entail construction, demolition, land use changes, or other activities evaluated in NEPA analysis that routinely lead to environmental impacts. Because of the limited nature of activities being proposed, the potential for environmental impacts on many of the environmental resource areas normally evaluated in an EA in detail, does not exist for this proposal. In accordance with CEQ guidance, all environmental resources were initially considered, but some were subsequently eliminated from further consideration in the EA if a determination was made that there was no potential for impacts. The following issues and concerns were determined to have limited potential for environmental impacts and therefore are not being evaluated in this EA:

- *Airspace Management.* Proposed project activities would not result in any obstructions to airspace or hazards to airspace management at Kirtland AFB or the Albuquerque International Sunport.
- *Land Use.* Because there are no activities associated with the Proposed Action that would result in changes to current land use designations at the installation and no land use changes due to increasing wildlife areas, land use was eliminated from further analysis (KAFB 2011).
- *Noise.* The Proposed Action would not include noise-generating activities that would affect noise levels on or adjacent to Kirtland AFB.
- *Cultural Resources.* There have been more than 150 cultural resources-related projects undertaken at Kirtland AFB. These projects have resulted in the identification of 661 archaeological sites and the evaluation of more than 2,000 facilities for the National Register of Historic Places. Because implementation of the INRMP would be conducted in compliance with the Integrated Cultural Resources Management Plan for Kirtland AFB, any ground-disturbing activities would be cleared for cultural resources concerns prior to implementation. Therefore, no impacts on cultural resources would be expected as a result of the Proposed Action.
- *Transportation and Infrastructure.* Proposed project activities would not result in any changes to the existing infrastructure or overburden the existing transportation system on the installation.
- *Visual Resources.* Implementation of the Proposed Action would not adversely change views of or from the installation.
- *Hazardous Materials and Wastes.* Although proposed project activities could include the use of pesticides and herbicides, they would continue to be handled by certified pest management personnel in accordance with all federal and local laws and regulations including the Resource Conservation Recovery Act; Federal Insecticide, Fungicide, and Rodenticide Act; Toxic Substances Control Act, and AFI 32-1053, *Integrated Pest Management Program*. Integrated pest management techniques would continue to be implemented to minimize the use of pesticides at Kirtland AFB.
- *Public Services.* The Proposed Action would not result in changes in the use of or demand for public services (e.g., schools, police, fire departments, emergency medical services) on or adjacent to the installation.

## 1.6 Environmental Laws, Regulations, and Executive Orders

To comply with NEPA (Public Law 91-190, 42 U.S.C. §§4321 et seq.), the planning and decisionmaking 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; rather, it addresses them collectively in an analysis, which enables decisionmakers 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 practice so that all such procedures run concurrently rather than consecutively” (40 CFR §1500.2).

As required in 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 (see **Table 1-1**).

**Table 1-1. Sample List of Coordination and Permits Associated with the Proposed Action**

Agency	Permit/Approval/Condition
USFWS	<ul style="list-style-type: none"> <li>• Endangered Species Act (ESA) Section 7 Coordination</li> <li>• Migratory Bird Treaty Act (MBTA) Coordination</li> </ul>
U.S. Army Corps of Engineers (USACE)	<ul style="list-style-type: none"> <li>• Clean Water Act (CWA) Section 404 Permit</li> </ul>
U.S. Environmental Protection Agency (USEPA)	<ul style="list-style-type: none"> <li>• National Pollutant Discharge Elimination System (NPDES) permit</li> </ul>
Albuquerque Environmental Health Department (AEHD) Air Quality Division	<ul style="list-style-type: none"> <li>• Applicable air quality permits</li> <li>• Title V Permit</li> </ul>

**Appendix A** contains summaries of the environmental laws, regulations, and EOs that might apply to this project. 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.

## 1.7 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. AFI 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning (IICEP)*, requires the USAF to implement 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 the USAF is preparing an EA to evaluate implementation of the updated INRMP for Kirtland AFB. 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. One response letter was received from the New Mexico State Historic Preservation Office (SHPO) stating that it is their opinion that the implementation of the INRMP would not have an effect on cultural resources; however, the INRMP is a planning document that is not recognized by the Advisory Council on Historic Preservation and has no role in the installation’s responsibility to consult with the SHPO under Section 106 of the National Historic Preservation Act. All undertakings that fall under the INRMP would be reviewed by the cultural resources manager at Kirtland AFB, as stated in **Section 1.5.1**. The cultural resources manager would consult with the SHPO if necessary. A copy of this letter is provided in **Appendix B**.

Through the IICEP process, Kirtland AFB 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 IICEP 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 were provided an opportunity to comment on the Proposed Action. All IICEP, tribal consultation, and public involvement materials related to this EA is included in **Appendix B**. A listing of the agencies, tribes, and other stakeholders that were contacted is provided in **Appendix B**.

Four response letters were received during the IICEP process. Responses were received from the Hopi Tribe, the Mid-Region Council of Governments, the New Mexico Environment Department, and the New Mexico SHPO. The Hopi Tribe stated that the Hopi Cultural Preservation Office is interested in consulting on any proposal that has the potential to adversely affect prehistoric sites and if prehistoric sites are identified that will be adversely affected by project activities, they request the USAF provide copies of the cultural resources survey report of the area of potential effect and any proposed plans for review and comment. This is consistent with **Section 1.5.1** of this EA.

The Mid-Region Council of Governments stated that they do not anticipate any major impacts as a result of the Proposed Action. The New Mexico Environment Department stated that it is unlikely that the implementation of the INRMP would have any adverse impacts on groundwater resources; however, some new practices described in the INRMP may require permit coverage. A Notice of Intent to Discharge form must be submitted for evaluation if the implementation of any management plan would produce a discharge. They further stated that parties involved in the project should be aware of notification requirements for accidental discharges and compliance with the notification and response requirements will further ensure the protection of groundwater quality in the vicinity of the project.

The SHPO again stated that it is their opinion that the implementation of the INRMP would not have an effect on cultural resources; however, the INRMP is a planning document that is not recognized by the Advisory Council on Historic Preservation and has no role in the installation's responsibility to consult with the SHPO under Section 106 of the National Historic Preservation Act. All undertakings that fall under the INRMP would be reviewed by the cultural resources manager at Kirtland AFB, as stated in **Section 1.5.1**. The cultural resources manager would consult with the SHPO if necessary. A copy of the response letters are 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 to the public for a 30-day review period from 28 April to 28 May 2014. The NOA was issued to solicit comments on the Proposed Action and involve the local community in the decisionmaking process. Comments received from the public and other federal, state, and local agencies were addressed in the EA, where applicable.

## 2. Description of the Proposed Action and Alternatives

The NEPA process provides for an evaluation of potential environmental consequences associated with a proposed action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for the proposed action, as defined in **Section 1.4**. In addition, CEQ regulations also specify the inclusion of a No Action Alternative against which potential impacts of the action alternatives can be compared. Reasonable alternatives for the Proposed Action are constrained by environmental laws and regulations, DOD and USAF policies, the nature and extent of existing natural resources, and the specific requirements within the INRMP.

The development of proposed management measures for the INRMP included a screening analysis. Resource-specific alternatives must meet the following screening criteria:

- Compliance with AFI 32-7064, *Integrated Natural Resources Management*
- Consistency with Kirtland AFB's military mission
- Technical and logistical feasibility
- Minimization of environmental impacts
- Cost-effectiveness.

The outcome of the screening analysis led to the development of the Proposed Action, as described in the following paragraphs. Consistent with the intent of NEPA, this screening process focused on identifying a range of reasonable, resource-specific management alternatives and development of a plan that could be implemented for the foreseeable future. This EA will formally address two alternatives: the Proposed Action (i.e., implementation of the updated INRMP) and the No Action Alternative.

### 2.1 Proposed Action

The USAF proposes to conduct integrated ecosystem management of natural resources at Kirtland AFB under the updated INRMP. The Proposed Action is to implement the INRMP, which is consistent with the SAIA, as amended. The updated INRMP would be reviewed annually and updated as needed to maximize its usefulness to installation natural resources personnel.

The Proposed Action includes continuing some of Kirtland AFB's existing natural resources management practices along with several new practices. New practices include prairie dog management, nuisance management, wildland fire management, golf course environmental management, management of sick and injured wildlife, and burrowing owl management. All management practices would be integrated and implemented in the context of the installation's mission support needs and regional setting, including general planning, comprehensive range planning, cultural resources management planning, Bird/Wildlife Aircraft Strike Hazard (BASH) planning, and pest management planning.

In addition to meeting Kirtland AFB's purpose and need, the Proposed Action would have additional benefits, including (1) better integration of the INRMP with other installation planning documents, (2) improved integration of the natural resources program with other Kirtland AFB activities, (3) explicit goals and objectives under which ongoing and future natural resources projects would be implemented, and (4) a systematic approach to integrated natural resources management by documenting present and future program implementation.

### 2.1.1 Goals and Objectives

Kirtland AFB has developed management goals that are, where applicable, consistent with DOD, USAF, and installation policies and guidance on how natural resources should be managed, sustained, and rehabilitated. These goals were formulated from a comprehensive analysis of regulatory requirements, the condition of the natural resources, and consideration of the value of these resources to the people who live and work on the installation. The INRMP goals are as follows:

- **Goal 1:** Comply with SAIA, as amended; AFI 32-7064, *Integrated Natural Resources Management*, as revised; Memoranda of Agreement concerning migratory birds and use of U.S. Geological Survey land; USAF and USFS guidelines for managing natural resources; and other environmental rules, regulations, laws, and procedures.
- **Goal 2:** Manage and protect natural resources in a manner that results in no net loss of the military mission and operational capability at Kirtland AFB.
- **Goal 3:** Conserve and enhance wildlife habitats to maintain and improve the sustainability and natural diversity of ecosystems on Kirtland AFB.
- **Goal 4:** Identify, conserve, and manage, if present, threatened, endangered, and candidate species listed for regulatory protection by federal and state agencies, in addition to critical habitat and wetlands.
- **Goal 5:** Manage wildlife habitat and populations to reduce the potential for bird and wildlife strikes during flying operations.
- **Goal 6:** Increase the awareness, appreciation, and conservation of natural resources on Kirtland AFB.
- **Goal 7:** Manage pests in a manner that reduces impacts on natural resources, watersheds, landscapes, and the installation mission.
- **Goal 8:** Incorporate existing and future Geographic Information System (GIS) information into a database that supports both mission and project planning and Natural Resources Management Program activities.
- **Goal 9:** Support resource conservation through integrated land and ground maintenance programs and plans, when and where possible.
- **Goal 10:** Provide opportunities for enjoyment and appreciation of the natural resources at the installation.

These goals reflect Kirtland AFB's vision for natural resources management for the period 2012 to 2017. Kirtland AFB has developed objectives that support each of these management goals. Objectives are categorized by natural resources management areas. Each goal is supported by one or more objectives. The INRMP also includes specific projects to meet each objective. The proposed projects include both newly proposed initiatives and ongoing initiatives carried over from the previous 5-year INRMP. This range of projects contributes to the objectives and goals for management of Kirtland AFB's natural resources, consistent with DOD and USAF guidance for multipurpose use, ecosystem- and landscape-level management, and support of the military mission. The following list describes the objectives and projects collectively representing the Proposed Action's goals:

#### Geographic Information System Objectives

1. Promote cohesion of GIS data between different GIS departments at Kirtland AFB.

## Fish and Wildlife Objectives

1. Use the Monitoring Avian Productivity and Survivorship (MAPS) Program to conduct long-term land bird surveys.
2. Continue communication between DOD and Department of Energy (DOE) concerning natural resources issues.
3. Continue monitoring predator distribution and populations.
4. Maintain, repair, and install wildlife guzzlers throughout the installation.
5. Identify power lines that pose an electrocution risk to raptors and raptor-proof these structures.
6. Survey for and update the installation's reptile and amphibian inventory.
7. Continue prairie dog relocation from exclusion zones to a relocation site on the installation (see Appendix J of the INRMP for a description of exclusion zones and relocation sites).
8. Update the vegetation manual for the installation by conducting additional flora surveys.
9. Survey the installation bat population for White-Nose Syndrome (WNS).
10. Implement the DOD, DOE, and the city of Albuquerque October 2007 Tijeras Arroyo Wildlife Corridor Memorandum of Understanding (MOU).
11. Implement the DOD and Bat Conservation International MOU.

## Threatened and Endangered Species Objectives

1. Conduct a mountain plover (*Charadrius montanus*) survey every 5 years.
2. Monitor gray vireo (*Vireo vicinior*) populations on the installation.
3. Implement the Gray Vireo Management Plan.
4. Monitor gray vireo nesting success and nest parasitism by brown-headed cowbirds (*Molothrus ater*).
5. Conduct long-term monitoring of the loggerhead shrike (*Lanius ludovicianus*), with emphasis on nesting success and population trends.
6. Continue annual monitoring of nesting burrowing owls (*Athene cunicularia hypugaea*).
7. Implement the Burrowing Owl Management Plan.
8. Continue installing artificial burrows on the installation to replace burrowing owl nesting habitat disturbed by development.
9. Develop and implement management plans for peregrine falcon (*Falco peregrinus*), northern goshawk (*Accipiter gentiles*), Townsend's big-eared bat (*Plecotus townsendii*), slate millipede (*Comanchelus chihuensis*) (if found during surveys), and grama grass cactus (*Schlerocactus papyracanthus*).
10. Conduct long-term monitoring of the desert massasauga (*Sistrurus catenatus spp. edwardsii*), documenting its distribution and population trends on the installation.

## Water Resources Protection Objectives

1. Minimize fertilizer and herbicide use on improved and semi-improved grounds on the installation whenever possible.

### Wetland Protection Objectives

1. Continue Coyote Springs Wetland Complex restoration and enhancement.
2. Identify the function and values, as well as inventory the flora and fauna of the installation's wetlands.
3. Monitor flora and fauna at the Coyote Springs Wetland Complex.

### Grounds Maintenance and Land Management Objectives

1. Implement the Golf Course Management Plan.
2. Review and update the Revegetation Action Plan, as required.
3. Review and update the Land Management Plan, as required.
4. Review and update the Brush Control Plan, as required.
5. Develop a long-term photographic monitoring program documenting changes in landscape and vegetation on the installation.

### Forest Management Objectives

1. Continue consulting with the Sandia Ranger District in joint management of forests in the Withdrawn Areas to restore conditions and reduce fuel loads.
  - 15,891 acres of Cibola National Forest land was withdrawn from public use for military purposes by a series of Public Land orders beginning in the 1940s.

### Wildland Fire Management Objectives

1. Implement the Wildland Fire Management Plan.

### Integrated Pest Management Program Objectives

1. Continue to manage prairie dog (genus *Cynomys*) populations on the installation to minimize BASH potential, damage to infrastructure, and health and safety concerns by following the procedures outlined in Kirtland AFB's Prairie Dog Management and Relocation Plan.
2. Conduct a noxious weed survey to develop a Noxious Weed Management Plan.
3. Implement the installation Pigeon Management Plan to minimize health concerns in aircraft hangars.

### Bird/Wildlife Aircraft Strike Hazard Objectives

1. Continue to monitor and remove prairie dogs from flightline areas to reduce foraging raptors in the area.
2. Maintain the mowing program around the flightline, according to the BASH Management Plan, to reduce attracting prey species for raptors and other wildlife.

### Outdoor Recreation Objectives

1. Educate installation personnel on the locations of running, walking, and biking paths.



## Cultural Resources Protection Objectives

1. Protect cultural resources.

## Enforcement Objectives

1. Ensure that Kirtland AFB security personnel, DOE security personnel, and state agencies work together on wildlife poaching issues.
2. Support a Conservation Law Enforcement Officer Program.
3. Ensure new security personnel are aware that unauthorized feeding of wildlife is prohibited on the installation.

## Public Outreach Objectives

1. Prevent spread of prairie dog colonies off Kirtland AFB.
2. Organize conservation projects with nonprofit organizations and develop a program educating installation personnel about the importance of wetlands and other wildlife species.

### 2.1.2 Proposed Projects

**Table 2-1** identifies the proposed projects listed in the updated INRMP that are designed to meet the goals and objectives listed in **Section 2.1.1**.

## 2.2 No Action Alternative

CEQ regulations specify the inclusion of the No Action Alternative in the alternatives analysis (40 CFR §1502.14). Analysis of the No Action Alternative provides a baseline against which the potential environmental and socioeconomic impacts of the Proposed Action and alternative actions can be compared. Under the No Action Alternative, management of natural resources would continue as characterized in the 2007 Kirtland AFB INRMP. This alternative represents the status quo. Under the No Action Alternative, natural resources management would continue as provided for in the 2007 INRMP.

## 2.3 Alternatives Considered but Eliminated from Detailed Analysis

A compliance-driven management alternative to the Proposed Action was initially considered, which would take a minimal approach to management and only manage natural resources components that are required by laws and regulations. Under this alternative, an ecosystem-based approach would not be implemented; rather, management actions would only be implemented if there were a possibility of a statutory or regulatory violation, such as the CWA or ESA. While this alternative would make it unlikely for Kirtland AFB to receive a notice of violation for noncompliance with natural resources regulations, it would not comply with the spirit of the SAIA, as amended, for natural resources management. The SAIA requires that the INRMP be developed to ensure that the management approach for resources is ecosystem-based, and, therefore, often requires more than just compliance. According to the SAIA, an installation's INRMP should ensure the sustainability of all ecosystems within and near the installation, and no net loss of installation military mission capabilities. To meet the intent of the SAIA, as amended, the DOD adopted an ecosystem-based management process for managing DOD lands and waters, which applies adaptive management and internal and external party collaboration (DOD Instruction 4715.03). Therefore, the compliance-driven management alternative would not meet the purpose and need identified in **Section 1.4**.

**Table 2-1. Proposed Projects for the Kirtland AFB INRMP**

<b>Natural Resources Management Area</b>	<b>Project Description</b>	<b>INRMP Goal(s)</b>	<b>Natural Resources Management Area Objective(s)</b>	<b>Federal, State, DOD or USAF Law, Policy, or Guidance</b>	<b>Priority*</b>	<b>Estimated Schedule</b>	<b>Estimated Cost</b>
<b>Geographic Information System</b>	Communicate with other GIS departments about natural resources data that could be shared between departments.	1, 2, 8	GIS 1	SAIA, ESA, AFI 32-7064	2	Immediate and ongoing	No cost
<b>Fish and Wildlife</b>	Long-term land bird studies have not been conducted at Kirtland AFB. Monitoring avian species would assist natural resources managers in identifying changes to species composition on the installation from military operations and successional changes in the environment. The MAPS bird survey protocol would be used in this project. Once sites (stations) have been chosen, a series of 10 mist nets would be set up in an 8-acre area and worked for 6 hours (starting at sunrise). Captured birds would be banded, recorded, and released. This would be repeated once every 10-day period. Data sheets would be kept documenting information such as recaptured birds, age, sex, and species. Data collected would be provided to the Institute for Bird Populations. This type of project requires 10 to 20 years before any trend analysis could be performed.	1, 2, 4, 8	Fish and Wildlife 1	SAIA, MBTA, AFI 32-7064	1	Immediate and ongoing	\$10,000 per station
	Continue DOD and DOE monthly meetings to discuss natural resources issues and share relevant information.	1, 2, 3, 4, 10	Fish and Wildlife 2	SAIA, ESA, MBTA, AFI 32-7064	2	Immediate and ongoing	No cost
	A variety of predators occur on Kirtland AFB including mountain lions, bobcats, bears, ringtail cats, skunks, badgers, foxes, and coyotes. Knowing the distribution of these predators would assist natural resources personnel in managing these species. Methods for surveying predator distribution and populations include remote sensing camera stations, scent tracking stations, scat transects, predator calling, and telemetry collars.	1, 2, 3, 8	Fish and Wildlife 3	SAIA, ESA, AFI 32-7064	1	2015	\$65,000
	Maintain and repair wildlife guzzlers on the installation on an as-needed basis. Install additional wildlife guzzlers in areas that lack freestanding water for much of the year.	1, 2, 3, 10	Fish and Wildlife 4	SAIA, ESA, MBTA, AFI 32-7064	1	2015	\$12,000 each new guzzler installed

Natural Resources Management Area	Project Description	INRMP Goal(s)	Natural Resources Management Area Objective(s)	Federal, State, DOD or USAF Law, Policy, or Guidance	Priority*	Estimated Schedule	Estimated Cost
<b>Fish and Wildlife (continued)</b>	Identify power poles on the installation that pose an electrocution risk to raptors. Identified poles would be fitted with raptor-proofing structures to prevent raptors from perching on them.	1, 2, 4, 8	Fish and Wildlife 5	SAIA, MBTA, AFI 32-7064	1	Immediate and ongoing	\$65,000
	Two reptile and amphibian surveys have been completed for the installation. However, due to the secretive nature of many of these species, only a single specimen for some species has been documented. Other species, such as the plains black-headed snake (none have been documented on the installation), are relatively common in the area but are generally found only under specific environmental conditions. Therefore, multiple surveys are required to understand species occurrences and distribution in an area. Survey methods would include surveying roads, searching under appropriate structures, drift fencing, dip netting, and audible surveys for croaking toads/frogs at breeding pools.	1, 2, 3, 4, 8	Fish and Wildlife 6	SAIA, ESA, AFI 32-7064	1	Immediate and ongoing	\$35,000
	A prairie dog relocation program has been developed for the installation. Capture of prairie dogs would continue from exclusion zones to a relocation site on the installation, as identified in the plan. Protocol established in the relocation program would be followed.	1, 2, 4, 5, 6, 7, 9, 10	Fish and Wildlife 7	SAIA, AFI 32-7064	1	Immediate and ongoing	No cost
	Update the 2004 Kirtland AFB Vegetation Manual. Digital photographs of new species not already covered in the manual shall be taken and new species would be identified and described.	1, 2, 4, 6, 8, 9	Fish and Wildlife 8	AFI 32-7064	1	Immediate and ongoing	\$35,000
	During mist-netting of bats, installation natural resources personnel would look for signs of WNS. If there is reason to believe a bat is infected with WNS, samples would be taken and sent to the lab for identification. If a dead bat is found, it would also be sent to the lab and tested for the WNS virus.	1, 2, 3	Fish and Wildlife 9	SAIA, ESA, AFI 32-7064	1	Immediate and ongoing	\$35,000

Natural Resources Management Area	Project Description	INRMP Goal(s)	Natural Resources Management Area Objective(s)	Federal, State, DOD or USAF Law, Policy, or Guidance	Priority*	Estimated Schedule	Estimated Cost
<b>Fish and Wildlife (continued)</b>	The DOD signed an MOU in October 2007 with the DOE and the city of Albuquerque. This MOU provides cooperation and coordination between these two agencies and the city of Albuquerque in keeping the Tijeras Arroyo maintained as a Wildlife Corridor.	1, 2, 3, 4	Fish and Wildlife 10	SAIA, AFI 32-7064	2	Immediate and ongoing	No cost
	The DOD signed an MOU with Bat Conservation International. This MOU provides cooperative coordination between these two agencies in preserving bat species on DOD lands. Kirtland AFB, to the best of its ability, shall conserve bat species on the installation with technical assistance, support, and training from Bat Conservation International.	1, 2, 3, 4, 8, 9, 10	Fish and Wildlife 11	SAIA, ESA, AFI 32-7064	2	Immediate and ongoing	\$0–25,000
<b>Threatened and Endangered Species</b>	Mountain plovers have recently been observed south of the installation boundary and as a result, a survey for this federal species of concern needs to be conducted. Mountain plover surveying protocol would be followed as outlined in Kirtland AFB's Work Plan for Surveying Mountain Plovers and Gray Vireo Populations.	1, 2, 3, 4, 8	Threatened and Endangered Species 1	SAIA, ESA, MBTA, DOD Partners in Flight (PIF), AFI 32-7064	1	Immediate and ongoing	\$15,000
	Conduct an installation-wide gray vireo survey identifying the total number of gray vireo territories on the installation. The results would be compared with the 2003 survey results to identify if the population on the installation has decreased, increased, or stabilized. Gray vireo surveying protocol would be followed as outlined in the installation's Work Plan for Surveying Mountain Plovers and Gray Vireo Populations.	1, 2, 3, 4, 8	Threatened and Endangered Species 2	SAIA, ESA, MBTA, DOD PIF, AFI 32-7064	1	Immediate and ongoing	\$60,000
	Develop and implement the Gray Vireo Management Plan, which would outline survey procedures for the gray vireo and timelines for the surveys. Two types of gray vireo surveys would be discussed: an installation-wide inventory and a nesting success/brown-headed cowbird nest parasitism survey. The management plan would identify gray vireo management goals and objectives as well as control measures for the brown-headed cowbird should control become necessary.	1, 2, 3, 4, 8	Threatened and Endangered Species 3	SAIA, ESA, MBTA, DOD PIF, AFI 32-7064	1	Immediate and ongoing	\$35,000

Natural Resources Management Area	Project Description	INRMP Goal(s)	Natural Resources Management Area Objective(s)	Federal, State, DOD or USAF Law, Policy, or Guidance	Priority*	Estimated Schedule	Estimated Cost
<b>Threatened and Endangered Species (continued)</b>	Monitor gray vireo nesting success and nest parasitism by brown-headed cowbirds in the Arroyo del Coyote watershed within the Withdrawn Areas. Gray vireo survey protocol would be followed as outlined in the installation's 2005 Final Surveying Report for Mountain Plover and Gray Vireo Populations. Field efforts shall focus on nesting success and brown-headed cowbird nest parasitism.	1, 2, 3, 4, 8	Threatened and Endangered Species 4	SAIA, ESA, DOD PIF, AFI 32-7064	1	Immediate and ongoing	\$55,000
	Long-term monitoring of the loggerhead shrike has not been done on the installation. Monitoring shall document shrike populations, habitat use, and nesting success, while using appropriate surveying protocols.	1, 2, 3, 4, 8	Threatened and Endangered Species 5	SAIA, ESA, DOD PIF, AFI 32-7064	1	Immediate and ongoing	\$60,000
	Kirtland AFB has monitored burrowing owl nesting success on the installation for the past several years. This monitoring program has shown a decrease in the nesting owl population on the installation. Therefore, continued monitoring is necessary to determine if the mission at Kirtland AFB is causing the decline, some other environmental factor is to blame, or a combination of the two. This project requires biologists to survey for nesting burrowing owls on the installation throughout suitable habitat and determine nesting success, trapping and banding of owls, prey availability, and dispersal behavior. The protocols for this type of survey have been successful on the installation and as a result, the same procedures would continue.	1, 2, 3, 4, 8	Threatened and Endangered Species 6	SAIA, ESA, DOD PIF, AFI 31-7064	1	Immediate and ongoing	\$55,000
	Implement the Burrowing Owl Management Plan, which outlines goals and objectives for maintaining a burrowing owl population on Kirtland AFB. It includes surveying protocols, schedules, identifies areas important to nesting burrowing owls, procedures for constructing artificial burrows, and other burrowing owl management procedures.	1, 2, 3, 4, 8	Threatened and Endangered Species 7	SAIA, ESA, DOD PIF, AFI 31-7064	1	Immediate and ongoing	\$35,000
	Continue installing artificial burrows on the installation to replace burrowing owl nesting habitat that has been disturbed by development.	1, 2, 3, 4, 5	Threatened and Endangered Species 8	SAIA, ESA, DOD PIF, AFI 32-7064	1	Immediate and ongoing	\$15,000 annually

Natural Resources Management Area	Project Description	INRMP Goal(s)	Natural Resources Management Area Objective(s)	Federal, State, DOD or USAF Law, Policy, or Guidance	Priority*	Estimated Schedule	Estimated Cost
<b>Threatened and Endangered Species (continued)</b>	Develop and implement management plans for peregrine falcon, northern goshawk, Townsend's big-eared bat, slate millipede, and grama grass cactus.	1, 2, 3, 6, 10	Threatened and Endangered Species 9	SAIA, ESA, MBTA, DOD PIF, AFI 32-7064	1	2014–2017	\$55,000 for each plan
	The desert massasauga, designated as a species of risk, is known to occur in Kirtland AFB's grasslands. However, long-term monitoring for this species has not been done on the installation. Biologists would capture the desert massasauga using a variety of proven techniques and mark individuals using Passive Integrated Transponder (PIT) Tags. Using a PIT-Tag reader, recaptured individuals could be identified and appropriate data recorded. These data could then be used to help determine the species distribution, estimated population, home ranges, and other pertinent information.	1, 2, 3, 4, 8	Threatened and Endangered Species 10	SAIA, ESA, AFI 32-7064	1	Immediate and ongoing	\$40,000 annually
<b>Water Resources Protection</b>	The installation would minimize fertilizer and herbicide use on improved and semi-improved grounds on the installation whenever possible.	1, 2, 9	Water Resources Protection 1	AFI 32-7064	1	Immediate and ongoing	No cost
<b>Wetland Protection</b>	The Coyote Springs Wetland Complex has undergone significant restoration and enhancement over the past 5 years. In an effort to continue this project, Kirtland AFB would continue the effort by augmenting the vegetation in the area with seeding, planting, and monitoring programs at the wetland.	1, 2, 3, 6, 8, 10	Wetland Protection 1	AFI 32-7064	1	Immediate and ongoing	\$35,000
	The developing meadow/woodland wetland upstream of the perennial pool north of Coyote Springs Wetland Pond requires protection against the head cut that formed during 2005 flood flows, which is stalled by resistance provided by tree roots at the upstream end of the perennial pool. A serious threat to this developing wetland exists, should this head cut begin to move again upstream, potentially cutting a 4-foot deep arroyo through this new community. This project would identify function and value of this system and build a grade reduction facility to prevent any further degradation to this wetland.	1, 2, 3, 4, 6, 10	Wetland Protection 2	AFI 32-7064	1	2012–2013	\$45,000

Natural Resources Management Area	Project Description	INRMP Goal(s)	Natural Resources Management Area Objective(s)	Federal, State, DOD or USAF Law, Policy, or Guidance	Priority*	Estimated Schedule	Estimated Cost
<b>Wetland Protection (continued)</b>	The Coyote Springs Wetland Complex has undergone significant habitat restoration enhancement. To determine the success of this project, the wetland should have its flora (hydric and xeric) and fauna (mammals, birds, reptiles, amphibians, and invertebrates) inventoried, and then monitored annually to identify changes resulting from the restoration/enhancement effort. Monitoring should also note what, if any, changes or management would be done to further enhance diversity at the wetland.	1, 2, 3, 6, 10	Wetland Protection 3	AFI 32-7064	1	Immediate and ongoing	\$40,000
<b>Grounds Maintenance and Land Management</b>	Implement the Golf Course Management Plan that focuses on conservation of water, pest management, weed control, ground maintenance, and minimal use of pesticides and herbicides.	1, 7, 8, 9, 10	Grounds Maintenance and Land Management 1	AFI 32-7064	1	Immediate and ongoing	No cost
	Review the 2004 Revegetation Action Plan. If conditions on the installation have changed significantly, then an update of the plan would be completed.	1, 2, 3, 9	Grounds Maintenance and Land Management 2	AFI 32-7064	1	Immediate and ongoing	\$15,000
	Review the 2004 Land Management Plan. If conditions on the installation have changed significantly, then an update of the plan would be completed. This plan shall include land management procedures that maintain burrowing owl habitat.	1, 2, 3, 9	Ground Maintenance and Land Management 3	SAIA, ESA, MBTA, AFI 32-7064	1	Immediate and ongoing	\$55,000
	Review the 2004 Brush Control Plan. If conditions or goals on the installation have changed significantly, then an update of the plan would be completed.	1, 2, 3, 9	Grounds Maintenance and Land Management 4	AFI 32-7064	1	2015	\$55,000
	Long-term changes to the vegetation and landscape at Kirtland AFB have not taken place. To understand long-term changes to the land, photographic monitoring would be developed and implemented. This project would establish photographic points in strategic locations that would be revisited every 10 years. Review of the photographs over a period of years would provide a record of landscape and vegetation changes on the installation.	1, 2, 3, 8, 9	Ground Maintenance and Land Management 5	AFI 32-7064	1	2013	\$35,000

Natural Resources Management Area	Project Description	INRMP Goal(s)	Natural Resources Management Area Objective(s)	Federal, State, DOD or USAF Law, Policy, or Guidance	Priority*	Estimated Schedule	Estimated Cost
<b>Forest Management</b>	Continue consulting with the Sandia Ranger District in cooperation on issues regarding wildlife and habitat suitability in the Withdrawn Areas on the installation.	1, 2, 3, 4, 6, 7, 8, 9, 10	Forest Management 1	SAIA, AFI 32-7064	1	Immediate and ongoing	No cost
<b>Wildland Fire Management</b>	Implement the Fire Management Plan by securing funding and support.	1, 2, 3, 7, 8, 9, 10	Wildland Fire Management 1	SAIA, AFI 32-7064	1	Immediate and ongoing	\$821,000
<b>Integrated Pest Management Program</b>	Continue to manage prairie dog populations on the installation to minimize BASH potential, damage to infrastructure, and health and safety concerns by following the procedures outlined in Kirtland AFB's Prairie Dog Management and Relocation Plan.	1, 2, 5, 7	Integrated Pest Management Program 1	SAIA, AFI 32-7064	1	Immediate and ongoing	No cost
	Conduct an installation-wide survey of invasive weeds as identified by the New Mexico Department of Agriculture. Salt Cedar, although not considered an invasive weed, would also be surveyed for and identified as a species requiring management. Once the survey is complete, a management plan would be developed to aid the installation in eliminating or managing the invasive species that do occur on the installation.	1, 2, 3, 6, 7, 8, 9	Integrated Pest Management Program 2	SAIA, AFI 32-7064	1	2014–2017	\$30,000
	Implement the Pigeon Management Plan for aircraft hangars on the installation where pigeons are causing health concerns.	1, 2, 5, 7	Integrated Pest Management Program 3	AFI 32-7064	1	Immediate and ongoing	No cost
<b>Bird/Wildlife Aircraft Strike Hazard</b>	Continue to monitor and remove prairie dogs, according to the Prairie Dog Management Plan on an as-needed basis around the flightline to reduce the potential for foraging raptors in the area.	1, 2, 5, 7	BASH 1	SAIA, DOD PIF, AFI 32-7064	1	Immediate and ongoing	No cost
	Maintain the mowing program around flightline areas, according to the BASH Management Plan, to reduce attracting prey species for raptors and other wildlife.	1, 2, 5, 7	BASH 2	SAIA, DOD PIF, AFI 32-7064	1	Immediate and ongoing	No cost
<b>Outdoor Recreation</b>	Educate (through fact sheets and Newcomer's Orientation) installation personnel on the locations of running, walking, and biking paths.	1, 6, 8, 10	Outdoor Recreation 1	SAIA, AFI 32-7064	2	Immediate and ongoing	No cost
<b>Cultural Resources Protection</b>	Maintain communication between cultural and natural resources personnel to ensure protection of cultural resources discovered during INRMP implementation.	1, 9	Cultural Resources Protection 1	SAIA, AFI 32-7064	1	Immediate and ongoing	No cost



Natural Resources Management Area	Project Description	INRMP Goal(s)	Natural Resources Management Area Objective(s)	Federal, State, DOD or USAF Law, Policy, or Guidance	Priority*	Estimated Schedule	Estimated Cost
<b>Enforcement</b>	Continue to ensure Kirtland AFB security personnel, DOE security personnel, and the NMDGF work together when poaching of wildlife or wildlife collisions with vehicles occur on the installation.	1, 2	Enforcement 1	SAIA, AFI 32-7064	1	Immediate and ongoing	No cost
	Support two positions through Environmental Quality for Conservation Law Enforcement Officers. Officers would patrol the Withdrawn Areas on Kirtland AFB for trespassers and poachers of wildlife and cultural resources.	1, 2	Enforcement 2	SAIA, AFI 32-7064	1	2013	\$98,000
	Installation employees frequently feed wildlife, especially prairie dogs. Feeding wildlife can conflict with the installation's natural resources management objectives such as BASH and human health and safety issues. Current security personnel are aware that feeding wildlife on the installation is prohibited. However, no program is in place to ensure that new or future security personnel are aware of this issue. Natural resources personnel at Kirtland AFB would coordinate with current security personnel to ensure new personnel are aware that unauthorized feeding of wildlife is prohibited.	1, 2, 5, 7	Enforcement 3	SAIA, AFI 32-7064	1	Immediate and ongoing	No cost
<b>Public Outreach</b>	Continue following Kirtland AFB's Prairie Dog Management Plan to prevent prairie dog colonies from expanding off the installation.	1, 2, 6, 7	Public Outreach 1	SAIA, AFI 32-7064	1	Immediate and ongoing	No cost
	Organize conservation projects with nonprofit organizations such as Scout Troops and Youth Conservation Corps. Continue to develop wildlife and conservation fact sheets to educate installation personnel and the public on the importance of ecosystem management.	1, 2, 3, 6, 10	Public Outreach 2	SAIA, AFI 32-7064	1	2012–2017	\$5,000

Note: \* Projects have been given a Priority of 1 to 2. Priority 1 projects are the most critical to the military mission; therefore, funding for these projects would be requested first. As Priority 1 projects are completed, funding for less critical projects (i.e., Priority 2) would be requested.

## 2.4 Summary of Environmental Impacts

**Table 2-2** provides an overview of potential impacts associated with the Proposed Action and the No Action Alternative broken down by resource area. **Section 4** of this EA addresses these impacts in more detail.

**Table 2-2. Summary of Environmental Impacts**

Resource Area	Proposed Action	No Action Alternative
<b>Air Quality</b>	Short-term, moderate, adverse impacts on air quality would result from prescribed burns; however, these impacts would not be significant. The prescribed burns would generate emissions of criteria pollutants directly from the combustion of vegetation. The estimated annual air emissions would be below all applicable significance criteria and would be conducted in accordance with a smoke management program. The smoke management program must meet the requirements of the USEPA's Interim Air Quality Policy on Wildland and Prescribed Fires or an equivalent replacement USEPA policy. The prescribed burns must also meet Bernalillo County Air Quality Control Board (AQCB) requirements for prescribed burns.	Kirtland AFB already conducts prescribed burns; however, they are being done at a much lesser magnitude than those described under the Proposed Action. Therefore, short-term, minor, adverse impacts on air quality would be expected to continue.
<b>Geology and Soils</b>	Implementation of the INRMP would increase soil stabilization in the long term. Short-term, minor, adverse impacts on soil resources could occur. Implementation of certain projects described in the INRMP could result in minor, but temporary, soil disturbance; however, these projects would be beneficial in the long-term. Monitoring of soil conditions at Kirtland AFB to identify potential problem areas would minimize potential impacts on soil resources and result in a reduction in erosion on the installation. By implementing an effective soil erosion and sedimentation program, impacts on geologic resources and soils associated with erosion and sedimentation on Kirtland AFB would be minimized.	Long-term, minor, adverse impacts would be expected. By failing to implement an effective soil erosion and sedimentation program, impacts on geological resources and soils associated with erosion and sedimentation at Kirtland AFB would be expected to continue.
<b>Water Resources</b>	Long-term, beneficial impacts on surface waters and wetlands would be expected as a result of the Proposed Action. The minimization of fertilizer and herbicide use would result in beneficial impacts by reducing nonpoint source impacts on surface water resources. In addition, repair and conversion of guzzlers could decrease or eliminate degradation of the springs that provide water to the guzzlers. As part of the Wetland Protection objectives and projects, Kirtland AFB would continue to restore and enhance the Coyote Springs Wetland Complex. The noxious weed inventory and management plan could work toward elimination of salt cedars and other species that adversely impact area wetlands. No impacts on floodplains would be expected as a result of the Proposed Action.	Minor, adverse impacts on water resources would be expected to continue. The No Action Alternative does not provide a formal plan of action for monitoring and protecting the water resources at Kirtland AFB. Long-term, minor, adverse impacts on wetlands might occur. The No Action Alternative does not provide a formal plan for evaluating and monitoring wetland habitat conditions nor does it establish formal protection measures to prevent or minimize potential impacts that could result from mission-related activities. No impact on floodplains would be expected as a result of the No Action Alternative.

Resource Area	Proposed Action	No Action Alternative
<b>Biological Resources</b>	<p>Long-term, beneficial impacts on wildlife species and their habitat would be expected. Several projects described in the INRMP consist of conducting surveys or inventories of Kirtland AFB's wildlife. Information obtained from these efforts would help installation personnel properly manage wildlife resources. Additional management measures established to protect or enhance aquatic and riparian habitats would include limiting pesticide and fertilizer use and minimizing erosion and sedimentation.</p> <p>Implementation of the Proposed Action would result in conservation of native habitat and the reestablishment of native vegetation would result in the protection of habitat for wildlife species.</p> <p>Short-term, minor, adverse impacts on wildlife habitat could occur with the habitat improvement activities; however, these projects would benefit wildlife species occupying those areas in the long term. Implementation of certain projects described in the INRMP could result in minor, but temporary, disturbance to vegetation. In the long term, however, implementation of the INRMP would result in improved habitat conditions.</p> <p>Long-term, beneficial impacts on all special status species, including listed species, candidate species, and species of concern at the installation would be expected.</p> <p>Implementation of the Proposed Action would provide protection and management of species not protected by the ESA. Implementation of formal management plans and routine assessment and monitoring of these special status species provides a method for protecting these species and provides a baseline of data that could be used to prioritize projects and identify the most efficient allocation of resources.</p>	<p>Minor, adverse impacts on wildlife would be expected to continue.</p> <p>Under the No Action Alternative, the health and condition of the wildlife populations would not be improved and management measures to increase the abundance and biodiversity of wildlife at Kirtland AFB would not be implemented. In addition, management measures designed to protect and enhance wildlife habitats would not be implemented, thereby resulting in a continuing decline in the quality and complexity of the habitats.</p> <p>Long-term, minor, adverse impacts would be expected for special status species not protected under the ESA. The No Action Alternative does not provide special measures for the protection and management of these species leaving these species vulnerable to potential impacts that could adversely affect their existence at the installation.</p>
<b>Safety</b>	<p>Short-term, negligible to minor, adverse impacts could be expected while conducting certain activities under the Proposed Action. Increased risks would be associated with relocating, tagging, collaring, and tracking wildlife; however, the specialists involved are trained and certified by the U.S. Department of Agriculture (USDA) on how to conduct these activities in a safe manner. All prescribed burns would be conducted by installation firefighting personnel and activities would be coordinated to ensure the safety of the firefighters with respect to mission activities.</p> <p>Long-term, moderate, beneficial impacts could be expected by relocating prairie dogs from active areas of the installation. Brush control would also reduce the potential for uncontrolled wildfires, which would improve safety on the installation.</p>	<p>No additional impacts on safety would be expected.</p>

Resource Area	Proposed Action	No Action Alternative
<b>Socioeconomics and Environmental Justice</b>	Long-term, negligible, beneficial impacts would be expected on demographics, employment, and the installation's economic characteristics from the proposed addition of two Conservation Law Enforcement Officers to patrol the Withdrawn Areas of the installation for trespassers and poachers of wildlife and cultural resources. No impacts on environmental justice and protection of children would be expected from implementation of the Proposed Action.	No impacts on socioeconomics and environmental justice would be expected. The addition of two Conservation Law Enforcement Officers would not occur under the No Action Alternative.

### 3. Description of the Affected Environment

This section addresses the environmental resources and conditions most likely to be affected by the Proposed Action and No Action Alternative and provides sources of information to serve as a baseline from which to identify and evaluate potential environmental and socioeconomic consequences that could result from implementation of those alternatives. Baseline conditions represent current conditions. In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, the description of the affected environment focuses on those resources and conditions potentially subject to impacts.

The affected environment within Kirtland AFB and the surrounding area is described in detail in the INRMP, which is available for review. Therefore, that information, which can be used as a baseline for identifying potential impacts of the alternatives, is not repeated in this EA and is incorporated by reference.

#### 3.1 Air Quality

##### 3.1.1 Definition of Resource

In accordance with federal Clean Air Act (CAA) requirements, the air quality in a given 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, the 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>), which is 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 3-1** presents the USEPA NAAQS and SAAQS for the federally listed criteria pollutants.

**Attainment versus Nonattainment and General Conformity.** The 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,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now 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 AEHD Air Quality Division. The AEHD Air Quality Division has delegated authority over air quality in Bernalillo County to the Albuquerque-Bernalillo County AQCB. 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.

**Table 3-1. 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 <sup>(2)</sup>	0.15 µg/m <sup>3</sup> <sup>(3)</sup>	None	Same as Primary
NO <sub>2</sub>	Annual <sup>(4)</sup>	53 ppb <sup>(5)</sup>	50 ppb	Same as Primary
	1-hour <sup>(6)</sup>	100 ppb	100 ppb	None
PM <sub>10</sub>	24-hour <sup>(7)</sup>	150 µg/m <sup>3</sup>	None	Same as Primary
PM <sub>2.5</sub>	Annual <sup>(8)</sup>	12 µg/m <sup>3</sup>	None	15 µg/m <sup>3</sup>
	24-hour <sup>(6)</sup>	35 µg/m <sup>3</sup>	None	Same as Primary
O <sub>3</sub>	8-hour <sup>(9)</sup>	0.075 ppm <sup>(10)</sup>	None	Same as Primary
SO <sub>2</sub>	1-hour <sup>(11)</sup>	75 ppb <sup>(12)</sup>	None	None
	3-hour <sup>(1)</sup>	None	0.10 ppm	None
	24-hour	None	0.10 ppm	None
	Annual mean	None	0.02 ppm	None

Sources: USEPA 2011, New Mexico 2009

Notes: Parenthetical values are approximate equivalent concentrations.

1. Not to be exceeded more than once per year.
2. Not to be exceeded.
3. Final rule signed 15 October 2008. The 1978 standard for Pb (1.5 µg/m<sup>3</sup> as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved. The USEPA designated areas for the new 2008 standard on 8 November 2011.
4. Annual mean.
5. 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.
6. 98th percentile, averaged over 3 years.
7. Not to be exceeded more than once per year on average over 3 years.
8. Annual mean, averaged over 3 years.
9. Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
10. Final rule signed 12 March 2008. The 1997 O<sub>3</sub> standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, USEPA revoked the 1-hour O<sub>3</sub> standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour O<sub>3</sub> 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. 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
12. Final rule signed 2 June 2010. The 1971 annual (0.3 ppm) and 24-hour (0.14 ppm) SO<sub>2</sub> standards were revoked in that same rulemaking. However, these standards remain in effect until 1 year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Key: ppm = parts per million; ppb = parts per billion; mg/m<sup>3</sup> = milligrams per cubic meter; µg/m<sup>3</sup> = micrograms per cubic meter

The General Conformity Rule applies only to significant actions in nonattainment or maintenance areas. The 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.

**Greenhouse Gas Emissions.** Greenhouse gas (GHG) emissions are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide. Human-caused GHGs are produced primarily by the burning of fossil fuels and through industrial and biological processes.

### 3.1.2 Existing Conditions

A description of the climate and air quality at Kirtland AFB are included in Sections 4.1 and 6.1.8 of the INRMP respectively.

## 3.2 Geology and Soils

### 3.2.1 Definition of 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.

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The soil qualities, growing season, and moisture supply are needed for a well-managed soil to produce a sustained high yield of crops in an economic manner. The land could be cropland, pasture, rangeland, or other land, but not urban developed land or water. The intent of the FPPA is to minimize the extent that federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses. The Act also ensures that federal programs are administered in a manner that, to the extent practicable, will be compatible with private, state, and local government programs and policies to protect farmland.

The implementing procedures of the FPPA and Natural Resources Conservation Service (NRCS) require federal agencies to evaluate the adverse effects (direct and indirect) of their activities on prime and unique farmland, and farmland of statewide and local importance, and to consider alternative actions that could avoid adverse effects. Determination of whether an area is considered prime or unique farmland and

potential impacts associated with a proposed action is based on preparation of the Farmland Conversion Impact Rating Form (AD-1006) for areas where prime farmland soils occur and by applying criteria established at Section 658.5 of the FPPA (7 CFR Part 658). The NRCS is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the act (see 7 CFR Part 658, 5 July 1984).

### 3.2.2 Existing Conditions

A detailed description of the topography, geology, and soils of Kirtland AFB are included in Sections 4.2, 4.3, and 6.4.1 of the INRMP.

## 3.3 Water Resources

### 3.3.1 Definition of 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, recreational, 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 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 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 by 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 mandates the NPDES program, which regulates



the discharge of point (end of pipe) and nonpoint (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 predevelopment 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.

The USEPA published the technology-based Final Effluent Limitations Guidelines (ELGs) and Standards 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 the USEPA further evaluates this limitation. The 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 New Source Performance Standards 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.

**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 frequency 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 recreational and preservation activities, to reduce the risks to human health and safety. EO 11988, *Floodplain Management*, directs federal agencies to avoid siting within floodplains unless the agency determines that there is no practicable alternative.

### 3.3.2 Existing Conditions

For a detailed description of the hydrology and water resources at Kirtland AFB, see Sections 4.4, 5.2.2.4, 5.3.4, 5.5, 6.1.2, 6.2.2, 6.4.2, and 6.4.3 of the INRMP.

## 3.4 Biological Resources

### 3.4.1 Definition of Resource

Biological resources include native or naturalized plants and animals and the habitats in which they occur, and 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 an action.

Sensitive habitats include those areas designated by the USFWS as critical habitat protected by 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, 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, USFWS and NMDGF maintain lists of species considered to be particularly sensitive or at risk.

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 “the 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. United States*. As a consequence of the associated U.S. Supreme Court decision, the 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* memorandum dated 5 June 2007 (USEPA and USACE 2007a). The 2007 memorandum was revised on 2 December 2008 to incorporate revisions to the originally issued

memorandum after careful consideration of public comments received and based on the agencies' experience in implementing the *Rapanos* decision (USEPA and USACE 2008).

The guidance requires a greater level of documentation to support agencies jurisdictional determination (JD) for a particular water body. As a result of the decision, the agencies currently assert jurisdiction over the following categories of water bodies: Traditional Navigable Waters (TNWs), all wetlands adjacent to TNWs, nonnavigable 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. A significant nexus analysis assesses the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs.

Additional classes of water bodies that may be subject to CWA jurisdiction, only if such a significant nexus with a TNW is demonstrated, are nonnavigable 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, nonnavigable 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 the Solid Waste Agency of Northern Cook County and *Rapanos* Supreme Court Decisions was developed and signed in response to the *Rapanos* decision (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 nonnavigable, intrastate, isolated water or wetland. The agencies now require that all determinations for nonnavigable, isolated waters be elevated for USACE and USEPA Headquarters review prior to the district making a final decision on the JD.

### **3.4.2 Existing Conditions**

Chapter 5 of the INRMP provides a detailed description of the ecosystems and biotic environment at Kirtland AFB.

## **3.5 Safety**

### **3.5.1 Definition of 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 addresses workers' health and safety during project activities, as well as public health and safety during and following project activities.

Site safety requires adherence to regulatory requirements imposed for the benefit of employees. It includes implementation of engineering and administrative practices that aim to reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous DOD- and USAF-specific regulations designed to comply with standards issued by the Occupational Safety and Health Administration (OSHA), USEPA, and state occupational safety and health agencies. These standards specify health and safety 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. 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 for nearby populations due to noise or fire hazards. Noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

### 3.5.2 Existing Conditions

**Specialist Safety.** All personnel performing project activities are responsible for following federal and state of New Mexico safety regulations and are required to conduct project activities in a manner that does not increase risk to workers or the public. New Mexico is one of several states that administer their own occupational safety and health (OSH) program according to the provision of the OSHA of 1970. 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 OSHA regulations.

New Mexico 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. Occupational health and safety 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., preventive, administrative, engineering, PPE) to ensure exposure to 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.

Specialists involved in the relocating, tagging, collaring, and tracking of wildlife are certified by the USDA. These activities are conducted in the unimproved areas of the installation. In accordance with the Wildland Fire Management Plan, all prescribed burns and wildlife responses are coordinated with the installation's Controlled Firing Area Committee (CFAC) to ensure the safety of firefighters with respect to mission activities.

**Military Personnel Safety.** Each branch of the military has its own policies and regulations that act to protect its workers, despite their work locations. AFI 91-202, *USAF Mishap Prevention Program*, implements Air Force Policy Directive 91-2, *Safety Programs*. It governs the recognition, evaluation, control, and protection of USAF personnel from occupational health and safety hazards. The purpose of the Mishap Prevention Program is to minimize the loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks.

The elimination of prairie dogs from the no-tolerance and buffer zones on the installation by capturing and relocating them to the prairie dog relocation site would continue in accordance with the Prairie Dog Management Plan. The 31 no-tolerance zones were established due to land use conflicts, risk to human health and safety, and threat to the military operation.

**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, emergency response planning, and community health and safety education through the dissemination of public safety information to the installation personnel. A Veterans Affairs hospital and the 377th Medical Group's Outpatient Clinic are the primary military medical facilities at Kirtland AFB (KAFB undated). A number of other hospitals and clinics, which are devoted to the public, are 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 2013).

## 3.6 Socioeconomics and Environmental Justice

### 3.6.1 Definition of Resource

**Socioeconomics.** Socioeconomics is the relationship between economics and social elements such as population levels and economic activity. Factors that describe the socioeconomic environment represent a composite of several interrelated and nonrelated attributes. There are several factors that can be used as indicators of economic conditions for a geographic area, such as demographics, median household income, unemployment rates, percentage of families living below the poverty level, employment, and housing data. Data on employment identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on industrial, commercial, and other sectors of the economy provide baseline information about the economic health of a region.

**Environmental Justice.** EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, pertains to environmental justice issues and relates to various socioeconomic groups and the disproportionate impacts that could be imposed on them. This EO requires that federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. The EO was enacted to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action.

**Children's Environmental Health and Safety Risks.** EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, states that each federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

### 3.6.2 Existing Conditions

**Demographics.** The population of the Albuquerque Metropolitan Statistical Area (MSA), defined by the U.S. Census Bureau as Bernalillo, Sandoval, and Valencia counties, was 887,077 people in the 2010 U.S. Census. This represents a 24.5 percent increase, or a 2.45 average annual growth rate since the 2000 U.S. Census for the Albuquerque MSA population (USCB 2010a).

The state of New Mexico's population totaled 2,059,179 in 2010. The population of Bernalillo County was 662,564 in 2010, representing 32 percent of the total population for the state of New Mexico. Based on 2000 and 2010 U.S. Census data, the population of Bernalillo County grew 19 percent from 2000 to 2010, while during this same time period Sandoval County experienced a 46.3 percent increase in

population and Valencia County grew by 15.7 percent. The growth rate of the population in the Albuquerque MSA from 2000 to 2010 (24.5 percent) was much greater than the growth rate of the state of New Mexico (13.2 percent) and of the United States (9.7 percent) over the same period. See **Table 3-2** for the 2000 and 2010 U.S. Census population data (USCB 2010a).

**Table 3-2. 2000 and 2010 Population**

Location	2000	2010	Percentage Change
United States	281,421,906	308,745,538	9.7%
New Mexico	1,819,046	2,059,179	13.2%
Albuquerque MSA	712,738	887,077	24.5%
Bernalillo County	556,678	662,564	19.0%
Sandoval County	89,908	131,561	46.3%
Valencia County	66,152	76,569	15.7%

Source: USCB 2010a

**Employment Characteristics.** The three largest industries in the Albuquerque MSA in terms of percentage of the workforce employed within the industry are the educational services, healthcare, and social assistance industry (6 percent); the professional, scientific, management, and administrative and waste management services industry (6 percent); and the retail trade industry (5 percent) (USCB 2011). Unemployment in the Albuquerque MSA from January 2003 to April 2013 ranged from 5.2 to 8.7 percent annually. In July 2013, the unemployment rate dropped to 7.8 percent (BLS 2013).

**Kirtland AFB.** The number of persons employed on Kirtland AFB is greater than 20,000, making it the single largest employer in the Albuquerque MSA. There are 3,257 active-duty personnel on the installation. Direct payroll expenditures from Kirtland AFB exceed \$2 billion annually. When nonpayroll expenditures associated with Kirtland AFB are included, total expenditures sum \$7.8 billion. Approximately \$4.3 billion of the total Kirtland AFB economic impact is local. Employment associated with Kirtland AFB is estimated to represent 1 of every 14 jobs in the state of New Mexico (KAFB 2013).

**Environmental Justice and Protection of Children.** To provide a baseline measurement for environmental justice, an area around the installation must be established to examine the impacts on minority and low-income populations. For the purpose of this analysis, a 50-mile radius around Kirtland AFB was evaluated to identify minority and low-income populations. This 50-mile radius includes numerous towns, villages, census-designated places, and cities. The largest of these is the city of Albuquerque with a population of 545,852. In the city of Albuquerque, 46.7 percent of the population is Hispanic and 4.6 percent is Native American (see **Table 3-3**) (USCB 2010a).

The city of Rio Rancho is on the northwestern side of Albuquerque and has a population of 87,521 and is the second largest city within 50 miles of Kirtland AFB. The Hispanic population represents 36.7 percent of the total population in Rio Rancho and the Native American population represents 3.2 percent of the total population. The third largest population center within 50 miles of Kirtland AFB is South Valley, situated to the west of Kirtland AFB, containing 40,976 persons. In South Valley, the Hispanic population is 80.2 percent of the total population and the Native American population is 2.2 percent of the total population. The percentage of individuals under the age of 5 is very similar in the city of Albuquerque, city of Rio Rancho, and South Valley when compared to the state of New Mexico and the United States (USCB 2010a). The average median household income for the Albuquerque MSA is \$48,047, which is slightly less than the United States average of \$51,222 (USCB 2010b).

The percentage of families living below the poverty level varies greatly throughout the metropolitan areas of Albuquerque, with the city of Albuquerque having poverty levels similar to the state of New Mexico and the United States (see **Table 3-3**). South Valley has a higher poverty rate compared to the state of New Mexico and the United States. Rio Rancho has a significantly lower poverty rate than the state of New Mexico and the United States (USCB 2010b).

**Table 3-3. Minority and Low-Income Characteristics (2010)**

<b>Race and Origin</b>	<b>Albuquerque</b>	<b>Rio Rancho</b>	<b>South Valley</b>	<b>New Mexico</b>	<b>United States</b>
Total Population	545,852	87,521	40,976	2,059,179	308,745,538
Percent Under 5 Years of Age	7.0	7.2	7.3	7.0	6.5
Percent Over 65 Years of Age	12.1	10.8	12.3	13.2	13.0
Percent White	69.7	76.0	59.5	68.4	72.4
Percent Black or African American	3.3	2.9	1.2	2.1	12.6
Percent American Indian and Alaska Native	4.6	3.2	2.2	9.4	0.9
Percent Asian	2.6	1.9	0.4	1.4	4.8
Percent Native Hawaiian and Other Pacific Islander	0.1	0.2	0.0	0.1	0.2
Percent Other Race	15.0	11.1	32.7	15.0	6.2
Percent Two or More Races	4.6	4.7	4.0	3.7	2.9
Percent Hispanic or Latino	46.7	36.7	80.2	46.3	16.3
Estimated Median Household Income	\$46,532	\$59,846	\$38,772	\$43,569	\$51,222
Estimated Percent of Families Living Below Poverty	12.2	6.5	16.6	14.0	10.5

Sources: USCB 2010a, USCB 2010b

Note: Hispanic and Latin denote a place of origin.

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## 4. Environmental Consequences

This section describes the potential environmental consequences associated with implementing the Proposed Action and the No Action Alternative. In **Sections 4.1 to 4.6**, each alternative is evaluated for its potential to affect physical, biological, and socioeconomic resources in accordance with 40 CFR §1508.8. Potential impacts for each resource area are described in terms of their significance. Significant impacts are those impacts that would result in substantial changes to the environment or socioeconomic resources (as defined by 40 CFR §1508.27) and should receive the greatest attention in the decisionmaking process.

### 4.1 Air Quality

#### 4.1.1 Evaluation Criteria

The environmental consequences to local and regional air quality conditions near a proposed federal action are determined based upon the increases or decreases in regulated pollutant emissions and upon existing conditions and ambient air quality. The evaluation criteria are dependent on whether the Proposed Action is located in an attainment, nonattainment, or maintenance area for criteria pollutants. Other evaluation criteria pertaining to stationary source emissions exist, but are not applicable to this Proposed Action. All applicable evaluation criteria are discussed in the following paragraphs.

**Attainment Area Pollutants.** The attainment area pollutants for the location of this Proposed Action are O<sub>3</sub> (measured as NO<sub>x</sub> and VOCs), NO<sub>2</sub> (measured as NO<sub>x</sub>), SO<sub>2</sub>, Pb, PM<sub>10</sub>, and PM<sub>2.5</sub>. The impact in NAAQS “attainment” areas would be considered significant if the net changes in these pollutant emissions from the federal action would result in any of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Exceed any evaluation criteria established by a SIP
- Cause an increase of 250 tons per year (tpy) of any attainment criteria pollutant (i.e., NO<sub>2</sub> [measured as NO<sub>x</sub>], SO<sub>2</sub>, Pb, and PM<sub>10</sub>) from stationary plus mobile source emissions<sup>1</sup>.

Although the 250 tpy stationary plus mobile source threshold is not a regulatory driven threshold, it is being applied as a conservative measure of significance in attainment areas. The rationale for this conservative threshold is that it is consistent with the threshold for a Prevention of Significant Deterioration (PSD) major source in attainment areas, although PSD permitting does not apply to mobile source emissions.

**Nonattainment or Maintenance Area Pollutants.** For federal actions in nonattainment or maintenance areas, the General Conformity Rule applies. The maintenance area pollutant for the location of this Proposed Action is CO. With respect to the General Conformity Rule, impacts on air quality might be considered significant if the proposed federal action emissions exceed *de minimis* threshold levels established in 40 CFR §93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been redesignated as a maintenance area. In addition, if a facility has a specific general conformity budget listed in the SIP, a proposed action that results in an exceedance of that budget would

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<sup>1</sup> The Pb threshold would be 250 tpy, but because emissions sources at an AFB have such low Pb emissions, a comparison to this threshold was not considered necessary

be considered a significant impact on air quality. Kirtland AFB is not specifically listed in the New Mexico SIP as having a specific SIP budget.

Note that stationary emissions sources subject to New Source Review (NSR) air permitting, including minor NSR, are not required to be counted towards the General Conformity *de minimis* thresholds. The reasoning for this is that by meeting the criteria and going through the approval process with the appropriate federal, state, or local air quality permitting authority, these emissions sources are demonstrating that they are in conformity with the SIP. Similarly, emissions from prescribed fires conducted in accordance with a smoke management program also are “presumed to conform,” and no conformity determination is necessary. See **Section 3.1.1**, General Conformity subsection for more information.

**Table 4-1** presents the General Conformity *de minimis* thresholds, by regulated pollutant. As shown in this table, *de minimis* thresholds vary depending on the severity of the nonattainment area classification.

**Table 4-1. Conformity *de minimis* Emissions Thresholds**

Pollutant	Status	Classification	<i>de minimis</i> Limit (tpy)
O <sub>3</sub> (measured as NO <sub>x</sub> or VOCs)	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/ 100 (NO <sub>x</sub> )
	Maintenance	All others	100
		Inside ozone transport region	50 (VOCs)/ 100 (NO <sub>x</sub> )
		Outside ozone transport region	100
CO	Nonattainment/maintenance	All	100
PM <sub>10</sub>	Nonattainment	Serious	70
		Moderate	100
		No Special Classification	100
	Maintenance	All	100
PM <sub>2.5</sub> (measured directly, or as SO <sub>2</sub> , or NO <sub>x</sub> or VOC as significant precursors)	Nonattainment/maintenance	All	100
SO <sub>2</sub>	Nonattainment/maintenance	All	100
NO <sub>x</sub>	Nonattainment/maintenance	All	100
VOC	Nonattainment/maintenance	All	100
Pb	Nonattainment/maintenance	All	25

Source: 40 CFR §93.153, as of 9 January 2012

### 4.1.2 Proposed Action

**Emissions Estimates.** Short-term, moderate, adverse impacts on air quality would result from the prescribed burns; however, these impacts would not be significant. The prescribed burns would generate emissions of criteria air pollutants directly from the combustion of vegetation. The prescribed burns are assumed to occur annually and burn a maximum of 1,000 acres each year. The estimated annual air emissions would be below all applicable significance criteria. **Table 4-2** summarizes the amount of air emissions that would be produced and the applicable significance criteria. **Appendix C** contains detailed calculations and the assumptions used to estimate the air emissions associated with the prescribed burns. With respect to GHG emissions, emissions of CO<sub>2</sub> from prescribed burns would be part of the carbon cycle, which are typically not included in inventories.

**Table 4-2. Estimated Air Emissions Resulting from Prescribed Burns**

Activity	PM <sub>10</sub> tpy	PM <sub>2.5</sub> tpy	CO tpy	VOC tpy	NO <sub>x</sub> tpy
<b>Air Emissions Estimates</b>					
Prescribed Burns	127.6	127.6	991.2	67.7	39.3
<b>Significance Criteria</b>					
Pollutants Significance Criteria	250	250	*	250	250

Notes:

\*Nonattainment pollutant. See “presumed to conform” discussion under General Conformity subsection.

Emissions of sulfur oxides would be negligible.

Emissions of CO<sub>2</sub> from prescribed burns would be part of the carbon cycle, which are typically not included in inventories.

Per the Albuquerque-Bernalillo County AQCB and 2011.21 New Mexico Administrative Code, any person who plans to conduct open burning shall obtain all applicable permits from AEHD and comply with all applicable restrictions of the Bernalillo County Fire Department or the city of Albuquerque Fire Department prior to burning. Open burning shall be suspended during declared “no burn periods” during the winter pollution advisory season or when an air pollution health alert is issued.

Prescribed burns would be conducted in accordance with a smoke management program. Such a program would include BMPs and environmental-control measures to minimize the air quality impacts from the prescribed burns. Examples of BMPs and environmental-control measures in a smoke management program could include restricting burning on days with poor air quality, limiting the amount of land burned, and reducing the frequency of burns to the minimum necessary to meet objectives.

The Proposed Action would not change the number of personnel or vehicles accessing the installation, change stationary source air emissions, or require the operation of construction and demolition equipment. Therefore, air emissions would not be produced from any other sources under the Proposed Action.

**General Conformity.** Bernalillo County has been designated as unclassified/attainment for all criteria pollutants except CO, which is classified as moderate maintenance. Based on this designation, the General Conformity Rule requirements are potentially applicable for CO. However, air emissions from prescribed fires that are conducted in accordance with a smoke management program do not require a conformity determination because they are “presumed to conform” in accordance with 40 CFR §93.153(i)(2). The smoke management program must meet the requirements of the USEPA’s

Interim Air Quality Policy on Wildland and Prescribed Fires or an equivalent replacement USEPA policy. The prescribed burns must also meet Bernalillo County AQCB requirements for prescribed burns. The reasoning for the “presumed to conform” designation is that by meeting the criteria and going through the approval process of the smoke management program with the appropriate federal, state, or local air quality authority, these emissions sources are demonstrating that they are in conformity with the SIP.

### **4.1.3 No Action Alternative**

Under the No Action Alternative, management of natural resources would continue as characterized in the previous INRMP for Kirtland AFB, which was prepared in 2007. Kirtland AFB already is conducting prescribed burns; however, they are being done at a much lesser magnitude than those described under the Proposed Action. Therefore, under the No Action Alternative, air emissions would continue to be generated in a manner identical to existing conditions.

## **4.2 Geology and Soils**

### **4.2.1 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 effects of a proposed action on geological resources. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control and storm water-management measures, and structural engineering design are incorporated into project development.

Effects on geology and soils would 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; or substantially change the soil composition, structure, or function within the environment.

### **4.2.2 Proposed Action**

Short-term, minor, adverse impacts on soil resources could occur with habitat improvement activities. Implementation of certain projects described in the INRMP (e.g., Coyote Springs Phase II activities, prairie dog relocation, revegetation action plans, road closures, bike trail) could result in minor, but temporary, soil disturbance; however, these projects would be beneficial in the long term.

Some mission activities result in soil disturbance, which could be minimized through seeding and revegetation. As part of the Grounds Maintenance and Land Management objectives and projects, Kirtland AFB is currently updating the installation’s natural resources inventory, which includes identifying areas of erosion and areas in need of revegetation. Monitoring of soil conditions at Kirtland AFB to identify potential problem areas, the implementation of conservation measures in areas where exposure of soils is necessary, and, when possible, the avoidance of activities likely to result in erosion would minimize potential impacts on the soil resources and result in a reduction in erosion at Kirtland AFB.

Additionally, the Kirtland AFB Land Management Plan would be reviewed and updated, as necessary, as part of the INRMP. The Land Management Plan addresses land management practices that protect natural resources and minimize impacts from military activities. Current ecosystems, landscaping, irrigation, and erosion and drainage issues are discussed in the plan. By implementing an effective soil erosion and sedimentation program, impacts on geologic resources and soils associated with erosion and

sedimentation on Kirtland AFB would be minimized. In the long term, implementation of the INRMP would increase soil stabilization.

### 4.2.3 No Action Alternative

Long-term, minor, adverse impacts would be expected. By failing to implement an effective soil erosion and sedimentation program, impacts on geologic resources and soils associated with erosion and sedimentation at Kirtland AFB would be expected to continue. The No Action Alternative does not include the implementation of soil conservation measures, or a plan of action to prevent or minimize potential soil problems related to erosion and sedimentation before their occurrence. Implementation of the No Action Alternative would involve reactive management to problems after their occurrence, rather than managing the resources to prevent impacts.

## 4.3 Water Resources

### 4.3.1 Evaluation Criteria

Evaluation criteria for effects on water resources are based on water availability, quality, and use and associated regulations. A proposed action would have significant effects on water resources if it were to do one or more of the following:

- Substantially reduce water availability or supply to existing users
- Overdraft groundwater basins
- Exceed 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.

### 4.3.2 Proposed Action

Long-term, beneficial impacts on surface waters would be expected as a result of the Proposed Action. As part of the Water Resources Protection objectives and projects, the minimization of fertilizer and herbicide use would result in beneficial effects by reducing nonpoint source impacts on surface water resources. The long-term reduction of soil erosion, see **Section 4.2.2**, could reduce sedimentation of water resources on Kirtland AFB. In addition, repair and conversion of guzzlers could decrease or eliminate degradation of the springs that provide water to the guzzlers.

Long-term, beneficial impacts on wetlands would be expected as a result of the Proposed Action. As part of the Wetland Protection objectives and projects, Kirtland AFB would continue to restore and enhance the Coyote Springs Wetland Complex. In addition to enhancing the wetland itself, restoration of the Coyote Springs Wetland Complex would provide a site where Kirtland AFB representatives could educate personnel and the public about the importance of wetlands and other wildlife species. The noxious weed inventory and management plan could work toward elimination of salt cedars and other species that adversely impact area wetlands. Removal of salt cedars from the Coyote Springs wetland would increase the amount of water available to the wetland. Update of the wetland delineation for Kirtland AFB to reflect current conditions would also benefit the installation.

No effects on floodplains would be expected as a result of the Proposed Action.

### **4.3.3 No Action Alternative**

Long-term, minor, adverse impacts on water resources would be expected to continue. The No Action Alternative does not provide a formal plan of action for monitoring and protecting the water resources at Kirtland AFB. Water resources are vulnerable to degradation without the implementation of a formal plan of action that includes watershed protection measures, nonpoint source pollution controls, and a comprehensive monitoring program designed to identify water quality problems at their onset.

Minor, adverse impacts on wetlands might occur. The No Action Alternative does not provide a formal plan for evaluating and monitoring wetlands habitat conditions nor does it establish formal protection measures to prevent or minimize potential impacts that could result from mission-related activities.

No effects on floodplains would be expected as a result of the No Action Alternative.

## **4.4 Biological Resources**

### **4.4.1 Evaluation Criteria**

The level of impact on biological resources is based on (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to the proposed activities, and (4) the duration of ecological ramifications. Impacts on biological resources are 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 wetland impacts is based on (1) the function and value of the wetland, (2) the proportion of the wetland that would be affected relative to the occurrence of similar wetlands in the region, (3) the sensitivity of the wetland to proposed activities, and (4) the 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 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 correlation 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 effect to total available habitat within the region, type of stressors involved, and magnitude of the effects.

As a requirement under the ESA, federal agencies must provide documentation that ensures that agency actions do not adversely affect the existence of any 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.

#### **4.4.2 Proposed Action**

Long-term, beneficial impacts on wildlife species and their habitat would be expected. Several projects described in the INRMP consist of conducting surveys or inventories of Kirtland AFB's wildlife. Information obtained from these efforts would help installation personnel properly manage wildlife resources. Assessment of wildlife populations at Kirtland AFB (e.g., bats, birds, predators, and reptiles) would provide a baseline that could be used in tracking conditions and trends, which would allow management practices to be applied where and when needed. As part of the Fish and Wildlife objectives and projects, completion of Coyote Springs Restoration Phase II and the revegetation action plans would improve the installation's vegetation. Other projects, such as the baseline natural resources inventory, noxious weed inventory and management plan, wetland flora inventory, and Phase II of the vegetation manual would provide Kirtland AFB personnel with information that would facilitate proper management of installation vegetation. Additional management measures established to protect or enhance aquatic and riparian habitats would include limiting pesticide and fertilizer use and minimizing erosion and sedimentation. Implementation of the Proposed Action would result in conservation of native habitat and the reestablishment of native vegetation would result in the protection of habitat for wildlife species.

Short-term, minor, adverse impacts on wildlife habitat could occur with the habitat improvement activities; however, these projects would benefit wildlife species occupying those areas in the long term. Implementation of certain projects described in the INRMP (e.g., prairie dog relocation and habitat enhancement, brush control, road closures, bike trail) could result in minor, but temporary, disturbance to vegetation. In the long term, however, implementation of the INRMP would result in improved habitat conditions. Raptor-proofing power poles would displace the raptors but ultimately reduce raptor mortality. Brush control may adversely impact some animals, depending upon the role of brush in their habitat.

Long-term, beneficial impacts on all special status species, including listed species, candidate species, and species of concern, at the installation would be expected. Implementation of the Proposed Action would provide protection and management for species not protected by the ESA (e.g., burrowing owl, mountain plover, gray vireo). As part of the Threatened and Endangered Species objectives and projects, mountain plover surveys would be conducted once every 5 years; a Gray Vireo Management Plan and a Burrowing Owl Management Plan would be developed and implemented; and annual monitoring, with emphasis on nesting success, would be initiated for the loggerhead shrike and continued for the gray vireo and burrowing owl. Implementation of formal management plans and routine assessment and monitoring for these special status species provides a method for protecting these species and provides a baseline of data that could be used to prioritize projects and identify the most efficient allocation of resources.

#### **4.4.3 No Action Alternative**

Long-term, minor, adverse impacts on wildlife would be expected to continue. Under the No Action Alternatives, the health and condition of the wildlife populations would not be improved and management measures to increase the abundance and biodiversity of wildlife at Kirtland AFB would not be implemented. In addition, management measures designed to protect and enhance wildlife habitats (i.e., aquatic, riparian, wetlands, terrestrial) would not be implemented, thereby resulting in a continuing decline in the quality and complexity of the habitats. Decline in habitat quality and complexity would continue to affect wildlife and biodiversity adversely. The No Action Alternative does not provide for the formal implementation of a routine habitat assessment and monitoring program. In addition, the No

Action Alternative does not establish routine management measures to protect and enhance these habitats by preventing or minimizing potential impacts.

## 4.5 Safety

### 4.5.1 Evaluation Criteria

If implementation of the Proposed Action were to increase risks associated with the safety of personnel, contractors, military personnel, or the local community, or hinder the ability to respond to an emergency, it would represent an adverse impact. An impact would be significant if implementation of the Proposed Action were to substantially increase risks associated with the safety of personnel, contractors, military personnel, or the local community; substantially hinder the ability to respond to an emergency; or 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.

### 4.5.2 Proposed Action

Overall, the long-term safety impacts of implementing the Proposed Action would be beneficial.

**Specialist Safety.** Short-term, negligible to minor, adverse impacts could be expected while conducting certain activities under the Proposed Action. Increased risks are associated with relocating, tagging, collaring, and tracking of wildlife; however, the specialists involved are trained and certified by the USDA in how to conduct these activities in a safe manner. All prescribed burns are conducted by installation firefighting personnel and activities would be coordinated through the CFAC to ensure the safety of firefighters with respect to mission activities.

**Military Personnel Safety.** Long-term, moderate, beneficial impacts could be expected by relocating prairie dogs from active areas of the installation. Prairie dogs would be separated from areas with high concentrations of human activity to reduce the risk of trip and fall hazards from their burrows, of infection and disease (i.e., rabies), and of bites to children playing nearby. Brush control would reduce the potential for uncontrolled wildfires, which would also improve safety on the installation resulting in a long-term, beneficial impact.

**Public Safety.** Long-term, beneficial impacts on public safety would be expected with implementation of the Proposed Action. Brush control would reduce the potential for uncontrolled wildfires on and off the installation. Implementation of the Proposed Action would not result in changes in the use of or demand for public services (e.g., police, fire departments, emergency medical services) on or near Kirtland AFB.

### 4.5.3 No Action Alternative

Under the No Action Alternative, management of natural resources would continue as characterized in the 2007 INRMP for Kirtland AFB and conditions would remain the same as discussed in **Section 3.5.2**. No additional impacts would be expected.

## 4.6 Socioeconomics and Environmental Justice

### 4.6.1 Evaluation Criteria

**Socioeconomics.** This section addresses the potential for direct and indirect impacts that the Proposed Action could have on local or regional socioeconomics. Impacts on local or regional socioeconomics are



evaluated according to their potential to stimulate the economy through the purchase of goods or services and increase in employment and population. Similarly, impacts are evaluated to determine if overstimulation of the economy (e.g., the construction industry's ability to sufficiently meet the demands of a project) could occur as a result of the Proposed Action.

***Environmental Justice and Protection of Children.*** Ethnicity and poverty data are examined for the Albuquerque metropolitan area (50-mile radius around Kirtland AFB) and compared to the state of New Mexico and the United States to determine if a low-income or minority populations could be disproportionately affected by the Proposed Action.

#### 4.6.2 Proposed Action

***Demographics.*** Long-term, negligible, beneficial impacts on demographics could be expected from implementation of the Proposed Action. The Proposed Action would include the addition of two Conservation Law Enforcement Officers to patrol the Withdrawn Areas on the installation for trespassers and poachers of wildlife and cultural resources.

***Employment.*** Long-term, negligible, beneficial impacts on employment would be expected from implementation of the Proposed Action. The addition of two Conservation Law Enforcement Officers to patrol the Withdrawn Areas on the installation for trespassers and poachers of wildlife and cultural resources is included under the Proposed Action.

***Kirtland AFB.*** Long-term, negligible, beneficial impacts on local economic characteristics would be expected from implementation of the Proposed Action. The addition of two Conservation Law Enforcement Officers is proposed in the updated INRMP.

***Environmental Justice and Protection of Children.*** Implementation of the Proposed Action would have no impacts on environmental justice and protection of children. Implementation of the Proposed Action would not create any advantage or disadvantage for any group or individual, and is not expected to create disproportionately high or adverse human health or environmental effects on children or on minority or low-income populations or communities at or surrounding Kirtland AFB. Therefore, there would be no effects expected as a result of implementing the Proposed Action.

#### 4.6.3 No Action Alternative

Under the No Action Alternative, management of natural resources would continue as characterized in the 2007 INRMP for Kirtland AFB and conditions would remain the same as discussed in **Section 3.6.2**. The addition of two Conservation Law Enforcement Officers would not occur under the No Action Alternative.

### 4.7 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 (federal, state, and local) or individuals. Informed decisionmaking is served by 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 respect to their effects.

This section briefly summarizes past, present, and reasonably foreseeable future projects 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 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 projects, identified below, make up the cumulative impacts scenario for the Proposed Action. The cumulative impacts scenario is then added to the Proposed Action's impacts on the individual resource areas analyzed in **Sections 4.1** through **4.6** to determine the cumulative impacts of the Proposed Action. In accordance with CEQ guidance, the current effects of past actions are considered in aggregate as appropriate for each resource area without delving into the historical details of individual past actions.

## 4.7.1 Impact Analysis

### 4.7.1.1 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 effects, too, 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 area; 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.

### 4.7.1.2 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 4-3**. These projects include the construction of facilities totaling approximately 681,599 square feet and the demolition of substandard facilities totaling approximately 685,672 square feet, resulting in a decrease of approximately 4,073 square feet of outdated, inefficient building space on the installation. Overall, implementation of the Proposed Action would not result in cumulative impacts on air quality, geology and soils, water resources, biological resources, safety, and socioeconomics and environmental justice.

## 4.7.2 Cumulative Impact Analysis by Resource Area

### 4.7.2.1 Air Quality

The Proposed Action would result in moderate levels of air emissions below *de minimis* threshold limits and would not be regionally significant. Prescribed burns would be conducted in accordance with a smoke management program, which would include BMPs and environmental-control measures to minimize the air quality impacts from the prescribed burns. Therefore, the Proposed Action, when combined with other past, present, and reasonably foreseeable projects at Kirtland AFB (see **Table 4-3**), would not contribute significantly to adverse cumulative impacts on air quality at Kirtland AFB or regionally.

#### 4.7.2.2 Geology and Soils

The Proposed Action and other local actions would not reduce prime farmland soils or agricultural production. By implementing an effective soil erosion and sedimentation program, impacts on geologic resources and soils associated with erosion and sedimentation on Kirtland AFB would be minimized. The Proposed Action, when combined with other past, present, and reasonably foreseeable projects at Kirtland AFB (see **Table 4-3**), would not result in significant cumulative impacts on geology and soils.

**Table 4-3. Present and Reasonably Foreseeable Actions at Kirtland AFB**

<b>Project Name</b>	<b>Description</b>
Hercules Tanker Recapitalization	The 58th Special Operations Wing proposes to recapitalize existing Special Operations Force (SOF) 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 SOF training force would increase by four tanker planes and one flight simulator. By fiscal year 2023, SOF personnel 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 Heavy Weapons Range)	The 377 ABW proposes to establish and use a small arms range in the southeastern section of Kirtland AFB, approximately 0.25 miles 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 would use the existing targets at the M60 range. Firing distance would 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.
Construction and Demolition of Military Support Facilities	Kirtland AFB 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 Officer Quarters Complex, the Main Enlisted Dormitory Campus, the Noncommissioned Officer 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 decrease of approximately 109,000 square feet of building space on the installation.
Construct New Hot Cargo Pad	The 377 ABW 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.

Project Name	Description
Construct New Military Working Dog Facility	Kirtland AFB proposes to construct a new military working dog facility. The proposed facility would consist of 14 indoor/outdoor kennels, 4 isolation kennels, storage and staff space, restrooms, a food storage room, a covered walkway, and a veterinarian examining room, totaling 8,000 square feet. A parking area with 25 spaces and new access roads would be constructed as part of the project. Demolition of facilities totaling 2,520 square feet would also be included in this project, resulting in an increase of 5,480 square feet of building space on the installation.
Replacement of Fire Station 3	377 ABW proposes to construct, operate, and maintain a new Fire Station 3 just south of the intersection of Pennsylvania Street and Power Line Road. The facility would be approximately 7,320 square feet and consist of a one-story structure with three high-bay, drive-through apparatus stalls; separate men's and women's restrooms 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. Demolition of the existing Fire Station 3 (Building 30116), which is approximately 4,312 square feet, would also be accomplished upon completion of the new Fire Station 3. This would result in an increase of 3,008 square feet of building space on the installation.
498th Nuclear System Wing Facility	Kirtland AFB 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 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	Kirtland AFB proposes to construct a 15,946-square-foot sustainment center for the Nuclear Weapons Center. This facility would 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 includes tying into utilities and communications and parking for vehicles. The facility would 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 377 ABW is in the process of demolishing 23 buildings (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 include removing foundations, 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.

Project Name	Description
Security Forces Complex	The 377 ABW 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 would 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 would be demolished. This project would result in an increase of 41,621 square feet of building space on the installation.
21st Explosive Ordnance Disposal Company Expansion	The 21st Explosive Ordnance Disposal (EOD) Company proposes facility expansion and site improvements for the 21st EOD Weapons of Mass Destruction Company Complex at Kirtland AFB. The 21st EOD Company currently operates from a 90-acre property leased by the U.S. Army within Kirtland AFB. The current site has seven structures, six of which are substandard and do not have adequate fire protection. The 21st EOD Company 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.

#### 4.7.2.3 Water Resources

As part of the Water Resources Protection objectives and projects, the minimization of fertilizer and herbicide use would result in beneficial effects by reducing nonpoint source impacts on surface water resources. As part of the Wetland Protection objectives and projects, Kirtland AFB would continue to restore and enhance the Coyote Springs Wetland Complex and implementation of the noxious weed inventory and management plan could work toward elimination of salt cedars and other species that adversely impact area wetlands. No impacts on floodplains would be expected as a result of the Proposed Action. The impacts of the Proposed Action, when considered with potential disturbances on water resources from past, present, and reasonably foreseeable actions at Kirtland AFB (see **Table 4-3**) would not be expected to have a significant cumulative impact on water resources. Implementation of the INRMP would minimize potential for adverse impacts on water resources associated with the Proposed Action and future actions.

#### 4.7.2.4 Biological Resources

Several projects described in the INRMP consist of conducting surveys or inventories of the installation's wildlife. Assessment of wildlife populations would provide a baseline that could be used in tracking conditions and trends, which would allow management practices to be applied where and when needed. Projects such as the baseline natural resources inventory, noxious weed inventory and management plan, wetland flora inventory, and Phase II of the vegetation manual would provide installation personnel with information to facilitate proper management of the installation's vegetation. Although urban growth and development can be expected to continue outside of Kirtland AFB and within the surrounding natural areas, significant adverse impacts on biological resources would not be expected.

Implementation of certain projects described in the INRMP (e.g., prairie dog relocation and habitat enhancement, brush control, road closures, and bike trail) could result in minor, but temporary, disturbances to vegetation. In the long term, however, implementation of the INRMP would result in improved habitat conditions. Overall, cumulative impacts of implementation of the Proposed Action and other past, present, and reasonably foreseeable actions at Kirtland AFB (see **Table 4-3**) on the biological resources of the area would be less than significant.

#### **4.7.2.5 Safety**

The Proposed Action would result in a long-term, beneficial impact on military and public safety. Implementation of effective health and safety plans, which follow federal, state, and local OSHA policies, during project activities would reduce or eliminate cumulative health and safety impacts on specialists, military personnel, and the general public.

#### **4.7.2.6 Socioeconomics, Protection of Children, and Environmental Justice**

Implementation of the Proposed Action would result in negligible, beneficial impacts on the region's economy from the addition of two Conservation Law Enforcement Officer positions on the installation. These impacts, when combined with the other projects currently proposed or ongoing at Kirtland AFB, would not be considered a significant cumulative impact. No impacts on residential areas, population, youth, or minority or low-income families on or off the installation would occur.

### **4.7.3 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 nonrenewable resources is an avoidable occurrence, although not considered significant. The Proposed Action would require the continued use of fossil fuels, a nonrenewable natural resource, during project activities. Energy supplies, although relatively small, would be committed to the Proposed Action.

**Geology and Soils.** Project activities would result in temporary soil disturbance; however, implementation of BMPs and erosion-control measures would limit the environmental consequences. Although soil disturbance would be unavoidable, the impact on geology and soils would not be expected to be significant.

### **4.7.4 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. Proposed INRMP activities would be compatible with all 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.

### **4.7.5 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 and the surrounding area. Implementation of the Proposed Action would not represent a significant loss of open space. Therefore, it is anticipated that the Proposed Action would not result in any cumulative impacts on land use or aesthetics.

#### **4.7.6 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 would 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). Irreversible and irretrievable commitments of resources usually result from implementation of actions that involve the consumption of material resources used for construction, energy resources, and human labor resources. The use of these resources is considered to be permanent.

Other than the minor use of fuels for motor vehicles, no other irreversible or irretrievable commitments of resources are expected.

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## 6. References

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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 [U.S.C.] §§670a-670o, 74 Stat. 1052), as amended, Public Law (P.L.) 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 (P.L. 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 U.S.C. §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, P.L. 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 (IICEP) AND PUBLIC INVOLVEMENT MATERIALS**



## **Appendix B**

### **Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) and Public Involvement Materials**

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The 377th Air Base Wing (377 ABW) 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 – IICEP Scoping Letters**

Dr. Benjamin Tuggle, Regional Director  
U.S. Fish and Wildlife Service  
Southwest Regional Office  
500 Gold Avenue SW  
Albuquerque NM 87102

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 75202-2733

Mr. Josh Sherman, 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  
Albuquerque District Office  
435 Montañito Road NE  
Albuquerque NM 87107-4935

Senator Martin Heinrich  
U.S. Senate  
625 Silver Avenue SW, Suite 130  
Albuquerque NM 87102

Senator Tom Udall  
U.S. Senate  
219 Central Avenue NW, Suite 120  
Albuquerque NM 87102

Representative Michelle Lujan Grisham  
U.S. House of Representatives  
505 Marquette Avenue NW  
Albuquerque NM 87102

Representative Steve Pearce  
U.S. House of Representatives  
3445 Lambros Loop NE  
Los Lunas NM 87031

Representative Ben Lujan  
U.S. House of Representatives  
811 St Michael's Drive, Suite 104  
Santa Fe NM 87505

Mr. Jeff Robbins  
National Nuclear Security Administration  
Albuquerque Service Center  
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  
New Mexico Environment Department  
Office of Planning and Performance  
1190 St Francis Drive, Suite N4050  
Santa Fe NM 87505

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

Mr. Jeff M. Witte, Director/Secretary  
New Mexico Department of Agriculture  
3190 S. Espina  
Las Cruces NM 88003-8005

Mr. John Bemis, Cabinet Secretary  
New Mexico Energy, Minerals and Natural  
Resources Department  
1220 South St Francis Drive  
Santa Fe NM 87505

Mr. Ray Powell, Commissioner  
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

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

Ms. Dayna Gardner, 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, Room 9087  
Albuquerque NM 87102

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

City of Albuquerque Planning Department  
P.O. Box 1293  
Albuquerque NM 87103

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

## Example IICEP Scoping Letter



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

7 November 2013

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

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

Dear Senator Heinrich

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, the USAF is preparing an Environmental Assessment (EA) to evaluate implementation of the Integrated Natural Resources Management Plan (INRMP) for Kirtland Air Force Base (AFB). The USAF recently updated the INRMP for Kirtland AFB. The new INRMP will provide natural resources management strategies for Kirtland AFB. The Proposed Action is to modify the existing Natural Resources Management Plans and practices at Kirtland AFB by implementing a new INRMP consistent with the military-essential use of the installation and the goals and objectives established in the Sikes Act Improvement Act of 1997, as amended, which requires the preparation, implementation, update, and review of an INRMP for each military installation in the United States and its territories with significant natural resources. The EA will evaluate potential environmental impacts associated with each alternative. The updated INRMP proposes annual reviews and updates, as needed, to maximize its usefulness.

In addition to meeting Kirtland AFB's purpose and need, the Proposed Action would have additional benefits, including (1) better integration of the INRMP with other installation planning documents, (2) improved integration of the natural resources program with other Kirtland AFB activities, (3) explicit goals and objectives under which ongoing and future natural resources projects would be implemented, and (4) a systematic approach to integrated natural resources management by documenting present and future program implementation.

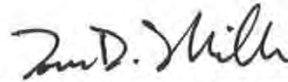
Kirtland AFB has developed natural resources management goals for the period of 2012 to 2017 that are consistent with Department of Defense and USAF policies and guidance pertaining to natural resources management, sustainment, and where applicable, rehabilitation. These goals were formulated from a comprehensive analysis of regulatory requirements, the condition of the natural resources, and consideration of the value of these resources to the people who live and work on the installation.

Kirtland AFB has similarly developed one or more objectives that support these management goals. Objectives are categorized by pertinent natural resources management areas. The INRMP also includes specific projects to meet each objective. The proposed projects include both newly proposed initiatives and ongoing initiatives carried forward from the previous 5-year INRMP. The range of proposed projects contribute to the objectives and goals for management of Kirtland AFB's natural resources, consistent with multiple uses, ecosystem and landscape management, and military mission support.

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. A copy of the Updated INRMP for Kirtland AFB is available at <http://www.kirtland.af.mil> under the environmental issues tab. 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 116, Kirtland AFB NM 87117, or via email to [nepa@kirtland.af.mil](mailto:nepa@kirtland.af.mil).

Sincerely

A handwritten signature in black ink, appearing to read "Tom D. Miller".

TOM D. MILLER, Colonel, USAF  
Commander



## IICEP Scoping Response Letter



Susana Martinez  
Governor

STATE OF NEW MEXICO  
**DEPARTMENT OF CULTURAL AFFAIRS  
HISTORIC PRESERVATION DIVISION**

BATAAN MEMORIAL BUILDING  
407 GALISTEO STREET, SUITE 236  
SANTA FE, NEW MEXICO 87501  
PHONE (505) 827-6320 FAX (505) 827-6338

September 17, 2013

NEPA Program Manager  
377 ABW/CEIE  
2050 Wyoming Blvd. SE  
Suite 116  
Kirtland AFB 87117

Re: KAFB INRMP

To whom it may concern,

On behalf of the New Mexico State Historic Preservation Officer (SHPO), I reviewed the consultation letter concerning the Environmental Assessment (EA) for the Kirtland Air Force Base's (KAFB) Integrated Natural Resource Management Plan (INRMP) (HPD Log 98270). I also reviewed the INRMP to see how it dealt with cultural resources. I am writing to provide SHPO comments on the consultation letter.

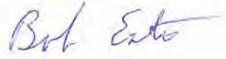
It is the SHPO's opinion that the implementation of the INRMP will not have an effect on cultural resources. However, the INRMP is a planning document that is not recognized by the Advisory Council on Historic Preservation. Therefore, the INRMP has no role in the KAFBs' responsibility to consult with the SHPO under Section 106 of the National Historic Preservation Act (NHPA). This includes all undertakings that need federal funding, licenses, permits, or approvals and have the potential to adversely affect historic properties.

Undertakings that fall under the INRMP need to be reviewed by cultural resources managers at KAFB, who will then consult with SHPO. As you may know, KAFB and SHPO do not have a Programmatic Agreement (PA) in place which would allow alternate procedures for Section 106 consultation. A PA would benefit both KAFB and SHPO because it could a list of undertakings that are exempted from consultation.

For several years now, our agencies have discussed the development of a PA. But we have not yet begun the process. The SHPO recommends that we re-enter discussion on the development of a PA. Until that time, KAFB should continue to consult with SHPO on a case by case basis.

If you have any question or comments, please feel free to call me directly at (505) 827-4225 or email me at [bob.estes@state.nm.us](mailto:bob.estes@state.nm.us).

Sincerely,

A handwritten signature in blue ink that reads "Bob Estes". The signature is written in a cursive, flowing style.

Bob Estes

Cc: Valerie Renner  
Cultural Resource Manager  
2050 Wyoming Blvd. SE  
Kirtland AFB, NM 87117

## Native American Tribes – IICEP 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  
Penasco 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  
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)

7 November 2013

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

Council Member Alfred La Paz  
Mescalero Apache Tribe  
PO Box 227  
Mescalero NM 88340

Dear Council Member La Paz

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, the USAF is preparing an Environmental Assessment (EA) to evaluate implementation of the Integrated Natural Resources Management Plan (INRMP) for Kirtland Air Force Base (AFB). The USAF recently updated the INRMP for Kirtland AFB. The new INRMP will provide natural resources management strategies for Kirtland AFB. The Proposed Action is to modify the existing Natural Resources Management Plans and practices at Kirtland AFB by implementing a new INRMP consistent with the military-essential use of the installation and the goals and objectives established in the Sikes Act Improvement Act of 1997, as amended, which requires the preparation, implementation, update, and review of an INRMP for each military installation in the United States and its territories with significant natural resources. The EA will evaluate potential environmental impacts associated with each alternative. The updated INRMP proposes annual reviews and updates, as needed, to maximize its usefulness.

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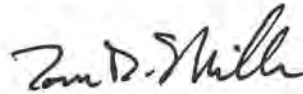
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Pursuant to Section 106 of the National Historic Preservation Act (NHPA; 36 Code of Federal Regulations Parts 800.2, 800.3, and 800.4) and Executive Order 13175, the Air Force would like to initiate government to government consultation concerning 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

A handwritten signature in black ink, appearing to read "Tom D. Miller".

TOM D. MILLER, Colonel, USAF  
Commander

## Federal, State, and Local Agencies – IICEP 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 75202-2733

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 Montañó Road NE  
Albuquerque NM 87107-4935

Senator Martin Heinrich  
U.S. Senate  
625 Silver Avenue SW, Suite 130  
Albuquerque NM 87102

Senator Tom Udall  
U.S. Senate  
219 Central Avenue NW, Suite 210  
Albuquerque NM 87102

Representative Michelle Lujan Grisham  
U.S. House of Representatives  
505 Marquette Avenue NW, Suite 1605  
Albuquerque NM 87102

Representative Steve Pearce  
U.S. House of Representatives  
3445 Lambros Loop NE  
Los Lunas NM 87031

Representative Ben Luján  
U.S. House of Representatives  
1611 Calle Lorca, Suite A  
Santa Fe NM 87505

Mr. Jeff Robbins  
National Nuclear Security Administration  
Albuquerque Service Center  
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  
New Mexico Environment Department  
Office of General Counsel & Environmental  
Policy  
1190 St Francis Drive, Suite N4050  
Santa Fe NM 87505

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

Mr. Jeff M. Witte, Director/Secretary  
New Mexico Department of Agriculture  
3190 S. Espina  
Las Cruces NM 88003-8005

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 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  
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Board of Directors  
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809 Copper Avenue NW  
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Assistant Commissioner for Commercial  
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New Mexico State Land Office  
P.O. Box 1148  
Santa Fe NM 87504

City of Albuquerque Planning Department  
P.O. Box 1293  
Albuquerque NM 87103

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



## Example IICEP Public Notice Letter



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

MAR 27 2014

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

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

Dear Senator Heinrich

The U.S. Air Force (USAF) is preparing an Environmental Assessment (EA) addressing implementation of the Integrated Natural Resources Management Plan (INRMP) for Kirtland Air Force Base (AFB). The USAF recently updated the INRMP for Kirtland AFB. The new INRMP will provide natural resources management strategies for Kirtland AFB. The Proposed Action is to modify the existing Natural Resources Management Plans and practices at Kirtland AFB by implementing a new INRMP consistent with the military-essential use of the installation and its land and the goals and objectives established in the Sikes Act Improvement Act of 1997, as amended, which requires the preparation, implementation, update, and review of an INRMP for each military installation in the United States and its territories with significant natural resources. The purpose of the EA is to evaluate potential environmental impacts associated with each alternative. The updated INRMP would be reviewed annually and updated as needed to maximize its usefulness to installation natural resources personnel.

The Proposed Action includes continuing some of Kirtland AFB's existing natural resources management practices along with several new practices to include prairie dog management, nuisance management, wildland fire management, golf course environmental management, management of sick and injured wildlife, and burrowing owl management. All management practices would be integrated and implemented in the context of the installation's mission support needs and regional setting, including general planning, comprehensive range planning, cultural resources management planning, Bird/Wildlife Aircraft Strike Hazard planning, and pest management planning.

In addition to meeting Kirtland AFB's purpose and need, the Proposed Action would have additional benefits, including (1) better integration of the INRMP with other installation planning documents, (2) improved integration of the natural resources program with other Kirtland AFB activities, (3) explicit goals and objectives under which ongoing and future natural resources projects would be implemented, and (4) a systematic approach to integrated natural resources management by documenting present and future program implementation.

Kirtland AFB has developed management goals that are consistent with Department of Defense (DOD), USAF, and installation policies and guidance on how natural resources should be managed, sustained, and rehabilitated, where applicable. These goals were formulated from a comprehensive analysis of regulatory requirements, the condition of the natural resources, and consideration of the value of these resources to the people who live and work on the installation.

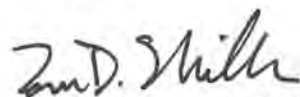
These goals reflect Kirtland AFB's vision for natural resources management for the period 2012 to 2017. Kirtland AFB has developed objectives that support each of these management goals. Objectives are categorized by pertinent natural resources management areas. Each goal is supported by one or more objectives. The INRMP also includes specific projects to meet each objective. The proposed projects include both newly proposed initiatives and ongoing initiatives carried over from the previous 5-year INRMP. This range of projects contributes to the objectives and goals for management of Kirtland AFB's natural resources, consistent with DOD and USAF guidance for multipurpose use, ecosystem- and landscape-level management, and support of the military mission.

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 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 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

## IICEP Public Notice Response Letter



## Mid-Region Council of Governments

Philip Gasteyer  
Chair, Board of Directors  
Mayor, Village of Corrales

April 24, 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  
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: INRMP

Dear Sir/Madame,

On behalf of the Mid-Region Council of Governments (MRCOG), I would like to give my support for your efforts in modifying the existing Integrated Natural Resources Management Plans and practices.

It is my understanding that the proposed action includes continuing some of Kirtland AFB's existing natural resource management practices along with several new practices including prairie dog management, nuisance management, wildland fire management, golf course environmental management, management of sick and injured wildlife, and burrowing owl management. 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 notify the City of Albuquerque Planning Department, the Bernalillo County Planning Department, and the Isleta Pueblo as to the proposed modifications of the plan and any potential impacts.

The mission of the Kirtland Air Force is very important in this region and the MRCOG communities. This proposal for construction 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](http://www.mrcog-nm.gov)



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](http://www.nmenv.state.nm.us)



RYAN FLYNN  
Cabinet Secretary  
BUTCH TONGATE  
Deputy Secretary

May 20, 2014

NEPA Program Manager  
377 MSG/CEIE  
2050 Wyoming Blvd SE, Ste 16  
Kirtland AFB, NM 87117  
[nepa@us.af.mil](mailto:nepa@us.af.mil)

RESPONSE BY EMAIL

**RE: Integrated Natural Resources Management Plan**

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 for review and comment. Comments were provided by the Ground Water Quality 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 indicates that the United States Air Force is in the preliminary stages of developing an Environmental Assessment (EA) regarding the implementation of the Integrated Natural Resources Management Plan (INRMP) for the Kirtland Air Force Base (AFB). The Proposed Action includes continuing existing natural resource management plans at Kirtland AFB along with implementing several new plans including prairie dog management, nuisance management, wildland fire management, golf course environmental management, sick and injured wildlife management, and burrowing owl management. Under the INRMP all management plans would be integrated and implemented in a manner consistent with the military-essential use of the installation and its land.

It is unlikely that the implementation of the INRMP will have any adverse impacts on ground water resources in the area of the project. However, the letter does not provide enough information to determine if any of the individual management plans would produce a discharge (including the use of reclaimed wastewater) that requires a ground water Discharge Permit in accordance with the Water Quality Act (WQA) and the Water Quality Control Commission



(WQCC) Regulations (20.6.2 NMAC). Section 20.6.2.3104 NMAC prohibits the discharge of wastewater or leachate in such a manner that it could move directly or indirectly into ground water without a Discharge Permit. Therefore, a Notice of Intent to Discharge (NOI) form must be submitted to the GWQB for evaluation if the implementation of any management plan will produce a discharge (i.e., golf course irrigation with reclaimed wastewater). The submission of a NOI form will provide the information necessary for the GWQB to determine if a ground water Discharge Permit will be required.

A copy of the Ground Water Quality Bureau Notice of Intent to Discharge (NOI) form is available at <http://www.nmenv.state.nm.us/gwb/FORMS/NewMexicoEnvironmentDepartment-GroundWaterQualityBureau-Forms.htm>.

Also, the implementation of some management plans (i.e., wildland fire management) may involve the use of heavy equipment, thereby leading to a possibility of contaminant releases (e.g., fuel, hydraulic fluid, etc.) associated with equipment malfunctions. The GWQB advises all parties involved in the project to be aware of notification requirements for accidental discharges contained in 20.6.2.1203 NMAC. Compliance with the notification and response requirements will further ensure the protection of ground water quality in the vicinity of the project.

A copy of the Water Quality Control Commission Regulations, 20.6.2 NMAC, is available at <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0002.htm>.

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

Some of the Proposed Actions in the new Integrated Natural Resources Management Plan (INRMP) includes continuing some of Kirtland AFB's existing natural resources management practices along with several new practices to include prairie dog management, nuisance management, wild land fire management, golf course environmental management, management of sick and injured wildlife, and burrowing owl management. New practices described in the INRMP may require permit coverage.

#### **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 storm water discharges from construction activities (such as pipeline installation, 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://cfpub.epa.gov/npdes/stormwater/cgp.cfm>

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

Information is provided below if the project (or associated construction support areas, if any) 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.

I hope you find this information helpful.

Sincerely,

**Morgan  
Nelson**

Digitally signed by Morgan Nelson  
DN: cn=Morgan Nelson, o=New Mexico  
Environmental Department, ou=Office of  
General Counsel,  
email=morgan.nelson@state.nm.us, c=US  
Date: 2014.05.20 11:27:39 -06'00'

Morgan R. Nelson  
Environmental Impact Review Coordinator  
NMED File Number: EIR 5134





Susana Martinez  
Governor

STATE OF NEW MEXICO  
**DEPARTMENT OF CULTURAL AFFAIRS**  
**HISTORIC PRESERVATION DIVISION**

BATAAN MEMORIAL BUILDING  
407 GALISTEO STREET, SUITE 236  
SANTA FE, NEW MEXICO 87501  
PHONE (505) 827-6320 FAX (505) 827-6338

May 22, 2014

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

Re: INRMP

Dear NEPA Program manager,

Thank you for informing the New Mexico State Historic Preservation Officer (SHPO) of the Environmental Assessment (EA) addressing the implementation of the Integrated Natural Resources Management Plan (INRMP) for Kirtland AFB (KAFB) (HPD log 99091). I am writing with SHPO's comments concerning the cultural resources sections of the EA.

It is the SHPO's opinion that, in general, implementation of the INRMP will not have an effect on cultural resources. However, the INRMP is a planning document that is not recognized by the Advisory Council on Historic Preservation. Therefore, the INRMP has no role in the KAFBs' responsibility to consult with the SHPO under Section 106 of the National Historic Preservation Act (NHPA). This includes all undertakings that need federal funding, licenses, permits, or approvals and have the potential to adversely affect historic properties.

Undertakings that fall under the INRMP need to be reviewed by cultural resources managers at KAFB, who will then consult with SHPO. As you may know, KAFB and SHPO do not have a Programmatic Agreement (PA) in place which would allow alternate procedures for Section 106 consultation. A PA would benefit both KAFB and SHPO because it could a list of undertakings that are exempted from consultation.

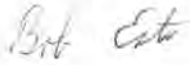
For several years now, our agencies have discussed the development of a PA. But we have not yet begun the process. The SHPO recommends that we re-enter discussion on the development of a PA. Until that time, KAFB should continue to consult with SHPO on a case by case basis.



Last, my review of the INRMP also shows that wetland improvements are planned for Coyote Springs, which is surrounded by a large number of previously recorded archaeological sites. Our records do not show any recent consultations for projects near Coyote Springs, including determinations of eligibility and assessments of effects for previous projects. Please note that KAFB needs to consult for any undertakings near Coyote Springs, and these should be addressed in the EA.

If you have any question or comments, please feel free to call me directly at (505) 827-4225 or email me at [bob.estes@state.nm.us](mailto:bob.estes@state.nm.us).

Sincerely,

A handwritten signature in cursive script that reads "Bob Estes".

Bob Estes

## Native American Tribes – IICEP Public Notice Letters

Pueblo of Isleta  
Governor E. Paul Torres, Sr.  
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 87501

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  
Penasco 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  
Kykotsmobi 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 87104

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)

MAR 27 2014

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

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

Dear President Breuninger

The U.S. Air Force (USAF) is preparing an Environmental Assessment (EA) addressing implementation of the Integrated Natural Resources Management Plan (INRMP) for Kirtland Air Force Base (AFB). The USAF recently updated the INRMP for Kirtland AFB. The new INRMP will provide natural resources management strategies for Kirtland AFB. The Proposed Action is to modify the existing Natural Resources Management Plans and practices at Kirtland AFB by implementing a new INRMP consistent with the military-essential use of the installation and its land and the goals and objectives established in the Sikes Act Improvement Act of 1997, as amended, which requires the preparation, implementation, update, and review of an INRMP for each military installation in the United States and its territories with significant natural resources. The purpose of the EA is to evaluate potential environmental impacts associated with each alternative. The updated INRMP would be reviewed annually and updated as needed to maximize its usefulness to installation natural resources personnel.

The Proposed Action includes continuing some of Kirtland AFB's existing natural resources management practices along with several new practices to include prairie dog management, nuisance management, wildland fire management, golf course environmental management, management of sick and injured wildlife, and burrowing owl management. All management practices would be integrated and implemented in the context of the installation's mission support needs and regional setting, including general planning, comprehensive range planning, cultural resources management planning, Bird/Wildlife Aircraft Strike Hazard planning, and pest management planning.

In addition to meeting Kirtland AFB's purpose and need, the Proposed Action would have additional benefits, including (1) better integration of the INRMP with other installation planning documents, (2) improved integration of the natural resources program with other Kirtland AFB activities, (3) explicit goals and objectives under which ongoing and future natural resources projects would be implemented, and (4) a systematic approach to integrated natural resources management by documenting present and future program implementation.

Kirtland AFB has developed management goals that are consistent with Department of Defense (DOD), USAF, and installation policies and guidance on how natural resources should be managed, sustained, and rehabilitated, where applicable. These goals were formulated from a comprehensive analysis of regulatory requirements, the condition of the natural resources, and consideration of the value of these resources to the people who live and work on the installation.


These goals reflect Kirtland AFB's vision for natural resources management for the period 2012 to 2017. Kirtland AFB has developed objectives that support each of these management goals. Objectives are categorized by pertinent natural resources management areas. Each goal is supported by one or more objectives. The INRMP also includes specific projects to meet each objective. The proposed projects include both newly proposed initiatives and ongoing initiatives carried over from the previous 5-year INRMP. This range of projects contributes to the objectives and goals for management of Kirtland AFB's natural resources, consistent with DOD and USAF guidance for multipurpose use, ecosystem- and landscape-level management, and support of the military mission.

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

## IICEP Tribal Public Notice Response Letter



Herman G. Honanie  
CHAIRMAN

Alfred Lomahquahu Jr.  
VICE-CHAIRMAN

May 12, 2014

Colonel Tom D. Miller  
Department of the Air Force 377 ABW/CC  
2000 Wyoming Blvd. SE Suite E-3  
Kirtland AFB New Mexico 87117-5000

Dear Colonel Miller,


This letter is in response to your correspondence dated March 27, 2014, regarding the Kirtland Air Force Base preparing an environmental assessment addressing implementation of the Integrated Natural Resources Management Plan. The Hopi Tribe claims cultural affiliation to earlier identifiable cultural groups in New Mexico. The Hopi Cultural Preservation Office supports the identification and avoidance of our ancestral sites, and we consider the prehistoric archaeological sites of our ancestors to be "footprints" and Traditional Cultural Properties. Therefore, we appreciate the U. S. Air Force's solicitation of our input and your efforts to address our concerns.

The Hopi Cultural Preservation Office is interested in consulting on any proposal that has the potential to adversely affect prehistoric sites. Therefore, if prehistoric sites are identified that will be adversely affected by project activities, please provide us with copies of the cultural resources survey report of the area of potential effect and any proposed plans for review and comment.

In addition, if any cultural features or human remains are encountered during project activities, these activities must be discontinued in the immediate area of the remains and the State Historic Preservation Department 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. Kuwanwisiwma, Director  
Hopi Cultural Preservation Office

xc: New Mexico State Historic Preservation Office

## **APPENDIX C**

### **AIR QUALITY SUPPORTING DOCUMENTATION**





## Appendix C

### Air Quality Supporting Documentation

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#### 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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