Chapter Three

AFFECTED ENVIRONMENT

Chapter Three
AFFECTED ENVIRONMENT

The purpose of this chapter is to identify or highlight any important background information that describes the existing environment at Double Eagle II Airport.

3.1 AIRPORT BACKGROUND

Double Eagle II Airport is located in within the City of Albuquerque's City Limits, approximately seven miles northwest of Albuquerque central business district on the West Mesa. The airport's location is identified on Exhibit 1A. Double Eagle II Airport is one of two airports owned and operated by the City of Albuquerque. Daily operations, maintenance, planning, and design of the airport are overseen by the City of Albuquerque Aviation Department. Initial construction of the airport was completed in 1983 with a single runway, general aviation parking apron, and an access road to Interstate 40. The second runway was constructed in 1984. Northern vehicular access to the airport was completed in the mid-1990s.

3.2 AIRPORT FACILITIES

Facilities at an airport can be divided into two distinct categories: airside facilities and landside facilities. Airside facilities include those directly associated with aircraft operation. Landside facilities include those necessary to provide an interface between surface and air transportation, as well as support aircraft servicing, storage, maintenance, and operational safety. These include the terminal building, aircraft hangars, aircraft parking aprons, and support facilities

such as automobile parking lots, roadway access, and fuel storage. Basic airport facilities are depicted on **Exhibit 3A** and summarized in **Table 3A.**

TABLE 3A
Runway Information
Double Eagle II Airport

	Runway 4-22		Runway 17-35	
Runway Length (feet) Runway Width (feet)	7,400 100		5,999 100	
Runway Surface Material	Asphalt		Asphalt	
Runway Load-Bearing Strength Single Wheel Loading (SWL)	30,000 lbs.		30,000 lbs.	
Pavement Edge Lighting	MIRL		MIRL	
Approach Aids	RWY 4 PAPI	RWY 22 MALSR	RWY 17 PAPI REIL	RWY 35 REIL
Instrument Approach Procedures	RWY 4 *None*	RWY 22 ILS GPS	RWY 17 *None*	RWY 35 *None*
Fixed Wing Aircraft Traffic Pattern	Left	Right	Left	Right
Weather or Navigational Aid	AWOS			

MIRL - Medium Intensity Runway Lighting
PAPI – Precision Approach Path Indicator
REIL – Runway End Identifier Lights
ILS – Instrument Landing System
GPS – Global Positioning System
MALSR – Medium Intensity Approach Lighting System with Runway Alignment Indicator Lighting
AWOS – Automated Weather Observing System

Source: *Airport Facility Directory, Southwest U.S. April 10, 2008 – June 5, 2008*.

3.3 LAND USE

3.3.1 Existing Land Use

Double Eagle II Airport is located in a largely undeveloped area in northwest Albuquerque. Land uses within the vicinity of the airport are depicted on **Exhibit 3B**. As shown on the exhibit, the land directly east of the airport is the Volcanoes Day Use area of the Petroglyph National Monument. This park unit is jointly managed by the National Park Service and the City of Albuquerque and protects a variety of cultural and natural resources within its grounds. A detailed discussion of the Petroglyph National Monument is included later in this chapter.

West of the airport is the City of Albuquerque's Soil Amendment Facility used to compost green waste collected from the city. West of the Soil Amendment Facility is the Grassland Preserve

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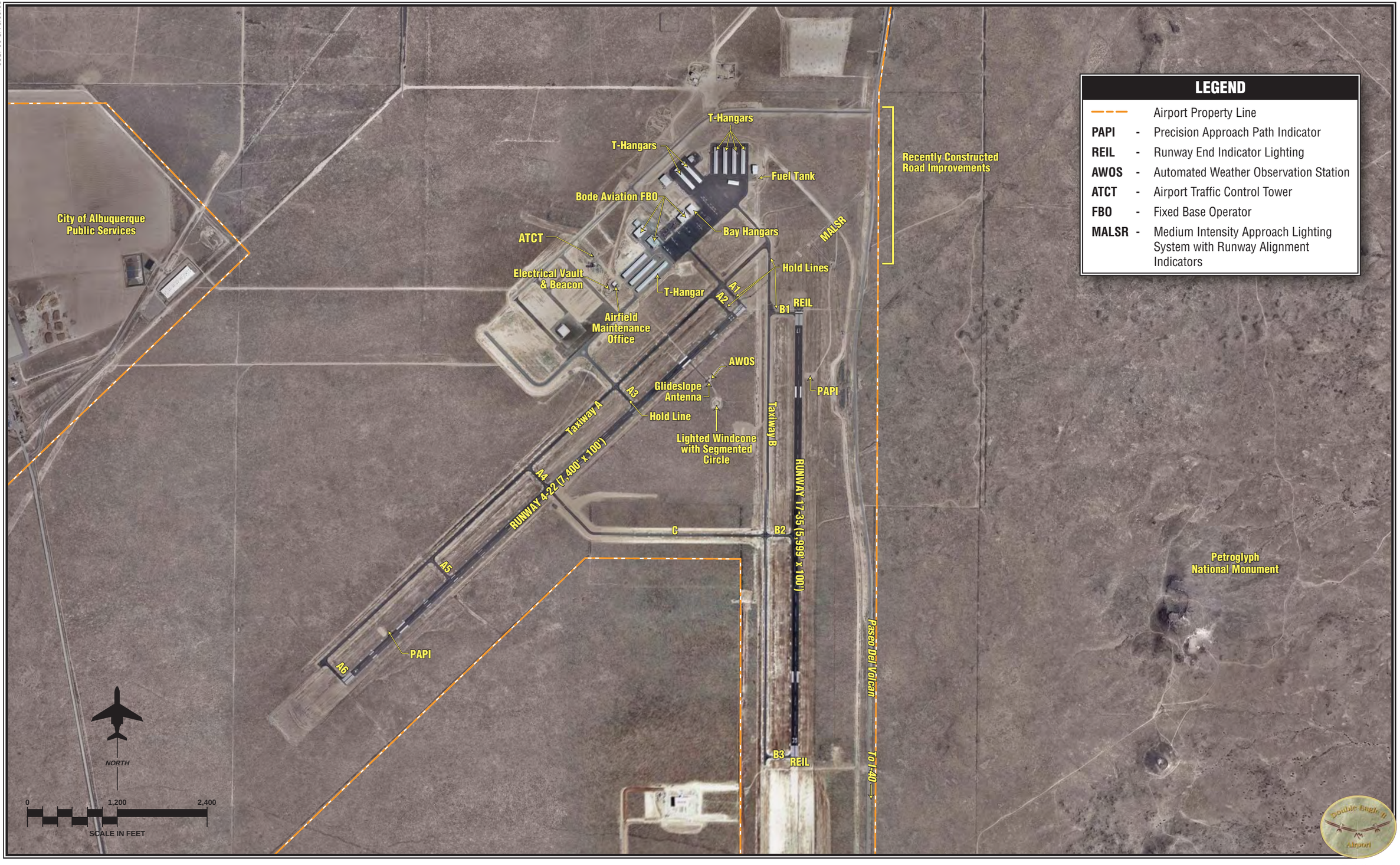

LEGEND

— — —		Airport Property Line
PAPI	-	Precision Approach Path Indicator
REIL	-	Runway End Indicator Lighting
AWOS	-	Automated Weather Observation Station
ATCT	-	Airport Traffic Control Tower
FBO	-	Fixed Base Operator
MALSR	-	Medium Intensity Approach Lighting System with Runway Alignment Indicators

Exhibit 3A
AIRPORT FACILITIES

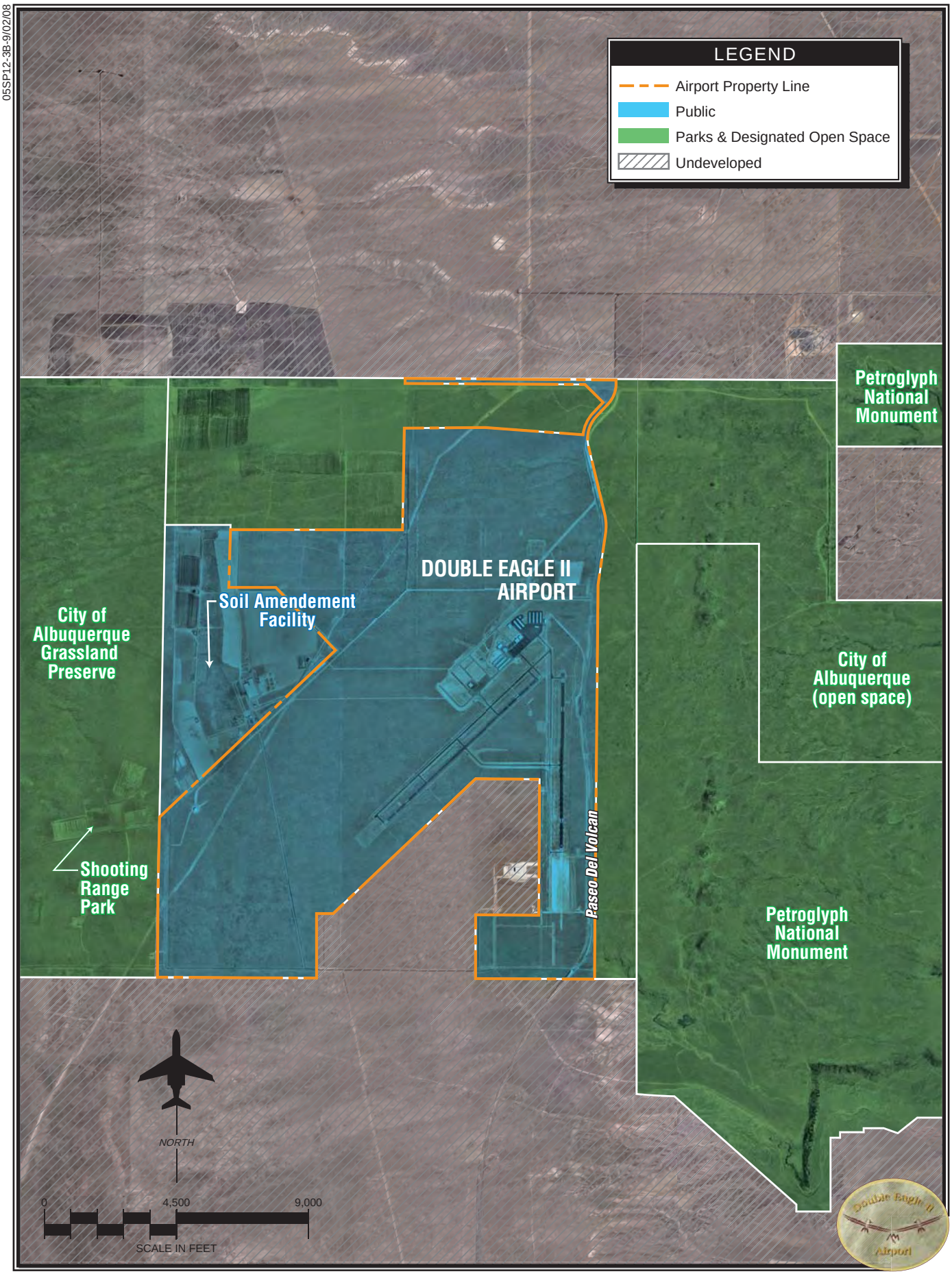

Exhibit 3B
EXISTING LAND USE

open space area managed by the City of Albuquerque. This area also includes the City's Shooting Range Park, an area designated for the safe discharge of firearms.

Land immediately north of the airport is owned by the City of Albuquerque and the New Mexico State Land Department. Beyond the publicly owned tracts, approximately 3 miles from the airport hangar facilities, is the Quail Ranch Development which will contain a planned community consisting of residences and commercial development. Immediately south of the airport, between Runways 17-35 and 4-22, is the Aerospace Technology Park. South of this area, property is currently undeveloped but is planned for development in the future.

Future Land Use

As previously stated, Double Eagle II Airport is located within the City of Albuquerque, which has land use planning jurisdiction over the lands surrounding the airport. The City of Albuquerque and Bernalillo County have adopted a jointly prepared Comprehensive Plan. Amended in 2003, the Comprehensive Plan includes policies and maps to guide land use development throughout the Albuquerque area. As shown on **Exhibit 3C**, the areas surrounding the airport are designated as Reserve within the Comprehensive Plan. The plan provides two approaches for development within Reserve Areas: conventional development or planned communities. The conventional approach would result in clustered development with a housing density of one dwelling unit per acre. The planned community approach would require a separate master plan for the community that must meet specific criteria outlined in the Comprehensive Plan. The criteria are intended to create a self-sufficient community that retains a link to the larger community.

Further development guidance for the West Mesa is provided by the City of Albuquerque's West Side Strategic Plan. Amended in 2002, this plan outlines development strategies for managing growth on Albuquerque's West Side which includes Double Eagle II Airport and its environs. The West Side Strategic Plan outlines development approaches for three neighborhood developments adjacent to the airport: Black Ranch, Far West Mesa, and Westland North. Black Ranch, also referred to as Quail Ranch, is a planned community of 7,000 acres that will have approximately 19,000 housing units at full build-out. The Far West Mesa area, located southwest of the airport, encompasses over 17,000 acres and is capable of accommodating three to five planned communities, but is not anticipated to be developed within the next 50 years. The Westland North community encompasses 6,500 acres southeast of the airport and is expected to support approximately 22,500 housing units.

A substantial amount of undeveloped land exists in the vicinity of the airport. The *2002 Double Eagle II Airport Master Plan* identifies ongoing development projects, as well as the recommended long-term development for the airport.

Land Use Planning Policies

Height and hazard zoning establishes height limits for new construction near the airport and within the runway approaches. The zoning is based upon an approach plan which describes artificial surfaces defining the edges of airspace which are to remain free of obstructions for the purpose of safe air navigation. It requires that anyone who is proposing to construct or alter an object that affects airspace must notify the FAA prior to construction. The City of Albuquerque has adopted an airport height and hazard zone ordinance under Chapter 14, Article 15 of the *Albuquerque Code of Ordinances.*

3.4 EXISTING ENVIRONMENT

This section provides background information on the existing natural and cultural environment within and surrounding Double Eagle II Airport. Sources of this information include coordination received from various resource agencies (copies contained within **Appendix B**), as well as field surveys and studies. Environmental resources (as described within Appendix A of FAA Order 1050.1E) which are not located within the project area include: Coastal Resources, Farmland, Floodplains, and Wild and Scenic Rivers. A field survey was conducted to determine the presence of biological resources. A review of previous environmental documentation prepared for Double Eagle II Airport was used to determine the presence of Architectural, Archaeological, and Cultural Resources. The presence of Coastal Resources, Environmental Justice Areas, Farmlands, Floodplains, and Wild and Scenic Rivers was determined through internet research.

The following sections describe the existing natural, cultural, and socioeconomic resources within the airport environs. **Appendix G** provides a detailed description of the environmental impact categories discussed within this report as defined within FAA Order 1050.1E.

3.4.1 Natural Resources

Air Quality

Double Eagle II Airport is located in Bernalillo County, which is in attainment for all federal criteria pollutants as defined by the U.S. Environmental Protection Agency[1].

Fish, Wildlife, and Plants

In May 2007, biologists with Taschek Environmental Consulting conducted a field evaluation of the project area to allow for an evaluation of sensitive biological resources or protected species. The survey findings are documented within the September 2007 *Biological Evaluation Memorandum*, a copy of which is contained within **Appendix H.**

[1] According to the EPA Greenbook accessed September 2008, http://www.epa.gov/oar/oaqps/greenbk/ancl.html#NEW%20MEXICO.

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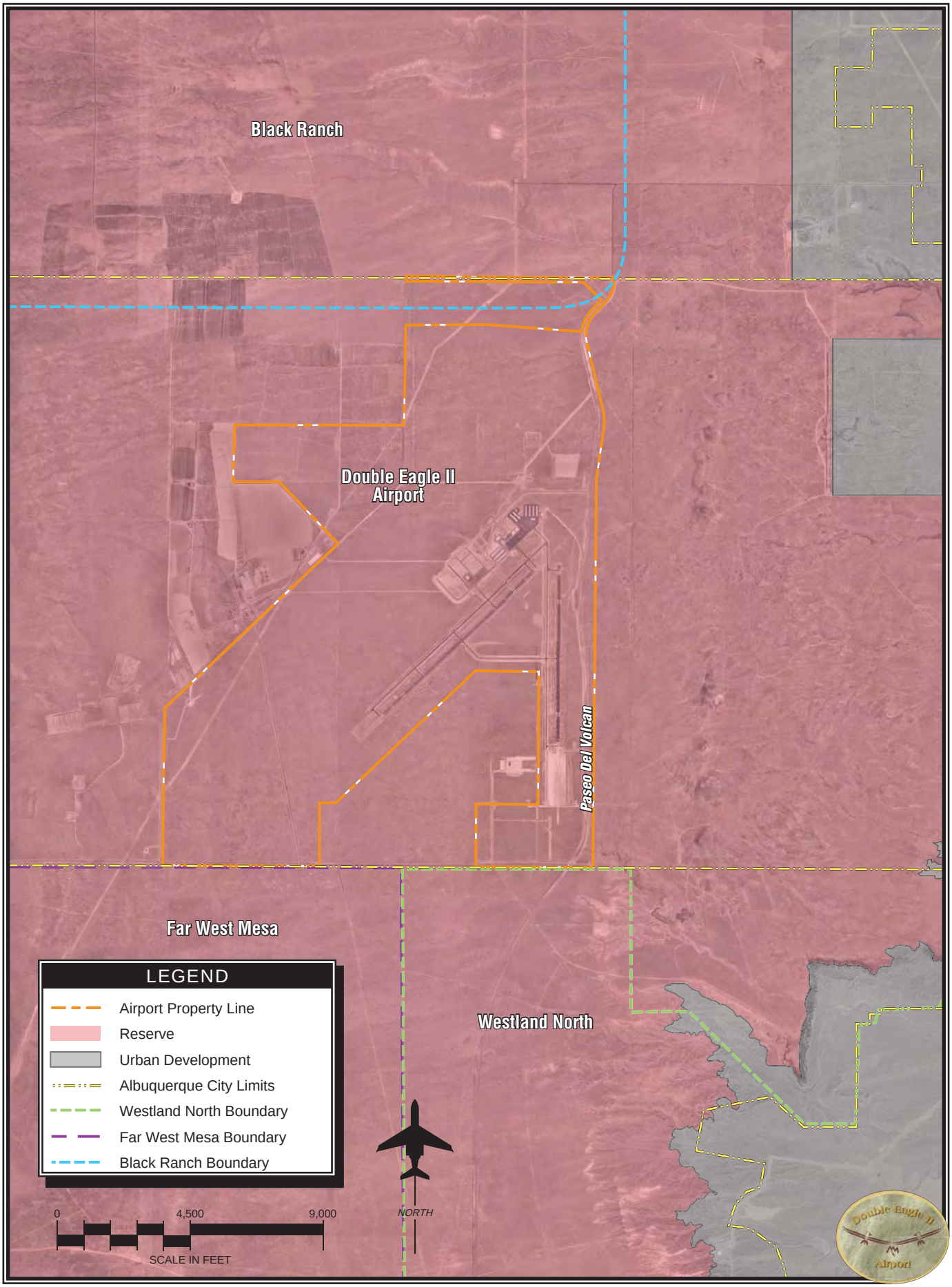

Source: Albuquerque/Bernilillo County Comprehensive Plan
City of Albuquerque West Side Srategic Plan

Exhibit 3C
FUTURE LAND USE

According to the report, the project area contains two biotic community types: desert grasslands and plains-mesa grasslands. During the field survey, there were no threatened or endangered species or their habitat observed. Two burrowing owls, classified as a federal species of special concern, were observed southwest of the project area between Runway 17-35 and its parallel taxiway.

A prairie dog colony was observed in the easternmost portions of airport property. The location of the colony is depicted on **Exhibit 3D**. Prairie dogs are not listed as protected species by any federal or state agencies, but the City of Albuquerque maintains a "no-kill" policy toward prairie dogs that are on City property.

The Biological Evaluation (BE) concludes that there is no critical habitat for federally listed species within project area. Federally listed species which are known to occur in Bernalillo County are included in **Table 3B** and a copy of the BE is presented in **Appendix H**.

TABLE 3B
Federally Listed and Candidate Species in Bernalillo County

Species	Federal Status	State Status	Potential to Occur in Study Area
Birds			
Bald eagle	Threatened[1]	Threatened	Unlikely
Southwestern willow flycatcher	Endangered	Endangered	Unlikely
Yellow billed cuckoo	Candidate	Sensitive	Unlikely
Mexican spotted owl	Threatened	Sensitive	Unlikely
Mammals			
Black-footed ferret	Endangered	-	Unlikely
Fishes			
Rio Grande silvery minnow	Endangered	Endangered	Unlikely

NMFS: Under jurisdiction of National Marine Fisheries Service

* An Unlikely determination indicates no suitable habitat within the project area.

[1] – At the time of the Biological Evaluation, this species was identified as "Threatened, Proposed Delisting." The current status is "Delisted Taxon, Recovered, Being Monitored First Five Years."

Source: *Taschek Environmental Consulting, Biological Environmental Memorandum, Double Eagle II Airport, September 2007*

Water Quality, Waters of the U.S., and Wetlands

According to the New Mexico Environment Department (NMED), Surface Water Quality Bureau website, the proposed project area does not contain any waters listed in the *Clean Water Act,* Section 303(d) list (Impaired Waters List).

The only water supply source to the project area is the Santa Fe Group Aquifer. In 2002, the NMED conducted a Source Water Assessment to determine how susceptible the Santa Fe

Group aquifer wells are to contamination. NMED concluded that the wells are well-maintained and operated, and are generally protected from potential sources of contamination. Wells near known contamination sites are ranked highly susceptible to contamination. Potential sources of contamination include businesses that use hazardous chemicals such as automotive repair shops, gas stations, dry cleaners, paint and hardware stores, car washes, construction sites, golf courses, interstate highways and city streets, military facilities, sewer lines and septic tanks, and unlined arroyos, ditches, and drainage canals. The airport is not considered a significant source of contamination due to its relatively remote location.

Recently, the Albuquerque area began using water obtained through the San Juan-Chama Drinking Water Project. This project diverts San Juan-Chama river water to a new, state-of-the-art water treatment plant north of Albuquerque. The finished water is distributed to customers for drinking water and is blended with ground water supplies during the summer or in times of drought.

As discussed in the previous section, a BE was conducted for the project vicinity in May 2007. As part of the evaluation, the presence of wetlands was assessed. Results of the evaluation indicated that there were no wetland plants, soils, or hydrology observed within the project area. All three of these components are required to define a wetland; therefore, no wetland issues are associated with the proposed project. Additionally, previous coordination with the U.S. Army Corps of Engineers (USACE) for projects at the airport indicates that there are no areas within the airport environs that meet the definition of wetlands. Finally, the Biological Evaluation did not identify any arroyos which are classified as Waters of the United States within the project area. The USACE responded to the agency scoping letters to indicate that no Waters of the United States are located within the project site. A copy of the response letter is included in **Appendix B**.

3.4.2 Cultural, Historic, and Archaeological Resources

3.4.2.1 On-Airport Resources

Several field surveys have been undertaken at and in the vicinity of the airport to identify the presence of artifacts or sites eligible for listing on the National Register of Historic Places (NRHP). Most recently, in the spring of 2004, 5,743 acres were surveyed in the vicinity of the airport, including most of the airport property. During this survey, seven previously recorded sites and eight new sites were identified. Nine of these sites were recommended potentially eligible for inclusion in the NRHP. (The precise locations of the sites cannot be disclosed to ensure they are not disturbed until further analysis is undertaken.) A copy of the 2004 survey report is contained in **Appendix I**.

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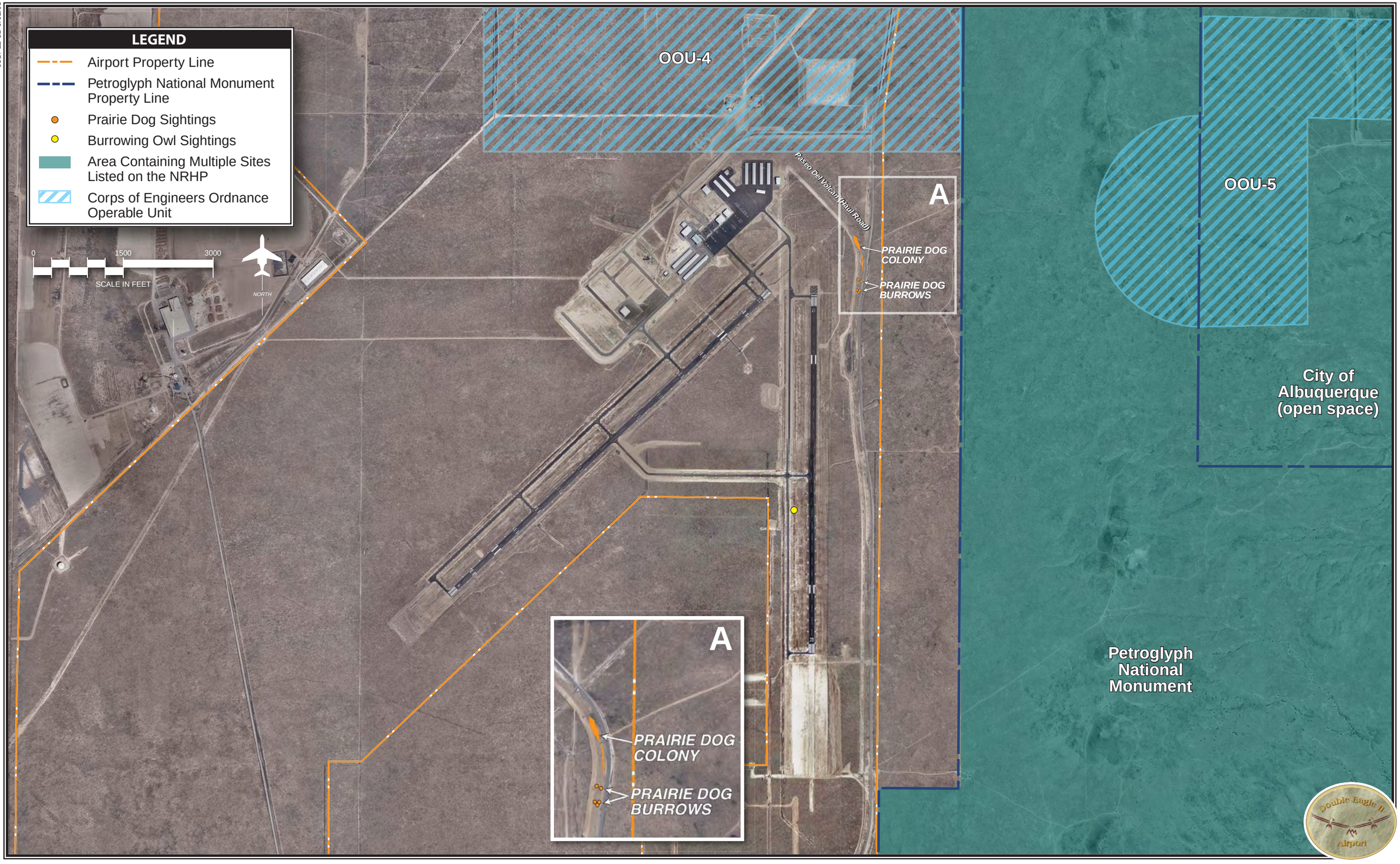

Exhibit 3D
ENVIRONMENTAL SENSITIVITIES

3.4.2.2 Off-Airport Resources

A number of off-airport cultural, historic, and archaeological resource sites have been identified and documented within the vicinity of the airport. The most significant of these sites is the entirety of the Petroglyph National Monument. As depicted on **Exhibit 3E**, the Monument is located just east of the airport. The Monument was established in 1990 and is cooperatively managed by the National Park Service and the City of Albuquerque Open Space Division. Prior to becoming a national monument, in 1986 the area was listed on the National Register of Historic Places as the Las Imágines National Register District. The Monument is home to a variety of cultural and natural resources including volcanoes, archeological sites, an estimated 20,000 carved images, and numerous plant and animal species. Many of the animal species are nocturnal, thereby active in the Volcano Day Use Area only at night.

Response to recreational use, vandalism, and development pressure on the West Mesa led to the creation of the Monument. A proposal in the late 1960s to divide the mesa top and volcanoes into five-acre parcels spurred public interest in the area. To ensure that the area would not be developed, the City of Albuquerque invested millions of dollars, matched with federal Land and Water Conservation Funds, to buy and protect the volcanoes and surrounding mesa land.

This area became the Petroglyph National Monument through enabling legislation passed in June 1990. Due to the role of the City's Open Space Division in acquiring land and managing it for several decades, Congress envisioned a cooperative partnership between the City and the National Park Service in managing this park unit. Therefore, consistent with a Memorandum of Understanding (MOU), the land within the boundary of the monument is cooperatively managed by the City of Albuquerque and the National Park Service. In accordance with the MOU, the National Park Service conducts interpretive and educational programs and natural and cultural research, patrols all Monument lands, operates the Las Imágines Visitor Center (an old adobe home built in 1953 and purchased from Dr. Sophie Aberle) and constructs and maintains facilities in the Atrisco Unit. The City of Albuquerque manages both the Boca Negra Unit (in which the State of New Mexico acquired 140 acres of land) and Piedras Marcadas Units and also conducts interpretive programs and law enforcement patrols.

The natural environment of the Petroglyph National Monument includes two primary geologic features: the basalt escarpment and the volcanoes. The basalt escarpment is part of a 17-mile feature known as the West Mesa because of its rise above the Rio Grande valley to the east. Five volcanoes, referred to as the Butte, Bond, Vulcan, Black, and JA volcanoes, are located within the Monument. The volcanic activity in the area resulted in a variety of related geologic formations including caves and lava flows. These impressive geologic features provide the context for the notable cultural features found in the area. The following sections describe the public and traditional use of the Monument.

Public Monument Use

Within the Monument are six lava flows and five volcanic cones that formed about 150,000 years ago. The first two flows traveled the farthest creating the lava-covered plateau of the West Mesa and extended east to what is now the boulder-strewn volcanic escarpment, whose location is depicted on **Exhibit 3E**. The boulders within the escarpment were used by American Indians and settlers of mixed Spanish, Mexican, and Indian backgrounds to create more than 20,000 petroglyphs. Visitors to the Monument typically utilize hiking trails to access the peaks of the volcanoes as well as portions of the escarpment. Due to the unique geography and geology, the Monument is also home to a number of plant and animal species that are unique to the area such as the millipede and numerous medicinal plants.

Traditional Monument Use

The Petroglyph National Monument area was used by a variety of American Indian and Spanish heritage peoples for thousands of years. As a result, these various groups each have a unique perspective on the cultural and natural importance of the features found within the Monument. These include: the archaeological sites, petroglyphs, plants, animals, and sacred places such as ceremonial areas, vistas, shrines, and spirit trails.

As a means of documenting the traditional use of the Monument, the NPS has overseen the preparation of several Ethnographic Landscape Reports (ELRs). The purpose of such reports is to identify those American Indian Tribes, Pueblos, and Spanish heritage groups that had traditional ties to the Monument as well as to determine the most prudent means for protecting the resources contained within the Monument boundaries. The most recent report, entitled *"That Place People Talk About": The Petroglyph National Monument Ethnographic Landscape Report*, was prepared by the Rio Grande Foundation and was published in May 2002.

According to the ELRs, the traditional uses of the Monument extend back to at least the latter Paleoindian period (10,000/9500-5500 B.C.) During interviews undertaken with various tribes and pueblos during the preparation of the ELRs, it was documented that while the petroglyphs and volcanoes were important artifacts, the Petroglyph symbols could not be pulled out of the context in which they are found and still retain any significant meaning for the Pueblo people. The spatial, geographical, and Petroglyph-grouping contexts in which these symbols are observed provide the meaning of the symbols to Pueblo people. Furthermore, Pueblo people do not view the spiritual significance of the Monument in terms of the specific sites, rather the relationship between the Monument area and the Sandia Mountains. It is believed there are spiritual pathways in the area of the volcanoes that connect the petroglyphs on the escarpment with the mountain range. The geologic windows, the locations of which are depicted on **Exhibit 3E**, have special importance as they constitute links in the ethnographic landscape connecting the pueblo people to the Sandia Mountain. The geologic windows are similar to kivas, with the breeze blowing down the canyons analogous to air coming in a ventilator shaft. It is believed the windows "breathe" hot and cold air.

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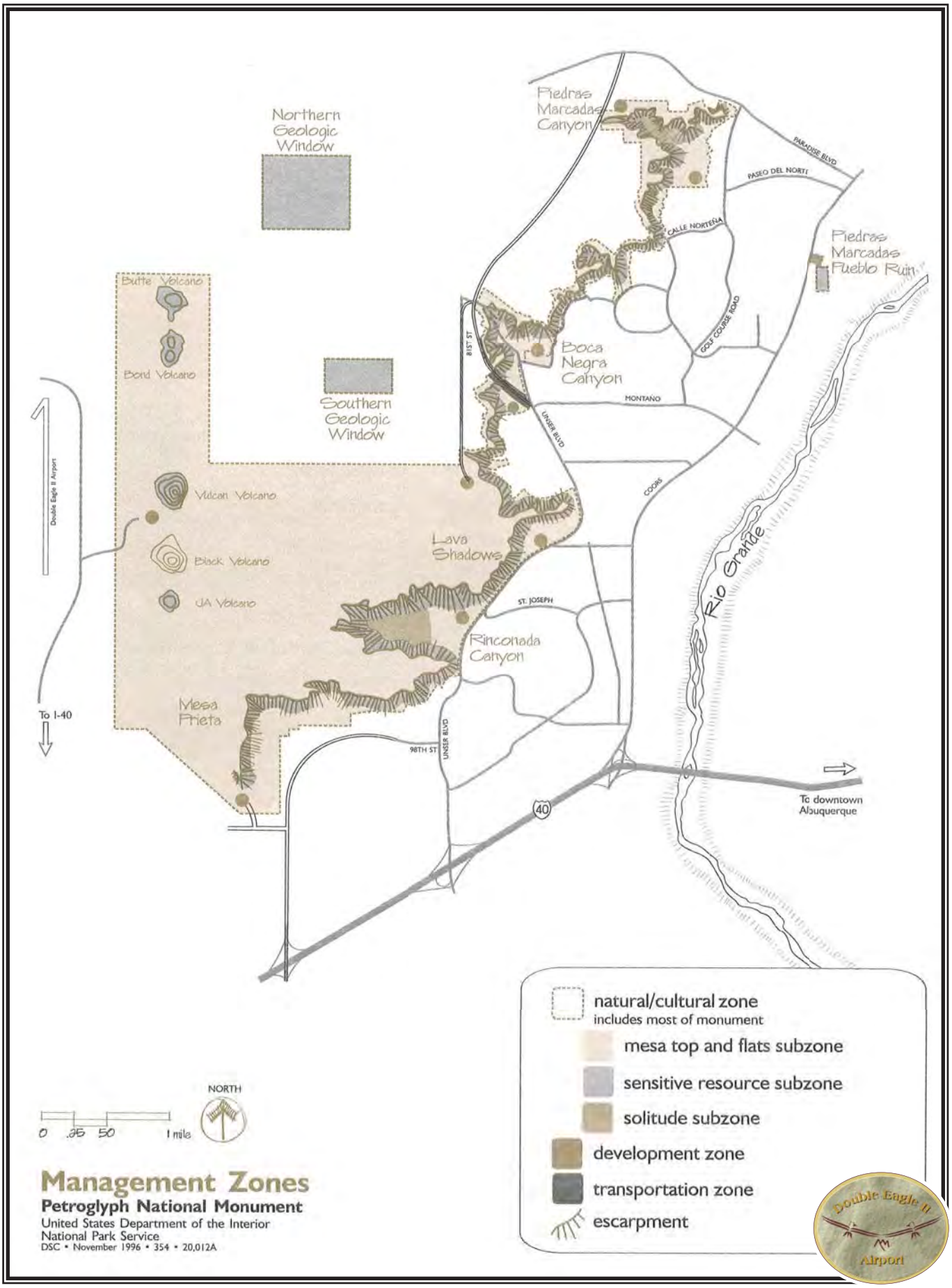

Exhibit 3E
PETROGLYPH NATIONAL
MONUMENT FEATURES

According to the NPS, the Monument can be visited at any time by any of the groups with traditional ties to the area. It is unknown when or what parts of the monument are visited regularly. However, there have been past efforts by tribes and pueblos to remove access to specific areas within the monument such as the Northern Geologic Window.

3.4.3 Hazardous Materials, Pollution Prevention, and Solid Waste

Coordination with the USACE indicates that an area north of the proposed project area is designated as Ordinance Operable Unit (OOU) 4, which identifies the "New" Demolition Area that was used for training pilots during World War II. Identified on **Exhibit 3D**, the area is suspected of containing munitions as large as 250 lb. High Explosives (HE) General Purpose (GP) bombs. A 100 pound HE GP bomb was unearthed during road construction in this area in 1996. Much of OOU 4 has not been surveyed and the USACE states that there is sufficient historical information and field investigative data to conclude the area may contain unexploded munitions. The USACE has requested that these munitions be removed; however, no timeline has been established for their removal.

The USACE also indicated that OOU 4 area was used to "train" pilots and the accuracy of the trainees may not have been of exceptional quality, and care should be taken anywhere near the HE target area vicinity.

As previously discussed, the City of Albuquerque's Soil Amendment Facility is located west of the airport. The Soil Amendment Facility is used to convert green waste into compost which is then used at the City's parks.

The airport currently maintains a National Pollutant Discharge Elimination System (NPDES) Permit (NMR05A992) and associated Stormwater Pollution Prevention Plan (SWPPP) to control water pollution.

According to the Environmental Protection Agency's Enviromapper website, there are no designated Superfund sites within the vicinity of the airport. There are five regulated sites on the Enviromapper webpage listed for air emissions. These include the following: Albuquerque Southwest, Climate Roofing, the City of Albuquerque Westside Correction facility located west of the airport, and two Alsup petroleum facilities, one located southwest of the airport and one located north of the airport. Each of these facilities is categorized as having potential uncontrolled emissions of less than 100 tons per year.

3.4.4 Parks

Within the vicinity of Double Eagle II Airport are a number of park and open space areas, the largest of which is the Petroglyph National Monument which was described in a previous section.

West of the airport are two park facilities that are managed by the City of Albuquerque. These include the Grassland Preserve Open Space area and the Shooting Range Park.

3.4.5. Noise

Exhibit 3F depicts the existing noise condition at the airport. As indicated on the exhibit, the 65 DNL noise contour is entirely contained on airport property.

3.5 SOCIOECONOMIC RESOURCES

The area within the immediate vicinity of Double Eagle II Airport is sparsely populated. **Exhibit 3G** depicts the U.S. Census block groups for areas surrounding Double Eagle II Airport. As indicated on the exhibit, the block group including and near the airport has a low percentage of population below the poverty level; each block group is below 10 percent. The minority populations within these block groups range between 20 and 40 percent, with a greater percent minority in the block group south of the airport.

Information regarding the socioeconomic characteristics of the study was obtained from the U.S. Census Bureau. The purpose of this section is to provide background material which will be utilized in the socioeconomic discussions within Chapter Four of this EA.

- **POPULATION**

Historical population estimates for the City of Albuquerque, Bernalillo County, and the State of New Mexico are presented in **Table 3C**. As indicated in the table, the population of the city, county, and state have increased since 1990. **Table 3D** provides additional socioeconomic information for the area.

TABLE 3C
Population Trends (1990-2005)

Year	City of Albuquerque	Bernalillo County	State of New Mexico
1990	384,736	480,577	1,515,069
2000	448,607	556,678	1,819,046
2006	493,438	615,099	1,954,599

Source: U.S. Census Bureau: 1990, 2000, 2006

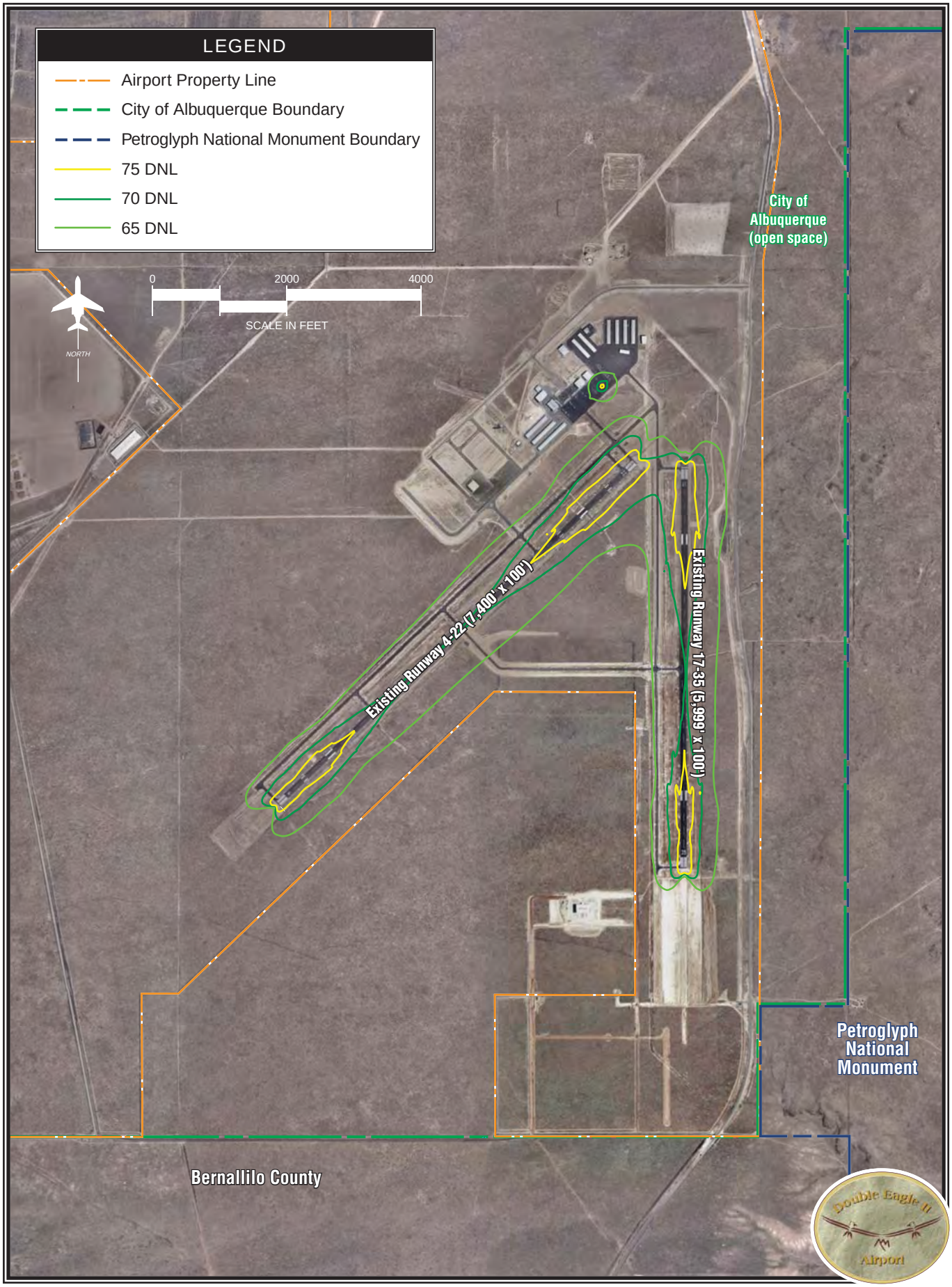

Exhibit 3F
EXISTING NOISE CONTOURS

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Percent Below Poverty

Percent Minority

LEGEND

0.0 - 10

10 - 20 (NA)

20 - 30

30 - 40

Source: U.S. Census Bureau

NORTH

0 3000 6000

SCALE IN FEET

Double Eagle II Airport

Exhibit 3G
MINORITY POPULATION AND POVERTY
RATES BY CENSUS BLOCK GROUP

TABLE 3D
Demographic Information

Income	City of Albuquerque	Bernalillo County
Demographic Information		
Median Family Income	$43,021	$55,439
Per Capita Income	$24,497	$24,545
Percent of Individuals below Poverty Level	14.6%	15.5%

Source: U.S. Census Bureau: 1990, 2000, 2006

3.6 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

The purpose of this section is to outline those projects which will need to be considered during the cumulative impact analysis in Chapter Four of this EA. The Council on Environmental Quality (CEQ), Section 1508.7, defines cumulative impact as the impact on the environment which results 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 actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Past projects are defined as those which have been undertaken over the past few years. Foreseeable future actions are defined as those which are likely to become a reality and have begun the approval design or construction processes. Projects which are conceptual in nature are not considered as they may or may not be undertaken.

- **AIRPORT DEVELOPMENT**

The following developments have recently been completed at the airport:

- Airport Traffic Control Tower
- Sewer, water, and communication infrastructure
- Taxiway improvements
- Additional security fencing
- Hangar construction
- Runway 4-22 resurfacing
- Relocation of Paseo Del Volcan

For these projects, appropriate environmental documentation was prepared and submitted to the FAA.

- **OFF-AIRPORT DEVELOPMENT**

The following projects have been undertaken, approved, or are in the planning stages:

Eclipse Aviation opened its Customer Training Center on a parcel adjacent to Double Eagle II Airport. Eclipse Aviation plans to build a manufacturing facility on property north of the airport that will produce 1,500 aircraft per year and employ approximately 1,500 people.

Access roads for the Aerospace Technology Park have been constructed south of the airport, between Runway 17-35 and Runway 4-22.

Chapter Four

ENVIRONMENTAL CONSEQUENCES AND MITIGATION

Chapter Four
ENVIRONMENTAL CONSEQUENCES AND MITIGATION

FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures*, and 5050.4B, *National Environmental Policy Act* (NEPA) *Implementing Instructions for Airport Actions*, defines the form and content of Environmental Assessments (EAs), and requires that an impact analysis be conducted for a number of specific categories to determine whether a potential for significant environmental impact from the proposed improvements exists. Impacts are determined by comparing the anticipated local environmental condition after development (implementation of Alternatives A or B) to the conditions on and around the airport should no project be developed (implementation of the No Action Alternative). Data regarding the existing condition is provided in Chapter Three as background and supplemental information. Where necessary, mitigation measures are discussed which will reduce or eliminate anticipated environmental impacts for each of the alternatives.

For the purposes of this EA, the environmental consequences were determined for the following:

- No Action Alternative.
- Alternative A, Proposed Action Alternative, Runway 17-35 Improvements.
- Alternative B, Runway 4-22 Improvements.

Please note, if impacts for Alternatives A and B are similar, the impact discussions will be combined.

In accordance with the Council on Environmental Quality (CEQ) guidance, as contained within 40 CFR 1508, the environmental consequences of each impact category include consideration of the direct, indirect, and cumulative effects of the alternatives under consideration. Where necessary, mitigation measures are discussed which will reduce or eliminate anticipated environmental impacts for each of the alternatives. Special purpose laws which protect various environmental resources will also be discussed. The No Action Alternative establishes the baseline impact level for the environmental consequences analysis.

The following sections contain a detailed impact analysis for those categories as defined within Appendix A of FAA Order 1050.1E and Table 7-1 of FAA Order 5050.4B. The order of the impact categories deviates from what is presented within the appendix in order to allow for a more streamlined presentation of the potential impacts. **Appendix G** provides detailed descriptions of each of the resource categories analyzed within this chapter. Only the results of the analysis undertaken are included within Chapter Four.

4.1 RESOURCES NOT IMPACTED BY PROJECT ALTERNATIVES

As outlined within paragraph 706.f of FAA Order 5050.4B, concise analysis was undertaken ***only*** for the potential impacts the alternatives under consideration may cause. A number of resources will not be impacted by implementation of any of the alternatives under consideration and are, therefore, not discussed in detail within this chapter of the EA. Resources which are not present within the study area or are not impacted by any of the alternatives include the following:

- RESOURCES NOT PRESENT
    - *Coastal resources*
    - *Farmland*
    - *Floodplains*
    - *Wetlands*
    - *Wild and Scenic Rivers*

4.2 NOISE

In accordance with FAA Orders 1050.1E and 5050.4B, the anticipated noise condition was prepared for the existing condition as well as the alternatives under consideration. Future analysis time periods include the anticipated year of project implementation (2010) and five years from the implementation date (2015). Detailed descriptions of the modeling inputs are contained within the noise discussion in **Appendix G**. The following sections outline the results of the noise modeling efforts for the existing condition, Alternative A, Alternative B, and the No Action Alternative.

Alternative A (Proposed Action) and Alternative B

Exhibits 4A and **4B** depict the 65, 70, and 75 DNL noise contours for Alternatives A and B for the year of project implementation (2010) and five years beyond (2015). As indicated on the exhibits, the 65 DNL noise contour remains on airport property for both forecast years under either alternative scenario. No noise-sensitive development is contained within any of the depicted contours.

Indirect noise impacts primarily relate to those that occur during construction of the proposed airport improvements. These impacts are discussed further within Section 4.14.

No Action

For comparison purposes, the No Action Alternative noise contours are also depicted on **Exhibits 4A** and **4B**. The contours are contained on airport property for both forecast years. No noise-sensitive development is contained within any of the depicted contours.

ANALYSIS AND MITIGATION

Implementation of Alternative A, the extension of Runway 17-35, results in the noise contour for the runway extending along the length commensurate with the proposed extension. When compared to the No Action Alternative, the contours extend to the north and south of the runway. A similar situation occurs with implementation of Alternative B, as the noise contour for Runway 4-22 extends to the southwest when compared to the No Action Alternative.

When compared to the No Action Alternative, implementation of either alternative under consideration does not result in a significant noise impact as defined by the FAA. A significant noise impact is defined as one which will occur if the proposed action will cause noise-sensitive areas to experience an increase in noise of 1.5 DNL or more, at or above the 65 DNL noise exposure level when compared to the No Action Alternative for the same timeframe. The 65 DNL noise contour remains on airport property for all alternatives.

Potential noise impacts on the neighboring National Park Unit are discussed in detail within Section 4.8.

4.3 COMPATIBLE LAND USE

As discussed within Chapter Three, existing land uses surrounding Double Eagle II Airport consist of portions of the Petroglyph National Monument to the east; the City of Albuquerque's Soil Amendment Facility to the west; the Aerospace Technology Park located between the runways, southwest of the Runway 35 end; and large expanses of undeveloped areas to the north and south.

Alternative A (Proposed Action)

As discussed within Section 4.2, Noise, no noise-sensitive development is contained within the 2010 or 2015 65 DNL noise contours. Land within these contours is compatible with airport operations as it is utilized for airport operations.

A number of new developments (Quail Ranch, Far West Mesa, and Westland North) are planned for the undeveloped areas located north and south of the airport. The City of Albuquerque Aviation Department has been very open with each of the developers regarding the planned development at the airport. The developers have communicated a willingness to sign avigation easements and will ensure that compatible land uses, such as light industrial or commercial, are placed in the areas within closest proximity to the airport or areas that will experience low overflights.

No wetland and floodplain impacts will result from implementation of this alternative and the alternative does not conflict with local or state regulatory land use compatibility plans, as the planned future land uses surrounding the airport will be compatible with airport operations. Alternative A is consistent with local land use plans, policies, and controls for the airport environs. The National Park Service indicated a preference for Alternative A in their letter dated November 3, 2008 (a copy of this letter is contained in **Appendix B**, Page B-66). Impacts to this resource are further discussed in Section 4.8, Historical, Architectural, Archaeological, and Cultural Resources.

Alternative B

No noise-sensitive development is contained within the 2010 or 2015 65 DNL noise contours for this alternative. Aircraft will continue to operate in a manner similar to today; therefore, no change in flight patterns will result from alternative implementation.

No wetland or floodplain impacts will result from implementation of this alternative and the alternative does not conflict with local or state regulatory land use compatibility plans, as the planned future land uses surrounding the airport will be compatible with airport operations. Alternative B is consistent with local land use plans, policies, and controls for the airport environs with the exception of the National Park Service's *General Management Plan*. This plan states that "The cumulative impacts of individual airport improvements should be addressed in an environmental document." In accordance with this plan, analyses of the proposed airport improvements were undertaken and the results provided to the NPS. Coordination received from the NPS in November 2008 indicated support for Alternative A. A copy of the letter received from the NPS is contained in **Appendix B**, page B-66.

05SP12-4A-1/8/09

NO ACTION

Existing Runway 4-22 (7,400' x 100')

Existing Runway 17-35 (5,999' x 100')

ALTERNATIVE A

Relocate Instrument Landing System to Runway 17

Road Realignment

Road Closure

Ongoing Development Areas

2,001' Runway Extension

Existing Runway 4-22 (7,400' x 100')

Existing Runway 17-35 (5,999' x 100')

Ultimate (9,000' x 100')

1,000' Runway Extension

Petroglyph National Monument

Bernallilo County

0 2,000 4,000

SCALE IN FEET

NORTH

ALTERNATIVE B

Ongoing Development Areas

Ultimate (9,000' x 100')

Existing Runway 4-22 (7,400' x 100')

Existing Runway 17-35 (5,999' x 100')

1600' Runway Extension

LEGEND

- Airport Property Line
- Ultimate Airfield Pavement
- Ultimate Road
- XXXXX Pavement to be Removed
- City of Albuquerque Boundary
- Petroglyph National Monument Boundary
- 75 DNL
- 70 DNL
- 65 DNL

Double Eagle II Airport

Exhibit 4A
2010 NOISE CONTOURS

05SP12-4B-1/8/09

NO ACTION

Existing Runway 4-22 (7,400' x 100')

Existing Runway 17-35 (5,999' x 100')

ALTERNATIVE A

Relocate Instrument Landing System to Runway 17

Road Realignment

Road Closure

Ongoing Development Areas

2,001' Runway Extension

Existing Runway 4-22 (7,400' x 100')

Existing Runway 17-35 (5,999' x 100')

Ultimate (9,000' x 100')

1,000' Runway Extension

Petroglyph National Monument

Bernallilo County

0 2,000 4,000

SCALE IN FEET

NORTH

ALTERNATIVE B

Ongoing Development Areas

Ultimate (9,000' x 100')

Existing Runway 4-22 (7,400' x 100')

Existing Runway 17-35 (5,999' x 100')

1600' Runway Extension

LEGEND

- Airport Property Line
- Ultimate Airfield Pavement
- Ultimate Road
- XXXXX Pavement to be Removed
- City of Albuquerque Boundary
- Petroglyph National Monument Boundary
- 75 DNL
- 70 DNL
- 65 DNL

Double Eagle II Airport

Exhibit 4B
2015 NOISE CONTOURS

No Action

No noise-sensitive development is contained within the 2010 or 2015 65 DNL noise contours for the No Action Alternative. Implementation of the No Action Alternative will result in the airport operating in a manner similar to today. No changes to the overflight patterns over the Monument and geologic window will occur, and these operations will increase as overall operations at the airport continue to grow. No resource impacts occur with alternative implementation.

ANALYSIS AND MITIGATION

No noise-sensitive development is impacted with implementation of Alternative A, Alternative B, or the No Action Alternative. Alternatives A and B are consistent with plans, policies, and land use controls for the area. Additionally, neither Alternative A nor Alternative B will divide or disrupt an established community; require residential or business relocations; result in induced socioeconomic impacts; or result in wetland, floodplain, or critical habitat impacts which exceed thresholds of significance established by any involved regulatory or advisory agencies.

As discussed previously in this EA, the National Park Service indicated concerns regarding the impact of potential airport development on the neighboring Petroglyph National Monument. In a letter dated November 3, 2008, the NPS indicated support for Alternative A. This is discussed further within Section 4.8, Historical, Architectural, Archaeological, and Cultural Resources.

Established thresholds of significance will not be exceeded by any of the alternatives under consideration. The threshold of significance for this impact category is defined as impacts which will occur when the noise analysis determines that a significant impact will occur over noise-sensitive areas within the 65 DNL noise contour.

4.4 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

The socioeconomic profile of the study area is described fully within Chapter Three of this EA. **Appendix G** contains a description of the required analyses for this impact category.

Alternative A (Proposed Action) and Alternative B

Socioeconomic Impacts. No land acquisition, business or residential relocations, or road realignments or construction will occur with implementation of Alternative A or B.

Environmental Justice Impacts. No environmental justice areas are located in proximity to the airport.

Children's Environmental Health and Safety. Pursuant to Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* federal agencies are directed to identify and assess environmental health and safety risks that may disproportionately affect children. These risks include those that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they may be exposed to. Products or substances which are utilized at the airport include aircraft and vehicle fuel, materials used for the restoration and maintenance of aircraft, and materials which are used for the cleaning and maintenance of office areas. Access to these materials by children is prevented or limited due to the presence of an airport security fence as well as locked storage cabinets.

After implementation of the proposed airport improvements, the airport will continue to operate in a manner similar as it does today. Therefore, access to substances which could affect a child's health or safety will still be limited. The perimeter fence will be relocated around the proposed improvements and maintained to restrict unauthorized persons from gaining access to the runway and other areas of potential health and safety risks.

No Action

Socioeconomic impacts, environmental justice impacts, and impacts to children's environmental health and safety are not anticipated with implementation of the No Action Alternative.

ANALYSIS AND MITIGATION

No socioeconomic or environmental justice impacts occur under any of the alternatives being evaluated. With implementation of Alternatives A and B, potential health and safety risks to children will be minimized through adherence to standard construction and safety practices implemented by the construction contractor. The disturbance and/or stockpiling of contaminated soils are not anticipated. Fugitive dust will be controlled by the application and maintenance of standard erosion and sedimentation control measures. The airport security fence will be relocated during construction; however, a secure perimeter will be maintained at all times.

The construction contractor will employ best management practices (BMPs) to restrict children from the construction site. These practices may include the posting of signs around the construction site, prohibiting access, fencing, warnings posted around areas of open excavation, and site policing.

The thresholds of significance for this impact category are reached if the project negatively affects a disproportionately high number of minority or low-income populations or if children will be exposed to a disproportionate number of health and safety risks. Significant socio-economic impacts will result if an extensive number of residents need to be relocated and sufficient replacement housing is unavailable; if extensive relocation of business is required and this relocation will create a severe economic hardship for the affected communities; if disruptions of local

traffic patterns will substantially reduce the level of service of the roads serving the airport and the surrounding community; or, if there will be a substantial loss in the community tax base. None of the alternatives under consideration are anticipated to exceed these stated thresholds of significance.

4.5 SECONDARY (INDUCED) IMPACTS

Alternative A (Proposed Action)

Alternative A is being advanced by the City of Albuquerque and is consistent with the city's planning and economic development objectives. Implementation of this alternative will not result in the direct displacement of residences, businesses, agricultural operations, or result in the disruption of established communities.

The proposed airport improvements are being undertaken to meet runway length needs for aircraft that may currently utilize the Albuquerque International Sunport (Sunport). The extension of Runway 17-35 will allow the airport to be utilized by more corporate aircraft. This will allow the airport to fully act as a reliever airport to the Sunport as general aviation traffic that currently use the busy Sunport could more fully utilize Double Eagle II Airport. The extension of the runway could introduce new general aviation or corporate aircraft to the currently based fleet at the airport. This will likely result in a socioeconomic benefit to the immediate area due to increased fuel sales and a potential need for support businesses such as restaurants or automobile fueling stations.

Development of Alternative A also has the potential to reduce the overflight of portions of the Petroglyph National Monument. The placement of the ILS on Runway 17-35 could reduce the overflights of the northern volcano and the geologic window by aircraft practicing ILS approaches and using the ILS during periods when visibility is low and/or cloud ceilings are low. The extension of Runway 17-35 provides the City with more flexibility for implementation of a future Fly Friendly Program to further reduce overflights of the area[1]. Currently, as depicted on the flight track exhibits contained in **Appendix F**, a large percentage of the touch-and-go training activity at the airport occurs on Runway 17-35. This is likely done to allow Runway 22 to remain available for departing aircraft, which can depart simultaneously with touch-and-go activity. With the extension of Runway 17-35, and the relocation of the ILS, during certain wind conditions, this situation could be reversed with departing traffic being placed on Runway 17 and the touch-and-go traffic being placed on Runway 22. (This type of an arrangement would need to be coordinated with the airport traffic control tower [ATCT].)

[1] For noise modeling purposes within this EA, the assumptions do not assume the implementation of a Fly Friendly Program. Therefore, for Alternative A, a large percentage of touch-and-go activity was modeled on Runway 17-35 due to its longer length and increased wind coverage. These two factors could lead to additional runway use, and additional overflights of the western and southern portions of the Monument, until a Fly Friendly Program can be put into place.

Alternative B

Implementation of this alternative will not result in the direct displacement of residences, businesses, agricultural operations, or result in the disruption of established communities. As with Alternative A, the extension of Runway 4-22 will allow the airport to be utilized by more business aircraft. This will allow the airport to fully serve its role as a reliever to the Sunport as general aviation traffic that currently use the Sunport could more fully utilize Double Eagle II Airport. The extension of the runway could introduce new general aviation or corporate aircraft to the currently based fleet at the airport. This will likely result in a socioeconomic benefit to the immediate area due to increased fuel sales and a potential need for support businesses such as restaurants or automobile fueling stations.

No Action

Implementation of the No Action Alternative will not address the runway length needs of the existing Sunport airport users, thereby, not allowing Double Eagle II Airport to fully act as a reliever airport to the Sunport. This alternative is not consistent with the City of Albuquerque's airport development plans.

ANALYSIS AND MITIGATION

Implementation of Alternatives A and B will allow the airport to meet the runway length requirements of corporate aircraft that currently utilize the Sunport. This change in airport users could result in the development of service businesses such as gas stations or restaurants.

An induced benefit of implementation of Alternative A is the potential for a further reduction in overflight of the Petroglyph National Monument as previously discussed. If the ILS remains on Runway 22, overflights of the northern volcano in the Petroglyph National Monument and the overflights of the geologic window will continue, and increase as operations at the airport grow. Aircraft utilizing the Runway 22 ILS join the extended runway centerline up to five miles from the Runway 22 end, which causes the overflight of both the northern volcano and the geologic window.

No mitigation measures are required.

4.6 AIR QUALITY

Alternative A (Proposed Action) and Alternative B

As discussed in Chapter Three, the airport is located in Bernalillo County which is designated as in attainment for all federal criteria pollutants as defined by the U.S. Environmental Protection Agency (EPA). Federal criteria pollutants are regulated under the National Ambient Air Quality

Standards (NAAQS) and include carbon monoxide (CO), ozone (O3), sulfur dioxide (SO2), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb).

Two Acts have been federally adopted to control air quality emissions, the *Clean Air Act* (CAA) and NEPA. Each Act has separate requirements for evaluating a proposed action's impact on air quality, but the same analysis can fulfill the requirements of both Acts.

Clean Air Act

The following sections address CAA provisions for general conformity, transportation conformity, and indirect source review.

General Conformity

To ensure that a federal action complies with the NAAQS, the CAA establishes the General Conformity Rule for all general federal actions, which includes all airport improvement projects. The General Conformity Rule (40 CFR Part 93) applies to federal actions that are:

- Federally funded or federally approved;
- Not a highway or transit project;
- Not identified as an exempt project under the CAA and is not listed on the federal agency's Presumed to Conform list; and
- Located within a non-attainment or maintenance area.

If a federal action meets all of the above criteria, the General Conformity Rule is applicable. The General Conformity Rule does not apply to Alternative A or Alternative B as Double Eagle II Airport is located in Bernalillo County, which is designated as in attainment for all criteria pollutants.

Transportation Conformity

The CAA also establishes Transportation Conformity provisions for federal actions. Transportation Conformity is applicable to highway or transit projects that are not included in the region's Transportation Plan or Transportation Improvement Plan, such as the proposed improvements at Double Eagle II Airport. However, neither Alternative A nor Alternative B meet the CAA's definition of a transportation project[2] which includes highway and transit projects. Alternative A will affect the relocation of the airport access road which is not classified as a highway; therefore, the Transportation Conformity provisions do not apply. Alternative B does not affect any roadways; therefore, the Transportation Conformity provisions do not apply.

[2] 40 CFR 93.101, see definition of "transportation project."

Indirect Source Review

Under the CAA General Conformity provisions, indirect source review is required in some states when a Federal Action has the potential to cause an increase in emissions from indirect sources. As indicated in the FAA *Air Quality Handbook*, the State of New Mexico does not require indirect source review for either Alternative A or Alternative B.

National Environmental Policy Act

NEPA requires that an air quality emissions inventory be prepared for federal actions at airports where forecast general aviation operations exceed 180,000. Forecast operations for 2010 at Double Eagle II Airport are estimated to reach 189,000; therefore, an emissions inventory has been prepared.

Emissions Inventory

Alternative A and Alternative B are likely to cause direct or reasonably foreseeable indirect emissions; therefore, an emissions inventory was prepared for both alternatives. The emissions inventories for both alternatives were calculated using the FAA's Emissions and Dispersion Modeling System (EDMS), Version 5.1. EDMS is listed among the EPA's preferred guideline models and has been identified by the FAA as the only acceptable model for estimating aircraft emissions at airports. It calculates emissions of pollutants associated with an airport, including aircraft, ground support equipment, and automobiles.

EDMS does not calculate lead emissions; therefore, an assessment of these impacts cannot be made. Additionally, ozone emissions are not calculated by EDMS; however, volatile organic compounds (VOC) and nitrogen (NO_X) are precursors to ozone. Ground-level ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. As a result, VOC and NO_x emissions are used to estimate ozone emissions. The fleet mix and operations levels utilized for the preparation of noise contours (**Appendix G**, page G-4) were utilized for the emissions analysis.

Automobile trips associated with Double Eagle II Airport were also included in the analysis. For purposes of this study, the annual vehicle trips associated with the airport were calculated according to the Institute of Transportation Engineer's Trip Generation Manual, 7th Edition, based on average daily operations at the airport. Vehicle emissions associated with operation of the airport are included in the EDMS output report shown in **Appendix J**.

Output data from the EDMS program are in tons per year. **Table 4A** provides the projected air pollutant emissions associated with the operations at Double Eagle II Airport under the existing condition (2008), year of implementation (2010) for Alternative A, Alternative B, and No Action Alternative and five years following implementation for Alternative A, Alternative B, and the No

Action Alternative. This includes emissions from aircraft, automobiles, ground support equipment, and fueling operations. Because the Proposed Action will occur in an area designated as in attainment, there are no *de minimis* thresholds for comparison of the emissions inventory levels.

TABLE 4A
Emissions Inventory (Tons per Year)
Double Eagle II Airport

	2008	2010		2015	
Pollutant[1]	Existing Condition	Alternative A and Alternative B	No Action	Alternative A and Alternative B	No Action
CO	1116.52	1414.12	1407.48	1738.08	1727.79
VOC	40.39	75.97	74.31	120.81	117.89
NO_X	4.36	9.87	9.39	13.00	12.01
SO_X	1.53	2.76	2.67	4.17	3.96
PM_{10}	0.060	0.49	0.48	1.16	1.11
$PM_{2.5}$	0.050	0.48	0.46	1.15	1.09

[1] EDMS does not calculate emissions for lead
Source: Coffman Associates analysis.

EDMS output tables depicting emissions by source (aircraft, automobiles, ground support equipment) are included in **Appendix J**.

The number and type of aircraft for Alternative A and Alternative B are not anticipated to change within each time horizon (2008, 2010, 2015); therefore, the emission inventory results are equal. As indicated in **Appendix C**, the forecast operations for the No Action condition are anticipated to be lower than Alternative A and Alternative B; therefore, the project emissions levels are lower.

Construction emissions were also evaluated for Alternative A and Alternative B. A construction emissions inventory was prepared using the Environmental Protection Agency's NONROAD and MOBILE6.2 emissions models. The NONROAD model estimates emissions related to non-highway approved vehicles such as heavy construction equipment. The MOBILE6 model evaluates highway vehicle emissions such as those from dump trucks or light-duty work trucks.

The NONROAD and MOBILE6.2 models do not calculate lead emissions; therefore, an assessment of these impacts cannot be made. Additionally, ozone emissions are not calculated by the emissions models; however, volatile organic compounds (VOC) are a precursor to ozone. VOCs combine with sunlight and oxides of nitrogen (NOx) to form ozone. Therefore, VOC emissions are used to estimate ozone emissions.

Construction emissions for Alternative A and Alternative B are included in **Table 4B**. Output data from the NONROAD and MOBILE6.2 emissions models are expressed in tons per year. A summary of the construction emissions assumptions used for this analysis is included in **Appendix J**.

TABLE 4B
Construction Emissions (Tons per Year)
Double Eagle II Airport

	2010	
Pollutant[1]	**Alternative A (Proposed Action)**	**Alternative B**
CO	166.2	125.2
VOC	29.3	22.1
NO_X	300.4	228.4
SO_X	51.6	39.4
PM_{10}	28.7	21.8
$PM_{2.5}$	27.8	21.1

[1] NONROAD and MOBILE6.2 do not calculate emissions for lead
Source: Coffman Associates analysis.

As indicated in **Table 4B**, construction emissions are greater for Alternative A. As previously discussed, the proposed action will occur in an area designated as in attainment, and there are no *de minimis* thresholds for comparison of the emissions inventory levels.

No Action

Under federal air quality modeling and analysis guidelines, the No Action Alternative represents the baseline condition to which the Proposed Action Alternative is compared. The No Action Alternative will not have air quality impacts as no development at the airport will take place under this scenario.

ANALYSIS AND MITIGATION

Implementation of Alternative A or Alternative B will not result in impacts which exceed one or more of the NAAQS for any of the time periods analyzed; therefore, impacts do not exceed the established threshold of significance.

Construction-related emissions will be short term and localized to the construction area. Best management practices (BMPs) will be implemented to reduce particulate emissions and were not considered as part of this analysis. Indirect impacts experienced during project construction are addressed in Section 4.14, Construction.

In addition to the BMPs, the City of Albuquerque requires that a Fugitive Dust Control Construction Permit application be submitted to the City Environmental Health Department at least 10 days prior to construction. This permit requires that BMPs will be implemented during construction.

The No Action Alternative will not result in any air quality impacts as the airport will continue to operate in a manner similar to what it does today.

4.7 WATER QUALITY

Alternative A (Proposed Action) and Alternative B

Implementation of either alternative will result in an increase of impermeable surfaces on the airport which could result in an increase in surface water runoff at the airport. The airport's current National Pollutant Discharge Elimination System (NPDES) Permit NMR05A992 and associated *Stormwater Pollution Prevention Plan* (SWPPP) will require a modification to reflect the new surfaces under each alternative. In addition, construction of the proposed improvements may have limited, near-term effects on surface water quality, particularly an increase in suspended sediments during and shortly after precipitation events occurring during the construction phase. A construction-related NPDES permit will be required prior to construction of the proposed improvements under either alternative. This permit requires a Notice of Intent for all construction activities disturbing one acre or more of land. A SWPPP will be designed and implemented in the field prior to construction, and inspected and maintained during construction in compliance with the NPDES permit. In their letter, dated June 6, 2007, the New Mexico Environment Department did not indicate concern with implementation of either alternative. No difficulties have been identified regarding modifying the existing NPDES permit or obtaining the construction NPDES permit. The construction NPDES permit will be obtained after project design and before construction is initiated. The airport's existing NPDES operational permit will be modified after construction of the proposed improvements to reflect the additional impervious surfaces and changes in drainage patterns.

These alternatives will not impact any *Clean Water Act*, Section 303(d), listed waters or any groundwater wells. Indirect impacts may occur to water quality as an increase in impermeable surfaces occurs in the area.

No Action

Implementation of the No Action Alternative will result in no development activities at the airport; therefore, no impacts to water quality are anticipated.

ANALYSIS AND MITIGATION

Implementation of Alternatives A and B will require a NPDES construction permit (discussed further within Section 4.14). The airport's existing NPDES operating permit will need to be modified to include the additional impervious surfaces at the airport.

The No Action Alternative will not result in impacts to water quality, as no construction will occur.

Mitigation measures for Alternatives A and B relate primarily to construction-related impacts. These measures are discussed within Section 4.14.

Difficulties in obtaining needed permits for the project, such as National Pollutant Discharge Elimination System (NPDES) permits, typically indicate a potential for significant water quality impacts. No difficulties in obtaining these permits have been identified for either alternative.

4.8 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

At the onset of the environmental review process, an area of potential effect (APE) was defined for those areas which could be affected by either Alternative A or Alternative B. The APE is depicted on **Exhibit 4C** and was communicated by letter to the State Historic Preservation Officer (SHPO) on January 16, 2009. A copy of the letter is included in **Appendix I**. The Section 106 Consultation processes between the FAA, tribal leaders, and the SHPO is being conducted concurrently with NEPA as allowed by 36 CFR (Code of Federal Regulations) 800.8. The SHPO was advised in the FAA's January 16, 2009 letter that the processes have been joined.

At the onset of this EA, and at the request of the NPS, noise measurements were performed at various locations on the airport as well as the NPS's areas of concern[3]. The APE, therefore, includes most of the airport property as well as the areas noise measurements were taken at the Monument. The areas of concern noted by NPS staff included the five volcanic cones as well as the Northern Geologic Window. The volcanic cones are currently overflown by aircraft performing touch-and-go activity on Runway 17-35 as well as, to some extent, aircraft approaching the airport from the south and east. The Northern Geologic Window is overflown primarily by aircraft approaching or departing Runway 4-22 as well as some aircraft transitioning from Runway 17-35.

For discussion purposes, the potential impacts to historical, archeological, and cultural resources by each alternative have been divided into two categories, Impacts to On-Airport Resources and Impacts to Off-Airport Resources. These resources are summarized within the following two sections followed by a discussion of each alternative's potential impacts to identified resources.

4.8.1 On-Airport Resources

As discussed within Chapter Three, previous surveys at the airport have identified nine sites on airport property which are potentially eligible for listing on the National Register of Historic Places (NRHP).

In June 2007, the project team gave a presentation before the All Indians Pueblo Council in Albuquerque. The purpose of the presentation was to inform the tribal leaders of the proposed

[3] The purpose of the noise measurement program was to provide field-collected data for comparison with the computer-predicted values generated from the Integrated Noise Model. Futher information regarding the noise measurement process and results is contained within Appendix L.

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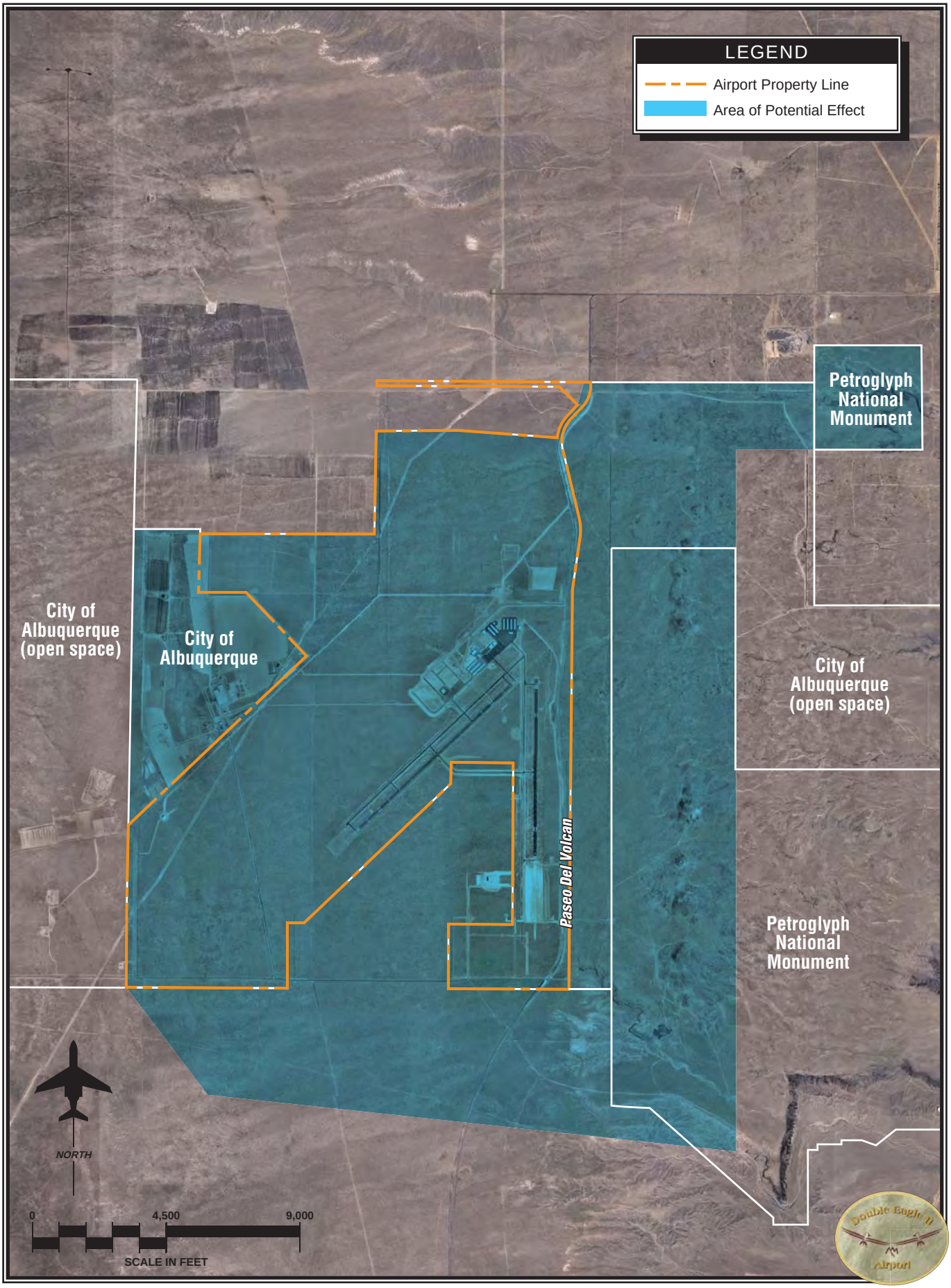

Exhibit 4C
AREA OF POTENTIAL EFFECT

development activities at the airport and the alternatives undergoing evaluation. Concerns raised by two pueblos in attendance were primarily related to overflights and noise impacts on the Petroglyph National Monument. (These concerns are addressed later in this section.) As a follow-up, the FAA sent letters to the area tribal governors in November 2008 to further identify any concerns related to potential impacts to tribal resources. As of the printing of this Preliminary Draft EA, three Native American tribes or pueblos have responded to the FAA letters. The Pueblo of Isleta indicated that the project will not have an impact on religious or cultural sites affiliated with the pueblo; the White Mountain Apache Tribe indicated that the project will not have an effect on the tribe's heritage resources; and the Hopi Tribe requested the opportunity to review the Draft EA once it becomes available for public review (this request will be complied with.)

4.8.2 Off-Airport Resources

As previously discussed, Double Eagle II Airport is located in the immediate vicinity of the Petroglyph National Monument, which is jointly managed by the City of Albuquerque Open Space Division and the NPS. During previous consultation processes, the City of Albuquerque and the National Park Service have indicated concerns regarding the potential impacts of airport development on the Monument. These concerns are documented within the *Final Environmental Assessment for Proposed On-Airport Access Road,* Double Eagle II Airport, May 1994, and the *Air Traffic Control Tower Final Environmental Assessment*, November 2004. Due to the recent concerns of the NPS, they were included as a cooperating agency for this EA and were kept abreast of the EA analysis through multiple meetings and teleconferences.

The concerns of the NPS, regarding development at the airport, relate primarily to the overflights of the volcanoes within the Monument as well as the Northern Geologic Window located northeast of the airport. As discussed within Chapter Three, the volcanoes are regularly visited by park visitors and are culturally and traditionally significant to the area pueblos and tribes. The geologic window is a depression into the mesa's geologic strata which contains petroglyphs and also has traditional and cultural significance to various pueblos. Conversations with NPS staff indicate that overflights of this area are amplified due to the acoustics resulting from the terrain.

Within the November 2004 EA for the construction of the ATCT, the City of Albuquerque pledged to establish a Fly Friendly Program at Double Eagle II Airport once an ATCT is operational and flight patterns have been observed for a period of time. The purpose of the program will be to reduce the quantity of overflights of the Monument and will be a cooperative program formed between the Petroglyph National Monument staff, airport operators, the City of Albuquerque, and the FAA. It is anticipated that through this program, informal and voluntary procedures will be established to, whenever safe and practicable, potentially direct aircraft away from portions of the Monument. It is anticipated that implementation of this program could result in fewer touch-and-go operations over the volcanoes as well as a change in the manner in which helicopters operate at the airport. Touch-and-go operations are undertaken by pilots to practice landings and takeoffs. During certain conditions, these types of operations

could occur on either runway at the airport. For the sole purposes of analysis within this EA, a potential Fly Friendly Program was developed for the airport. This potential program was developed with input from the Double Eagle II Airport Traffic Control Tower (ATCT) Manager and includes measures that could reduce some overflights of the Monument. The measures contained within this potential program are not currently being utilized by the airport, and will require a great deal of coordination with airport users, the FAA, the ATCT, the NPS, and the City of Albuquerque prior to implementation. The final Fly Friendly Program, once established, may not mirror the assumptions included within this EA. The analysis contained within the alternatives evaluation includes potential impacts with and without the potential Fly Friendly Program.

During discussions regarding the formulation of the potential Fly Friendly Program, the ATCT manager indicated that since the ATCT became operational, only one runway is considered operational at any given time. However, it was indicated that as traffic levels permit, aircraft are allowed to depart Runway 22 when Runway 17 is the active runway and Runway 17 when Runway 22 is active. These allowances were included within the modeling scenarios and assumptions.

Exhibits 4D and **4E** depict the flight tracks modeled under the two noise modeling scenarios, with and without the potential Fly Friendly Program. The left side of **Exhibit 4D**, depicts the arrival flight tracks which were integrated into the INM for the noise analysis described within Sections 4.2 and 4.3. The right side of the exhibit depicts the arrival flight tracks which could potentially be relocated with implementation of a Fly Friendly Program. As depicted on the exhibit, the arrival corridors that are currently on the east side of Runway 17-35 have been relocated to west side. Aircraft arriving to Runway 35 would now fly on the west side of the airport as would the arrivals to Runway 17. Additionally, the touch-and-go operations for Runway 17-35 were relocated from the east side of the runway to the west.

Exhibit 4E depicts the modeled departure flight tracks under the two modeling scenarios. As with **Exhibit 4D**, the left side of the exhibit depicts the departure flight tracks which were integrated into the INM for the noise analysis described within Sections 4.2 and 4.3 and the right side of the exhibit depicts the departure flight tracks which could potentially be relocated with implementation of a Fly Friendly Program. As depicted on the exhibit, only one track is assumed to change with implementation of the potential Fly Friendly Program. Aircraft departing Runway 35 could be directed to turn left, over the western portions of the airfield.

The flight tracks input into the INM were the same for Alternative A, B, and the No Action Alternative; only the number of operations assigned to each of the tracks varied depending on which alternative was being evaluated. The primary modeling difference between Alternatives A and B were the number of operations assigned to the flight track. Under Alternative A, the ILS is relocated to Runway 35; therefore, the traffic that formerly utilized the ILS to Runway 22 was reassigned to the straight-in approach to Runway 35[4].

[4] There is little flexibility in the manner in which aircraft utilize an ILS system. An ILS approach procedure is specified by the FAA and published in the *United States Government Flight Information Publication, U.S. Terminal Procedures, Southwest, January 15, 2009*. Pilots are required to fly these procedures during inclement weather conditions and as directed by ATCT. To provide for a safe landing, aircraft utilizing the ILS approach procedure to a run-

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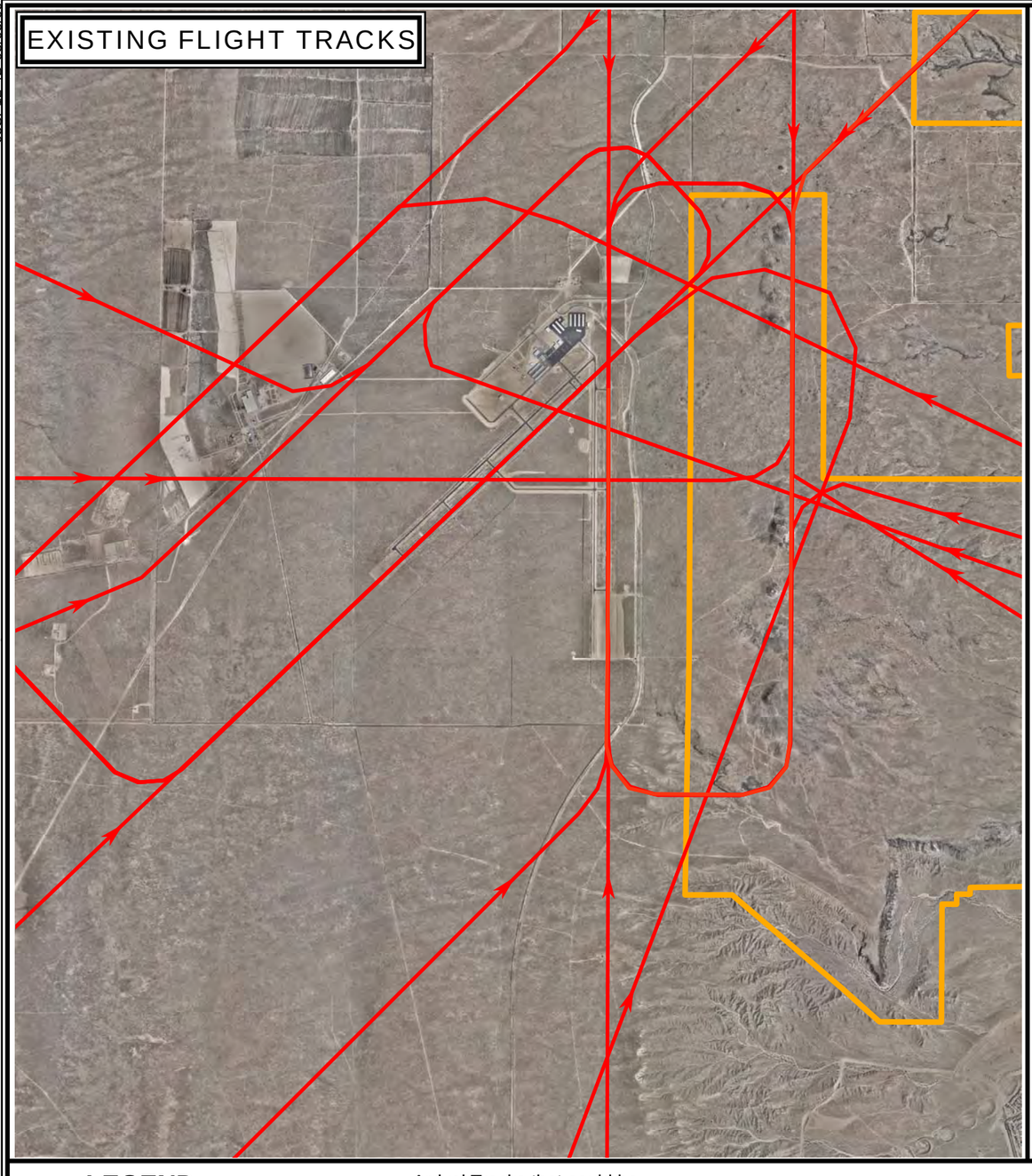
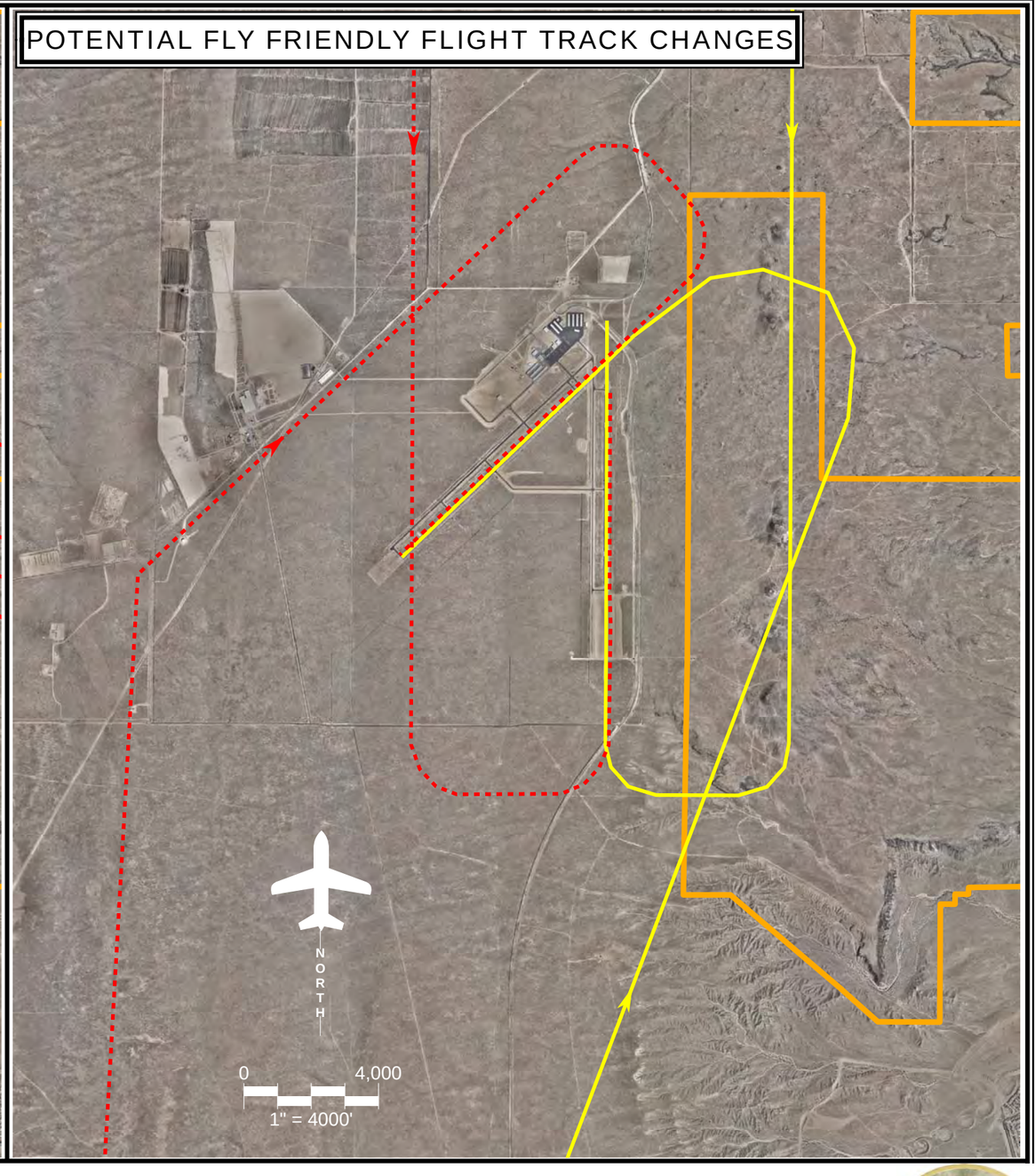
EXISTING FLIGHT TRACKS



POTENTIAL FLY FRIENDLY FLIGHT TRACK CHANGES



LEGEND

- Monument Boundary
- Generalized Arrival Tracks
- Arrival Tracks that could be discouraged through implementation of a "Fly Friendly" program.
- Potential Fly Friendly Arrival Tracks

Source: Coffman Associates Analysis.

Exhibit 4D
POTENTIAL ARRIVAL TRACKS WITH
IMPLEMENTATION OF A "FLY FRIENDLY" PROGRAM

05SEP12-4E-05/05/09

EXISTING FLIGHT TRACKS

POTENTIAL FLY FRIENDLY FLIGHT TRACK CHANGES

N
O
R
T
H

0 4,000

1" = 4000'

LEGEND

- Monument Boundary
- Generalized Departure Tracks
- Departure and Touch & Go Tracks that are discouraged through implementation of a "Fly Friendly" program.
- Generalized Touch and Go Tracks
- Potential Fly Friendly Departure Tracks
- Potential Fly Friendly Touch & Go Tracks

Source: Coffman Associates Analysis.

Exhibit 4E
POTENTIAL DEPARTURE TRACKS WITH
IMPLEMENTATION OF A "FLY FRIENDLY" PROGRAM

Portions of the analysis described below were presented to the NPS at the most recent project meeting held on May 14, 2008 (a copy of the meeting sign-in sheet and presentation is contained in **Appendix L**). Since that meeting, the ATCT became operational and the potential Fly Friendly Program was developed. The methodology for analyzing potential impacts on the Petroglyph National Monument was two-fold and focused on aircraft noise and overflights.

4.8.2.1 Monument and Northern Geologic Window Aircraft Noise Analysis

To assess the potential changes in noise exposure resulting from implementation of the alternatives under consideration, a grid point analysis for both modeling scenarios was undertaken for seven points within the Monument and geologic window boundaries. (A grid point analysis provides estimated noise levels at precise points selected by the user during the noise modeling process.)

The grid point locations depicted on **Exhibit 4F** were selected based on input received from NPS staff during the noise monitoring efforts. As depicted on the exhibit, the existing modeled noise condition at the seven points ranges from 41.0 day/night noise level (DNL) in the northern portions of the geologic window to 52.7 DNL on the western edges of the Monument. To allow for a comparison, these same points were modeled for Alternatives A, B, and the No Action Alternative for the years 2010 and 2015, and the year 2015 assuming implementation of the potential Fly Friendly Program. These results are provided within later discussions regarding each alternative. Please note, the data regarding the existing condition is provided for informational purposes only. The impact analysis will be undertaken for only Alternatives A, B, and the No Action Alternative.

4.8.2.2 Monument and Northern Geologic Window Overflight Analysis

To obtain a perspective of the current overflight condition, actual aircraft flight track data was obtained from the FAA's Airport Surveillance Radar (ASR) at the Albuquerque International Sunport. This data was evaluated to assess runway use at the airport as well as typical flight paths for aircraft arriving and departing Double Eagle II Airport. **Appendix F** contains exhibits prepared for the flight track analysis.

The overflight analysis focused on the existing arrival flight patterns over the northern portions of the Monument as well as the geologic window. As depicted on **Exhibit 4G**, an evaluation of flight tracks from January 1, 2008 to January 19, 2008 indicates that over this 18-day period, the northern portion of the Monument experienced approximately 131 arrival overflights and the geologic window experienced 126 arrival overflights. (Total annual overflights of these areas were estimated to be 4,656 in 2006.) Again, data regarding the existing condition is provided for informational purposes only. Analysis is focused on the alternatives being evaluated.

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way aircraft join the extended runway centerline up to five miles from the runway end. Under Alternative A it was assumed that aircraft would line up on the Runway 35 centerline approximately five to six miles from the airport and under Alternative B, it was assumed that aircraft would continue to utilize the ILS as they do today.

4.8.3 Alternatives Evaluation

Utilizing the analyses methodology described within the previous sections, an evaluation of potential impacts resulting from implementation of the project alternatives was undertaken.

Alternative A (Proposed Action)

Potential Impacts to On-Airport Resources

As discussed within Chapter Three, previous surveys at the airport have identified nine sites which are potentially eligible for listing on the National Register of Historic Places (NRHP). None of these sites are located in proximity to the development projects contained in Alternative A; therefore, no impacts will occur.

Potential Impacts to Off-Airport Resources

The results of the Alternative A grid point analysis at the seven points within the Monument are summarized on **Exhibit 4F.** These results reflect the likely increase in operations to Runway 17-35 resulting from the relocation of the ILS and the additional runway length provided to this runway as well as the projected increase in operations through the planning period. As depicted on the exhibit, in the year 2010 the noise condition modeled at the seven points ranges from 42.1 DNL in the Northern Geologic Window to 54.1 on the western edge of the Monument, immediately beyond the Runway 4-22 end. In the year 2015, these values increase to 43.0 DNL in the Northern Geologic Window and 55.0 DNL on the western edge of the monument. **Table 4C** further summarizes the Alternative A grid point analysis.

TABLE 4C
Alternative A Grid Point Analysis

	Grid Point Number						
	1	**2**	**3**	**4**	**5**	**6**	**7**
2010	44.1	45.5	53.6	56.1	50.5	54.2	48.2
2015	44.8	46.2	54.2	56.8	51.1	54.8	48.9
2015 "Fly Friendly"	44.5	45.8	52.8	56.2	48.6	48.3	45.7

As described in **Table 4C**, the noise levels over the Monument are anticipated to increase as operations at the airport increase. The decibel (dB) DNL increase ranges from 0.6 dB DNL at grid points 3, 5, and 6 to 0.7 dB DNL at grid points 1, 2, 4, and 7. With implementation of the potential Fly Friendly Program, the noise exposure at four of the seven grid points falls below the forecasted 2010 levels. Grid points 1, 2, and 4 have noise levels that are higher than the anticipated 2010 levels, but are lower than the anticipated 2015 noise condition without the potential Fly Friendly Program.

Exhibit 4G summarizes the existing northern Monument overflights and provides a summary of the future modeled operations that overfly both the Northern Geologic Window and the northern portions of the Monument (Flight Track 22A). As with the grid point analysis, the results of

Table of INM Grid Point Values (DNL)

Grid Point ID	1	2	3	4	5	6	7
Existing	41	42.3	49.3	52.7	47.1	51	46.8
2010							
Alternative A	44.1	45.5	53.6	56.1	50.5	54.2	48.2
Alternative B	44.9	46.2	52.7	56.5	49.8	52.9	48.7
No Action	44.9	46.2	52.9	56.6	49.9	52.8	48.6
2015							
Alternative A	44.8	46.2	54.2	56.8	51.1	54.8	48.9
Alternative B	45.6	46.9	53.4	57.1	50.4	53.5	49.3
No Action	45.6	46.9	53.5	57.2	50.5	53.4	49.3
2015 With Implementation of Potential Fly Friendly Program							
Alternative A	44.5	45.8	52.8	56.2	48.6	48.3	45.7
Alternative B	45.5	46.7	52.3	56.5	47.7	48.4	45.8
No Action	45.4	46.7	52.5	56.7	47.8	48.4	45.8

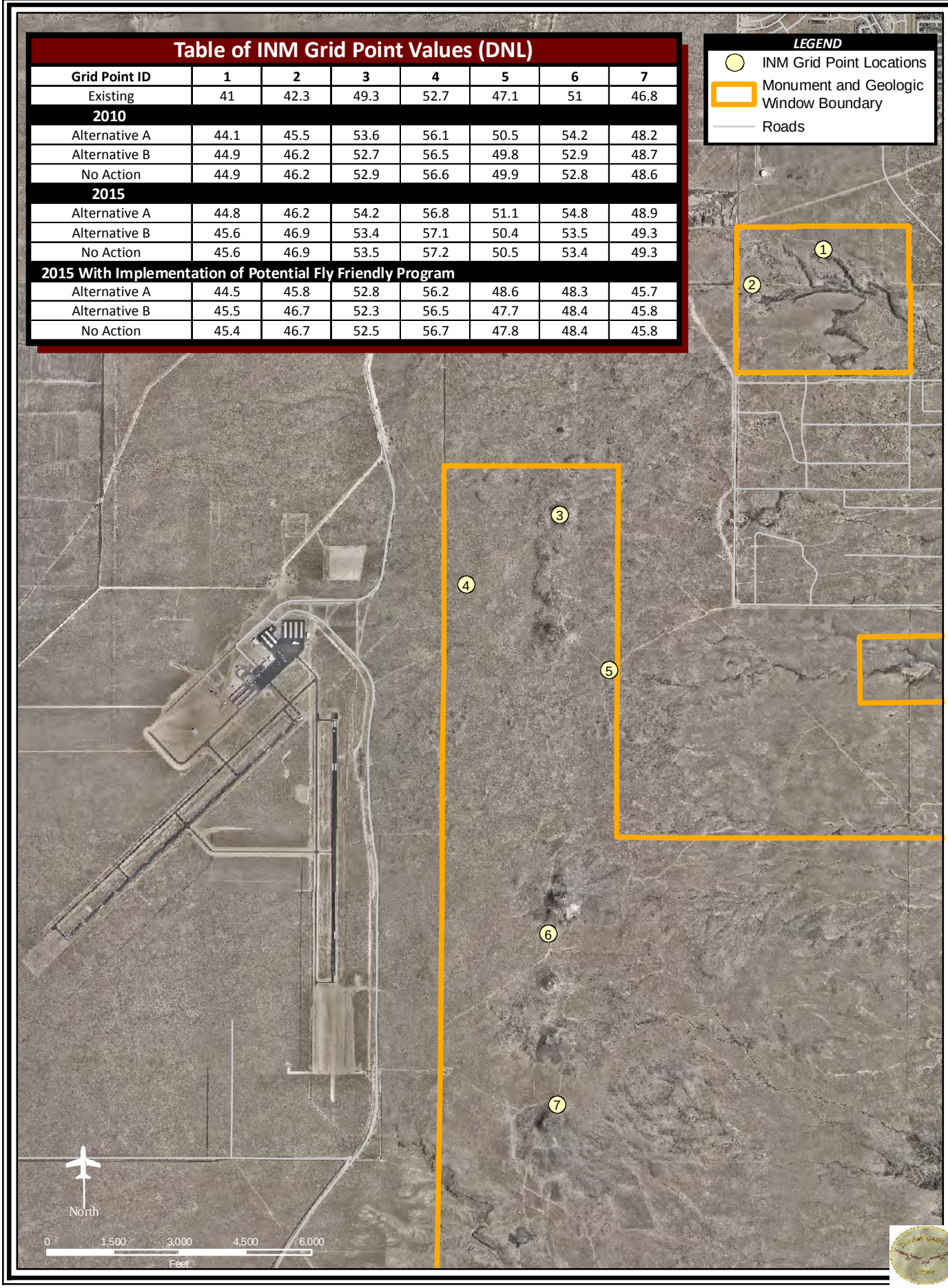

Exhibit 4F
AREA OF CONCERN GRID POINT NOISE ANALYSIS RESULTS

Track 22A Modeled Operations Within the INM	
Existing	4,637
2010	
Alternative A	3,960
Alternative B	6,336
No Action	6,236
2015	
Alternative A	5,344
Alternative B	8,550
No Action	8,370

INM Track 17A

INM Track 22A

126 Observations from January 1 through January 19, 2008

131 Observations from January 1 through January 19, 2008

Geologic Window and Northern Volcano Overflights

Legend

- Monument and Window Boundary
- Observed Arrival Tracks
- Modeled Arrival Track 22A
- Modeled Arrival Track 17A
- Roads

Source: Sunport ASR Flight Track Data

Coffman Associates Analysis

North

0 490 980 1,960 2,940 3,920

Feet

Exhibit 4G
AREAS OF CONCERN OVERFLIGHT ANALYSIS

the overflight analysis are reflective of the relocation of the ILS from Runway 22 to Runway 17. During the noise modeling process, aircraft arrivals from the northeast, over the geologic window and northern portions of the Monument, were assigned to Track 22A. Therefore, for the existing condition, Track 22A contains flights that would arrive to Runway 22 from the northeast, some of which would utilize the ILS or the GPS approach to Runway 22. Since Alternative A results in the relocation of the ILS to Runway 17, the number of flights assigned to Track 22A decrease and those arrivals assigned to Track 17A are increased to reflect the change in ILS operations. (Implementation of the potential Fly Friendly Program does not result in a change to the number of operations assigned to or location of Track 22A; therefore, no changes to the overflights on Track 22A would occur.)

Alternative B

Potential Impacts to On-Airport Resources

Implementation of Alternative B will not result in any impacts to the nine on-airport sites which are potentially eligible for listing on the National Register of Historic Places (NRHP).

Potential Impacts to Off-Airport Resources

Results of the Alternative B grid point analysis at the seven points within the Monument are also summarized on **Exhibit 4F** and the Alternative B anticipated overflights are summarized on **Exhibit 4G**. The grid point and overflight analysis results reflect a continuation of the existing runway use with an increase in business aircraft operations which correlates with the additional runway length provided on Runway 4-22. As depicted on the exhibit, in the year 2010 the noise condition modeled at the seven points ranges from 44.9 DNL in the Northern Geologic Window to 56.5 on the western edge of the Monument, immediately beyond the Runway 4-22 end. In the year 2015, these values increase to 46.9 DNL in the Northern Geologic Window and 57.1 DNL on the western edge of the monument. **Table 4C** further summarizes the Alternative B grid point analysis.

TABLE 4D
Alternative B Grid Point Analysis

	Grid Point Number						
	1	**2**	**3**	**4**	**5**	**6**	**7**
2010 DNL	44.9	46.2	52.7	56.5	49.8	52.9	48.7
2015 DNL	45.6	46.9	53.4	57.1	50.4	53.5	49.3
2015 "Fly Friendly" DNL	45.5	46.7	52.3	56.5	47.7	48.4	45.8

As described in **Table 4D**, the noise levels over the Monument are anticipated to increase as operations at the airport increase. The dB DNL increase ranges from 0.7 dB DNL increase for grid points 1, 2, and 3 to 0.6 dB DNL increase at grid points 4, 5, 6, and 7. With implementation of the potential Fly Friendly Program, the noise exposure at grid points 1, 2, 3, and 4 approaches the year 2010 anticipated noise levels and the exposure at grid points 5, 6, and 7 falls well below the 2010 anticipated noise condition.

Exhibit 4G summarizes the existing northern monument overflights and provides a summary of the future modeled operations that overfly both the Northern Geologic Window and the northern portions of the Monument (Flight Track 22A). As with the grid point analysis, the results of the overflight analysis are reflective of the ILS remaining on Runway 22. For Alternative B, Track 22A contains flights that would arrive to Runway 22 from the northeast, some of which would utilize the ILS or the GPS approach to Runway 22.

No Action

No development will occur with implementation of the No Action Alternative; therefore, no impacts to on-airport historic or cultural resources are anticipated. Results of the No Action Alternative grid point analysis at the seven points within the Monument are summarized on **Exhibit 4F** and within **Table 4E.** The introduction of a potential Fly Friendly Program was not analyzed as part of the No Action Alternative as it is assumed aircraft will continue to operate in a manner similar to today.

TABLE 4E
No Action Grid Point Analysis

	Grid Point Number						
	1	**2**	**3**	**4**	**5**	**6**	**7**
2010 DNL	43.0	44.2	51.0	54.4	48.4	52.1	47.9
2015 DNL	43.9	45.2	51.9	55.3	49.2	52.8	48.6

The overflight analysis results are summarized on **Exhibit 4G**. These results reflect a continuation of the existing runway use at the airport by aircraft which do not require additional runway length and a projected increase in operations at the airport.

ANALYSIS AND MITIGATION

None of the alternatives will result in direct impacts to sites eligible for listing, or listed on the NHRP. Should resources be unearthed during construction, all construction activities in the vicinity of the find will cease until a determination can be made as to its/their significance and, if necessary, a data recovery plan be implemented. If further on-site investigation is required, all subsequent recommendations shall conform to Section 106 of the *National Historic Preservation Act*. See Section 4.9 regarding potential indirect impacts on resources contained within the neighboring Petroglyph National Monument.

To assess potential impacts on the Petroglyph National Monument and Northern Geologic Window, a comparison of each of the alternatives to the No Action Alternative was performed both in regards to noise and overflights.

According to the grid point analysis, in 2010 and 2015 implementation of Alternative A will result in a decrease in noise over the No Action Alternative for grid points 1, 2, 4, and 7. With implementation of the potential Fly Friendly Program, Alternative A results in a decrease in noise

at all grid points except grid points 3 and 5. These grid points are located at the convergence of flight tracks arriving from the east with the tracks from north. The decreases experienced under Alternative A range from 0.1 dB DNL at grid points 6 and 7 to 0.9 dB DNL at grid points 1 and 2. As previously discussed, these decreases are a result of the relocation of the ILS to Runway 17 which moves the arriving traffic to the west, in line with Runway 17, as well as a change in the manner in which touch-and-go's are conducted.

Overflights of the northern portions of the Monument and geologic window decrease with implementation of Alternative A versus the No Action Alternative. In 2010, the forecast overflights decrease from 6,236 operations anticipated under the No Action Alternative to 3,960 operations anticipated under Alternative A. This decrease carries into 2015 where 8,370 overflights are anticipated under the No Action Alternative and 5,344 operations are anticipated under Alternative A.

The analysis results of Alternative B and the No Action Alternative are very similar as implementation of Alternative B results in aircraft operating in a similar manner as the No Action Alternative. The primary difference between the alternatives is the number of operations at the airport. The longer runway provided through Alternative B allows for greater use of the airport by business aircraft, thereby resulting in more overflights of the Monument and geologic window when compared to the No Action Alternative. Alternative B further assumes that Runway 4-22 will continue to accommodate the majority of operations due to its longer length. With implementation of a potential Fly Friendly Program, Alternative B results in a decrease in noise at grid points 3, 4, and 5; an increase at grid point 1; and no change at grid points 2, 6, and 7. In 2015, overflights of the northern portions of the Monument and the Geologic Window increase from 8,370 to 8,550 as more business jets will be able to utilize the airport.

As previously mentioned, due to the proximity of the Petroglyph National Monument to the airport, the NPS was coordinated with throughout this EA process. After reviewing the data presented within this section, the NPS, in a letter dated November 3, 2008, stated support for Alternative A, which "appears to reduce the amount of landing overflight traffic on Petroglyph National Monument's northern boundary. We believe the primary designation (relocation of the ILS) and extension of Runway 17-35 will best protect the resources of the Petroglyph National Monument." Due to the input received from the NPS, the City of Albuquerque has selected Alternative A as the Proposed Action Alternative; therefore, no additional analysis, coordination, or documentation is required. Implementation of Alternative B will require additional coordination between the FAA and the NPS as well as, potentially, additional analysis and documentation.

Impacts resulting from the implementation of Alternative A or Alterative B will not exceed the established threshold of significance for this impact category.

4.9 DEPARTMENT OF TRANSPORTATION ACT: SECTION 4(f)

As discussed in the previous section, Double Eagle II Airport is located in close proximity to the Petroglyph National Monument, which is jointly managed by the City of Albuquerque Open Space Division and the NPS. During previous consultation processes, the City of Albuquerque and the National Park Service have indicated concerns regarding the potential impacts of airport development on the Monument. Appendix A, Section 6, Paragraph 6.3 of FAA Order 1050.1E, states that a significant impact to Section 4(f) resources will occur when a proposed action either involves more than a minimal use of a Section 4(f) property or is deemed a "constructive use," thereby substantially impairing the Section 4(f) property, and mitigation measures do not eliminate or reduce the effects. Substantial impairment will occur when impacts to Section 4(f) lands are sufficiently serious so that the value of the site in terms of its prior significance and enjoyment are reduced or lost.

To determine if implementation of Alternative A or B will result in impacts to the neighboring Section 4(f) resources, analysis was undertaken to assess whether or not the runway improvements will involve more than a minimal or "constructive" use of the Section 4(f) property.

4.9.1 Alternatives Evaluation

Utilizing the analyses methodology described within Section 4.8, an evaluation of potential impacts resulting from implementation of the project alternatives was developed.

Alternative A (Proposed Action)

The results of the Alternative A grid point analysis at the seven points within the Monument were summarized on **Exhibit 4F.** These results reflect the likely increase in operations to Runway 17-35 resulting from the relocation of the ILS and the additional runway length provided to this runway as well as the projected increase in operations through the planning period. The changes in noise at the Monument with implementation of Alternative A will not likely be perceivable to the human ear. A study conducted for NASA in 1984 found that when comparing sounds over the same frequency range, most people cannot distinguish between sounds varying by less than two or three dB[5].

Input received from the NPS, in a letter dated November 3, 2008, stated support for Alternative A, which "appears to reduce the amount of landing overflight traffic on Petroglyph National Monument's northern boundary. We believe the primary designation (relocation of the ILS) and extension of Runway 17-35 will best protect the resources of the Petroglyph National Monument."

[5] Kryter, K.D. 1984. *Physiological, Psychological, and Social Effects of Noise*, NASA Reference Publication 1115.

Alternative B

Implementation of Alternative B will not result in changes to the manner in which aircraft operate over the Monument. The aircraft will continue the use of the ILS on Runway 4-22 and as operations at the airport increase, too, so will ILS overflights. Implementation of the potential Fly Friendly Program discussed within in Section 4.8 cannot reduce the ILS overflights as there is little flexibility in the manner in which aircraft utilize the ILS system. The ILS approach procedure is specified by the FAA and published in the *United States Government Flight Information Publication, U.S. Terminal Procedures, Southwest, January 15, 2009*. Pilots are required to fly these procedures during inclement weather conditions and as directed by ATCT. To provide for a safe landing, aircraft utilizing the ILS approach procedure to Runway 22 join the extended Runway 22 centerline up to five miles northeast of the airport, thereby resulting in overflight of the northern portions of the volcano and the Northern Geologic Window.

Similar to Alternative A, the incremental increases in noise are at levels that will not likely be perceptible to the human ear.

ANALYSIS AND MITIGATION

Appendix A, Section 6, Paragraph 6.3 of FAA Order 1050.1E, states that a significant impact to Section 4(f) resources will occur when a proposed action either involves more than a minimal use of a Section 4(f) property or is deemed a "constructive use," thereby substantially impairing the Section 4(f) property, and mitigation measures do not eliminate or reduce the effects. Based on the grid point analysis, it is not anticipated that either Alternative A or Alternative B will result in substantial impairment that will reduce the value of the Monument. Based on input received from the NPS, the City of Albuquerque has selected Alterantive A as the Proposed Action Alternative.

Neither Alternative A, B, nor the No Action alternative is anticipated to exceed the thresholds of significance for this impact category.

4.10 FISH, WILDLIFE, AND PLANTS

Alternative A (Proposed Action)

In accordance with the requirements of FAA Orders 1050.1E and 5050.4B, coordination was undertaken with the agencies charged with oversight of the *Endangered Species Act*, the *Sikes Act*, the *Fish and Wildlife Coordination Act*, and the *Migratory Bird Treaty Act*. Field surveys were undertaken in May 2007 to assist with this coordination. The results of these surveys are documented within the Biological Evaluation Memorandum contained in **Appendix H**. Protected species lists were obtained from the U.S. Fish and Wildlife Service's (FWS) website and through coordination with the New Mexico Department of Game and Fish.

Impacts to biotic resources. As outlined within Chapter Three, the project area contains two biotic community types: desert grasslands and plains-mesa grasslands. Two burrowing owls, classified as a federal species of special concern and a migratory bird species, were observed southwest of the project area between Runway 17-35 and its parallel taxiway. This area is not anticipated to be disturbed. If possible, to minimize potential impacts, ground disturbances will be undertaken outside of the nesting season (March through September) to minimize impacts to this, and all, migratory birds.

As described in Chapter Three, a prairie dog colony was observed in the easternmost portions of airport property. Prairie dogs are not listed as protected species by any federal or state agencies, but the City of Albuquerque maintains a "no-kill" policy toward prairie dogs that are on City property. The location of the colony in relation to Alternative A is depicted on **Exhibit 4H**. As indicated on the exhibit, implementation of Alternative A will not impact this colony. The wildlife species noted in Chapter Three as occurring within the Petroglyph National Monument will not likely be impacted by the proposed improvements at the airport as they are primarily nocturnal and are active at times the airport does not experience a high volume of activity.

Impacts to state or federally listed species. Field surveys and a review of available records indicate that implementation of Alternative A is not likely to adversely affect any listed species or their habitat. During the field surveys undertaken in May 2007, no habitat for listed species was located within the airport environs. Additionally, according to the U.S. Fish and Wildlife Service critical habitat database, no critical habitat for listed species is located within the project area. Therefore, no species listed as federally threatened or endangered will be impacted by Alternative A.

Alternative B

Impacts to fish, wildlife, and plants resulting from implementation of Alternative B are very similar to those of Alternative A, with the exception of the proximity of the prairie dog colony and burrowing owls to the alternative. The proposed Runway 4-22 improvements will occur within the southwestern portions of airport property, well away from the location of the observed owls and prairie dog colony.

No Action

No construction will occur with implementation of the No Action Alternative; therefore, no impacts to biological resources are anticipated.

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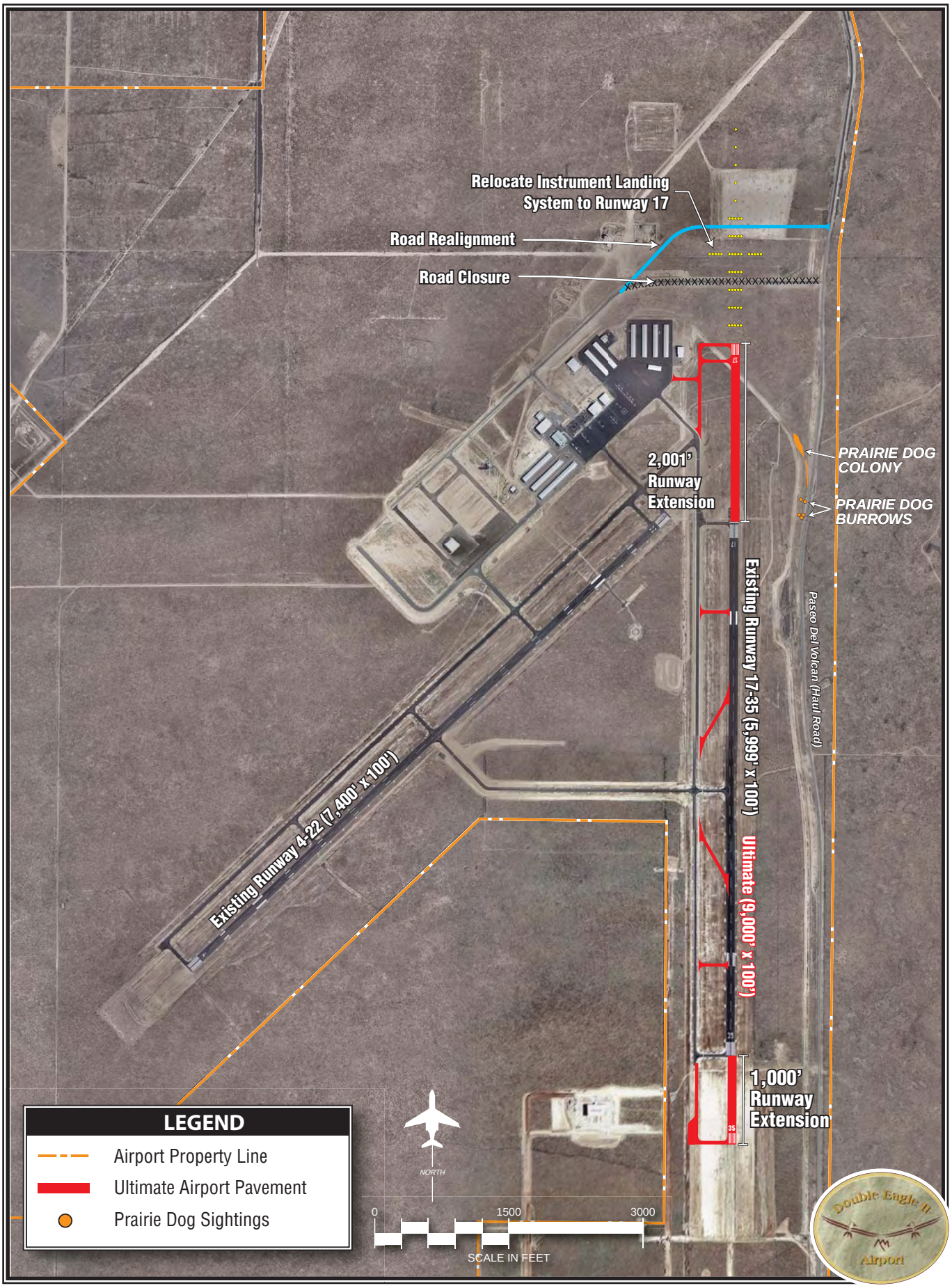


Exhibit 4H
PROXIMITY OF PRAIRIE DOG SIGHTINGS
TO ALTERNATIVE A

Analysis and Mitigation

Implementation of Alternative A or Alternative B is not expected to result in impacts to biological resources that exceed the established threshold of significance. No resource agencies have indicated concerns regarding either alternative. To minimize impacts to migratory birds, clearing will be undertaken outside of the nesting season (March through September) to minimize impacts to migratory birds.

No impacts to threatened or endangered species will occur with either alternative. The FAA concurred with the "no effect" finding. FAA Order 1050.1E, Appendix A, Paragraph 8.2d, states that if the proposed action is not likely to adversely affect any listed species or critical habitat, no consultation needs to occur with the Fish and Wildlife Service (see 50 CFR 402.14). A significant impact to federally listed threatened or endangered species would occur when the FWS or NMFS determines that the proposed action would likely jeopardize the continued existence of the species in question or would result in the destruction or adverse modification of critical habitat for the species. Neither alternative results in impacts which exceed this established threshold of significance.

4.11 NATURAL RESOURCES AND ENERGY SUPPLY

Alternative A (Proposed Action)

The primary impact on natural resources resulting from alternative implementation is related to fuel usage during both construction and operation of the proposed airport improvements. During the public outreach process for this EA, concerns were raised by pilots regarding the potential for increased taxi distances, thereby resulting in increased fuel usage. To address this concern, taxi distances were calculated from a common point on the existing airfield apron. The common point was selected based on the location of the airport's main apron area near fueling and aircraft services, a typical location that would be passed by both transient and based aircraft using either runway at the airport. **Exhibit 4I** depicts the anticipated taxi route from the common apron point to the proposed extended runway ends. As described on the exhibit, the taxi distance from the common point to the ultimate Runway 17 end is approximately 1,785 feet and the taxi distance from the common point to the ultimate Runway 35 end is approximately 9,479 feet. When compared to the No Action Alternative, aircraft will taxi a lesser distance to the Runway 17 end and greater distance to the Runway 35 end. When utilizing Runway 17, there will be a fuel savings and when using Runway 35, there will be an increase in fuel usage.

Indirect impacts attributed to construction activities could temporarily increase the use of some or all of the following: electricity, fuel, oil, chemicals, water, and other forms of energy and resources needed to construct the proposed improvements.

Alternative B

Impacts of Alternative B mirror those of Alternative A with the exception of aircraft fuel usage for taxiing. **Exhibit 4I** depicts the anticipated taxi routes from the common apron point to the proposed runway ends. The threshold for Runway 22 will not change with implementation of Alternative B. Its threshold is located 1,457 feet from the common point. The Runway 4 threshold will be 10,057 feet from the common point. Aircraft will need to travel a greater distance to the Runway 4 end when compared to the No Action Alternative, thereby resulting in an increase in fuel usage.

Indirect impacts attributed to construction activities could temporarily increase the use of some or all of the following: electricity, fuel, oil, chemicals, water, and other forms of energy and resources needed to construct the proposed improvements.

No Action

For comparative purposes, the no action taxi (existing) distances are 2,480 feet from the common point to the existing Runway 17 end; 8,479 feet from the common point to the existing Runway 35; 1,457 feet to the Runway 22 end; and 8,457 feet to the Runway 4 end.

No construction will occur with implementation of the No Action Alternative; therefore, natural resources and energy supply will be utilized in a manner similar as to what is experienced today.

ANALYSIS AND MITIGATION

Implementation of Alternatives A and B will result in an increased use of energy and natural resources during construction. In regards to aircraft taxi distances and fuel usage, **Table 4C** summarizes the taxi distances for each alternative utilizing the common starting (or ending) point.

TABLE 4C
Summary of Alternative Taxi Distances from Common Point

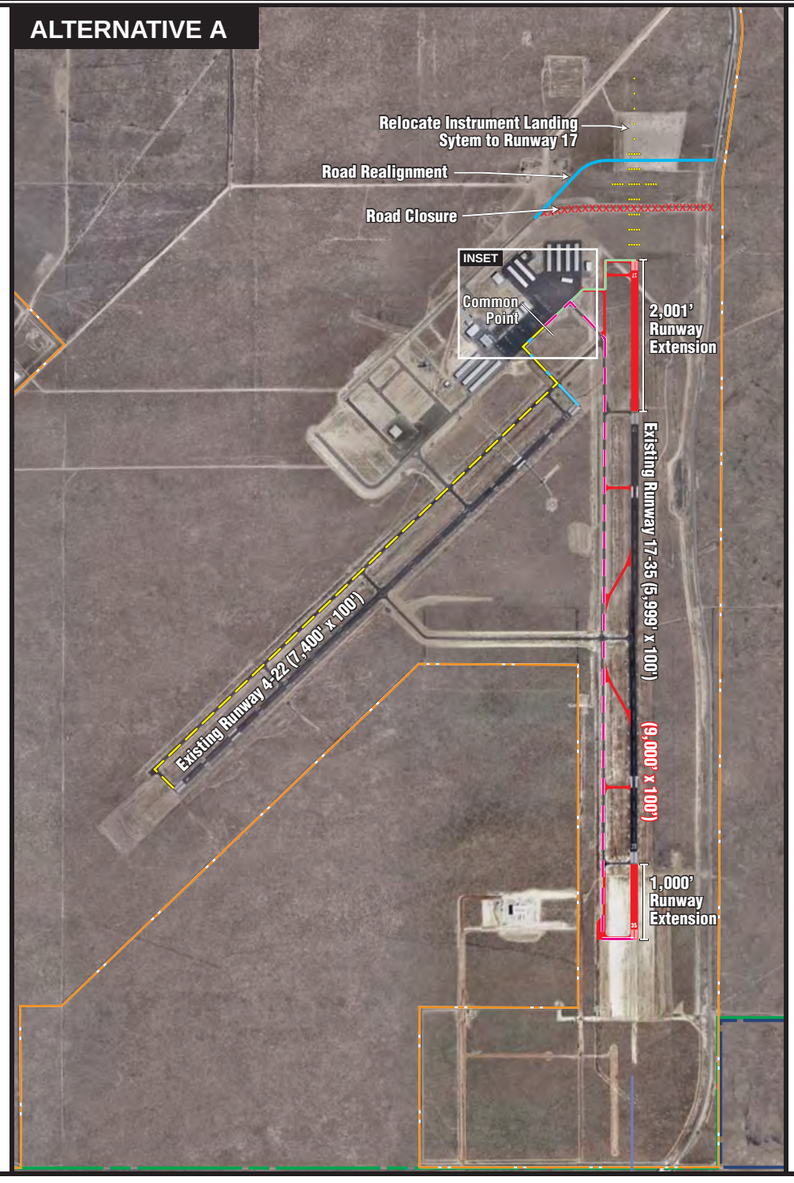
	Runway 17	Runway 35	Runway 4	Runway 22
No Action (Existing Condition)	2,480 feet	8,479 feet	8,457 feet	1,457 feet
Alternative A	1,785 feet	9,479 feet	8,457 feet	1,457 feet
Alternative B	2,480 feet	8,479 feet	10,057 feet	1,457 feet

As described in the table, Alternative A results in a shorter taxi distance from the common point to the Runway 17 end when compared to the No Action Alternative and Alternative B, but a longer distance to the Runway 35 end. Alternative B results in the longest distance to the Runway 4 end with the remaining taxi distances being unchanged. Both Alternatives A and B result in changes to the existing taxi distances, thereby correlating with an increase in fuel usage.

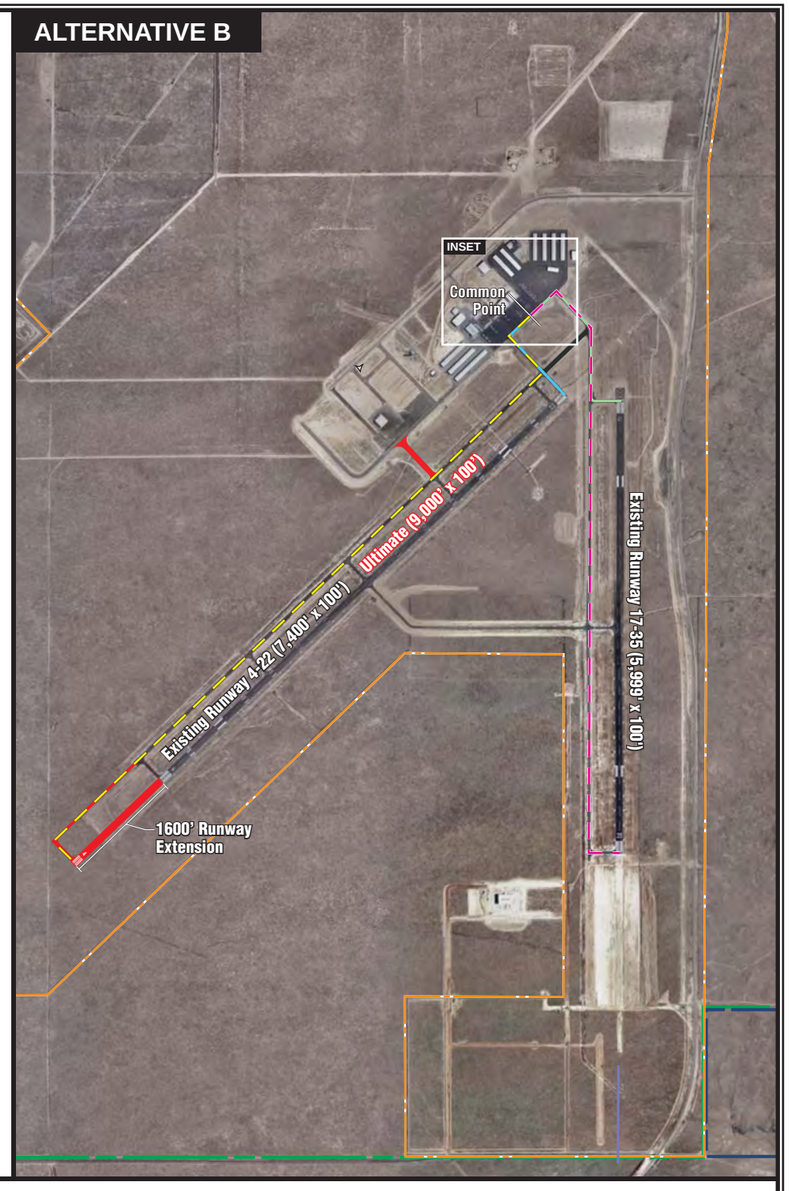
05SP12-41-1/20/09

NO ACTION

ALTERNATIVE A

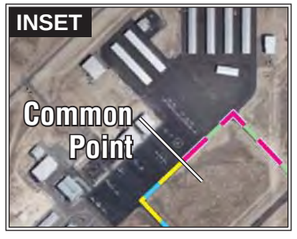


ALTERNATIVE B



Summary of Alternative Taxi Distances from Common Point (in feet)

	Runway 17	Runway 35	Runway 4	Runway 22
No Action (Existing Condition)	2,480	8,479	8,457	1,457
Alternative A	1,785	9,479	8,457	1,457
Alternative B	2,480	8,479	10,057	1,457



LEGEND

- Airport Property Line
- City of Albuquerque Boundary
- Petroglyph National Monument Boundary
- Ultimate Airfield Pavement
- Ultimate Road
- XXXXXX Pavement to be Removed
- Runway 17 Distance Route
- Runway 35 Distance Route
- Runway 4 Distance Route
- Runway 22 Distance Route

NORTH

0 2000 4000

SCALE IN FEET

Double Eagle II Airport

Exhibit 4I
TAXI DISTANCE
COMPARISON

It is not anticipated that the demand for these natural resources or energy will exceed supply; therefore, neither alternative results in impacts which exceed this established threshold of significance.

No mitigation measures are required.

4.12 LIGHT EMISSIONS AND VISUAL IMPACTS

Alternative A (Proposed Action)

Improvements proposed with Alternative A primarily occur in the eastern portions of airport property. Implementation of Alternative A will result in the extension of Runway 17-35, and its associated taxiway and lighting systems, 2,001 feet to the north and 1,000 feet to the south. Additionally, the medium intensity approach lighting system with runway alignment indicator lights (MALSR) will be relocated from Runway 22 to Runway 17. The introduction of additional runway and taxiway lighting at the airport will be most noticeable on days of low visibility or at night.

Aesthetic impacts which could result from the development of Alternative A primarily relate to the overflights of the Petroglyph National Monument by fixed wing aircraft. As previously discussed, the extension of Runway 17-35 and relocation of the ILS system could result in fewer overflights of the northern monument volcano and the geologic window.

Alternative B

Implementation of Alternative B will result in airport improvements primarily occurring in the southwestern portions of airport property. The extension of Runway 4-22 to the southwest will extend runway and taxiway lighting; however, due to the relatively isolated nature of the area, these changes will likely go unnoticed.

Aesthetic impacts will be similar to the existing condition due to the location of the proposed improvements and the likelihood for aircraft to be operating in a manner similar to today.

No Action

As no development will occur with implementation of the No Action Alternative, no lighting or visual impacts are anticipated.

ANALYSIS AND MITIGATION

Implementation of Alternatives A and B will result in the MALSR and Runway 17 PAPI being shifted north of its current location. No mitigation measures are required.

4.13 HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

Alternative A

Hazardous Materials. As described in Chapter Three, areas north of existing airport facilities are designated as Ordnance Operable Unit (OOU) 4 by the USACE. During World War II, the military used areas around Albuquerque to train pilots. Areas around the airport are suspected of containing munitions as large as 250-pound High Explosives General Purpose bombs. Additional information regarding this site is contained within the scoping letter response from the USACE dated May 11, 2007. A copy of this letter is contained within **Appendix B**, page B-37.

As depicted on **Exhibit 4J,** implementation of Alternative A will result in the construction of airport improvements within OOU 4. Coordination, undertaken with Mr. David Henry of the USACE, indicates that, with proper notice, the area could be cleared either prior to, or during, construction. As of September 2008, no clearance activities had occurred in OOU 4.

Pollution Prevention. As discussed within Section 4.7, Water Quality, the City of Albuquerque maintains an NPDES permit for continuing operation of an industrial facility. Implementation of Alternative A will require a modification of this permit to reflect the additional impervious surfaces and any mitigation measures which could be implemented during the final design of the project. Additionally, a construction-related NPDES permit will be required prior to construction of the proposed improvements. This permit requires a Notice of Intent for all construction activities disturbing one acre or more of land. Construction-related water quality impacts are discussed under Section 4.14, Construction, and will be minimized through the use of best management practices (BMPs).

Solid Waste. Implementation of Alternative A could increase capacity at the airport, thereby resulting in an increase of solid waste generated. No concerns were raised during the agency scoping process regarding this increase. The City of Albuquerque's Soil Amendment Facility, located west of the airport, will not be impacted by the development or operation of Alternative A.

Alternative B

Hazardous Materials. Development of Alternative B will occur within the southwestern portions of airport property. This area is located outside of OOU 4. Additionally, no munitions

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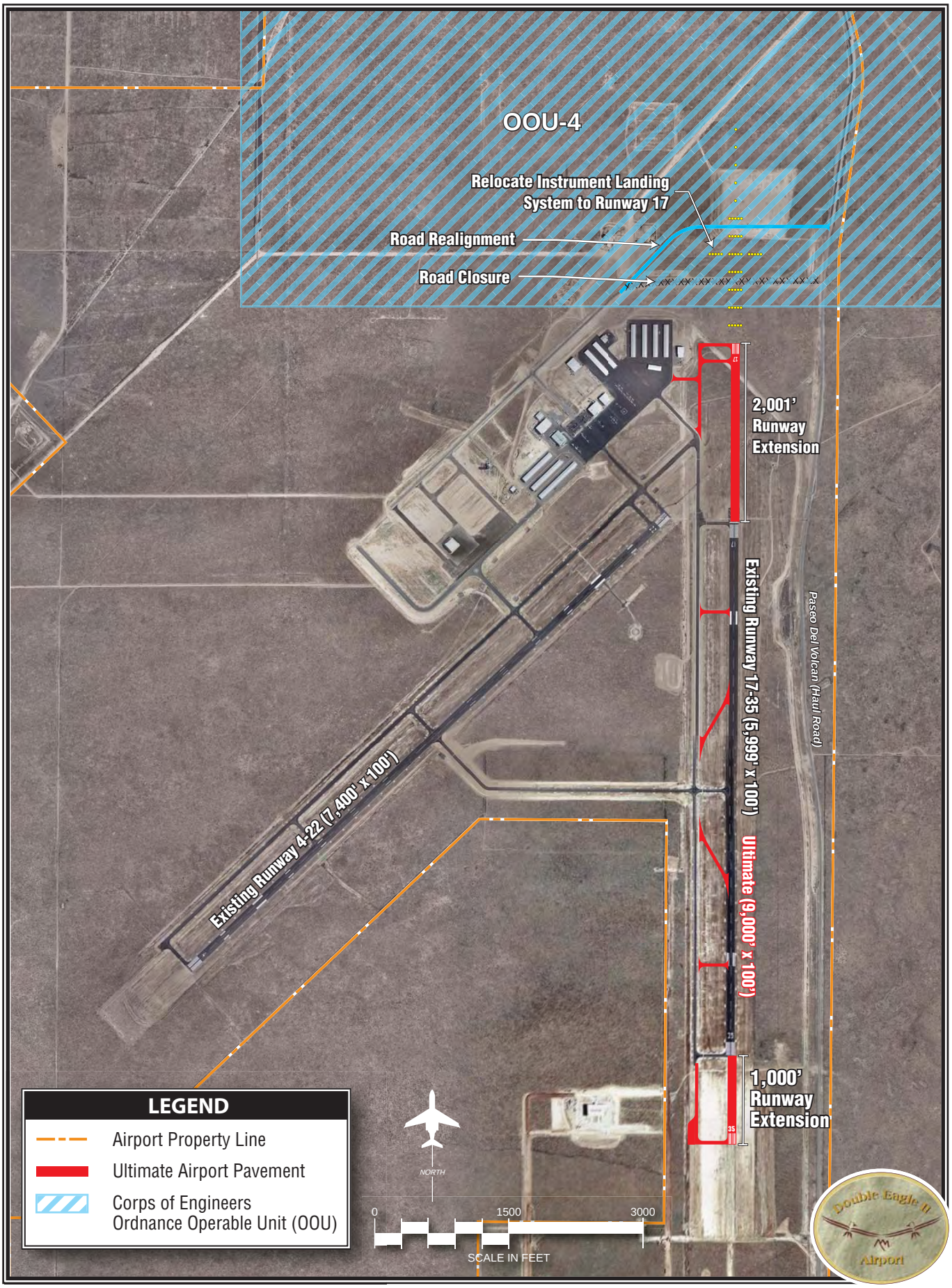

Exhibit 4J
PROXIMITY OF
OOU-4 TO ALTERNATIVE A

have been uncovered in the southern portions of airport property. It is not anticipated that earthwork will expose any hazardous materials in this area.

Pollution Prevention. As stated within the Alternative A discussion, Water Quality, the City of Albuquerque maintains an NPDES permit for continuing operation of an industrial facility. Implementation of Alternative B will require a modification of this permit to reflect the additional impervious surfaces and any mitigation measures which could be implemented during the final design of the project. Additionally, a construction-related NPDES permit will be required prior to construction of the proposed improvements. This permit requires a Notice of Intent for all construction activities disturbing one acre or more of land. Construction-related water quality impacts are discussed under Section 4.14, Construction, and will be minimized through the use of best management practices (BMPs).

Solid Waste. Implementation of Alternative B results in impacts that mirror those of Alternative A.

No Action

No construction will occur with implementation of the No Action Alternative; therefore, no impacts to hazardous materials are anticipated to result from alternative implementation. Additionally, the airport will continue to operate in a manner similar to today; therefore, ongoing pollution prevention measures will be employed and solid waste will continue to be generated.

ANALYSIS AND MITIGATION

Implementation of Alternative A results in the disturbance of OOU 4. Additional coordination will need to be undertaken with the USACE during project design to ensure the development area is cleared of munitions. If the area cannot be cleared prior to construction, a monitoring plan will need to be prepared in cooperation with the USACE to ensure the safety of construction crews. Alternative B does not impact this OOU.

For Alternatives A and B, the city will obtain and modify necessary permits for operation of the airport and construction of the proposed improvements. These actions will help ensure that any potential impacts are properly mitigated. Initial coordination with affected resource agencies has not identified any mitigation measures which may be required beyond those described within Section 4.14.

4.14 CONSTRUCTION IMPACTS

Alternatives A and B

Construction impacts for Alternatives A and B are anticipated to be similar and will be expected to be temporary in nature.

Noise. Noise-related construction impacts at airports result from the use of construction equipment. Noise impacts from construction activities are closely related to the type of construction equipment being used during each phase of construction. The construction phases are expected to include earthwork/grading, paving, building construction, and landscaping. Each phase necessitates different types of construction equipment.

At Double Eagle II Airport, construction of the airport improvements is not expected to result in excessive construction equipment noise impacts as the construction activities will be occurring in undeveloped, rural areas and are considered short-term.

Air Quality. The generation of fugitive dust as a result of construction activities is anticipated due to the movement of heavy construction equipment and the exposure and disturbance of surface soils. This impact is expected to be both temporary and localized. Mitigation measures, as outlined below, can reduce this impact to levels below significance.

Water Quality. Construction activities also have the potential to result in temporary water quality impacts, particularly suspended sediments, during and shortly after precipitation events in the construction phase. Recommendations established in FAA Advisory Circular 150/5371-10, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control,* will be incorporated in project design specifications to further mitigate potential impacts. These standards include temporary measures to control water pollution, soil erosion, and siltation through the use of berms, fiber mats, gravels, mulches, slope drains, and other erosion control methods.

In addition, the airport sponsor will comply with the Federal National Pollutant Discharge Elimination System (NPDES) program regarding filing Notice of Intent prior to construction activities affecting more than one acre. This program is managed by the State of New Mexico through the NPDES permit program.

The project design and construction of the proposed airport improvements will incorporate BMPs to reduce erosion, minimize sedimentation, and control non-storm water discharges in order to protect the quality of surface water features on and off the airport. BMPs are defined as nonstructural and structural practices that provide the most efficient and practical means of reducing or preventing pollution of storm water.

No Action

No development is proposed under the No Action Alternative; therefore, no construction impacts will occur.

ANALYSIS AND MITIGATION

Implementation of Alternative A or B will result in short-term construction impacts. The following preventive and mitigative measures are recommended during construction.

Site Preparation

- Minimize land disturbance.
- Use watering trucks to minimize dust.
- Cover trucks when hauling dirt.
- Stabilize the surface of dirt piles if not removed immediately.
- Use windbreaks to prevent accidental dust pollution.
- Limit vehicular paths and stabilize these temporary roads.
- Grade to prevent soil from washing onto paved roadways.
- Pave all unpaved construction roads and parking areas to road grade for a length no less than 50 feet where such roads and parking areas exit the construction site to prevent dirt from washing onto paved roadways.

Construction

- Cover trucks when transferring materials.
- Use dust suppressants on traveled paths which are not paved.
- Minimize unnecessary vehicular and machinery activities.
- Minimize dirt track-out by washing or cleaning trucks before leaving the construction site.

Post-Construction

- Revegetate any disturbed land not used.
- Remove unused material.
- Remove dirt piles.
- Revegetate all vehicular paths created during construction to avoid future off-road vehicular activities.

Construction Scheduling

- Sequence construction activities so that areas void of vegetation are not exposed for long periods of time.
- Schedule landscaping and other work that permanently stabilizes the area to be done immediately after the land has been graded to its final contour.
- Alter the project schedule to minimize the amount of denuded areas during wet months.
- Construct permanent storm water control facilities early in the project schedule and then utilize these structures for controlling erosion and sedimentation.

Limiting Exposed Areas

- Divert up-slope water from entering the denuded areas of the construction site by constructing dikes and swales.
- Divert or intercept storm water before it reaches long and/or steep slopes.
- Release captured storm water at a slow and controlled rate to prevent damage to downstream drainageways and structures.
- Increase the soil's ability to absorb moisture through vegetative means, surface roughening, and/or mulching.
- Stage grading so that the native vegetation provides a buffer to slow and disperse run-off.

Runoff Velocity Reduction

- Build check dams or other energy dissipation structures in unlined drainage channels to slow runoff velocity and encourage settlement of sediments.
- Limit slopes to 3:1 wherever practical.
- Intercept runoff before it reaches steep slopes using diversion dikes, swales, or other barriers.
- Protect slopes with mulches, matting, or other types of temporary or permanent soil stabilization.
- Provide velocity-reducing structures or rip rap linings at storm water outfalls.

Sediment Trapping

- Direct sediment-laden storm water to temporary sediment traps.
- Construct temporary sediment traps or basins at the drainage outlet for the site.
- Use temporary sediment barriers such as silt fences, straw bale barriers, sand bag barriers, and gravel filter barriers for construction sites with relatively flat slopes that produce sheet flow runoff.

Good Housekeeping

- Schedule regular inspections of storm water and sediment control devices.
- Repair and/or replace storm water and sediment control devices as often as necessary to maintain their effectiveness.

4.15 CUMULATIVE IMPACTS

Analysis of the cumulative overall impact of a proposed action and the consequences of subsequent related actions is required to determine the significance of the impact on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of the actions' originator.

Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Cumulative impact analysis considers connected actions, projects related and dependent upon the completion of the proposed airport project; cumulative actions, reasonably foreseeable independent projects; and similar actions or projects having a

common geography or timing that provide a basis for considering their impact together with the proposed airport project.

As discussed within Chapter Three, a number of projects, on and off airport property, have been undertaken or are planned to be undertaken in the near-term. These projects include the following.

- Construction of the ATCT
- Construction of sewer, water, and communication infrastructure for the ATCT as well as the Aerospace Technology Park
- Taxiway improvements, specifically the construction of taxiways connecting Runway 17-35 to the Aerospace Technology Park
- Installation of additional security fencing
- Construction of hangars south of the FBO facilities, along Runway 4-22
- Resurfacing of Runways 4-22 and 17-35
- Improvements to Paseo del Volcan to eliminate a series of curves near the airport entrance
- Eclipse Aviation opened its Customer Training Center on a parcel adjacent to Double Eagle II Airport. Eclipse Aviation plans to build a manufacturing facility on property north of the airport that will produce 1,500 aircraft per year and employ approximately 1,500 people
- Access roads for the Aerospace Technology Park have been constructed south of the airport, between Runway 17-35 and Runway 4-22
- Relocation of Paseo Del Volcan

The airport improvements included within Alternatives A and B provide for additional runway length at the airport, which allows Double Eagle II Airport to perform as a suitable reliever airport to the Albuquerque International Sunport.

Preview of applicable resource materials and coordination with appropriate agencies has resulted in the determination that the following resources are not present and require no further analysis. These resources include environmental justice areas, wetlands, coastal resources, farmland, floodplains, and wild and scenic rivers.

Resource issues that are appropriate for analysis under a cumulative impact assessment are addressed below. Much of the discussion contained within the following sections is also reflected within the various impact analyses in Sections 4.2 through 4.15. The discussions have been consolidated within this section to summarize the qualitative cumulative impact analysis which was completed for the project.

NOISE

Neither Alternative A nor B result in noise impacts which exceed FAA's threshold of significance. The continuing development at the airport will likely introduce new aircraft to the airport's based aircraft fleet. The introduction of these aircraft is reflected within the facility forecasts and is, therefore, accounted for within the noise analysis described in Section 4.2.

COMPATIBLE LAND USE

The proposed airport improvements are being advanced by the City of Albuquerque Aviation Department and much of the land surrounding the airport is under the jurisdiction of Bernalillo County. To ensure that future development around the airport is compatible with airport operations, the Aviation Department is in regular contact with the county as well as any developers proposing projects within the airport vicinity. When needed, the airport requests that avigation easements be placed upon neighboring property to ensure that future landowners area aware of the operations at the airport. Currently, the county's zoning, land use policies, and ordinances encourage land use and development that is compatible with airport operations. Based on this information, no cumulative land use or zoning impacts are anticipated, and all reasonably foreseeable development in the area around the airport will be compatible with airport operations.

SOCIOECONOMIC AND SECONDARY (INDUCED) IMPACTS

The proposed alternative does not result in the displacement of residences, businesses, or agricultural operations, or result in the division or disruption of established communities. Other development projects ongoing within the airport environs could result in induced development impacts including shifts in patterns of population and growth, demand for public services, or changes in business and economic activity. As the City of Albuquerque continues to grow, it is anticipated that the area surrounding the airport will develop. The presence of the airport may encourage the development of businesses that utilize aircraft for transportation purposes.

Current and reasonably foreseeable development within the Albuquerque area is being planned under the current population, employment, income, and economic growth trends. Along with the Sunport, Double Eagle II Airport directly and indirectly influences the land use and economic structure of the City of Albuquerque metropolitan area. It is reasonable to assume that the population, income, and economic growth trends of the past will continue into the future under the proposed development, consistent with the city's land use and development planning policies and objectives.

AIR QUALITY

Coordination received from the State of New Mexico did not indicate any concerns regarding cumulative air quality impacts within the project area. Cumulative construction-related air quality impacts are not anticipated as the projects described within this EA will likely not be undertaken at the same time as the projects planned for completion in the project area.

WATER QUALITY, WETLANDS, AND WATERS OF THE U.S.

Due to the project's proposed increase of impervious runway surface, a modification of the existing NPDES permit will be required as well as an NPDES construction permit. Reasonably foreseeable projects may also have individual impacts on water supply and water quality. These impacts will be subject to regulatory agency permit review and approval. Permit issuance verifies agency concurrence with the proposed resource impacts as not being individually significant.

During this process of obtaining and modifying permits, review by agencies having jurisdiction over water supply and quality issues will be conducted. The permit programs implemented by these agencies take into account the cumulative impact of actions and projects on the regulated resources. Periodic program reviews are conducted to ensure that the loss of regulated resources authorized through the permit programs do not constitute an individual or cumulatively unacceptable impact. The proposed alternative, as well as all reasonably foreseeable actions, will be subject to this regulatory review process, as applicable. In reviewing the additional projects planned in the project area, additional impacts to ephemeral streams may occur.

FISH, WILDLIFE, AND PLANTS

Alternatives A or B will not impact unique or significant biological features or habitat that supports rare species or promotes the spread of invasive species or noxious weeds. The reasonably foreseeable projects are proposed for locations that are consistent with the airport's master plan and the city's zoning and land use policies. These plans and policies have been developed in consultation with various environmental resource agencies. These agencies have varied oversight and protection powers over significant biotic communities under their respective jurisdictions. The proposed alternative and reasonably foreseeable projects are consistent with the airport master plan, zoning, and land use policies. No significant cumulative impact to biotic communities is anticipated.

Likewise, Alternatives A and B are not likely to result in a trend toward federal listing for the list of species identified through coordination with the U.S. Fish and Wildlife Service and the New Mexico Department of Game and Fish. The reasonably foreseeable projects are proposed for areas currently zoned for respective development, on airport property, and on or adjacent to existing development.

NATURAL RESOURCES AND ENERGY SUPPLY

The proposed alternative will not result in a significant increase in use of energy or natural resources over current trends. Projected demands for energy and natural resources will increase commensurate with the growth of population. The proposed alternative and reasonably foreseeable projects will account for only a minor portion of the projected growth and, therefore, will not result in a significant cumulative impact on energy and natural resources.

LIGHT EMISSIONS AND VISUAL IMPACTS

The proposed runway extension under the proposed alternative will include the relocation of existing runway lights and potential relocation of the MALSR. The proposed lighting will not involve any substantial changes to the type or intensity of the lights currently used at the airport. The location of the existing rotating beacon light will not be changed. Other development projects in the area will also likely introduce new lighting to the area. However, due to the relatively industrial nature of the area, no cumulative impacts due to light emissions are reasonably foreseeable.

CONSTRUCTION IMPACTS

Construction activities result in temporary impacts with recovery of the natural and social environments after construction is completed. Issues of more long-term cumulative impacts to the natural, social, economic, and cultural environments were discussed previously under this section. During construction, temporary construction-related increases in noise levels, fugitive dust, erosion and sedimentation, and traffic congestion are anticipated with recovery upon completion of construction. No significant cumulative construction impacts are anticipated as the projects evaluated within this EA and the projects planned to occur in the airport environs will not occur concurrently.