

FINAL

**ENVIRONMENTAL ASSESSMENT
FOR THE EXPANSION AND OPERATION OF A
U.S. BORDER PATROL
FIRING RANGE NEAR FABENS, EL PASO COUNTY, TEXAS**



**U.S. Department of Homeland Security
U.S. Customs and Border Protection
U.S. Border Patrol
Washington, D.C.**

February 2008

FINDING OF NO SIGNIFICANT IMPACT
For the Expansion and Operation of a U.S. Border Patrol
Firing Range Near Fabens, El Paso County, Texas

PROJECT HISTORY: United States (U.S.) Customs and Border Protection (CBP) is the Federal agency responsible for enforcing the laws regulating the admission of illegal aliens into the U.S. As part of CBP, U.S. Border Patrol (USBP) is responsible for maintaining control of the U.S. borders. The USBP's primary mission is to prevent the entry of those who attempt to illegally enter or smuggle persons or contraband across the border by detection, interdiction and apprehension.

The USBP, El Paso Sector is responsible for carrying out its mission in the southwestern Texas border region through station-level operations. To accommodate the growing need for more agents in the El Paso Sector as required for implementation of the Secure Border Initiative and the National Strategic Plan, CBP intends to expand the Fabens Firing Range capacity. CBP prepared the *Environmental Assessment for the Expansion and Operation of an Office of Border Patrol Firing Range Near Fabens, El Paso County, Texas* to address this proposed project and meet the requirements of the National Environmental Policy Act.

PURPOSE AND NEED: The purpose of the proposed action is to provide a state-of-the art firing range where USBP agents can qualify with a range of small arms weapons. Qualification with a variety of weapons is critical for law enforcement duties; would enhance agent capabilities; provide a safer working environment for the USBP personnel; and further facilitate USBP's mission to gain, maintain, and extend control of the U.S.-Mexico border.

The existing Fabens Firing Range is situated on approximately 15 acres of land and currently provides 18 firing lanes. Approximately 1,100 USBP agents from the El Paso, Ysleta, Fabens, and Fort Hancock Stations currently use the existing facilities to qualify on small arms usage each quarter. In addition, other Federal and state law enforcement agencies use the firing range facility. A new, larger range is needed to accommodate the increase in agents in the El Paso Sector. No other firing range in the vicinity of these USBP stations is available for USBP firing practice and training. The need for the indoor range is based on operational and programmatic concerns that it would lessen noise and environmental issues, allow for firing range use in inclement weather, provide a safety and noise buffer, and would also accommodate the increase in USBP agents from the Texas offices of the El Paso Sector.

ALTERNATIVES: Two alternatives were identified during the planning stages of the proposed project and carried forward for detailed analyses: (1) no further development (No Action Alternative); and (2) the lease acquisition of 304 acres of property, modification to the existing firing range, and construction of additional outdoor firing lanes and an indoor modular firing range. In addition, a modular classroom, infrastructure improvements (*i.e.* road surfacing, water well installation, *etc.*), and additional fencing would be constructed (Proposed Action Alternative). Given the specific USBP stations supported by Fabens Firing Range, the relocation of the range to other areas would reduce its effectiveness for the local USBP agents. Therefore, no other locations were evaluated because they did not meet the project's purpose and need.

Proposed Action Alternative: The Proposed Action Alternative would be to expand the current Fabens outdoor firing range by 10 lanes (to a total of 28 lanes), construct an additional 18 to 20 lane outdoor firing range and a new modular indoor firing range, also called a QuickRange™ with appropriate support facilities and buildings that include 4-firing lanes. The footprint for the construction and expansion of the Proposed Action Alternative would not require any additional acreage, and would remain within the existing 15 acres currently used for the firing range facilities. The remaining 289 acres would serve as a safety, noise, and security buffer. No construction or

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USBP activities would occur within this buffer area, with the exception of placing fencing around the perimeter. Under this alternative, property would be leased from the University of Texas System. Support facilities would include a 40- by 60-foot modular building containing a classroom, weapons cleaning area, restrooms, and storage. Lighting along the 15-acre perimeter would be expanded to illuminate the entire firing range facility. New 3-phase electrical transmission lines would be added to the site for support of the expansion and the new indoor range. In addition, the entire 304 acres would be fenced by barbed wire, while the ranges, modular buildings and offices would be surrounded with 6-foot tall chain link fencing and an access gate. The Proposed Action Alternative site is located northeast of the Town of Fabens, Texas. Currently, it is anticipated that this Proposed Action Alternative would take approximately 60 to 90 days for construction of new and expanded facilities.

No Action Alternative: Currently there is an 18-lane firing range, administrative facilities and a helipad. The No Action Alternative would require the firing range to remain on the current 15 acres, in its present configuration with no certain future expectations of a new, larger firing range facility for the increasing number of agents and staff, or upgrade of buildings or other needs. Although the No Action Alternative does not meet the purpose and need, it will be carried forward for analysis as required by the President's Council on Environmental Quality (CEQ) regulations.

ENVIRONMENTAL CONSEQUENCES: No significant adverse effects to the natural or human environment are expected upon implementation of the Proposed Action Alternative. Implementation of the Proposed Action Alternative would ultimately remove 15 acres of soil and vegetation communities from biological production. Air quality, water quality, and noise would be temporarily impacted by construction activities, but would return to baseline conditions after the completion of construction. There would be minor impacts to transportation associated with increased traffic and noise from increased range usage; however, this would not differ from the No Action Alternative. There would be minor indirect impacts to water resources from increased water use for dust suppression.

ENVIRONMENTAL DESIGN MEASURES: Environmental design measures that will be implemented by the USBP for the Proposed Action Alternative include:

Soils Suitable fencing will be installed around the perimeter of the facility to contain vehicles and people and prevent accidental impacts to soils on adjacent properties. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared prior to construction activities. Best Management Practices (BMPs) described in the SWPPP will be implemented to reduce erosion. All areas not immediately developed will be landscaped with native plant species, where appropriate, in order to minimize erosion.

Biological Resources Construction equipment will be cleaned prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species. Disturbed soils located in temporary impact areas will be re-vegetated.

The Migratory Bird Treaty Act requires that Federal agencies coordinate with U.S. Fish and Wildlife Service (USFWS) if a construction activity would result in the "take" of a migratory bird. If construction or clearing activities were scheduled during the nesting season (March 15-September 15) preconstruction surveys for burrowing owls and other migratory bird species will occur immediately prior to the start of any construction activity to identify active nests. If construction activities would result in the "take" of a migratory bird, then coordination with

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USFWS and Texas Parks and Wildlife Department (TPWD) will occur, and applicable guidelines will be followed prior to construction or clearing activities. Another environmental design measure that would be considered is to schedule all construction activities outside the nesting season, negating the requirement for nesting bird surveys.

CBP will avoid Texas horned lizards (*Phrynosoma cornutum*) to the extent possible; however, where avoidance is impractical, consultation with TPWD will be conducted to identify conservation measures and reasonable and prudent measures, such as using biologists to monitor construction progress and conduct post-project, long-term monitoring, as deemed necessary. During below-ground construction, construction personnel will avoid leaving open trenches to minimize the risk of injury or death to wildlife.

Cultural Resources Although no cultural resources were found to be present in the project area, unanticipated subsurface deposits are possible at any undertaking that disturbs the ground surface. If previously unknown cultural resources are exposed by construction activities associated with the proposed development, work will stop in the immediate vicinity, the resources will be protected, and State Historic Preservation Officer (SHPO) will be notified within 24 hours of discovery. If, in consultation with SHPO, it is determined that the resource is significant and cannot be avoided by construction, then an archaeological data recovery plan will be prepared and implemented in consultation with SHPO.

If unmarked human burials are discovered during construction, work will stop in the immediate vicinity, the remains will be protected, and the local law enforcement agency and SHPO will be notified as soon as possible. The location of the unmarked human burial will be documented, and the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) will be implemented, including consultation with Native American tribes.

Air Quality Suitable fencing to restrict traffic within the project area will be constructed to reduce soil disturbance. Soil watering will be utilized to minimize airborne particulate matter created during construction activities. Bare ground will be covered with hay or straw to lessen wind erosion between facility construction and landscaping. After the construction is complete, all areas with vehicle traffic will be paved to reduce the potential for fugitive dust, and landscaping will be designed to prevent or lessen wind fugitive dust creation. Additionally, all construction equipment and vehicles will be kept in good operating condition to minimize exhaust emissions.

Water Resources Because the impact area is greater than 1 acre, as part of the National Pollutant Discharge Elimination System (NPDES) permit process, a SWPPP and Notice of Intent will be submitted to Texas Commission on Environmental Quality (TCEQ) prior to the start of construction. Sedimentation and pollution of surface waters by fuels, oils and lubricants will be minimized through the implementation of the SWPPP.

Noise During the construction phase, short-term noise impacts are anticipated. All Occupational Safety and Health Administration requirements will be followed. To lessen noise impacts to the local residents and wildlife communities, construction will only occur during daylight hours whenever possible. All motor vehicles will be maintained to reduce the potential for vehicle-related noise. A buffer area around the 15-acre firing range will be maintained to minimize noise disturbance outside the project area.

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Solid and Hazardous Wastes BMPs for small arms firing ranges can prevent the spread of contamination, specifically lead contamination, and lessen environmental and occupational health problems from the operation and maintenance of the range, and are listed below.

- Stagger firing lane usage
- Vegetative cover
- Improve berm maintenance and repair
- Lead removal and recycling
- Soil pH modifiers
- Alternative shot material usage
- Lead fixation technologies
- Whole backstop and bullet pocket management
- Backstop contouring
- Stormwater channels and buffer strips
- Detention basins
- Clay layers and barriers

Several of these BMPs are currently in use at the firing range, such as dust suppression mechanisms, stormwater channels, and detention basins. Use of additional BMPs can significantly prevent any environmental degradation to humans and wildlife in future land reuse and potentially limits legal liability.

In accordance with TCEQ regulations, any activity which disturbs the final cover of the closed municipal solid waste landfill must have prior written approval from the executive director of TCEQ at least 45 days prior to the start of construction activities. Activities, such as the installation of fence posts, light poles and foundations, would classify as construction activities which could potentially impact landfill final cover and require authorization.


In addition to these BMPs, care will be taken to avoid impacting the project area with hazardous substances (*i.e.*, anti-freeze, fuels, oils, lubricants) used during construction. Catch pans will be used when refueling, and equipment necessary to quickly contain any spills will be present during refueling.

Transportation During the design phase of the firing range construction, measures to assure that impacts to traffic flow are minimized will be considered. Additional vehicular entrances, speed zones, traffic signals or signs will be reviewed as measures to ease the impacts of traffic. The CBP will coordinate with Texas Department of Transportation and El Paso County to address any traffic or safety impacts associated with the Proposed Action Alternative.

Socioeconomics Whenever possible, materials and other project expenditures will be obtained through merchants in the local community. All construction activities, regardless of the area, will be limited to daylight hours whenever possible. Safety buffer zones will be designated around all construction sites to ensure public health and safety.

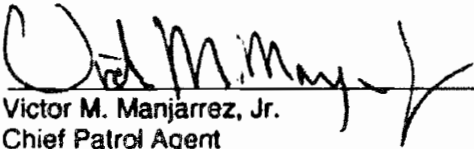
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FINDING: Based upon the results of the environmental assessment and the environmental design measures to be incorporated as part of the Proposed Action Alternative, it has been concluded that the Proposed Action Alternative will not have a significant adverse effect on the environment. Therefore, no further environmental impact analysis is warranted.



Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

1/28/08
Date



Victor M. Manjarrez, Jr.
Chief Patrol Agent
U.S. Border Patrol
El Paso Sector

1-17-08
Date

Final

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FEBRUARY 2008

Lead Agency:

Mark Gable
Environmental Program Manager
U.S. Department of Homeland Security
U.S. Customs and Border Protection
Dallas Facility Center
7701 North Stemmons Freeway
Dallas, TX 75247-4232

Point of Contact:

Charles McGregor
U.S. Army Corps of Engineers
Fort Worth CESWF-PM-ECSO
819 Taylor Street Room 3B10
Fort Worth, TX 76102-0300

EXECUTIVE SUMMARY

PROPOSED ACTION:	The United States (U.S.) Border Patrol (USBP) El Paso Sector proposes the expansion of the existing 15-acre Fabens Firing Range near Fabens, Texas. USBP proposes to lease 304 acres of property from the University of Texas System to expand an existing USBP firing range and associated facilities. The existing 18-lane firing range would have a canopy and baffles installed, reconstruction of the surrounding safety berm, enhancement of the water drainage system, and surfacing of the range access road. The new facilities would include an 18- to 20-lane outdoor fully baffled and canopied range, an indoor firing range modular building, a 60-foot x 40-foot modular classroom, expansion of perimeter lighting of 15 acres, installation of a water well and perimeter fencing.
PURPOSE AND NEED FOR THE PROPOSED ACTION:	<p>The purpose of this expansion is to support the mission of USBP El Paso Sector. The proposed property lease acquisition and expansion of the firing range would accommodate the growing need for more agents in the El Paso Sector as required for implementation of the Secure Border Initiative and the National Strategic Plan.</p> <p>Fabens Firing Range expects an increase in agent firing range usage from the current 1,100 agents per quarter to approximately 1,800 per quarter. The projected agent increase would require additional lanes to enable USBP agents to remain proficient on their assigned weapons.</p>
ALTERNATIVES CONSIDERED:	There are two alternatives under consideration: The No Action Alternative and the Proposed Action Alternative (described above). Under the No Action Alternative, Fabens Firing Range would remain at its present location with no expansion of the outdoor firing range and with no indoor firing range capabilities at the site.
ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION:	Implementation of the Proposed Action Alternative would ultimately remove 15 acres of soil and vegetation communities from biological production. The perimeter fencing would limit access to wildlife. Air quality, water quality, and noise would be temporarily impacted by construction activities, but would return to baseline conditions after the completion of the construction activities. There would be minor impacts to transportation associated with increased traffic and to noise from increase range usage. There would be minor indirect impacts to water resources.
CONCLUSIONS:	Based on the findings of this analysis and the assumption that all design measures recommended herein are implemented, no significant adverse impacts would occur from the Proposed Action Alternative, and no additional National Environmental Policy Act documentation is warranted.

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SECTION 1.0
INTRODUCTION



1.0 INTRODUCTION

United States (U.S.) Customs and Border Protection (CBP), U.S. Border Patrol (USBP), El Paso Sector has prepared this Environmental Assessment (EA) to address the potential effects, beneficial and adverse, from the expansion and operation of an USBP Firing Range near Fabens, Texas (Figure 1-1). CBP proposes to lease approximately 304 acres of real property from the University of Texas System for construction of the proposed firing range additions, associated facilities, and a noise and safety buffer. The existing 15-acre firing range currently resides within the 304 acres of land proposed for lease by USBP. The range has operated on the current 15 acres since 1978 and supports small arms training for the El Paso, Ysleta, Fabens, and Fort Hancock stations of the El Paso Sector. In addition, the firing range has been, and is currently used by Texas Department of Public Safety and other Federal and state law enforcement agencies. USBP proposes to expand Fabens Firing Range (FFR) facilities to accommodate the increasing agent force deployed to the El Paso Sector under the USBP's National Strategic Plan. The National Strategic Plan was designed to gain and maintain control of the U.S. borders (CBP 2004).

The current FFR consists of 15 acres located within the proposed 304-acre project area. The current 15-acre firing range footprint is considered to be disturbed land from its use as a firing range and from vehicle transportation around the area for range maintenance. FFR is considered a small arms firing range, as the range regularly accepts .50 caliber or smaller nonexploding ammunition. At the present time, the firing range includes an outdoor 18-lane range with an administrative section and a firing range section. The administrative section (Photograph 1-1) consists of a trailer, storage building, picnic area and water tank while the firing range section (Photograph 1-2) includes a shelter, restroom, water tank, observational tower with warning flag,



Photograph 1-1. Administrative section of the existing range.



Photograph 1-2. Firing range section of the existing range.

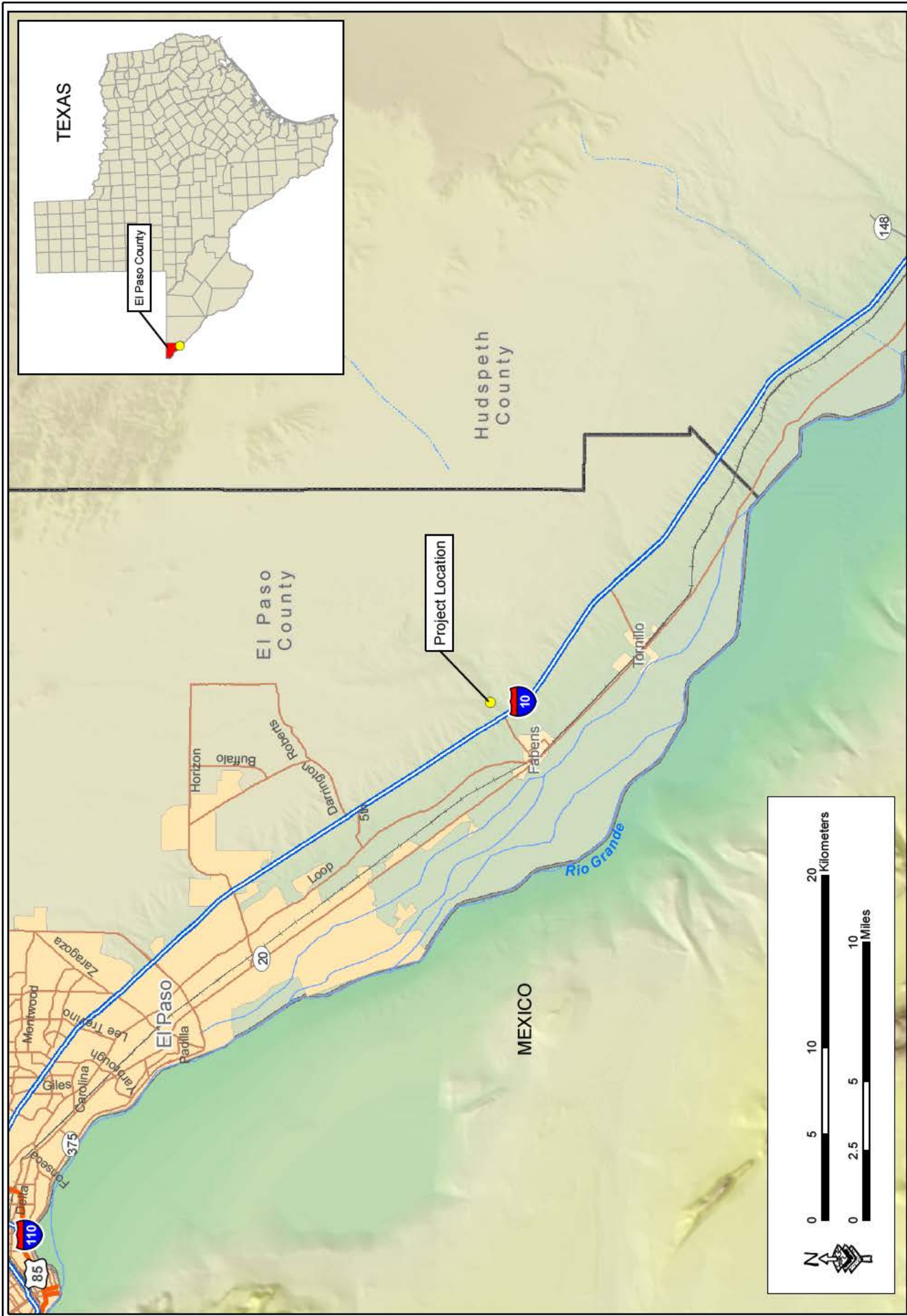


Figure 1-1: Project Vicinity Map

generator and storage building. USBP proposes to modify the current outdoor range and drainage system, build an 18-20 lane secondary outdoor firing range, and construct a modular indoor range (QuickRange™). To support these facilities USBP would also drill a water well for range wetting and dust suppression and pave an existing road with asphalt. Additional fencing would be installed around the perimeter of the 304-acre parcel for safety and security considerations. The proposed firing range expansion would remain within the previously disturbed 15-acre footprint. The remainder of the property (289 acres) would be used as a noise and safety buffer for the firing range.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 of the U.S. Code of Federal Regulations [CFR], Parts 1500-1508), and the Department of Homeland Security (DHS) Management Directive 5100.1, which is the Environmental Planning Program Directive that outlines CBP's procedures for the implementation of NEPA.

1.1 CBP BACKGROUND

In 1924, Congress created USBP to serve as the law enforcement entity of Immigration and Naturalization Service (INS), which it did until November 25, 2002. With the passage of the Homeland Security Act of 2002 (Public Law [PL] 107-296), Congress transferred all INS responsibilities to the newly created DHS. CBP also assumes many responsibilities and functions of other branches of INS, as well as those of U.S. Customs Service and Animal and Plant Health Inspection Service.

The mission of CBP is to prevent terrorists and terrorist weapons from entering the U.S. (CBP 2004). This mission involves maintaining a diverse, multi-layered approach, which includes improving security along the international borders and of ports of entry. As part of this mission, the CBP works to implement its *National Border Patrol Strategy* (CBP 2004), identify and seize terrorists' assets and funding sources, and enhance the support infrastructure to further develop targets and analyses.

The implied tasks of this mission are to strengthen U.S. borders, to prevent the entry of terrorists and terrorist weapons, smugglers, illegal aliens (IAs), narcotics, and other contraband. The principle objective of USBP is to apply appropriate levels of personnel, intelligence, technology,

and infrastructure resources to increase the level of operational effectiveness until the likelihood of apprehension is sufficient enough to be an effective deterrent that conveys an absolute certainty of detection and apprehension.

1.2 REGULATORY AUTHORITY

The primary sources of authority granted to USBP agents are the Immigration and Nationality Act (INA), found in Title 8 of the United States Code (USC), and other statutes relating to the immigration and naturalization of aliens. The secondary sources of authority are administrative regulations implementing those statutes, primarily those found in Title 8 of the CFR (Section 287), judicial decisions, and administrative decisions of the Board of Immigration Appeals. In addition, the Illegal Immigration Reform and Immigrant Responsibility Act, and subsequently the Homeland Security Act of 2002, mandates DHS to acquire and improve equipment and technology along the border, hire and train new agents for the border region, and develop effective border enforcement strategies.

The statutory provisions related to enforcement authority are found in Sections 287(a), 287(b), 287(c), and 287(e) [8 USC § 1357(a,b,c, and e)]; Section 235(a) [8 USC § 1225]; Sections 274(b) and 274(c) [8 USC § 1324(b,c)]; Section 274(a) [8 USC § 1324(a)]; and Section 274(c) [8 USC § 1324(c)] of the INA. Other statutory sources of authority are Title 18 of the USC, which has several provisions that specifically relate to enforcement of immigration and nationality laws; Title 19 [19 USC § 1401(i)], relating to U.S. Customs Service cross-designation of immigration officers; and Title 21 [21 USC § 878], relating to Drug Enforcement Agency cross-designation of immigration officers.

1.3 PROJECT AREA LOCATION

The project area is located on 304 acres directly northeast of the intersection of Interstate 10 (I-10) and Texas Farm to Market Road 793 (FM 793), and approximately 33 miles southeast of the City of El Paso in El Paso County, Texas (Figure 1-2).

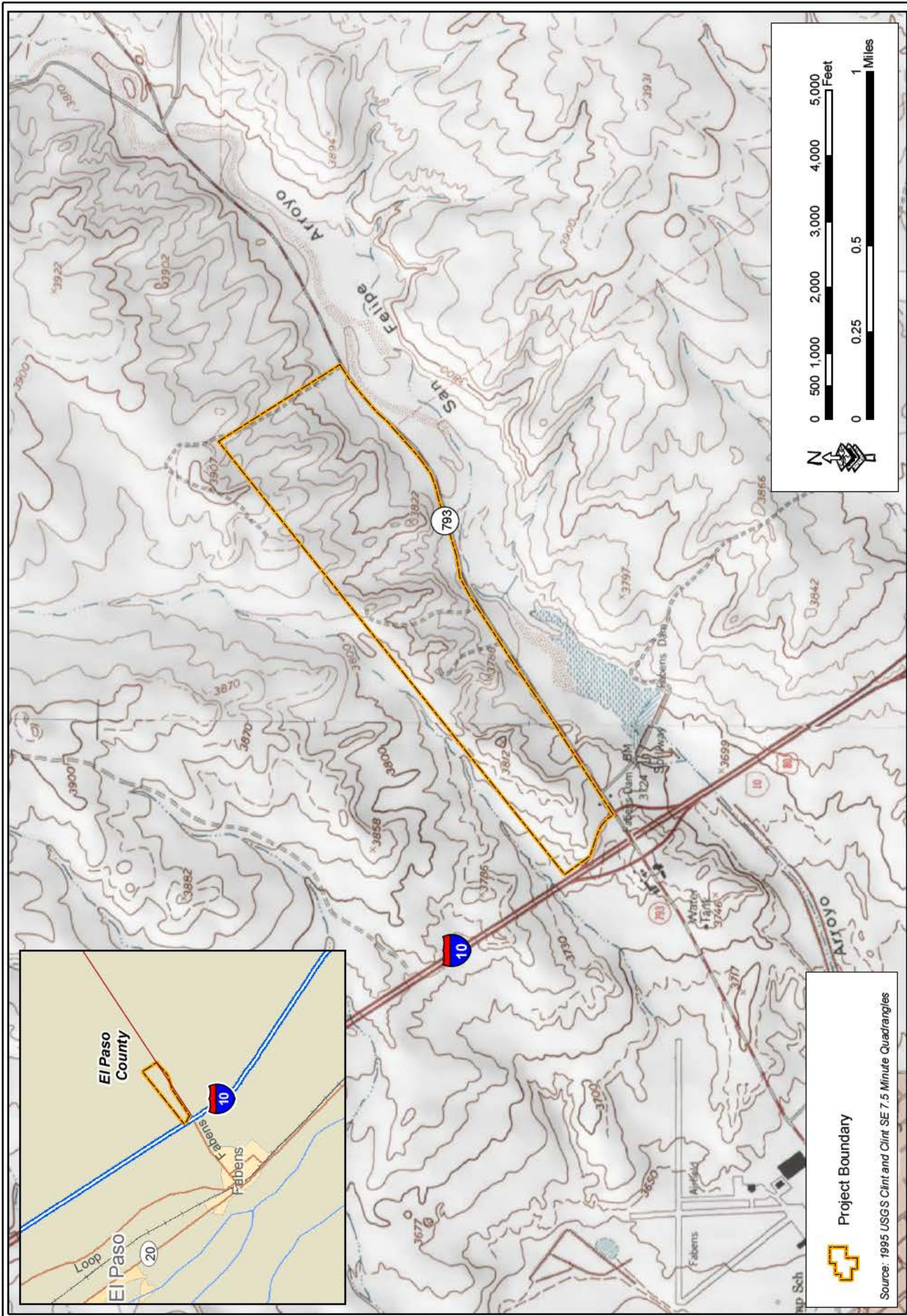


Figure 1-2: Project Location Map

1.4 PURPOSE AND NEED

The purpose of the proposed action is to provide a state-of-the art firing range where USBP agents can qualify with a range of small arms weapons. Qualification with a variety of weapons is critical for law enforcement duties, and would sustain agent proficiency, provide a safer working environment for USBP agents, and further facilitate USBP's mission to gain, maintain, and extend control of the U.S.-Mexico border. Various training classes are held at the firing range and include: quarterly training; remedial training; tactical firearms instruction; firearms instructor and range safety officer training; and night (low level light) training. The existing FFR currently provides 18 firing lanes, and is situated on approximately 15 acres of land located within the proposed 304-acre lease acquisition. Currently approximately 1,100 USBP agents from the El Paso, Ysleta, Fabens, and Fort Hancock Stations use the existing facilities to qualify on small arms usage each quarter. No other firing range in the vicinity of these USBP stations is available for USBP firing practice and training. In addition, other Federal and state law enforcement agencies use FFR for small arms practice. It is anticipated that under the Secure Border Initiative and the National Strategic Plan, 1,800 agents would use the range per quarter. A new, larger range is needed to accommodate the increased number of agents in the El Paso Sector so that all agents t required to use the range can do so in a safe and timely manner.

The need for the indoor range is based on operational and programmatic concerns that it would lessen noise and environmental issues, allow for use of the firing range in inclement weather, and would also accommodate the increase in USBP agents from the Texas offices of the El Paso Sector.

To summarize, the purpose and need for this proposed facility expansion is to:

- support additional agents in the El Paso Sector, Texas stations;
- provide safer working conditions;
- allow agents to train in inclement weather;
- allow agents increased effectiveness in the performance of their duties; and
- enhance USBP's mission to gain, maintain, and extend control of the U.S.-Mexico border.

1.5 APPLICABLE ENVIRONMENTAL STATUTES AND REGULATIONS

This EA was prepared by DHS-CBP and USBP, in accordance with the NEPA of 1969; Endangered Species Act (ESA) of 1973, as amended; the National Historic Preservation Act (NHPA) of 1966, as amended; the Archaeological and Historical Preservation Act of 1974, as amended; Executive Order (EO) No. 11593, "Protection and Enhancement of the Cultural Environment"; EO No. 11988, "Floodplain Management"; EO No. 11990, "Protection of Wetlands"; EO No. 13007, "Indian Sacred Sites"; EO No. 13045, "Protection of Children from Environmental Health Risks"; and EO No. 12898 "Federal Actions to Address Environmental Justice." Table 1-1 summarizes the applicable environmental statutes and regulations that guided the development of this EA.

Table 1-1. Applicable Environmental Statutes and Regulations

Federal Statutes
Archaeological and Historical Preservation Act of 1974, as amended
Clean Air Act of 1955, as amended
Clean Water Act of 1977, as amended
Endangered Species Act of 1973, as amended
Migratory Bird Treaty Act of 1972
National Historic Preservation Act of 1966, as amended
National Environmental Policy Act of 1969, as amended
Watershed Protection and Flood Prevention Act of 1954
Wild and Scenic Rivers Act of 1968, as amended
Farmland Protection Policy Act of 1980
Native American Graves Protection and Repatriation Act of 1990
Executive Orders, Memorandums, etc.
Floodplain Management (EO 11988) of 1977
Protection of Wetlands (EO 11990) of 1977
Federal Actions to Address Environmental Justice to Minority Populations and Low-Income Populations (EO 12898) of 1994
Protection of Children from Environmental Health Risks (EO 13045) of 1997
Protection of Migratory Birds & Game Mammals (EO 11629) of 2001
Indian Sacred Sites (EO 13007) of 1996
Consultation and Coordination with Indian Tribal Governments (EO 13175) of 2000
Government-to-Government Relations with Native American Tribal Governments (Presidential Memorandum) of 1994

1.6 REPORT ORGANIZATION

This EA is divided into ten sections, including this section. Section 2 describes the alternatives that would satisfy the stated purpose and need. Current environmental conditions within the

project area and vicinity are presented in Section 3. The potential impacts, beneficial and adverse, of the considered alternatives are discussed in Section 4. The cumulative effects of past, present, and reasonably foreseeable future actions are discussed in Section 5. Section 6 presents environmental design measures and plans to reduce, eliminate, or compensate for any adverse impacts to the human or natural environment. Section 7 discusses public involvement measures that have been utilized throughout the preparation of this EA in soliciting, obtaining, and incorporating input from the general public and resource agencies. References used while preparing the EA, as cited in the text, are listed in Section 8. A list of acronyms and abbreviations used throughout this EA is provided in Section 9, while the list of persons responsible for preparing the EA is presented in Section 10. Appendix A provides a list of Texas noxious plants, and Appendix B provides a list of Federal and state endangered species. Appendix C provides the results of air quality calculations, and Appendix D provides correspondence with Federal and state agencies, tribes, and interested parties.

SECTION 2.0
ALTERNATIVES



2.0 ALTERNATIVES

The proposed action is to expand a current USBP facility (Figure 2-1); therefore, it would not be feasible to build a new facility at a new location. Given the specific stations supported by FFR, the relocation of the range to other areas would reduce its effectiveness for the local USBP agents. Because no other alternatives meet the project's purpose and need, the only other alternative considered is the No Action Alternative.

2.1 ALTERNATIVES CARRIED FORWARD

The two alternatives carried forward for detailed analyses included: (1) no further development (No Action Alternative); and (2) the lease acquisition of 304 acres of property, the expansion of the current facility, and the maintenance and operation of the FFR facility (Proposed Action Alternative).

2.1.1 No Action Alternative

The No Action Alternative would require the FFR to remain on the current 15 acres, in the current location with no certain future expectations of a new, larger firing range facility to accommodate the increasing number of agents and staff, or upgrade of buildings or other needs. Currently, there is an 18-lane firing range, administrative facilities and a helipad. Although the No Action Alternative does not meet the purpose and need, it will be carried forward for analysis to provide a baseline by which to compare the Proposed Action Alternative.

2.1.2 Proposed Action Alternative

The Proposed Action Alternative includes modifications to the current FFR, such as installing a safety canopy and baffles, reconstruction of the surrounding safety berm, and enhancement of the water drainage system (Figure 2-1). A fully baffled, canopied, 18 to 20 lane secondary range would also be constructed, as well as a new modular indoor firing range, also called a QuickRange™, that includes four firing lanes with appropriate support facilities. The proposed baffle and canopy of the existing and new range lanes would add a significant measure of safety to FFR by ensuring the containment of any small arms fire to within the fully baffled, canopied, and bermed area.

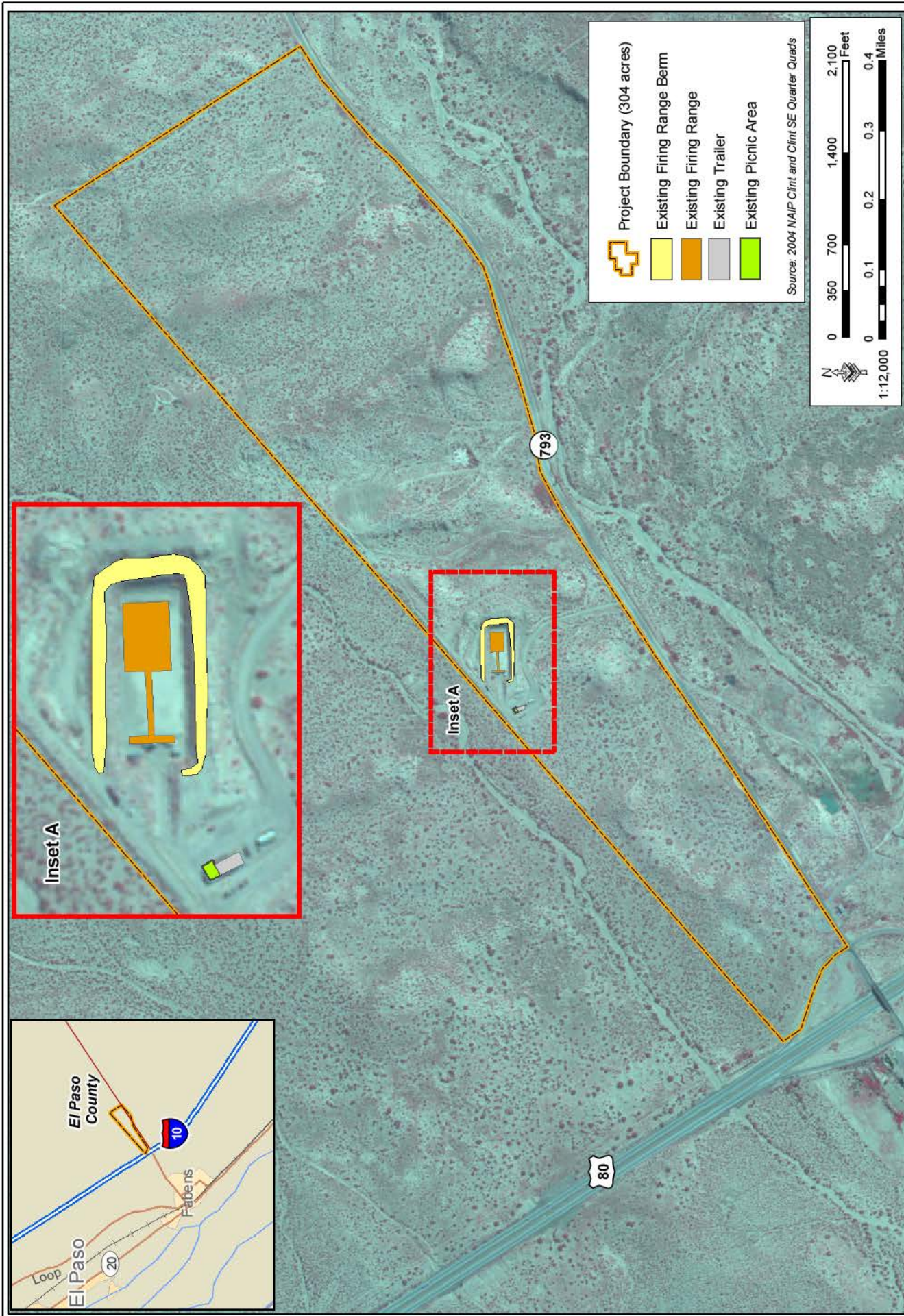


Figure 2-1: Project Area

Under the proposed project, a water well would be installed to ensure there is a reliable water source for the firing range dust suppression activity which occurs prior to each agent's use of the range facility. The water well would be screened in the Hueco-Mesilla Bolson Aquifer and would only be used for range dust suppression, and would not be used as a potable water supply. There would be no change to the current helipad location or size. The footprint for the construction and expansion of the Proposed Action Alternative would not require any additional acreage, but would remain within the existing 15 acres currently used for the FFR facilities. The remainder of the 304 acres would serve only as a safety, noise, and security buffer. Under this alternative, property would be leased from the University of Texas System.

Support facilities would include a 40-foot by 60-foot modular building containing a classroom, weapons cleaning area, restrooms, and storage areas. The current 1,020-foot long unimproved access road would be upgraded with an asphalt surface to accommodate the increase in agent vehicular traffic. Lighting along the 15-acre perimeter would be expanded to illuminate the new modular buildings and the outdoor range. New 3-phase electrical transmission lines would be added to the site for support of the expansions and the new indoor range. In addition, the entire 304 acres would be fenced by barbed wire, and the firing range area and adjacent structures/buildings would have an additional 6-foot perimeter chainlink fence with gated access to the 15-acre range site. Although facility designs are not complete, a conceptual layout of the proposed FFR facility is shown in Figure 2-2. Currently, it is anticipated that this Proposed Action Alternative would take approximately 60 to 90 days for construction of the new and expanded facilities.

2.2 SUMMARY

Two alternatives, the No Action Alternative and the Proposed Action Alternative, will be carried forward for analysis. An Alternative Matrix (Table 2-1) presents each of the alternatives in comparison to selection criteria and the project's purpose and need. Table 2-2 presents a Summary Matrix of the impacts from the two alternatives analyzed and how they affect the environmental resources in the project area.

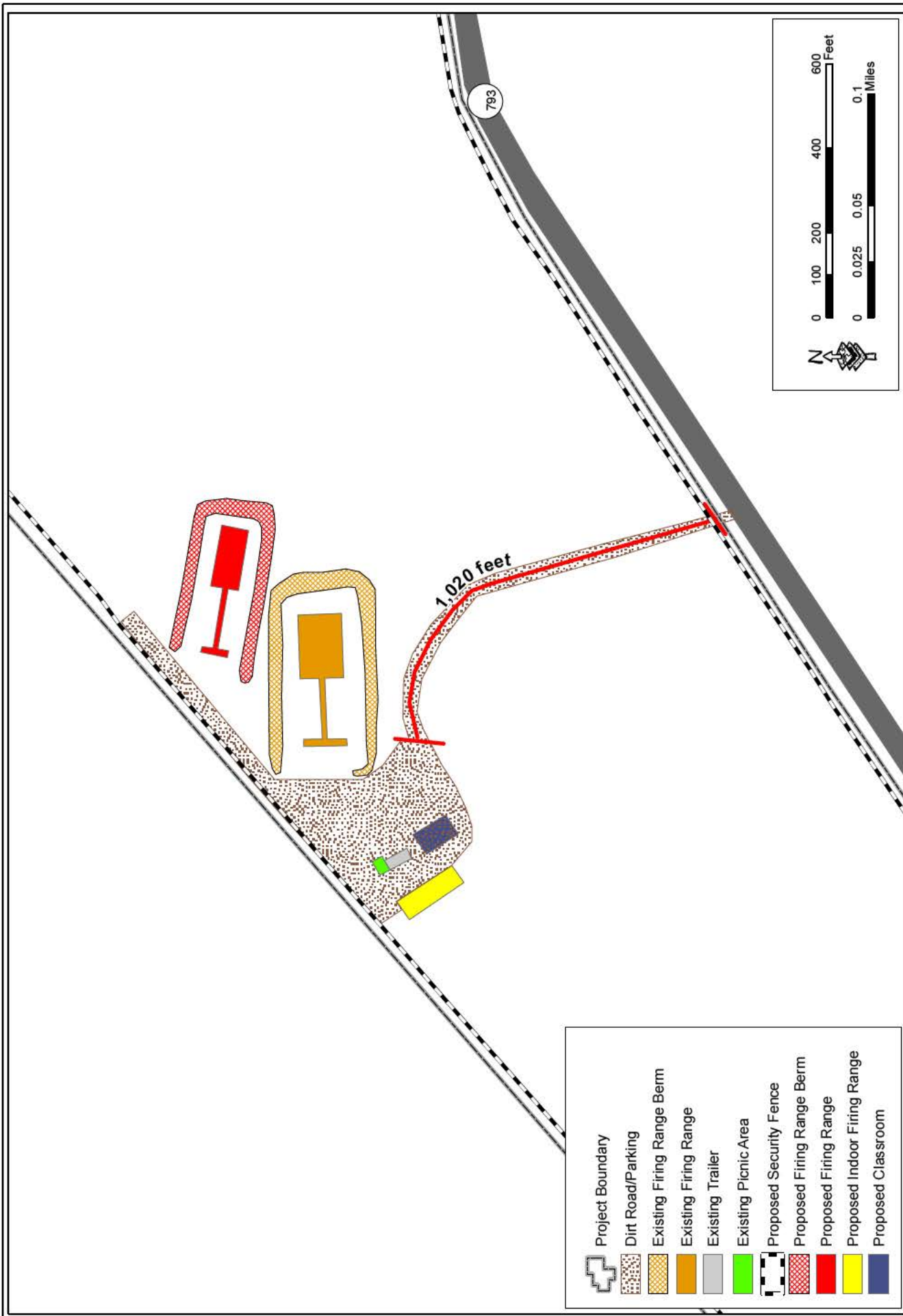


Figure 2-2: Proposed Action Alternative Conceptual Design

Table 2-1. Alternative Matrix

Purpose and Need	No Action Alternative	Proposed Action Alternative
Supports additional agents in El Paso Sector, Texas stations	○	●
Provides safer working conditions	○	●
Allows agents increased effectiveness in the performance of their duties	◻	●
Enhances USBP's mission to gain, maintain, and extend control of the U.S.-Mexico border	◻	●
Allows USBP agents to train during inclement weather conditions	○	●
○ = No ● = Yes ◻ = Partial		

Table 2-2. Summary Matrix of Potential Impacts

Affected Environment	No Action Alternative	Proposed Action Alternative
Land Use	No impacts would occur.	No impacts would occur.
Soils	No impacts would occur.	15 acres of previously disturbed soils would be permanently impacted.
Vegetation Communities	No impacts would occur.	Direct impacts to 15 acres of disturbed shrubland. Temporary indirect impacts to natural vegetation related to fugitive dust created during construction.
Fish and Wildlife Resources	No impacts would occur.	No loss of habitat. Some less mobile species might be lost during construction. Wildlife in adjacent areas could be impacted by noise. The perimeter fencing could limit movement of terrestrial wildlife.
Protected Species and Critical Habitat	No impacts would occur.	Potential temporary impacts to state protected Texas horned lizard and burrowing owl during construction. No critical habitat in project area.
Cultural Resources	No impacts would occur.	No impacts would occur.
Water Resources	No direct impacts would occur. Minimal indirect impacts to groundwater due to increase in agent use.	A Stormwater Pollution Prevention Plan (SWPPP) would be implemented prior to construction. A National Pollutant Discharge Elimination System (NPDES) permit would be required. Minor indirect impacts to water use from anticipated increase of agents at the firing range.
Air Quality	Indirect impacts from anticipated increase in agents in the El Paso Sector resulting in an increase in USBP vehicles associated with agent usage of the facility.	Short-term and minor impacts to air quality would occur during construction. Indirect impacts from vehicle emissions due to anticipated increase in USBP vehicles traveling to and from the facility.

Table 2-2, continued

Affected Environment	No Action Alternative	Proposed Action Alternative
Hazardous Material	Long-term adverse impacts from lead contamination may be partially minimized through the use of current operational and design Best Management Practices (BMPs) such as watering for dust suppression and retention ponds.	Potential for minor adverse impacts during construction would be minimized with BMPs. Additionally, long-term adverse impacts from lead contamination would be minimized through the use of operational and design BMPs.
Noise	Permanent indirect impacts to ambient noise levels due to additional vehicles for the increase in agent force.	Minor temporary increases in noise would occur during construction. Minor indirect increases to ambient noise levels due to the increased agent use of the range.
Socioeconomics	No direct impact to socioeconomic status is expected. Indirect beneficial impacts to socioeconomics of the area from the anticipated increase in agents would occur.	No changes to local employment rates, poverty levels, or local incomes would occur as a result of this project. Indirect beneficial impacts to socioeconomics of the area from the anticipated increase in agents would occur.
Transportation	Permanent minor impacts to transportation from the additional USBP vehicles traveling to and from the facility.	Permanent minor impacts to transportation from an increase in USBP vehicles traveling to and from the facility.

SECTION 3.0
AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

This section of the EA describes the natural and human environment within the project area. Only those resources that have the potential to be affected by the Proposed Action Alternative are described, as per CEQ guidance (40 CFR 1501.7 [3]). Several topics are limited in scope due to the lack of effect from the proposed project on the resource, or because that particular resource is not located within the project area. Where data for resources are typically provided on a county-wide basis (e.g., socioeconomics), the affected environment for those resources are described for El Paso County, Texas. Otherwise, where possible, resources were described independently for the project area. Resources dismissed from further discussion are:

- **Geologic Resources**
Geological resources include physical surface and subsurface features of the earth such as geological formations, and the seismic activity of the area. The Proposed Action Alternative involves only disturbances to the topsoil layers and the impacts would occur to only a very small surface area, not substantially altering the geology of the region. Additionally, all properties proposed within the project area would be located adjacent to or very near a major road or highway, and would not require substantial modifications to the area's topography (*i.e.*, road cuts). Therefore, geologic resources will not be discussed further.
- **Communications**
The Proposed Action Alternative would neither affect nor be affected by communication systems in the area.
- **Climate**
The Proposed Action Alternative would neither affect nor be affected by climate.
- **Wild and Scenic Rivers**
The Proposed Action Alternative would not affect any stretch of river designated as wild and scenic.
- **Unique and Sensitive Areas**
The Proposed Action Alternative would not affect any unique and sensitive areas, because no areas designated as such are located within or near the project area.
- **Aesthetic Resources**
The Proposed Action Alternative would not affect the aesthetic resources of the project area because much of the project area is already developed and in use as a firing range. Furthermore, the new expansion is not visible from adjacent FM 793.

3.1 LAND USE

Land use was assessed by means of the U.S. Geological Survey (USGS) land cover/land use map (USGS 1990) for the project area. Land use type was more generally categorized as developed, agriculture, or natural. The area in and around the 304-acre site is natural and is predominately shrub and brush rangeland. Aside from the Town of Fabens, development is sparse. The adjacent property to the south is managed by Texas Department of Transportation (TxDOT) as an Interstate Highway (I-10). FM 793 is located southeast of the project area, and beyond that, the adjacent property is also owned by the University of Texas System with a current grazing lease to Indian Cliffs, Inc. To the west-southwest the property is bisected by I-10, and land adjacent to I-10 toward the southwest is under a grazing lease to Oro Farms, Inc., and is also owned by the University of Texas System.

The project area is undeveloped; however, portions have been previously disturbed and have been used as a municipal landfill, firing range, roadside picnic area, and as grazing land for cattle. There is an unimproved road traversing the center of the subject property, and the property is adjacent to FM 793. Currently, approximately 15 acres are used as a firing range by USBP.

3.2 SOILS

The Natural Resources Conservation Service (NRCS) Soil Survey for El Paso County, Texas was reviewed to determine general soil types present within the proposed project area. A general soil map was used to obtain an overview of the major soil associations (U.S. Department of Agriculture [USDA] 1971). In addition to the El Paso County general soil map, Soil Survey Geographic data were used to determine individual soil map units, and their extent and suitability for pertinent infrastructure (USDA 2007).

There are two soil map units that occur within the project area: Bluepoint gravelly association, rolling (BUC) and Bluepoint association, rolling (BPC) (Figure 3-1). The BUC map unit is composed 100 percent of the Bluepoint, gravelly component. This component is found on river valleys and hillsides, and has slopes of 2 to 8 percent. The parent material for these soils consists of wind-modified sandy alluvium. The depth to a root restrictive layer is greater than 60 inches below ground surface (bgs). These soils are somewhat excessively drained and water movement is high. The available water to a depth of 60 inches bgs is low and shrink-swell potential is low.

Figure 3-1. Proposed Action Alternative Soils Map

This soil is rarely flooded and is not ponded. There is no zone of water saturation within a depth of 72 inches bgs, and the soils are not classified as hydric soils.

The Bluepoint component makes up 100 percent of the BPC map unit. This component is found on river valleys and hillsides and has slopes of 5 to 15 percent. The parent material of these soils consists of wind-modified sandy alluvium. The depth to a root restrictive layer is greater than 60 inches bgs. These soils are somewhat excessively drained and water movement is high. The available water to a depth of 60 inches bgs is low and shrink-swell potential is low. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches bgs, and the soils are not classified as hydric soils.

3.2.1 Prime Farmland

Prime farmland is protected under the Farmland Protection Policy Act of 1980 and 1995 (FPPA). The FPPA's purpose is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. As required by Section 1541(b) of Act, 7 USC 4202(b), Federal agencies are (a) to use the criteria to identify and take into account the adverse effects of their programs on the preservation of farmland, (b) to consider alternative actions, as appropriate, that can lessen adverse effects, and (c) to ensure that their programs, to the extent practicable, are compatible with state and local governments and private programs and policies to protect farmland.

Prime farmlands are those farmlands that have the best combination of physical and chemical properties to be able to produce fiber, feed, or food, and are available for these uses. Unique farmland is defined as land other than prime farmland that is used for producing specific high-value food and fiber crops.

Farmlands of statewide importance (also protected under the FPPA) are areas of irrigated farmlands that do not meet the criteria of prime farmland, but have an irrigated capability. These lands must also have a dependable water supply for irrigation to meet crop needs. Areas under this designation are limited to farmlands currently in production. According to the NRCS, neither BUC nor BPC soils are considered prime farmlands or farmlands of statewide importance.

3.3 BIOLOGICAL RESOURCES

3.3.1 Vegetation

The project area is located in the northern portion of the Chihuahuan Desert Biome (Brown 1994). The lower elevations of this region are characterized by botanists as Chihuahuan desertscrub (Chihuahuan Desert Research Institute [CDRI] 2007). It has been suggested that desertscrub communities have grown to their present extent through the invasion of eroded grasslands. Creosote bush (*Larrea tridentata*) is a prominent element of desertscrub, often covering large expanses. Stem succulents, such as sotol (*Dasyllirion wheeleri*) and yucca (*Yucca* spp.), are dominant features of the desertscrub landscape. Other common shrubs include whitethorn acacia (*Acacia neovernicosa*), western honey mesquite (*Prosopis glandulosa* var. *torreyana*), four-winged saltbush (*Atriplex canescens*), tarbush (*Flourensia ternua*), allthorn (*Koeberlinia spinosa*), and ocotillo (*Fouquieria splendens*) (Brown 1994, CDRI 2007).

3.3.1.1 Project Area Vegetation

A field reconnaissance survey was performed by Gulf South Research Corporation (GSRC) at the proposed project area on February 20, 2007 and on October 3, 2007. The proposed project area consists of 304 acres, 15 of which are previously developed as a firing range. The remainder of the 304 acres is Chihuahuan desertscrub and mesquite duneland (Photograph 3-1). Vegetation observed in the buffer area of the subject property included creosote bush, soap tree yucca (*Yucca elata*), four-winged saltbush, crucifixion thorn (*Canotia holocantha*), mesquite, Russian thistle (*Salsola* sp.), mustard (*Brassica* sp.), broom snakeweed (*Gutierrezia sarothrae*), joint-fir (*Ephedra* sp.), jimson weed (*Datura* sp.), and devils claw (*Proboscidea altheaefolia*).



Photograph 3-1. Chihuahuan desertscrub vegetation in the project area.

3.3.1.2 Non-native and Invasive Plant Species

Texas Department of Agriculture maintains a noxious plant list (*i.e.*, plants resulting in negative impacts to the economy or environment) which currently includes 33 species (Texas Administrative Code 2005). This list is presented in Appendix A of this document, and represents a partial list of noxious plant species potentially occurring within the project area.

3.3.2 Wildlife Resources

As described in Section 3.3.1, the project area is found within the Chihuahuan Desert biome. The Chihuahuan desertscrub community occupies the majority of the project area (Brown 1994). The area of Chihuahuan Desert in the State of Texas is better known as the Trans-Pecos region. The Trans-Pecos region is the only part of Texas where mountain and desert habitats are found, and is one of the most diverse regions in Texas for wildlife resources (Texas Parks and Wildlife Department [TPWD] 2005).

According to the Checklist of Mammals of El Paso County, 64 mammalian species occur in El Paso County (Harris 2000). Mammals typically associated with Chihuahuan desertscrub include large hooved mammals, such as mule deer (*Odocoileus hemionus*) and pronghorn (*Antilocapra americana*) (Brown 1994). Carnivore species likely to occur within the project area include coyote (*Canis latrans*), bobcat (*Lynx rufus*), kit fox (*Vulpes velox*), grey fox (*Urocyon cinereoargenteus*), ringtail (*Bassariscus astutus*), badger (*Taxidea taxus*), and racoon (*Procyon lotor*) (Burt and Grossenheider 1976). Rodents comprise the largest order of mammals that occur in the area, including spotted ground squirrel (*Spermophilus spilosoma*), Botta's pocket gopher (*Thomomys bottae*), desert pocket gopher (*Geomys arenarius*), kangaroo rat (*Dipodomys* sp.), and approximately 12 species of mice and rats (Harris 2000). Hares and rabbits commonly seen in the study area include black-tailed jackrabbit (*Lepus californicus*) and desert cottontail (*Sylvilagus auduboni*) (Harris 2000).

A variety of habitats contribute to the diverse and complex avifauna of the Trans-Pecos Region. A total of 505 species of birds have been observed in the region, which is 81 percent of the total bird species known to occur in Texas (Bryan 2002). Common bird species occupying Chihuahuan desertscrub in El Paso County include the red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), greater roadrunner (*Geococcyx californianus*), cactus wren (*Campylorhynchus brunneicapillus*), lesser nighthawk (*Chordeiles acutipennis*), turkey vulture (*Cathartes aura*), and numerous passerine species (Cutler 2000).

A wide variety of herpetofauna can be found associated with Chihuahuan desertscrub. Common species of amphibians likely to occur in the project area include spadefoot toads (*Scaphiopus* spp., *Spea* spp.). Several species of true toads (*Bufo* spp.) can also be found near arroyos, streams, and ditches. Common reptiles include many lizard species, such as whiptail lizards (*Aspidoscelis* spp.), side-blotched lizards (*Uta stansburiana*), greater earless lizards (*Cophosaurus texanus*), round-tailed horned lizards (*Phrynosoma modestum*), ornate tree lizards (*Urosaurus ornata*), and several species of spiny lizards (*Sceloporus* spp.). Approximately 32 species of snakes inhabit the project area (Texas Agricultural and Mechanical University 1998). Snakes commonly found in the study area include western diamondback rattlesnakes (*Crotalus atrox*), prairie rattlesnakes (*Crotalus viridis*), glossy snakes (*Arizona elegans*), Sonoran gopher snakes (*Pituophis melanoleucus*), western ground snakes (*Sonora semiannulata*), and night snakes (*Hypsiglena torquata*). The most common turtle, the desert box turtle (*Terrepenne ornate luteola*), is found in the Chihuahuan desertscrub and Chihuahuan semi-desert grassland (Stebbins 2003).

Sixteen faunal species were identified during the field reconnaissance surveys. Mammal species included black-tailed jackrabbit, desert cottontail, coyote, and woodrat (*Neotoma* sp.). Avian species included Chihuahuan raven (*Corvus cryptoleucus*), house wren (*Troglodytes aedon*), greater roadrunner, white-crowned sparrow (*Zonotrichia albicollis*), Gambel's quail (*Callipepla gambelii*), turkey vulture, mourning dove (*Zenaida macroura*), burrowing owl (*Athene cunicularia*), and red-tailed hawk. Reptile species included western whiptail (*Aspidoscelis tigris*), side-blotched lizard, and round-tailed horned lizard.

3.3.3 Protected Species and Critical Habitat

3.3.3.1 Federal Endangered Species

The ESA was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the ecosystems upon which these species depend for their survival. All Federal agencies are required to implement protection programs for designated species and to use their authorities to further the purposes of the act. Responsibility for the identification of a threatened or endangered species and development of any potential recovery plans lies with the Secretary of the Interior and the Secretary of Commerce (marine species).

U.S. Fish and Wildlife Service (USFWS) is the primary agency responsible for implementing the ESA, and is responsible for birds and other terrestrial and freshwater species. The USFWS's

responsibilities under the ESA include: (1) the identification of threatened and endangered species; (2) the identification of critical habitats for listed species; (3) implementation of research on, and recovery efforts for, these species; and (4) consultation with other Federal agencies concerning measures to avoid harm to listed species.

An endangered species is a species officially recognized by USFWS as being in danger of extinction throughout all or a significant portion of its range. A threatened species is a species recognized as likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Proposed species are those that have been formally submitted to the Secretary of the Interior for official listing as threatened or endangered. Species may be considered for listing as endangered or threatened when any of the five following criteria occurs: (1) current/imminent destruction, modification, or curtailment of their habitat or range; (2) overuse of the species for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or human-induced factors that affect continued existence.

In addition, USFWS has identified species that are candidates for listing as a result of identified threats to their continued existence. The candidate designation includes those species for which USFWS has sufficient information to support proposals to list as endangered or threatened under the ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity. Although not afforded protection by the ESA, candidate species may be protected under other Federal or state laws.

A total of six Federally listed species occur in El Paso County (USFWS 2007). Four species are listed as endangered, one as threatened, and one as candidate species (Table 3-1).

Table 3-1. Federally Listed, Proposed, and Candidate Species Potentially Occurring within El Paso County, Texas

Common Name	Scientific Name	Listing Status
Interior least tern	<i>Sterna antillarum athalassos</i>	E
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	E
Southwestern willow flycatcher	<i>Empidonax traillii</i>	E
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	C
Sneed's pincushion cactus	<i>Coryphantha sneedii</i>	E

Legend: E – Endangered T – Threatened C – Candidate
Source: USFWS 2007.

Of the listed species potentially occurring in El Paso County, none would likely occur in the project area. The Mexican spotted owl, listed as threatened by USFWS and TPWD, occurs in disjunctive localities that correspond to isolated mountain systems and canyons. This species is frequently associated with mature mixed-conifer, pine-oak, and riparian forests. They are also found in canyon habitat dominated by vertical-walled rocky cliffs within complex watersheds, including tributary side canyons (*Federal Register* 2004). No habitat suitable for the Mexican spotted owl is present in the project area.

The northern aplomado falcon is listed as endangered by USFWS. This species prefers habitat in open woodland or savannah, or grassy plains and valleys with scattered mesquite, yucca, and cactus. However, the majority of the project area is disturbed desertscrub with few perches and no grasslands.

The Sneed's pincushion cactus, listed as endangered by USFWS, grows in dry limestone outcrops on rocky slopes in Chihuahuan Desert Mountains. This type of habitat does not occur within the project area.

The interior least tern occurs along major river systems of the U.S. The project area is approximately 6 miles from the Rio Grande, and, therefore, would not provide nesting or foraging habitat for this species.

The southwestern willow flycatcher and yellow-billed cuckoo both prefer riparian habitats with dense growths of trees along the banks. There is no riparian habitat in the vicinity of the project area.

3.3.3.2 Critical Habitat

The ESA also calls for the conservation of what is termed Critical Habitat - the areas of land, water, and air space that an endangered species needs for survival. Critical habitat also includes such things as food and water, breeding sites, cover or shelter, and sufficient habitat area to provide for normal population growth and behavior. There are no critical habitats designated in El Paso County (USFWS 2006).

3.3.3.3 State Endangered Species

In 1973, the Texas legislature authorized TPWD to establish a list of endangered animals for the state. Endangered species are defined as “those species which the Executive Director of the TPWD has named as being threatened with statewide extinction.” Threatened species are those species which Texas Parks and Wildlife Commission has determined are likely to become endangered in the near future. In 1988, the Texas legislature authorized TPWD to establish a list of threatened and endangered plant species for the state. An endangered plant is one that is in danger of extinction throughout all or a significant portion of its range, and a threatened plant is one which is likely to become endangered in the near future (TPWD 2007). A complete list of protected species as well as species that TPWD consider rare, but have no regulatory status, is provided in Appendix B (TPWD 2006).

Many of the species listed as endangered or threatened by TPWD for El Paso County would not occur in the project area. The black bear (*Ursa americanus*), listed as threatened by TPWD, has historically inhabited Louisiana and eastern Texas, in large tracts of bottomland hardwoods and undeveloped forest (TPWD 2006). Habitat of this type does not occur within the project area. The black-footed ferret (*Mustela nigripes*), listed as endangered by TPWD, are associated with prairie dogs (*Cynomys* spp.). Black-footed ferrets historically occurred over much of New Mexico and northern and western Texas. They are now rarely observed. Black-footed ferrets prefer prairie dog towns where they prey upon the inhabitants. Destruction of prairie dog towns has undoubtedly led to extirpation of black-footed ferrets in this region (TPWD 2006). There are no prairie dog towns in the vicinity of the project area. The Texas lyre snake (*Trimorphodon biscutatis*), listed as threatened by TPWD, occurs mostly in crevices, especially in areas with jumbled boulders and rock fissures (TPWD 2006). Suitable habitat for this snake does not occur in the project area. The Mexican spotted owl and Sneed’s pincushion cactus were discussed previously under the Federally listed species, and would not occur within the project area. There is neither suitable foraging nor breeding habitat for the American and arctic peregrine falcons (*Falco peregrinus anatum* and *F. p. tundrus*).

There is potentially suitable habitat for the Texas horned lizard (*Phrynosoma cornutum*) in the project area. The Texas horned lizard is listed as threatened by TPWD, and is found in open, arid and semi-arid regions with sparse vegetation (TPWD 2006).

3.4 CULTURAL RESOURCES

The NHPA establishes the Federal government's policy to provide leadership in the preservation of historic properties, and to administer Federally owned or controlled historic properties in a spirit of stewardship. NHPA established the Advisory Council on Historic Preservation (ACHP) to advocate full consideration of historic values in Federal decision-making; review Federal programs and policies to promote effectiveness, coordination, and consistency with national preservation policies; and recommend administrative and legislative improvements for protecting our Nation's heritage with due recognition of other national needs and priorities. In addition, the NHPA also established State Historic Preservation Officers (SHPO) to administer national historic preservation programs on the state level and Tribal Historic Preservation Officers on tribal lands, where appropriate. The NHPA also establishes the National Register of Historic Places (NRHP). The NRHP is the Nation's official list of cultural resources worthy of preservation and protection. Properties listed in the NRHP include districts, sites, buildings, structures, and objects that are significant in U.S. history, architecture, archaeology, engineering, and culture. The National Park Service administers the NRHP.

Section 106 of the NHPA requires CBP to identify and assess the effects of its actions on cultural resources. CBP must consult with appropriate state and local officials, Indian tribes, and members of the public, and consider their views and concerns about historic preservation issues when making final project decisions. The historic preservation review process mandated by Section 106 is outlined in regulations issued by the ACHP. Revised regulations, "Protection of Historic Properties" (36 CFR Part 800), became effective January 11, 2001.

Traditional cultural resources are resources associated with cultural practices and beliefs of a living community that are rooted in its history and are important in maintaining the continuing cultural identity of the community. Traditional resources may include archaeological resources, locations of historic events, sacred areas, sources of raw material used to produce tools and sacred objects, topographic features, traditional hunting or gathering areas, and native plants or animals.

Under Federal regulation, only significant cultural resources warrant consideration with regard to adverse impacts resulting from a Federal undertaking. Significant archaeological, architectural, and traditional resources include those that are eligible or recommended as eligible for inclusion

in the NRHP. The significance of Native American and Euroamerican archaeological resources is evaluated according to the criteria for eligibility for inclusion to the NRHP, as defined in 36 CFR 60.4 and in consultation with SHPO. As established in the following criteria, the quality of significance is present in districts, sites, buildings, structures, and objects that:

- a) are associated with events that have made a significant contribution to the broad patterns of history, or
- b) are associated with the lives of persons significant in the past, or
- c) embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic value or represent a significant and distinguishable entity whose components may lack individual distinction, or
- d) have yielded, or may be likely to yield, information important in prehistory or history.

3.4.1 Cultural History

Prehistoric occupation in the U.S. is generally divided into three major periods that vary regionally: the Paleo-Indian Period, the Archaic Period, and the Late Prehistoric Period. These periods are commonly subdivided into smaller temporal phases based on particular characteristics of the artifact assemblages encountered in each of the archaeological regions of the U.S. The prehistoric periods and corresponding phases are defined by the presence of particular diagnostic artifacts such as projectile points, certain types of pottery, and occasionally, particular site locations. For the Prehistoric Period, documentary information more often is used to distinguish certain phases; nevertheless, particular artifacts also can be used to recognize certain historic affiliations. Age estimates for different cultural phases are given in the table below from work done at Choke Canyon Reservoir, which is near Zapata County, Texas (Table 3-2).

Table 3-2. Prehistoric Cultural Phases and Age Estimates from Choke Canyon Reservoir

Cultural Period and Phase	Age Range (B.C./A.D.)
Paleo-Indian	9200-6000 B.C.
Early Archaic	6000-2500 B.C.
Middle Archaic	2500-400 B.C.
Late Archaic	400 B.C.-A.D. 200-900
Hiatus	A.D. 200-900
Late Prehistoric (Early)	A.D. 900-1400
Late Prehistoric (late)	A.D. 1400-1650

Source: Hall *et al.* 1986

3.4.1.1 Paleo-Indian Period

The nature and temporal position of the first people in the U.S. is a subject of debate. Most researchers contend that successive migrations occurred throughout the latter part of the Pleistocene, coinciding with global temperature drops that resulted in massive quantities of water being frozen. As the ice caps increased in size, sea levels dropped, exposing land bridges in the areas where the sea was the shallowest. One of these land bridges connected Alaska with Siberia across the Bering Strait. This land bridge has successively appeared and disappeared over the last 100,000 years as temperatures fluctuated. "Early man sites" or Pre-clovis sites in the New World (those defined as being occupied prior to 12,000 years ago) have been reported within the U.S. but are not wholly accepted. The Paleo-Indian people hunted large and small game and gathered wild edible plants for subsistence. Artifacts from this period include lanceolate, fluted spear points along with scrapers, gravers, choppers, and knives chipped from stone. Early fluted point types such as the Clovis and Folsom have been found in association with mammoth kills along with now extinct forms of bison. Later Paleo-Indian point types include Dalton, San Patrice, Plainview, Scottsbluff, and near the terminal end of the Paleo-Indian Period, the Angostura projectile points. Paleo-Indian sites are less common than sites dating to later periods, which suggest there were smaller populations as compared to the later periods (Hester 1980; Texas State Historical Association [TSHA] 2005).

3.4.1.2 Archaic Period

The cultural remains of Archaic people, who were post-Pleistocene foragers, are more common manifestations than those of Paleo-Indian populations. By about 8,000 B.C., a gradual change to a warmer, drier environment resulting in the extinction of many of the big game animals stimulated a change in adaptive strategies and was reflected in the tool content of these cultures. Grinding equipment for the processing of vegetal foods, roasting ovens, rock-lined hearths, a more restricted and perhaps more consistently scheduled pattern of mobility indicated by intensive repeated occupation at some sites, local resource usage, and a variety of notched stemmed projectile point-knives serve to differentiate Archaic complexes from those of the preceding Paleo-Indian Period. The Archaic Period also saw the utilization of a diverse array of modern species in diffuse foraging economies, along with a greater reliance on plant food resources. Faunal remains recovered from these sites included bones of fish, deer, turkey, squirrel, prairie chicken, raccoon, and other small game (Hester 1980, TSHA 2005).

3.4.1.3 Late Prehistoric Period

The Late Prehistoric Period is identified in some areas of the southwest, particularly Texas and Colorado. The period is marked by the introduction of new technologies such as the bow and arrow and pottery, along with continued population growth in the region. This period marked the transition from nomadic hunters and gatherers relying on wild plants and animals to a more sedentary people who practiced agriculture and lived in more hierarchical chiefdom societies. Agricultural remains include maize and typical archaeological remains include ceramic pottery, storage pits, hearths, and small triangular projectile points (Hester 1980, TSHA 2005).

3.4.1.4 Historic Period

Spaniards in the 16th Century named El Paso del Norte (the Pass of the North), the future location of two border cities, Ciudad Juárez on the south, or right bank, of the Rio Grande, and El Paso, Texas, on the opposite side of the river. Since the 16th century the pass has been a continental crossroads; a north-south route along a historic *Camino Real (King's Highway)* prevailed during the Spanish and Mexican periods, but traffic shifted to an east-west axis in the years following 1848, when the Rio Grande became an international boundary.

The El Paso area was inhabited for centuries by various Indian groups before the Spaniards came. The first Europeans, in all probability, were Álvaro Núñez Cabeza de Vaca and his three companions, survivors of an unsuccessful Spanish expedition to Florida, who passed through the El Paso area in 1535 or 1536, although their exact route is debated by historians.

When the Spaniards entered the area, they encountered the Tigua Indians, a group of Pueblo tribes comprising three geographic divisions, one occupying Taos and Picuris (the most northerly of the New Mexican pueblos) on the upper waters of the Rio Grande; another inhabiting Sandia and Isleta, north and south of Albuquerque, respectively; the third division, living in the pueblos of Isleta del Sur, Texas, and Senecu del Sur, Chihuahua, on the lower Rio Grande. At the time of Coronado's visit to New Mexico in 1540-42, the Tigua were separated from the middle group by the Tano, the Tewa, and the Rio Grande Queres (Keresan). The pueblos in the south, near El Paso, were not established until late in the 17th century. Chroniclers describe their territory, the province of Tiguex, on the Rio Grande, as containing 12 pueblos on both sides of the river (Access Genealogy 2006).

The Tigua of Ysleta del Sur Pueblo, a 12-mile drive east of downtown El Paso, are the southern-most of the Rio Grande Indian Pueblos that extend northward to Taos Pueblo, above Santa Fe, New Mexico. Ysleta del Sur Pueblo is the oldest community in the State of Texas and the Tigua Tribal Council is the oldest government in the state. Ysleta del Sur Pueblo has a tribal population of some 1,200 members. The combined reservation lands include two housing communities and several tracts near the Ysleta Mission and Hueco Tanks. Other tribally-owned lands include the historic Chilicote Ranch near Valentine, Texas (Houser 2006).

With the establishment of Mexican independence from Spain in 1821, the El Paso area and what is now the American southwest became a part of Mexico. The Treaty of Guadalupe Hidalgo (February 2, 1848), which officially ended the Mexican War, fixed the boundary between the U.S. and Mexico at the Rio Grande, the Gila River, and the Colorado River, thence westward to the Pacific. All territory north of that line, known as the Mexican Cession and comprising half of Mexico's national domain, became a part of the U.S., which paid Mexico \$15 million. Thus, El Paso del Norte, the future Ciudad Juárez, became a border town. By late 1849, aided by the gold rush to California, five settlements had been founded along the north bank of the Rio Grande. In addition, the three Mexican towns of Ysleta, Socorro, and San Elizario were declared to be in the U.S.; thus, by 1850 the bicultural, bilingual foundations of the future El Paso, Texas, were clearly established. Most authorities agree that the arrival of the railroads in 1881 and 1882 was the single most significant event in El Paso history, as it transformed a sleepy, dusty, little adobe village of several hundred inhabitants into a flourishing frontier community that became the county seat in 1883 and reached a population of more than 10,000 by 1890.

After 1900, El Paso began to shed its frontier image and develop into a modern municipality with a significant industrial, commercial, and transportation center. The exodus of refugees fleeing the disruption of the Mexican Revolution contributed heavily to the city's population growth during this period. Factors making this rapid development possible included El Paso's geographic location as a gateway to Mexico; its proximity to the mining areas of Mexico, New Mexico, and Arizona; its plentiful natural resources; and an abundant supply of cheap Mexican labor.

3.4.2 Results of Past and Current Surveys

A cultural resources survey was performed under the authority of the Texas Antiquities Permit 4447. The survey produced no evidence of prehistoric or significant historic use of the 15-acre firing range property. Three sites were found in the surrounding buffer areas, but they show no potential for meeting Federal or state significance criteria. No further work at the three sites is recommended.

3.5 WATER RESOURCES

3.5.1 Water Quality

The Clean Water Act (CWA) Sections 301-320 establishes standards and enforcement guidelines for the protection of water quality. The CWA requires states to categorize waters by the uses they provide and to establish maximum pollutant levels acceptable for its identified use. If a water body should become polluted to the extent that it is not suitable for its designated use, Texas Commission on Environmental Quality (TCEQ) is required to list this waterbody as impaired under Section 303(d) of the CWA. The Rio Grande below the international dam is within the Rio Grande basin and is listed as a concern for water quality screening levels for general use support. The nutrient screening parameters of concern are specifically for nitrate and total phosphorus levels per the 2006 Texas Water Quality Inventory and 303(d) list (TCEQ 2006a). This report addresses the status of Texas waters based on concerns for public health, use by aquatic species and other wildlife, and specific pollutants and their possible sources as required by Sections 305(b) and 303(d) of the Federal CWA. All other constituents and levels for this segment of the Rio Grande are fully supporting the aquatic use, general use, and recreational use for the waterbody. The nitrate and total phosphorus levels of concern are generally considered to be attributed to non-point sources from outside state jurisdiction or borders, and from urban run-off and/or storm sewer discharges.

3.5.2 Surface Water

Surface water quality management in Texas has state and Federal aspects. The state establishes standards for intrastate and interstate waterbodies, assesses the quality of surface waters, adopts regulations, and develops programs and takes actions to protect and maintain surface water quality. The state also coordinates with U.S. Environmental Protection Agency (USEPA) in implementing the CWA, the Nation's primary legislation for controlling surface water quality. The Texas Water Code is the basic authority for water quality in Texas, of which TCEQ

has primary responsibility for its provisions. Additionally, the Texas Water Code Chapter 26 mandates and charges Texas Water Development Board (TWDB) with the comprehensive water planning for surface and groundwater.

The subject area is located in the Rio Grande Basin, and the Rio Grande below the City of El Paso serves as the boundary between the U.S. and Mexico. In-flow to the Rio Grande below El Paso consists of sporadic runoff, treated and untreated municipal wastewater and irrigation return flow (CBP 2006). Surface water in the proposed project area is primarily ephemeral drainages originating from the slopes of nearby hills and mountains. No surface water bodies are present at or on the project area, although two large arroyos are located near the proposed 304-acre property. One unnamed arroyo is approximately 209 feet to the north of the 304-acre property boundary, while the other arroyo, called the San Felipe Arroyo, is across FM 793 and approximately 125 feet to the south of the 304-acre property boundary. Although the San Felipe Arroyo is quite close to the property boundary, it is approximately 910 feet from the 15-acre range footprint.

3.5.3 Ground Water

Groundwater management plans for the State of Texas are approved by TWDB. Currently, El Paso and Hudspeth counties comprise Groundwater Management Area 5, as designated by the State of Texas. The County of El Paso, however, is not part of a confirmed groundwater conservation district in Texas, and therefore, by definition, has not developed and implemented a management plan for the effective management of their groundwater resources (TWDB 2007a).

The Hueco-Mesilla Bolsons Aquifer is recognized as a major aquifer in Texas, and consists of basin fill deposits of silt, sand, gravel and clay in two basins or bolsons. The Hueco Bolson is the principal aquifer for the El Paso area and Ciudad Juarez in Mexico. Nearly 90 percent of the water pumped from the Mesilla and the Hueco Bolsons is used as public water supply (TWDB 2007b). The upper portion of the Hueco Bolson contains fresh to slightly saline water, and water level declines have contributed to the higher salinity found in the aquifer. A water level decline of several hundred feet has occurred in the Hueco Bolson as the result of municipal pumping from El Paso and Ciudad Juarez. Currently, the regional water planning group recommends the combined use of water from the Rio Grande with groundwater from the Hueco-Mesilla Bolsons Aquifer as a part of an overall water management strategy. Additionally, El Paso and Fort Bliss are building the world's largest inland desalination plant in El Paso County, which will use brackish

groundwater from the Hueco Bolson as its source water. The open portion of the Hueco Bolson is within the project area. The saline groundwaters below the El Paso and Fabens area are used for livestock watering and agricultural irrigation (CBP 2006).

Currently at FFR, prior to USBP agents' use of the range, water is dispersed via a timed sprinkler system onto the firing range field and the lower portions of the berms to minimize dust. Two water tanks, one near the range and one near the administrative building, store the water used for dust suppression and bathroom usage; water is trucked to the site from a local municipal source. Locally, Fabens municipal water and other nearby sources derive water from local groundwater wells in the Hueco-Mesilla Bolson Aquifer. Drinking water for firing range personnel and agents is provided through purchased bottled water.

3.5.4 Waters of the U.S. and Wetlands

Section 404 of the CWA of 1977 (PL 95-217) authorizes the Secretary of the Army, acting through the U.S. Army Corps of Engineers (USACE), to issue permits for the discharge of dredged or fill material into Waters of the U.S. (WUS), including wetlands. WUS (Section 328.3[2] of the CWA) are those waters used in interstate or foreign commerce, subject to ebb and flow of tide, and all interstate waters including interstate wetlands. WUS are further defined as, and may include, waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, or impoundments of waters, tributaries of waters, and territorial seas. Jurisdictional boundaries for WUS are defined in the field as the ordinary high water mark, which is that line on the shore established by the fluctuations of water and indicated by physical characteristics, such as clear, natural lines impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory 1987). No wetlands occur at the proposed project area; however, two arroyos, one unnamed to the north and the San Felipe Arroyo located to the south of the 304-acre property, are potential WUS.

3.6 AIR QUALITY

In El Paso County, potential sources of man-made air pollution are mostly vehicle emissions, industries, burning of domestic and agricultural wastes, burning of common and hazardous wastes by brick kilns, Carbon Monoxide (CO), suspended particulate matter less than 10 microns (PM-10), and natural wind blown dust. In the remote portions of El Paso County where the FFR is located, the main source of air pollution is windblown dust from nearby rangelands, as the region is prone to high winds. Rain induced corrosive processes can leach lead particles from fragmented bullets into the soils. High winds can suspend the lead contaminated soil particles and expose USBP officers and construction workers to lead-contaminated soils through inhalation (Interstate Technology and Regulatory Council [ITRC] 2003).

3.6.1 Federal and State Standards

USEPA established National Ambient Air Quality Standards (NAAQS), for specific pollutants determined to be of concern with respect to the health and welfare of the general public. Ambient air quality standards are intended to protect public health and welfare and are classified as either "primary" or "secondary" standards. The major pollutants of concern, or criteria pollutants, are CO, sulfur dioxide, nitrogen dioxide, ozone, PM-10, and lead. NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. The NAAQS are included in Table 3-3. Areas that do not meet these standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas.

Table 3-3. National Ambient Air Quality Standards

POLLUTANT	STANDARD VALUE	STANDARD TYPE
Carbon Monoxide (CO)		
8-hour average	9ppm (10mg/m ³)**	P
1-hour average	35ppm (40mg/m ³)**	P
Nitrogen Dioxide (NO₂)		
Annual arithmetic mean	0.053ppm (100µ/m ³)**	P and S
Ozone (O₃)		
8-hour average*	0.08ppm (157µg/m ³)**	P and S
1-hour average*	0.12ppm (235µg/m ³)**	P and S
Lead (Pb)		
Quarterly average	1.5µg/m ³	P and S
Particulate<10 micrometers (PM-10)		
Annual arithmetic mean	50µg/m ³	P and S
24-hour average	150µg/m ³	P and S

Table 3-3, continued

POLLUTANT	STANDARD VALUE	STANDARD TYPE
Particulate<2.5 micrometers (PM-2.5)		
Annual arithmetic mean	15µg/m ³	P and S
24-hour average	65µg/m ³	P and S
Sulfur Dioxide (SO₂)		
Annual average mean	0.03ppm (80µg/m ³)	P
24-hour average	0.14ppm (365µg/m ³)	P
3-hour average	0.50ppm (1300µg/m ³)	S

Legend: P= Primary
S= Secondary

Source: USEPA 2006.

ppm = parts per million

mg/m³ = milligrams per cubic meter of air

µg/m³ = micrograms per cubic meter of air

* Parenthetical value is an approximate equivalent concentration

USEPA requires each state to develop a State Implementation Plan (SIP) that sets forth how the Clean Air Act (CAA) provisions will be implemented within that state. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain compliance with the NAAQS within each state. To provide consistency in different state programs and ensure that a state program complies with the requirements of the CAA, USEPA must approve the SIP. The purpose of the SIP is twofold. First, it must provide a strategy that will result in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is being made in attaining the standards in each non-attainment area.

3.6.2 Status of Air Quality

Texas is located in USEPA Region 6. TCEQ is the state agency responsible for controlling present and future sources of air pollution. Texas' Ambient Air Quality Standards for the criteria pollutants are currently the same as the NAAQS. Neighboring Hudspeth County is currently in attainment for all criteria pollutants (TCEQ 2006b). El Paso County has been in non-attainment for CO and PM-10 since 1990. Since that time, El Paso County has implemented extensive legislation, as well as partnerships with Ciudad Juárez, to attain healthier air quality. Some of these regulations include (TCEQ 2006b):

- **Tailpipe inspections.** Annual emissions testing for cars and trucks in El Paso has been in place since 1987, based on the two-speed idle test. Vehicles failing the test must be repaired and retested.
- **Alternative gasoline.** Gasoline throughout the county is sampled to ensure that its quality meets required standards. In the winter, all vehicles switch to oxygenated fuel to run cleaner and reduce CO levels. In the summer, motorists switch to low Reid vapor pressure gasoline to control evaporation and reduce the rate of ozone formation.

- **Vapor recovery.** Commercial gasoline pumps are equipped with Stage II vapor recovery systems. During fueling, the vapors escaping from vehicle gas tanks are captured and directed to underground storage tanks. Fuel delivery trucks must be similarly equipped with Stage I vapor recovery to minimize vapor leaks while filling fuel tanks.
- **Pollution prevention.** The transportation of dirt and debris is regulated to prevent PM-10 from becoming airborne. Construction sites are required to water the ground surface as land is disturbed. Open burning is prohibited, except by permit, and then closely monitored. When weather conditions warrant, such as during wintertime inversions, the use of residential fireplaces is prohibited. Projects that involve the removal of asbestos are monitored for compliance.

3.6.3 Conformity Rule Requirements

The Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria or requirements for conformity determinations for Federal projects. The Federal Conformity Rule was first promulgated in 1993 by USEPA, following the passage of Amendments to the CAA in 1990. The rule mandates that a conformity analysis must be performed when a Federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more NAAQS.

A conformity analysis is the process used to determine whether a Federal action meets the requirements of general conformity rule and the associated SIP. It requires the responsible Federal agency to evaluate the nature of the proposed action and associated air pollutant emissions, calculate emissions as a result of the proposed action, and mitigate emissions if thresholds are exceeded.

3.7 SOLID AND HAZARDOUS WASTES

3.7.1 Hazardous Material

A portion of the northeast section of the 304-acre property was operated as a landfill for the unincorporated Town of Fabens in the 1950s and 1960s. The unengineered landfill is classified as a municipal solid waste disposal (MSW) site (Fabens Landfill Permit Number 136). It was operated until the early 1970s, and was closed in 1976 within its boundaries (TCEQ 2007a). Solid waste material from the closed landfill appears scattered throughout the northeastern portion of the 304 acres. Many old unengineered MSW landfills are located throughout the U.S., and generally are found on the outskirts of cities, towns, and villages similar to the Fabens landfill. MSW is generally known as trash or garbage, and consists of everyday items, such as

household packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, and batteries (USEPA 2007a). Materials that also may have been disposed of in old MSW landfills, but no longer considered to be MSW, may include construction and demolition debris, municipal wastewater treatment sludges, and non-hazardous industrial wastes (USEPA 2007a). In older abandoned/closed MSW landfills, the environmental concern deals with groundwater contamination from landfill leachate. Landfill leachate is water that seeps through a landfill and enters the nearby surrounding environment. Typical contaminants of concern in MSW landfill leachate are listed in Table 3-4.

Table 3-4. Typical Contaminants of Concern in Landfill Leachate

Contaminants of Concern
<i>Heavy Metals</i>
Cadmium
Copper
Chromium
Lead
Mercury
Nickel
Zinc
<i>Volatile Organic Compounds</i>
Benzene
Xylenes
Chlorobenzene
Trichloroethene
<i>Salts</i>
Chlorides
<i>Other</i>
Ammonia

Source: USEPA 2007a and USGS 2003

The historic and current use of the firing range on the proposed project property also raises concern regarding contamination from lead and other contaminants associated with firing range activities. Typical contaminants of concern at small arms firing ranges are lead, antimony, copper, zinc, arsenic, and polycyclic aromatic hydrocarbons (PAHs) as shown in Table 3-5. These contaminants may leach from bullets and fragments, bullet jackets, and related sporting material (e.g., clay targets), and potentially impact soils, surface waters, and groundwater in the vicinity of the firing range (ITRC 2003). Lead is generally considered to be the primary contaminant in soils at small arms firing ranges, with detectable concentrations in the soil behind and adjacent to targets and impact berms. Elevated lead levels may also be found in vegetation growing near impact berms. Lead particles can migrate offsite from the firing range through various

mechanisms, such as airborne particulates, storm water runoff, berm erosion, and dissolved lead in groundwater and surface water (Pro-Act Fact Sheet 1998).

Table 3-5. Contaminants of Concern at Small Arms Firing Ranges

Contaminants of Concern	Origin/Source	Media of Concern
Lead	Pellets, shot and primers	Soil, surface water, groundwater
Antimony	Shell casing and jackets	Soil, surface water, groundwater
Copper	Shell casing and jackets	Soil, surface water, groundwater
Zinc	Shell casing and jackets	Soil, surface water, groundwater
Arsenic	Additive in lead shot	Soil, surface water, groundwater
PAHs	Clay targets	Soil, groundwater

Source: ITRC 2003 and USEPA 2005

In addition, searches from Federal and state databases indicated a nearby historic leaking underground storage tank (Leaking Petroleum Storage Tank [LPST] ID 93784) within the vicinity of the 304-acre FFR (US EPA 2007b). A Phase I *Environmental Site Assessment* in conformance with the scope and limitations of American Society for Testing Materials (ASTM) Practice E1527-05 was performed, and *potential recognized environmental conditions* were visually observed on or near the proposed project area which indicated that *further investigation is warranted* (CBP 2007, TCEQ 2007). To accomplish the additional assessments or investigations (*i.e.*, Phase II Environmental Site Assessment) while also satisfying fiscal and scheduling concerns with the proposed project, a staged approach was recommended for conducting the environmental site assessments. The Phase II investigation would determine if any actual contamination exists on a portion of the 304-acre FFR site (approximately 52 acres). Upon completion of the 52-acre Phase II Environmental Site Assessment, the remaining 252 acres would then undergo a Phase II Environmental Site Assessment to identify any contamination remaining from the former landfill prior to the lease acquisition of the 304-acre property.

No other information regarding additional environmental concerns within or in the vicinity of the subject property was found in the Federal or state databases (TCEQ 2007 and US EPA 2007b).

3.7.2 Regulatory Applicability

Prior to the promulgation of the USEPA Munitions Rule, no Federal regulations specifically addressed military small arms ranges. Environmental regulatory authority by Federal and state entities is somewhat unclear. In order to clarify regulatory issues with small arms firing ranges a brief discussion of applicability follows.

3.7.2.1 Resource Conservation and Recovery Act (RCRA)

The Nation's solid and hazardous waste management program is administered under RCRA. Currently, lead shot is not regulated under RCRA, as the USEPA has determined that the act of firing ammunition does not, by itself, generate a solid or hazardous waste, since the ammunition at the time of discharge is being used for its intended purpose. RCRA could potentially apply to range operations due to its use of lead bullets/shot. If the range is abandoned or lead-containing soil is removed, or lead-containing bullets are removed (except for recycling purposes), the lead bullets/shot may become a solid and/or hazardous waste with an actual or potential imminent and substantial endangerment to human health and the environment (USEPA 2005).

3.7.2.2 Clean Water Act

Two court cases in the northeast U.S. have applied the provisions of the CWA to civilian shooting ranges, evoking that the CWA was violated because the ranges did not have permits that allow spent ammunition to be discharged into water. Small arms firing ranges which are not located near coastal zones or those that are sited entirely over land may comply with CWA by obtaining a National Pollutant Discharge Elimination System (NPDES) permit for piped or channeled runoff from the range into waterbodies (USEPA 2005).

3.7.2.3 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Under CERCLA, lead is considered a hazardous substance. Two court cases in Wisconsin and California have challenged CERCLA laws and can impact current and former range owners/operators (including the Federal government). It is important to note that CERCLA allows for recovery of damages to natural resources, cleanup cost, and the cost of any health assessment studies (USEPA 2005).

3.8 NOISE

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

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by the USEPA, and has been adopted by most Federal agencies (USEPA 1974). Several examples of noise pressure levels in dBA (A-weighted decibel is a measure of noise at a given, maximum level or constant state level) are listed in Table 3-6.

Table 3-6. A-Weighted (dBA) Sound Levels of Typical Noise Environments

DBA	Overall Level	Noise Environment
120	Uncomfortably Loud (32 times as loud as 70 dBA)	Military jet takeoff at 50 ft
100	Very loud (8 times as loud as 70 dBA)	Jet flyover at 1,000 ft
80	Loud (2 times as loud as 70 dBA)	Down Town with some construction activity Propeller plane flyover at 1,000 ft High urban ambient sound Diesel truck 40 mph at 50 ft
70	Moderately loud	Freeway at 50 ft from pavement edge Vacuum cleaner (indoor)
60	Relatively quiet (1/2 as loud as 70 dBA)	Old urban residential area Air condition unit at 10 ft Dishwasher at 10 ft (in door)
50	Quiet (1/4 as loud as 70 dBA)	Large transformers Small private office (in door)
40	Very quiet (1/8 as loud as 70 dBA)	Bird calls Lowest limit of urban ambient sound
10	Extremely quiet (1/64 as loud as 70 dBA)	Just audible
0	Threshold of hearing	

Source: Wyle Research Corporation 1992

A DNL of 65 dBA is the level most commonly used for noise planning purposes, and represents a compromise between community impact and the need for activities like construction. Areas exposed to a DNL above 65 dB are generally not considered suitable for residential use. A DNL of 55 dBA was identified by USEPA as a level below which there is no adverse impact (USEPA 1974). There are no human noise receptors located within 1 mile of the FFR.

3.9 SOCIOECONOMICS

3.9.1 Population and Demographics

Population in the Region of Influence (ROI) of El Paso County in 2005 was 708,319 (U.S. Census Bureau 2005). The 2005 racial mix of El Paso County was predominantly Caucasian (77.6

percent), followed by African-American (2.5 percent), and 1.6 percent of the population were American Indians and Alaskan Natives and Asians, and the remaining 18.3 percent were considered some other race or two or more races (U.S. Census Bureau 2005). In El Paso County, 81.7 percent of the population claimed to be Hispanic or Latino (of any race).

3.9.2 Employment, Poverty Levels and Income

The total number of jobs in the study area in 2005 was 349,204, an increase of 16 percent over the 1995 number of jobs of 300,045 (U.S. Bureau of Economic Analysis 2005a). The government sector provided the most jobs, followed by the retail trade industry. The 2006 annual average unemployment rate for El Paso County was 6.7 percent (Tracer 2006). This is higher than the 4.9 percent average annual unemployment rate for the State of Texas (Bureau of Labor Statistics 2006).

There were 301,578 people in the El Paso County labor force in 2005 (U.S. Census Bureau 2005). In 2005, El Paso County had a per capita personal income (PCPI) of \$23,256 (U.S. Bureau of Economic Analysis 2005b). This PCPI ranked 184th in the State of Texas, and was 72 percent of the state average of \$32,460, and 67 percent of the National average of \$34,471. The average annual growth rate of PCPI from 1995 to 2005 was 4.6 percent. This average annual growth rate was higher than the growth rate for the state (4.4 percent) and higher than that for the Nation (4.1 percent). In 2005, El Paso County had a total personal income (TPI) of \$16.8 billion. This TPI ranked 9th in the state and accounted for 2.3 percent of the state total. The 2005 TPI reflected an increase of 6.6 percent from 2004, which was lower than 2004-2005 state change of 7.8 percent and higher than the National change of 5.2 percent (U.S. Bureau of Economic Analysis 2005a).

3.9.3 Housing

El Paso County had a total of 224,447 housing units according to the 2000 U.S. Census Bureau (U.S. Census Bureau 2000), and an estimated 244,193 housing units in 2005 (U.S. Census Bureau 2005). There are no homes in the vicinity of the project area.

3.9.4 Environmental Justice

EO 12898 was signed in February 1994. This order was intended to direct Federal agencies "...to make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental effects of its programs,

policies, and activities on minority populations and low-income populations in the U.S....” To comply with EO 12898, minority and poverty status in the vicinity of the project was examined to determine if any minority and/or low-income communities would potentially be disproportionately affected by implementation of the action alternatives. As stated previously, 77.6 percent of the population of El Paso County is Caucasian, however, 81.7 percent of the population claimed to be Hispanic or Latino (of any race) (U.S. Census Bureau 2005). Census data from 2004 indicated that 16.2 percent of the population of Texas was living below the poverty level (U.S. Census Bureau 2004). In El Paso County during 2004, however, 24.6 percent of the population was living below the poverty level (U.S. Census Bureau 2004). Low-income populations are prevalent within the ROI; however, there are no persons living within 1-mile of the FFR.

3.9.5 Protection of Children

EO 13045 requires each Federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children”, and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks”. This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. In El Paso County in 2004, 78,024 individuals, or 44.6 percent of the population below the poverty level were children under the age of 18 (U.S. Census Bureau 2004). The percentage of children under 18 below the poverty level for the State of Texas is 22.7 percent. The potential for impacts to the health and safety of children is greater where projects are located near residential areas; however, there are no residential areas within 1-mile of the FFR.

3.10 TRANSPORTATION

Due to its rural nature, the Town of Fabens does not provide any form of public transportation. The main transportation arteries in the project area are I-10 and FM 793. The nearest public use airport is the Fabens Municipal Airport located approximately 1.0 mile west of the project area. The nearest airport certified for carrier operations is the El Paso International Airport in El Paso, Texas.

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SECTION 4.0
ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

This section of the EA addresses the potential impacts associated with the implementation of the Proposed Action Alternative or No Action Alternative outlined in Section 2.0. Impacts to the human and natural environment can be characterized as beneficial or adverse, and can be direct or indirect based upon the result of the action. Direct impacts are those effects that are caused by the action and occur at the same time and place (40 CFR 1508.8[a]). Indirect impacts are those effects that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8[b]). The effects can be temporary, short in duration (short-term), long lasting (long-term), or permanent. For purposes of this EA, temporary effects are defined as those that would last for the duration of the construction period; short-term impacts would last from the completion of construction to 3 years. Long-term impacts are defined as those impacts that would occur from 3 to 10 years after construction, while permanent impacts indicate an irretrievable loss or alteration.

Impacts can vary in magnitude from slight to a total change in the environment. The impact analysis presented in this EA is based upon existing regulatory standards, scientific and environmental knowledge and best professional opinions. The impacts on each resource are described as significant, moderate, minor (minimal), insignificant or no impact. Significant impacts are those effects that would result in substantial changes to the environment (as defined by 40 CFR 1500-1508). All impacts described are adverse unless otherwise noted. Additionally, a quantitative impact analysis was used to describe potential impacts when data were available for the given resource (e.g., vegetation).

4.1 LAND USE

The significance threshold established for land use is:

- The action is inconsistent with adopted land use plans or would substantially affect those resources required for, supporting, or benefiting current use.

4.1.1 No Action Alternative

With the implementation of the No Action Alternative, there would be no direct or indirect impacts to existing land uses.

4.1.2 Proposed Action Alternative

Under the Proposed Action Alternative, the existing land use for a portion of the 304 acres would be altered by USBP activities. The 15-acre disturbed, range footprint has been used as a firing range since at least 1978 and therefore, the land use for 15 acres would continue to be a firing range. Although in the past there were grazing leases on the remaining 289 acres, currently, the land is not used for grazing purposes, but instead as a buffer for the existing firing range. Under the Proposed Action Alternative, the 289 acres would continue to be used as a firing range buffer and would be fenced to exclude cattle.

4.2 SOILS

The significance thresholds established for soils are:

- The action results in substantial soil erosion or loss of topsoil.
- The action is located on inappropriate soil types, creating substantial risks to life or property.

4.2.1 No Action Alternative

With the implementation of the No Action Alternative, there would be no direct or indirect impacts to soils because no new firing range facilities would be constructed.

4.2.2 Proposed Action Alternative

Ground disturbance would be necessary to construct and implement the Proposed Action Alternative, and would directly result in permanent impacts to as much as 15 acres of BPC and BUC soils. Neither of these soil types is considered Prime Farmland or Farmland of Statewide Importance and; therefore, consultation with NRCS regarding FPPA would not be required.

The construction of the proposed USBP firing range expansion would not cause substantial soil erosion and would not be located on inappropriate soil types. Therefore, permanent impacts to either soil type within the project area would be insignificant. Temporary impacts would consist of possible soil erosion during construction activities; however, these impacts would be reduced to an insignificant level through the use of Best Management Practices (BMPs) as described in Section 6.0 and from the short duration of the construction process.

4.3 BIOLOGICAL RESOURCES

Significance thresholds established for biological resources are:

- The action causes the loss of a substantial number of individuals of any native animal species that could affect abundance or diversity of that species beyond normal viability.
- The action results in the permanent loss or degradation of sensitive or rare habitat for animal species.
- The action results in an adverse modification of designated or proposed critical habitat for one or more listed species.
- The action causes a jeopardy opinion on Federal species which cannot be minimized through conservation measures.
- The action results in direct or indirect impacts on candidate or sensitive species populations, or habitat, that would contribute to or result in the Federal or state listing of the species (e.g., by substantially reducing species numbers, or by resulting in the permanent loss of habitat essential for the continued existence of a species).

4.3.1 Vegetation

4.3.1.1 No Action Alternative

Under the No Action Alternative no expansion of the FFR would occur and no vegetation communities or wildlife would be disturbed.

4.3.1.2 Proposed Action Alternative

Implementation of the Proposed Action Alternative would impact 15 acres of previously disturbed Chihuahuan desert scrubland. No protected or rare plant species, or habitat that could support them, were observed during the site visit. The proposed construction would be located on previously disturbed land, and little native vegetation would be removed. All individual native plant species that would be lost are common both locally and regionally. Temporary indirect impacts to natural vegetation related to fugitive dust created during construction would be minimized by watering of road surfaces and other BMPs described in Section 6.0, and would not substantially impair plant respiration or photosynthesis over the long-term.

There is currently lighting around the existing outdoor firing range and the administration building. Additional lighting would be installed for the proposed outdoor range expansion and

indoor firing range and the parking lot. These lights would have little effect on vegetation in the area since these areas are mostly denuded of natural plant life.

4.3.2 Wildlife

4.3.2.1 No Action Alternative

No direct impacts are expected to occur to wildlife or their habitats if the No Action Alternative is implemented, since no future expansion of the USBP FFR would occur.

4.3.2.2 Proposed Action Alternative

Wildlife species which would be directly impacted from the Proposed Action Alternative would be small mammals (e.g., mice, kangaroo rats), reptiles (e.g., lizards, snakes), and amphibians (e.g., spadefoot toads, true toads). The greatest movement of small animals generally happens when a disturbance such as grading, dozing, or construction occurs. Mobile animals escape to areas of similar habitat, while other slow or sedentary species of reptiles, amphibians, and small mammals may be potentially lost (Busnel and Fletcher 1978). Any displacement or reduction in the number of animals would not severely impact animal communities due to the presence of vast areas of similar environments adjacent to the project area. All lighting would be directed toward the 15-acre facility and back shielded to prevent impacts to wildlife in adjacent areas.

The impacts to foraging habitat and ground nesting habitat would not be significant due to the low amount of actual area (15 acres) of previously disturbed Chihuahuan desertscrub habitat removed by the Proposed Action Alternative. No long-term impacts to small mammals, reptiles, and bird populations would be expected. Larger terrestrial wildlife would be expected to move to adjacent areas during construction, and the security fence would provide a barrier to keep large mammals out of the project area and away from firing range activities. The proposed perimeter security fence would limit access to the project area by terrestrial mammals. However, there area is rural in nature and there is vast amounts of similar land in the adjacent areas.

Noise from construction would have temporary impacts on wildlife. However, by using the environmental design measures outlined in Section 6.0, these impacts would be minimal. Most movement of wildlife species occurs during nighttime or low daylight hours, and construction activities would be limited primarily to daylight hours. Noise from daily operations is not likely to have an adverse impact on wildlife populations in the project area, since the project area is

currently a functioning firing range. Helicopters would periodically take-off and land, as they currently do, but this would be no different from the No Action Alternative.

4.3.3 Threatened and Endangered Species

4.3.3.1 No Action Alternative

No direct or indirect impacts to threatened and endangered species or their habitats would occur if the No Action Alternative is implemented because no future expansion of the USBP firing range facility would occur.

4.3.3.2 Proposed Action Alternative

No Federally listed species were observed and none is expected to occur in the project area, since the area does not support habitat suitable for any listed species. Thus, no effects to threatened and endangered species would occur.

The only state listed species with potentially suitable habitat in the project area is the Texas horned lizard (TPWD 2006). There is a potential for minor temporary impacts to this species during construction. However, no Texas horned lizards were observed within the project area during field surveys. During field surveys two burrowing owls were observed in the buffer area. Burrowing owls are listed as rare in the state of Texas; however, no construction or disturbance is proposed for the buffer area. If a Texas horned lizard or burrowing owl is observed in the project area during the construction phase of this project, the environmental design measures described in Section 6.0 would be implemented to reduce any impacts to these species.

4.3.4 Non-native and Invasive Plants

4.3.4.1 No Action Alternative

No new construction or expansion would take place as a result of the No Action Alternative; therefore, no impacts associated with non-native species would occur.

4.3.4.2 Proposed Action Alternative

The proposed project area is primarily Chihuahuan desert scrubland, but there are non-native plant communities established at this site in disturbed areas. Environmental design measures described in Section 6.0 would reduce further impacts from the introduction of invasive plant species and spread of non-native plants during the construction phase of the project.

4.4 CULTURAL RESOURCES

Significance thresholds established for cultural resources are:

- Any action that would cause a substantial adverse change in a historical or archeological resource.
- Any action that would disturb any human remains, including those interred outside of formal cemeteries.

4.4.1 No Action Alternative

Under the No Action Alternative, the existing firing range would be maintained and no expansion of the firing range would occur. Thus, there would be no ground disturbing activities, and no impacts to cultural resources.

4.4.2 Proposed Action Alternative

The surveys and records check for cultural resources resulted in no observed or recorded resources at the 15-acre firing range site. However, three sites were found in the surrounding buffer area that show no potential for meeting Federal or state significance criteria. Since there would be no construction in the buffer area, no further work at the three sites was recommended. In addition, the SHPO concurred that no historic properties would be affected by the Proposed Action Alternative (see Appendix D).

No impacts to cultural resources are anticipated from the implementation of the Proposed Action Alternative. However, if any unknown cultural resources are found during the construction of the proposed station, activities would temporarily stop in the immediate vicinity of the find(s), and a qualified archaeologist, along with the SHPO, would be contacted to assess significance and determine appropriate procedures.

4.5 WATER RESOURCES

The significance thresholds for water resources are:

- The action substantially alters existing drainage patterns of the site or area.
- The action causes a violation to Federal surface or groundwater quality standards.

4.5.1 Surface and Ground Water

4.5.1.1 No Action Alternative

The No Action Alternative would not require the use of water for construction. However, water use for restroom facilities at the current firing range (approximately 312,000 gallons per year) would increase by approximately 84,000 gallons per year as the number of agents assigned to the El Paso Sector increases. As water is trucked into the facility from local municipal water supplies, which originate from municipal groundwater wells, the No Action Alternative would have minimal indirect impacts to local groundwater availability in the region.

4.5.1.2 Proposed Action Alternative

Under the Proposed Action Alternative, water would be required for pouring concrete and watering of road and ground surfaces during construction. Water use for construction would be temporary, and the volume of water used for construction would be minimal in comparison to the volume used annually for municipal, agricultural, and industrial purposes. Water not lost to evaporation from watering of surfaces during construction would potentially contribute to aquifer recharge through downward percolation. The construction of the additional outdoor firing range lanes would alter natural drainage patterns and would be incorporated into the enhanced water drainage system as a component of the Proposed Action. In addition, to minimize the impacts to the alteration of the natural drainage patterns, proper storm water retention/detention measures would be incorporated into the design as described in Section 6.0.

Current water usage for restrooms and dust suppression at the FFR is approximately 312,000 gallons per year. An increase in agent restroom use and dust suppression for the 10-lane firing range would result in a 59 percent increase in water use to approximately 496,000 gallons per year. This would yield an approximate increase of 184,000 gallons per year for the Proposed Action Alternative. Currently, the FFR has water transported in from a local municipal source and is then stored in large tanks on-site for range use. The Proposed Action would install a water well for the range restroom and dust suppression use. In the area, most potable water wells are drilled between 200-600 feet bgs and draw from the Hueco-Mesilla Bolsons Aquifer. The local municipal source withdraws from the same aquifer system as the proposed FFR water well; therefore, impacts would be the same as the No Action Alternative. The use of either source would ultimately affect regional groundwater resources as these resources are already severely taxed. Therefore, the anticipated increase, although small, would have minor long-

term indirect impacts to groundwater as a result of increased water consumption from the regional groundwater resource.

4.5.2 Water Quality

4.5.2.1 No Action Alternative

No new construction or expansion would take place as a result of the No Action Alternative; therefore, there would be no impacts to water quality.

4.5.2.2 Proposed Action Alternative

Construction and expansion of the firing range would temporarily increase the potential contribution to suspended solids from construction activities. A NPDES permit would be applied for and a Stormwater Pollution Prevention Plan (SWPPP) submitted to TCEQ. Implementation of the SWPPP would reduce any short-term impacts to water quality from suspended contaminants or sediments from construction activities. The Proposed Action Alternative would not violate Federal or state groundwater quality standards, and would have no significant impacts. The proposed project activities and range operations of the FFR should not impact either arroyo on the adjacent properties.

4.5.3 Wetlands and Waters of the U.S.

4.5.3.1 No Action Alternative

The No Action Alternative would not impact wetlands or WUS because no new construction or expansion would take place.

4.5.3.2 Proposed Action Alternative

The Proposed Action Alternative would not impact wetlands or WUS because no wetlands or WUS have been identified in the project area.

4.6 AIR QUALITY

4.6.1 No Action Alternative

The No Action Alternative would not result in any impacts to air quality because there would be no construction activities.

4.6.2 Proposed Action Alternative

Temporary and minor increases in air pollution would occur from the use of construction equipment (combustible emissions) and soil disturbances (fugitive dust) while preparing the new firing range and constructing and installing the indoor firing range.

Combustible emission calculations were made for standard construction equipment, such as bulldozers, excavators, pole trucks, front end loaders, backhoes, cranes, and dump trucks, using emission factors from USEPA approved emission model NONROAD6.2. See Appendix C for model results.

Fugitive dust calculations were made for disturbing the soils while excavating, grading and constructing the new firing range and installing the indoor modular firing range (QuickRange™). Dust can arise from the mechanical disturbance of surface soils. Fugitive dust emissions were calculated using emission factors from the (Mid-Atlantic Regional Air Management Association 2006).

Assumptions were made regarding the type of equipment, duration of the total number of days each piece of equipment would be used, and the number of hours per day each type of equipment would be used. The assumptions, emission factors, and resulting calculations are presented in Appendix C.

The total air quality emissions, which include combustible air emissions from construction and increased USBP vehicle emissions, were calculated to determine the applicability of the General Conformity Rule, and are provided in Appendix C. A summary of the total emissions is presented in Table 4-1. As can be seen from this table, the proposed construction activities do not exceed *de minimis* thresholds and, thus, do not require a Conformity Determination.

Table 4-1. Total Air Emissions (tons/year) from Construction Activities vs. the *de minimis* Levels

Pollutant	Total (tons/year)	<i>de minimis</i> Thresholds (tons/year)
CO	12.11	100
VOCs	2.48	NA
NOx	19.92	NA
PM-10	8.32	100
PM-2.5	2.98	NA
Sulfur Dioxide (SO ₂)	2.62	NA

Source: 40 CFR 51.853

At the FFR, fugitive dust emissions may be contaminated with lead. Elemental lead from fragmented bullet slugs and spent shot can be transported as a particulate by the action of surface water and wind. Typically, the greatest lead concentrations are measured near impact sources (impact and lateral berms and shotfall zones). The physical abrasion of lead-rich metal fragments during erosion could release the oxidation products as dust into the environment and create particles yielding a larger surface area prone to breakdown and leaching. The action of water and wind could distribute lead particulates of lead-enriched soil into prevailing winds (ITRC 2003).

The transport of the lead contaminated-soils could be mitigated during construction by watering soils during construction activities (Midwest Research Institute [MRI] 1997). A SWPPP and Notice of Intent (NOI) would be prepared and submitted prior to construction. The SWPPP would identify BMPs to be implemented for erosion and sedimentation control during construction. Control of PM-10 emissions would be included in the plan. Water stabilization of soils can reduce fugitive dust emissions by 50 percent (MRI 1977). Other BMPs for soil erosion would be outlined in the SWPPP. Efforts would be made to continue to mitigate wind blown fugitive dust emissions by watering the exposed soil.

During the construction of the proposed project, proper and routine maintenance of all vehicles and other construction equipment would be implemented to ensure that emissions are within the design standards of all construction equipment. Dust suppression methods would be implemented to minimize fugitive dust during construction activities and during future day-to-day operations. Air emissions from the proposed action would be temporary and should not significantly impair air quality in the region.

The emissions resulting from the number of USBP staff commuting daily to the firing range would be the same as the No Action Alternative.

4.7 SOLID AND HAZARDOUS WASTE

The significance threshold established for solid and hazardous waste is:

- The action results in a significant hazard to the public or the environment through transport, use, or disposal of hazardous materials.

4.7.1 No Action Alternative

No impacts from hazardous materials would be expected from the No Action Alternative. There is a potential for firing range contaminants, specifically lead, to migrate into soils, surface water, and groundwater at small arms firing ranges; therefore, there could be potential indirect impacts to future land use, even if no new firing range facilities would be constructed. Lead has well known adverse effects to humans and wildlife, and lead contamination may often result from historic small arms firing range use. As the current 15 acres have been used as a small arms firing range since at least 1978, there is a concern that possible lead contamination could negatively impact the beneficial reuse of the land in the future. Measures to reduce potential lead migration, as outlined in Section 6.8, could be incorporated into operational designs, and would render these impacts less than significant.

4.7.2 Proposed Action Alternative

As discussed in Section 3.7.2, a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-05 was conducted for the proposed project area. This assessment revealed that *further investigation is warranted* in connection with the 52-acre property and a Phase II for the site is proposed (CBP 2007). There is a potential for firing range contamination, specifically lead contamination, to migrate into soils, surface water, and groundwater at small arms firing ranges. As mentioned above, lead has a deleterious effect to humans and wildlife, and the Proposed Action Alternative would have the same indirect effect as the No Action Alternative to the future beneficial reuse of the land. The level of significance would be reduced if BMPs for the Proposed Action Alternative, as outlined in Section 6.8, were implemented and used consistently during the life of the firing range facility. Design measures to reduce potential lead migration would be incorporated into engineering and operational designs as finalized, and would render the overall potential impacts insignificant. Furthermore, no disturbance of the landfill would occur under the Proposed Action Alternative.

Care would be taken to avoid impacting the project area with hazardous substances (*i.e.*, anti-freeze, gasoline) associated with the construction efforts. During construction activities, fuels, oils, lubricants, and other hazardous materials would be used. Although catch pans would be used when refueling, accidental spills could occur as a result of maintenance procedures to construction equipment. A spill could result in potentially adverse impacts to on-site soils and threaten the health of wildlife, soils, water, and vegetation. However, the amount of fuel, lubricants, and oil is limited, and equipment necessary to quickly contain any spills would be

present when refueling; therefore, significant impacts to the public or the environment from hazardous materials are not anticipated.

4.8 NOISE

The significance threshold established for this analysis for noise is:

- The action results in a substantial permanent increase in ambient noise levels in the project vicinity.

4.8.1 No Action Alternative

The proposed project area already experiences noise disturbances from normal small arms training; however, the noise disturbances would increase incrementally with the addition of USBP staff in the El Paso Sector and their subsequent use of the firing range. Under the No Action Alternative, the firing range would continue to experience small scale munitions training.

4.8.2 Proposed Action Alternative

The noise generated from the construction and installation of the firing range lanes would come primarily from the use of heavy equipment. Noise from the construction of the firing range would be intermittent in nature and of short duration. There are no sensitive noise receptors within 1 mile of the firing range, and no noise impacts are expected to result from the construction of the proposed project. Furthermore, the noise impacts from the use of FFR would be less than the No Action Alternative because the new firing ranges would be fully baffled. Additionally, the Proposed Action will include a perimeter fence which would discourage ingress into the 289-acre safety and noise buffer and further reduce the potential for noise impacts to occur to individuals.

4.9 SOCIOECONOMICS

The significance thresholds for socioeconomics are:

- The action causes a substantial permanent population increase or reduction in local income.
- The action causes the vacancy rate for temporary housing to fall, requiring relocation of existing population, construction of replacement housing elsewhere, or destruction of housing or businesses.
- The action increases the short or long-term demand for public services in excess of existing and projected capacities.

4.9.1 No Action Alternative

Under the No Action Alternative, no expansion of the FFR would occur. As a result, there would be no short-term temporary minor benefits from construction in the local economy. However, there would be an ongoing slight increase in the tax base and traffic associated with the increase in El Paso Sector USBP agents in the area.

4.9.2 Proposed Action Alternative

With the implementation of the Proposed Action, no increase in local construction job opportunities would occur as this work would be completed by government employees. There would, however, be a short-term and long-term increase in gas and grocery revenue from the government construction laborers and increased USBP personnel in the area. Furthermore, the ongoing slight increase in the tax base and traffic associated with the increase in El Paso Sector USBP agents in the area would be the same as the No Action Alternative.

4.9.3 Executive Order 12898, Environmental Justice

4.9.3.1 No Action Alternative

Under the No Action Alternative, no construction or expansion of the firing range would occur in the project area. As a result, no impacts would be anticipated regarding environmental justice issues.

4.9.3.2 Proposed Action Alternative

The Proposed Action would not result in disproportionately high or adverse environmental health or safety impacts to minority or low-income populations. Although, as stated in Section 3.9.4 there is a large low-income population in the ROI, within the vicinity of the firing range there are no people who reside near the range. FFR is located in a fairly remote, rural setting with the nearest population center consisting of the Town of Fabens situated well over 1 mile to the south. In addition, the additional 304-acre site perimeter fencing would minimize the likelihood of any accidental entry into the 289-acre safety and noise buffer area.

4.9.4 Executive Order 13045, Protection of Children

4.9.4.1 No Action Alternative

Under the No Action Alternative, expansion of the firing range facility would not occur. As a result, no issues regarding protection of children associated with construction activities would occur.

4.9.4.2 Proposed Action Alternative

The Proposed Action Alternative would not result in disproportionately high or adverse environmental health or safety impacts to children. This is based on the fact that no significant adverse environmental effects have been identified for any resource area or population (minority, low-income, children, or otherwise) analyzed in this EA. Residential areas are well over 1.0 mile south of the firing range, and the buffer areas are open grazing land with no residential dwellings where children would likely be encountered. The noise and safety buffer zones around the expanded firing range would further reduce potentially dangerous conditions for children. Furthermore, safety would be enhanced due to the use of baffles in the design of the firing range expansion and the perimeter fencing around the 304-acre buffer zone.

4.10 TRANSPORTATION

The significance threshold for transportation is:

- The action increases traffic beyond the design capacity of a public roadway.

4.10.1 No Action Alternative

Under the No Action Alternative, no expansion of FFR would occur; however, with the increase in agents assigned to the El Paso Sector, there would be an increase in USBP vehicles on the existing roads traveling to and from the firing range. The increase of approximately 700 additional USBP agents utilizing the firing range to qualify quarterly would have permanent indirect impacts on traffic in the area. These impacts would be insignificant because the area is extremely remote and the additional agents would not increase traffic beyond the design capacity of public roadways.

4.10.2 Proposed Action Alternative

Due to the increasing agent force, there would be an increase in the number of USBP automobiles on local roadways traveling to and from the firing range; however, this increase would not be beyond the design capacity of local transportation routes. The impacts would be the same as those for the No Action Alternative. Environmental design measures outlined in Section 6.0 would minimize these impacts.

***SECTION 5.0
CUMULATIVE EFFECTS***



5.0 CUMULATIVE EFFECTS

This section of the EA addresses the potential cumulative impacts associated with the implementation of the alternatives outlined in Chapter 2.0 and other projects/programs that are planned for the region. The following paragraphs present a general discussion regarding cumulative effects that would be expected, irrespective of the alternative selected.

The CEQ defines cumulative impacts as the incremental impact of multiple present and future actions with individually minor, but potentially collective, significant effects. Cumulative impacts can be concisely defined as the total effect of multiple land uses and developments, including their interrelationships, on the environment. The boundaries used to identify the area in which potential cumulative effects could occur are defined as the boundaries of the county in which the program occurs. This area will be referred to as the region of potential cumulative impacts.

In 2001, INS and Joint Task Force-6 (JTF-6) Programmatic Environmental Impact Statement (PEIS) assessed the potential cumulative impacts associated with past and future USBP projects for the entire U.S.-Mexico border, and that assessment is herein incorporated by reference (INS 2001). In summary, the PEIS estimated that, in total, 6,900 acres would be disturbed along the southwestern border by 2004. The U.S.-Mexico border is approximately 6 miles south of the project area.

Future projects are being planned by CBP throughout the El Paso Sector. In 2006, a Programmatic EA was prepared to address proposed construction of tactical infrastructure along the U.S.-Mexico border in the Texas portion of the El Paso Sector (CBP 2006). The tactical infrastructure involves improvements or construction of up to 19 Remote Video Surveillance Systems, improvements to or construction of approximately 99 miles of all-weather patrol roads and approximately 40 miles of drag roads, installation of permanent pedestrian barriers, installation of permanent lights, construction of ancillary structures (*i.e.*, low water crossings, access gates, pipe gates, bridges), vegetation management, and permanent vehicle barriers. It is anticipated that the project would be implemented over the next 10 years and disturb a total of 571 acres.

CBP is also planning several facilities projects in the sector. These include the construction of new USBP stations in Fort Hancock, Texas (14 acres) and Lordsburg, New Mexico (25 acres),

and the construction of one forward operating base in New Mexico along New Mexico Highway 9, in the Deming Station Area of Operation (AO). The approximate footprint for the forward operating base is 10 acres. USBP also plans to install 10 emergency beacons in the Lordsburg and Deming Station AOs.

Three USBP checkpoints in El Paso Sector are being enlarged or relocated. The I-25 checkpoint would be reconfigured and enlarged by 11.8 acres. The I-10 checkpoint would be reconfigured and enlarged by 5.8 acres. In addition, the proposed new truck lane east of the I-10 checkpoint would utilize up to 4.5 acres. The Ysleta checkpoint would be relocated to a new 7.1-acre site on U.S. Highway 62/180. A total of 24.7 additional acres would be acquired and potentially disturbed outside of the existing footprint at the three sites, plus the 4.65 acres for the new truck separation lane at the I-10 Checkpoint.

Recent, on-going and reasonably foreseeable proposed projects will result in cumulative impacts. In particular, legislation mandates the construction of primary fence along the southwestern border to be completed. The first phase of construction would occur in areas that have already been developed (e.g., currently contains permanent vehicle barriers [PVB] or temporary vehicle barriers [TVB]) and thus, little or no additional environmental impacts would be expected. The second phase of construction would generally occur in more remote areas, and would inevitably result in cumulative impacts. It should be noted that the final locations for the primary fence have not been determined yet so, these should be considered only as planning estimates.

The TxDOT El Paso District has several construction projects in progress or in planning stages.

- I-10 Southern Relief Route- TxDOT is studying the feasibility of a Southern Relief Route for I-10 along the southern corridor of Loop 375 in El Paso.
- I-10 E3 rail project/closure update- permanent concrete railings would be built, and high mast illumination lights will be installed on I-10, between Schuster Drive and Reynolds Street.
- Northeast Parkway Project- TxDOT, in cooperation with the New Mexico Department of Transportation, has recently completed the design schematic for a 21-mile long, limited access highway connecting Loop 375 in northeast El Paso near Railroad Drive to I-10 in Anthony, New Mexico.
- I-10 Americas Interchange- the I-10/Americas Interchange project would involve improving the existing cloverleaf interchange; constructing the Loop 375 main lanes over I-10 to the Socorro Independent School District's Activities Center at

Bob Hope Drive; and adding directional ramps/connections between Loop 375 and I-10.

- I-10 East Corridor Study- TxDOT has completed the 22-mile I-10 East Corridor Study from just west of US 54 at Piedras Street to FM 1110 at the Town of Clint. The corridor also included portions of FM 76 (North Loop Road) from FM 1281 (Horizon Boulevard) to FM 1110, and SH 20 (Alameda Avenue) from just east of Loop 375 to FM 1110, and FM 1110 between I-10 and FM 76. The I-10 East Corridor Study was designed as a comprehensive multi-modal study, has resulted in recommended strategies to address identified long-term transportation and corridor needs through 2025.

The El Paso County Road and Bridge Department has an ongoing road paving schedule. All of these streets are 24 feet in width. Paving projects in the Fabens area include:

- Wingo Reserve Road from Jeff Harris Road to Rawls Road- 0.8 mile
- Rawls Road from Wingo Reserve Road to Isla Road- 0.1 mile
- Island Road from Lower Island Road to Newman Road- 1.4 miles
- Highland Street from 5th Street to the end of Highland Street- 0.6 mile
- Tornillo Avenue from OT Smith Road to 5th Street- 0.3 mile
- Florinda Drive from Cobb Avenue to Linda Drive- 0.3 mile
- Flor Del Rio Drive from Cobb Avenue to Linda Drive- 0.3 mile
- Florelia Drive from Gaby Road to Linda Drive- 0.1 mile
- Flor Bella Lane from Linda Drive to the end of Flor Bella Lane- 0.1 mile
- Linda Drive from Feed Penn Road to Henderson Street- 0.3 mile
- Los Lettunich Road from Henderson Street to Feed Penn Road- 0.3 mile
- Chamizo Road from Feed Penn Road to Henderson Street- 0.3 mile

The following assessment of potential cumulative impacts is based upon the information provided from previously listed, past, ongoing, and anticipated future projects.

5.1 No Action Alternative

The No Action Alternative would not result in direct cumulative impacts to any resource. There would be insignificant indirect cumulative impacts to water resources, transportation, and noise from the No Action Alternative from the additional agent force using the existing firing range.

5.2 Proposed Action Alternative

The disturbance or loss of soils associated with the Proposed Action Alternative, along with the disturbance to soils from other projects proposed by the USBP in the region, is a cumulative adverse impact which contributes to the historical and ongoing degradation of these resources.

Other USBP proposed projects in the area would impact approximately 690 acres of soils in the El Paso Sector. The Proposed Action Alternative would impact an additional 15 acres of soils. However, because these soils are previously disturbed, not prime or unique farmland soils, and are abundant in the region, cumulative impacts on soils associated with the Proposed Action Alternative would be minor.

Other proposed USBP projects in the area would impact 690 acres of vegetation along the U.S.–Mexico Border in the El Paso Sector. The Proposed Action Alternative would impact 15 acres that consist of little or no native vegetation. Thus, the Proposed Action Alternative would not have significant cumulative impacts on native vegetation.

Other USBP projects proposed for the area would impact up to 690 acres of foraging grass habitat and ground nesting habitat for wildlife. However, in the project area, little or no vegetation would be removed and habitat to support wildlife is highly degraded; therefore, there would be no cumulative impacts to wildlife.

The Proposed Action Alternative would have no impact to cultural resources; although, in general, other USBP projects in this region have had beneficial impacts to cultural resources through their identification and protection. All USBP projects would be evaluated by the Texas SHPO under the Section 106 consultation process. However, if any cultural resources were to be found during construction efforts, environmental design measures outlined in Section 6.0 would reduce the cumulative impacts to less than significant.

Vehicle, heavy equipment, and helicopter use in the region associated with other proposed USBP projects would increase noise regionally, but would not likely result in significant cumulative impacts. The Proposed Action Alternative would utilize land that is currently being used as a firing range and is located in a rural area. There are no residences, schools or churches nearby, and there are few noise sensitive receptors in the proposed area; therefore, any cumulative impacts from increased noise due to construction or firing range use would be insignificant. In addition, the increased fenced safety and noise buffer zone would minimize any accidental entry into the proposed 304-acre buffer area and FFR.

The increased vehicle and heavy equipment use, associated with the firing range construction and operation and other proposed USBP construction projects, would have a temporary

cumulative effect on fugitive dust regionally, but would not result in significant cumulative impacts to air quality because of the use of environmental design measures as outlined in Section 6.0.

The implementation of other USBP projects in the region, as well as the Proposed Action Alternative, would have minor beneficial cumulative socioeconomic impacts to the region. Construction and maintenance activities associated with these projects would yield expenditures for supplies, and private contractors. The majority of projects proposed by other agencies in the region would also benefit socioeconomics in the region; therefore, the cumulative socioeconomic impacts would be beneficial.

With the additional traffic that would result in and around the project site, the potential exists that local traffic would increase at times. However, with the proposed environmental design measures, no adverse cumulative impacts are expected to occur now, or in the foreseeable future, from the expansion of the firing range.

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SECTION 6.0
ENVIRONMENTAL DESIGN MEASURES

6.0 ENVIRONMENTAL DESIGN MEASURES

This chapter describes those measures that will be implemented to reduce or eliminate potential adverse impacts to the human and natural environment. Many of these measures have been incorporated as standard operating procedures by USBP on past projects. Environmental design measures are presented for each resource category that would be potentially affected. It should be emphasized that these are general mitigation measures; development of specific mitigation measures would be required for certain activities implemented under the action alternatives. The proposed mitigation measures will be coordinated through the appropriate agencies and land managers/administrators, as required.

It is Federal policy to mitigate adverse impacts through the sequence of avoidance, minimization, and finally, compensation. Compensation varies, and includes activities such as restoration of habitat in other areas, acquisition of lands, *etc.*, and is typically coordinated with USFWS and other appropriate Federal and state resource agencies.

6.1 GENERAL CONSTRUCTION ACTIVITIES

BMPs implemented as standard operating procedures during all construction activities will include proper handling, storage, and disposal of hazardous and/or regulated materials. To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils, and solvents will be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery will be completed following accepted guidelines, and all vehicles will have drip pans during storage to contain minor spills and drips. Although it would be unlikely for a major spill to occur, any spill of 5 gallons or more will be contained immediately within a dike, and the application of an absorbent (*e.g.*, granular, pillow, sock) will be used to absorb and contain the spill. Any spill of 5 gallons or more of a hazardous or regulated substance will be reported immediately to on-site environmental personnel, who would notify appropriate Federal and state agencies. In addition to the SWPPP, a Spill Prevention, Control and Countermeasures Plan (SPCCP) will be in place prior to the start of construction, and all personnel will be briefed on the implementation and responsibilities of this plan.

All waste oil and solvents will be recycled. All non-recyclable hazardous and regulated wastes will be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures.

Non-hazardous solid waste (trash and waste construction materials) will be collected and deposited in the on-site receptacles. Solid waste receptacles will be maintained, and solid waste will be collected and disposed of by a local waste disposal contractor.

6.2 SOILS

Suitable fencing will be installed around the perimeter of the facility to prevent vehicle and pedestrian traffic from impacting soils on adjacent properties. Vehicular traffic associated with the construction activities and operational support activities will remain on established roads to the maximum extent practicable. Areas with highly erodible soils will be given special consideration when designing the proposed project to ensure incorporation of various BMPs, such as straw bales, aggregate materials, and wetting compounds, to decrease erosion. A SWPPP will be prepared prior to construction activities, and BMPs described in the SWPPP will be implemented to reduce erosion. Furthermore, all areas not immediately developed will be landscaped with native plant species, where appropriate, in order to minimize erosion.

6.3 BIOLOGICAL RESOURCES

Construction equipment will be cleaned prior to entering and departing the project corridor to minimize the spread and establishment of non-native or invasive plant species. Soil disturbances in temporarily impacted areas will be re-vegetated with native plants. To minimize vegetation impacts, designated travel corridors will be marked with easily observed removable or biodegradable markers, and travel will be restricted to the corridor under most circumstances.

The Migratory Bird Treaty Act requires that Federal agencies coordinate with USFWS if a construction activity would result in the “take” of a migratory bird. If construction or clearing activities are scheduled during the nesting season (typically March 15 - September 15), preconstruction surveys for burrowing owls and other migratory bird species will occur immediately prior to the start of any construction activity to identify active nests. If construction activities would result in the “take” of a migratory bird, then coordination with USFWS and TPWD

will occur, and applicable permits will be obtained prior to construction or clearing activities. An additional mitigation measure that will be considered is to schedule all construction activities outside the nesting season, negating the requirement for nesting bird surveys. To lessen noise impacts to wildlife communities, construction will only occur during daylight hours, whenever possible.

CBP will avoid Texas horned lizards to the extent possible; however, where avoidance is impractical, consultation with TPWD will be conducted to identify conservation measures and reasonable and prudent measures, such as using biologists to monitor construction progress and conduct post-project, long-term monitoring, as deemed necessary. During below-ground construction, construction personnel will avoid leaving open trenches to minimize the risk of injury or death to wildlife.

6.4 CULTURAL RESOURCES

Although no cultural resources are known to be present within the project area, unanticipated subsurface deposits are possible at any undertaking that disturbs the ground surface. Evidence of subsurface deposits may be in the form of subsurface artifacts (lithics, ceramics, ground stone, bone, metal, or glass), charcoal, stained soil, or burned rocks. If previously unknown cultural resources are exposed by construction activities associated with the proposed development, work will stop in the immediate vicinity, the resources will be protected, and the SHPO will be notified within 24 hours of discovery. If, in consultation with SHPO, it is determined that the resource is significant, and the resource cannot be avoided by construction, then an archaeological data recovery plan will be prepared in consultation with SHPO, and will be implemented.

If unmarked human burials are discovered during construction, work will stop in the immediate vicinity, the remains will be protected, and the local law enforcement agency and SHPO will be notified as soon as possible. The location of the unmarked human burial will be documented, and the provisions of the Native American Graves Protection and Repatriation Act will be implemented, including consultation with potentially affected Native American tribes.

6.5 AIR QUALITY

Environmental design measures will include suitable fencing to restrict traffic within the project area to reduce soil disturbance. Soil watering will be utilized to minimize airborne particulate matter created during construction activities. Bare ground will be covered with hay or straw to lessen wind erosion between facility construction and landscaping. After construction is complete, all areas with vehicle traffic will be paved to reduce the potential for fugitive dust, and landscaping would be designed to prevent or lessen wind fugitive dust creation. Additionally, all construction equipment and vehicles will be kept in good operating condition to minimize exhaust emissions.

6.6 WATER RESOURCES

Standard construction procedures will be implemented to minimize the potential for erosion and sedimentation during construction. All work will cease during heavy rains, and will not resume until conditions are suitable for the movement of equipment and material. Because the impact area is greater than 1 acre, as part of the NPDES permit process, a SWPPP and NOI will be submitted to TCEQ prior to the start of construction. Sedimentation and pollution of surface waters by fuels, oils and lubricants will be minimized through the implementation of the SWPPP. The expansion and construction of FFR would alter natural drainage patterns; however, proper storm water retention/detention measures will be incorporated into the firing range design. CBP will investigate the possibility of utilizing reclaimed water from the El Paso Water Utilities for dust suppression at the firing range in order to reduce water demand from local groundwater supplies.

6.7 NOISE

During the construction phase, short-term noise impacts are anticipated. All Occupational Safety and Health Administration requirements will be followed. To lessen noise impacts to the local residents, construction will only occur during daylight hours whenever possible. All motor vehicles will be maintained to reduce the potential for vehicle-related noise. A 289 acre buffer area around the 15-acre firing range will be maintained to minimize noise disturbance outside the project area.

6.8 SOLID AND HAZARDOUS WASTES

BMPs for small arms firing ranges can prevent the spread of contamination, specifically lead contamination, and lessen environmental and occupational health problems from the operation and maintenance of the range, and are listed in Table 6-1. Several of these BMPs, such as dust suppression mechanisms, stormwater channels, and detention basins, are currently in use at the firing range. Use of additional BMPs could significantly prevent any environmental degradation to humans and wildlife in future land reuse and potentially limit legal liability.

Table 6-1. BMPs for Small Arms Firing Ranges

BMPs	Risk Reduction of Measure
<i>Operational Management Practices</i>	
Stagger Firing Lane Usage	Increases berm stability, lessens lead migration
Vegetative Cover	Reduces lead migration
Improve Berm Maintenance and Repair	Increases berm stability, lessens lead migration
Lead Removal and Recycling	Reduces lead migration
Soil pH Modifiers	Reduces lead mobility
Soil Modifiers	Reduces vertical mobility of lead
Alternative Shot Material Usage	Reduces environmental risk
Lead Fixation Technologies	Binds lead, potential reduces lead mobility
<i>Engineering Management Practices</i>	
Whole Backstop and Bullet Pocket Management	Reduces lead in berm, reduces corrosion rate of round, bind lead to soil components
Backstop Contouring	Erosion control, reduces lead migration
Stormwater Channels and Buffer Strips	Stormwater control, reduces lead migration
Detention Basins	Stormwater control, reduces lead migration
Clay Layers and Barriers	May reduce vertical mobility

Source: ITRC 2003 and U. S. EPA 2005

In addition to these BMPs, care will be taken to avoid impacting the project area with hazardous substances (*i.e.*, anti-freeze, fuels, oils, lubricants) used during construction. Although catch pans will be used when refueling, accidental spills could occur as a result of maintenance procedures to construction equipment. A spill could result in potentially adverse impacts to on-site soils and waters, as well as threaten the health of wildlife and vegetation. However, the amount of fuel, lubricants, and oil is limited, and equipment necessary to quickly contain any spills will be present when refueling.

In accordance with TCEQ regulations, any activity which disturbs the final cover of closed municipal solid waste landfill must have prior written approval from the executive director of TCEQ at least 45 days prior to the start of construction activities. Activities, such as the installation of

fence posts, light poles and foundations, would classify as construction activities which could potentially impact landfill final cover and require authorization.

In addition, all other strategies for the management of hazardous substances and materials during construction activity will be followed as outlined under General Construction Activities in Section 6.1.

6.9 TRANSPORTATION

During the design phase of the firing range construction, measures to assure that impacts to traffic flow are minimized will be considered. Additional vehicular entrances, speed zones, traffic signals or signs will be reviewed as measures to ease the impacts of traffic. The CBP will coordinate with TxDOT and El Paso County to address any traffic or safety impacts associated with the Proposed Action Alternative.

6.10 SOCIOECONOMICS

When possible, materials and other project expenditures will predominantly be obtained through merchants in the local community. All construction activities, regardless of the area, will be limited to daylight hours, whenever possible. Safety buffer zones will be designated around all construction sites to ensure public health and safety.

SECTION 7.0
PUBLIC INVOLVEMENT

7.0 PUBLIC INVOLVEMENT

7.1 AGENCY COORDINATION

This chapter discusses consultation and coordination that has occurred during preparation of this document. Included are contacts that were made during the development of the action alternatives and writing of the EA. Formal and informal coordination were conducted with the following agencies:

- U.S. Fish and Wildlife Service (USFWS)
- Texas Parks and Wildlife Department (TPWD)
- Texas Commission on Environmental Quality (TCEQ)
- U.S. Environmental Protection Agency (USEPA)
- Natural Resource Conservation Service (NRCS)
- Texas State Historical Preservation Officer (SHPO)
- Native American Tribes
- County of El Paso
- University of Texas System
- Texas Department of Transportation (TxDOT)

7.2 PUBLIC REVIEW

The draft EA was made available to the public for review for 30 days. The draft EA was also made available at the Burges Regional Branch and the Ysleta Branch Libraries in El Paso, Texas, and electronically published at <http://ecso.swf.usace.army.mil/>. The Notice of Availability (NOA) was published in the *El Paso Times* and is included in Appendix D.

Exhibit 7-1 is a copy of the NOA that will be published for the final EA and final FONSI. All correspondence sent or received during the preparation of this EA is also included in Appendix D.

Exhibit 7-1.

NOTICE OF AVAILABILITY

**ENVIRONMENTAL ASSESSMENT AND FONSI
FOR THE EXPANSION AND OPERATION OF A U.S. BORDER PATROL FIRING RANGE
NEAR FABENS, EL PASO COUNTY, TEXAS**

The public is hereby notified of the availability of the final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) prepared by U.S. Customs and Border Protection and U.S. Border Patrol (USBP) for the construction of a new USBP firing range near Fabens, Texas. The location for the Proposed Action is a 304-acre site near Fabens, El Paso County, Texas.

The final EA and FONSI will be available for review at the Burges Regional Branch and the Ysleta Branch Libraries in El Paso, Texas. It is also available for review and downloading from the U.S. Army Corps of Engineers, Fort Worth District's Internet website at the following url address: <http://ecso.swf.usace.army.mil/>.

For additional information, please contact, U.S. Army Corps of Engineers, Fort Worth District, ATTN: CESWF-PM-ECSO/McGregor, 819 Taylor Street, Room 3B10, Fort Worth, Texas 76102.

SECTION 8.0
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SECTION 9.0
ACRONYMS/ABBREVIATIONS

9.0 ACRONYMS/ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
AO	Area of Operation
ASTM	American Society for Testing Materials
bgs	Below ground surface
BMP	Best Management Practices
BPC	Bluepoint association, rolling
BUC	Bluepoint gravelly association
CAA	Clean Air Act
CBP	U.S. Customs and Border Protection
CDRI	Chihuahuan Desert Research Institute
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
dB	Decibel
dBA	Decibel (A-weighted)
DHS	Department of Homeland Security
DNL	Day-Night average sound Level
EO	Executive Order
EA	Environmental Assessment
ESA	Endangered Species Act
FFR	Fabens Firing Range
FM	Farm to Market Road
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GSRC	Gulf South Research Corporation
I-10	Interstate 10
I-25	Interstate 25
IA	Illegal Alien
INA	Immigration and Nationality Act
INS	Immigration and Naturalization Service
ITRC	Interstate Technology and Regulatory Council
JTF-6	Joint Task Force Six
mg/m ³	Milligrams per cubic meter
µg/m ³	Microgram per cubic meter
MRI	Midwest Research Institute
MSW	Municipal Solid Waste Disposal
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
PAH	Polycyclic Aromatic Hydrocarbons

PCPI	Per Capita Personal Income
PEIS	Programmatic Environmental Impact Statement
PL	Public Law
PM-10	Particulate Matter <10 micrometers
PM-2.5	Particulate Matter< 2.5 micrometers
ppm	Parts per million
PVB	Permanent Vehicle Barriers
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SPCCP	Spill Prevention, Control and Countermeasures Plan
SWPPP	Stormwater Pollution Prevention Plan
TCEQ	Texas Commission on Environmental Quality
TPI	Total Personal Income
TPWD	Texas Parks and Wildlife Departments
TSHA	Texas State Historical Association
TVB	Temporary Vehicle Barriers
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USBP	U.S. Border Patrol
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WUS	Waters of the U.S.

SECTION 10.0
LIST OF PREPARERS

10.0 LIST OF PREPARERS

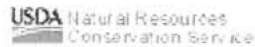
The following people were primarily responsible for preparing this EA.

NAME	AGENCY/ORGANIZATION	DISCIPLINE/EXPERTISE	EXPERIENCE	ROLE IN PREPARING EA
Mark Gable	Customs and Border Protection	NEPA/DHS PM and Regional Environmental Officer	25 years Environmental Management and Review	EA review
Nancy Parrish	USACE, Fort Worth District, AERC	Archaeology	9 years professional archaeologist/cultural resource manager	Cultural Resources Manager and cultural resources review
Charles McGregor	USACE, Fort Worth District, AERC	NEPA	10 years Environmental Management and Review	ECSO Project Manager, EA review and coordination
Steve Oivanki	Gulf South Research Corporation	Geology/Environmental Assessment	20 years of environmental assessment and remediation	EA review
Eric Webb, Ph.D.	Gulf South Research Corporation	Ecology/Wetlands	15 years experience in natural resources and NEPA studies	EA technical review
Greg Lacy	Gulf South Research Corporation	Biology/Wildlife	10 years NEPA and natural resources	Project Manager
Denise Rousseau Ford	Gulf South Research Corporation	Environmental Engineering	Over 15 years of environmental experience	EA preparation and Field Studies
John Lindemuth	Gulf South Research Corporation	Archaeology	15 years professional archaeologist/cultural resources	EA preparation (cultural resources)
Steve Kolian	Gulf South Research Corporation	Water and Air Quality	10 years experience in environmental science	EA preparation (Air and Water Quality) and EA review
Chris Cothron	Gulf South Research Corporation	GIS/graphics	4 years GIS/graphics experience	GIS/graphics
Shanna McCarty	Gulf South Research Corporation	Forestry	3 years experience in natural resource studies	EA preparation (Socioeconomics)

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APPENDIX A
TEXAS NOXIOUS PLANTS LIST





Texas state-listed noxious weeds

Click on an accepted name below to view its Plant Profile with more information, and web links if available. Noxious weeds that are synonyms are indented beneath the current PLANTS accepted name.

 View report by common name

Texas Administrative Code. 2005. Quarantines and Noxious Plants, Chapter 19. State of Texas.

Symbol	Scientific Name	Noxious Common Name	State Noxious Status	U.S. Nativity*
ALMA12	Alhagi maurorum Medik.			
ALCA	Alhagi camelorum Fisch.	camelthorn	Noxious plant	
ALPH	Alternanthera philoxeroides (Mart.) Griseb.	alligatorweed	Noxious plant	I
ARDO4	Arundo donax L.	giant reed	Noxious plant	I
CASE13	Calystegia sepium (L.) R. Br.	hedge bindweed	Noxious plant	NI
CAHA13	Cardiospermum halicacabum L.	balloonvine	Noxious plant	N
COAR4	Convolvulus arvensis L.	field bindweed	Noxious plant	I
CUJA	Cuscuta japonica Choisy	Japanese dodder	Noxious plant	I
EIAZ2	Eichhornia azurea (Sw.) Kunth	rooted waterhyacinth	Noxious plant	I
EICR	Eichhornia crassipes (Mart.) Solms	waterhyacinth	Noxious plant	I
HYVE3	Hydrilla verticillata (L. f.) Royle	hydrilla	Noxious plant	I
IPAQ	Ipomoea aquatica Forssk.	water spinach	Noxious plant	I
LAMA15	Lagarosiphon major (Ridley) Moss	lagarosiphon	Noxious plant	XU
LYSA2	Lythrum salicaria L.	purple loosestrife	Noxious plant	I
MEQU	Melaleuca quinquenervia (Cav.) Blake	paperbark	Noxious plant	I
MYSP2	Myriophyllum spicatum L.	Eurasian watermilfoil	Noxious plant	I
NATR3	Nassella trichotoma (Nees) Hack.	serrated tussock	Noxious plant	I
ORRA	Orobanche ramosa L.	branched broomrape	Noxious plant	I
PARE3	Panicum repens L.	torpedograss	Noxious plant	I?
PIST2	Pistia stratiotes L.	waterlettuce	Noxious plant	N
PUMOL	Pueraria montana (Lour.) Merr. var. lobata (Willd.) Maesen & S. Almeida			
PULO	Pueraria lobata (Willd.) Ohwi	kudzu	Noxious plant	
ROCO6	Rottboellia cochinchinensis (Lour.) W.D. Clayton	itchgrass	Noxious plant	I
SALV12	Salvinia Séguier	salvinia	Noxious plant	
SCTE	Schinus terebinthifolius Raddi	Brazilian peppertree	Noxious plant	I
SOVI2	Solanum viarum Dunal	tropical soda apple	Noxious plant	I
TAMAR2	Tamarix L.	saltcedar	Noxious plant	
TRSE6	Triadica sebifera (L.) Small			
SASE5	Sapium sebiferum (L.) Roxb.	Chinese tallow tree	Noxious plant	

*N =Native, N? =probably native, NI=some populations native, some introduced, I =Introduced, I? =probably introduced, XU = Not in US

APPENDIX B
ENDANGERED AND PROTECTED SPECIES LISTS



U.S. Fish & Wildlife Service

Endangered Species List

[Back to Start](#)

List of species by county for Texas:

Counties Selected: El Paso

Select one or more counties from the following list to view a county list:

- Anderson
- Andrews
- Angelina
- Aransas
- Archer

[View County List](#)

El Paso County

<u>Common Name</u>	<u>Scientific Name</u>	<u>Species Group</u>	<u>Listing Status</u>	<u>Species Image</u>	<u>Species Distribution Map</u>	<u>Critical Habitat</u>	<u>More Info</u>
least tern	<i>Sterna antillarum</i>	Birds	E				[i]
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Birds	T				[i]
northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	Birds	E				[i]
Sneed pincushion cactus	<i>Coryphantha sneedii</i> var. <i>sneedii</i>	Flowering Plants	E				[i]
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Birds	E				[i]
yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Birds	C				[i]

EL PASO COUNTY

AMPHIBIANS

Federal Status

State Status

Northern leopard frog *Rana pipiens*

streams, ponds, lakes, wet prairies, and other bodies of water; will range into grassy, herbaceous areas some distance from water; eggs laid March-May and tadpoles transform late June-August; may have disappeared from El Paso County due to habitat alteration

BIRDS

Federal Status

State Status

American Peregrine Falcon *Falco peregrinus anatum*

DL

E

resident in west Texas

Arctic Peregrine Falcon *Falco peregrinus tundrius*

DL

T

currently potential migrant through most of state, winters along gulf coast

Baird's Sparrow *Ammodramus bairdii*

shortgrass prairie with scattered low bushes and matted vegetation; mostly migratory in western half of State, though winters in Mexico and just across Rio Grande into Texas from Brewster through Hudspeth counties

Ferruginous Hawk *Buteo regalis*

open country, primarily prairies, plains, and badlands; nests in tall trees along streams or on steep slopes, cliff ledges, river-cut banks, hillsides, power line towers; year-round resident in northwestern high plains, wintering elsewhere throughout western 2/3 of Texas

Interior Least Tern *Sterna antillarum athalassos*

LE

E

subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

Mexican Spotted Owl *Strix occidentalis lucida*

LT

T

remote, shaded canyons of coniferous mountain woodlands (pine and fir); nocturnal predator of mostly small rodents and insects; day roosts in densely vegetated trees, rocky areas, or caves

Montezuma Quail *Cyrtonyx montezumae*

open pine-oak or juniper-oak with ground cover of bunch grass on flats and slopes of semi-desert mountains and hills; travels in pairs or small groups; eats succulents, acorns, nuts, and weed seeds, as well as various invertebrates

Peregrine Falcon *Falco peregrinus*

DL

E T

subspecies (F p tundrius) potential migrant through most of state, winters along coast; subspecies (F p anatum) resident, nests in west Texas

Prairie Falcon *Falco mexicanus*

open, mountainous areas, plains and prairie; nests on cliffs

EL PASO COUNTY

BIRDS

	Federal Status	State Status
Snowy Plover <i>Charadrius alexandrinus</i> formerly an uncommon breeder in the Panhandle; potential migrant		
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> thickets of willow, cottonwood, mesquite, and other species along desert streams	LE	E
Western Burrowing Owl <i>Athene cunicularia hypugaea</i> open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows		
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i> uncommon breeder in the Panhandle; potential migrant; winter along coast		
Western Yellow-billed Cuckoo <i>Coccyzus americanus occidentalis</i> status applies only to western population beyond the Pecos River Drainage; breeds in riparian habitat and associated drainages; springs, developed wells, and earthen ponds supporting mesic vegetation; deciduous woodlands with cottonwoods and willows; dense understory foliage is important for nest site selection; nests in willow, mesquite, cottonwood, and hackberry; forages in similar riparian woodlands; breeding season mid-May-late Sept	C;NL	

FISHES

	Federal Status	State Status
Bluntnose shiner <i>Notropis simus</i> extirpated; Rio Grande; main river channel, often below obstructions over substrate of sand, gravel, and silt; damming and irrigation practices presumed major factors contributing to decline		T
Rio Grande silvery minnow <i>Hybognathus amarus</i> extirpated; historically Rio Grande and Pecos River systems and canals; pools and backwaters of medium to large streams with low or moderate gradient in mud, sand, or gravel bottom; ingests mud and bottom ooze for algae and other organic matter; probably spawns on silt substrates of quiet coves	LE	E

INSECTS

	Federal Status	State Status
A Royal moth <i>Sphingicampa raspa</i> woodland - hardwood; with oaks, junipers, legumes and other woody trees and shrubs; good density of legume caterpillar foodplants must be present; Prairie acacia (<i>Acacia augustissima</i>) is the documented caterpillar foodplant, but there could be a few other woody legumes used		
A tiger beetle <i>Cicindela hornii</i> grassland/herbaceous; burrowing in or using soil; dry areas on hillside or mesas where soil is rocky or loamy and covered with grasses, invertivore; diurnal, hibernates/aestivates, active mostly for several days after heavy rains. the life cycle probably takes two years so larvae would always be present in burrows in the soil		
Barbara Ann's tiger beetle <i>Cicindela politula barbarannae</i>		

EL PASO COUNTY

INSECTS

Federal Status State Status

limestone outcrops in arid treeless environments or in openings within less arid pine-juniper-oak communities; open limestone substrate itself is almost certainly an essential feature; roads and trails

Poling's hairstreak *Fixsenia polingi*

oak woodland with *Quercus grisea* as substantial component, probably also uses *Q. emoryi*; larvae feed on new growth of *Q. grisea*, adults utilize nectar from a variety of flowers including milkweed and catslaw acacia; adults fly mid May - Jun, again mid Aug - early Sept

MAMMALS

Federal Status State Status

Big free-tailed bat *Nyctinomops macrotis*

habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

Black bear *Ursus americanus* T/SA;NL T

bottomland hardwoods and large tracts of inaccessible forested areas; due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as federal and state listed Threatened

Black-footed ferret *Mustela nigripes* LE E

extirpated; inhabited prairie dog towns in the general area

Black-tailed prairie dog *Cynomys ludovicianus*

dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups

Cave myotis bat *Myotis velifer*

colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore

Desert pocket gopher *Geomys arenarius*

cottonwood-willow association along the Rio Grande in El Paso and Hudspeth counties; live underground, but build large and conspicuous mounds; life history not well documented, but presumed to eat mostly vegetation, be active year round, and bear more than one litter per year

Fringed bat *Myotis thysanodes*

habitat variable, ranging from mountainous pine, oak, and pinyon-juniper to desert-scrub, but prefers grasslands at intermediate elevations; highly migratory species that arrives in Trans-Pecos by May to form nursery colonies; single offspring born June-July; roosts colonially in caves, mine tunnels, rock crevices, and old buildings

Gray wolf *Canis lupus* LE E

EL PASO COUNTY

MAMMALS

Federal Status

State Status

extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands

Long-legged bat *Myotis volans*

in Texas, Trans-Pecos region; high, open woods and mountainous terrain; nursery colonies (which may contain several hundred individuals) form in summer in buildings, crevices, and hollow trees; apparently do not use caves as day roosts, but may use such sites at night; single offspring born June-July

Pale Townsend's big-eared bat *Corynorhinus townsendii pallescens*

roosts in caves, abandoned mine tunnels, and occasionally old buildings; hibernates in groups during winter; in summer months, males and females separate into solitary roosts and maternity colonies, respectively; single offspring born May-June; opportunistic insectivore

Pecos River muskrat *Ondatra zibethicus ripensis*

creeks, rivers, lakes, drainage ditches, and canals; prefer shallow, fresh water with clumps of marshy vegetation, such as cattails, bulrushes, and sedges; live in dome-shaped lodges constructed of vegetation; diet is mainly vegetation; breed year round

Western red bat *Lasiurus blossevillii*

roosts in tree foliage in riparian areas, also inhabits xeric thorn scrub and pine-oak forests; likely winter migrant to Mexico; multiple pups born mid-May - late Jun

Western small-footed bat *Myotis ciliolabrum*

mountainous regions of the Trans-Pecos, usually in wooded areas, also found in grassland and desert scrub habitats; roosts beneath slabs of rock, behind loose tree bark, and in buildings; maternity colonies often small and located in abandoned houses, barns, and other similar structures; apparently occurs in Texas only during spring and summer months; insectivorous

Yuma myotis bat *Myotis yumanensis*

desert regions; most commonly found in lowland habitats near open water, where forages; roosts in caves, abandoned mine tunnels, and buildings; season of partus is May to early July; usually only one young born to each female

MOLLUSKS

Federal Status

State Status

Franklin Mountain talus snail *Sonorella metcalfi*

terrestrial; bare rock, talus, scree; inhabits igneous talus most commonly of rhyolitic origin

Franklin Mountain wood snail *Ashmunella pasonis*

terrestrial; bare rock, talus, scree; talus slopes, usually of limestone, but also of rhyolite, sandstone, and siltstone, in arid mountain ranges

REPTILES

Federal Status

State Status

Big Bend slider *Trachemys gaigeae*

EL PASO COUNTY

REPTILES

Federal Status State Status

almost exclusively aquatic, sliders (*Trachemys* spp.) prefer quiet bodies of fresh water with muddy bottoms and abundant aquatic vegetation, which is their main food source; will bask on logs, rocks or banks of water bodies; breeding March-July

Chihuahuan Desert lyre snake *Trimorphodon vilkinsonii* T

mostly crevice-dwelling in predominantly limestone-surfaced desert northwest of the Rio Grande from Big Bend to the Franklin Mountains, especially in areas with jumbled boulders and rock faults/fissures; secretive; egg-bearing; eats mostly lizards

Mountain short-horned lizard *Phrynosoma hernandesi* T

diurnal, usually in open, shrubby, or openly wooded areas with sparse vegetation at ground level; soil may vary from rocky to sandy; burrows into soil or occupies rodent burrow when inactive; eats ants, spiders, snails, sowbugs, and other invertebrates; inactive during cold weather; breeds March-September

New Mexico garter snake *Thamnophis sirtalis dorsalis*

nearly any type of wet or moist habitat; irrigation ditches, and riparian-corridor farmlands, less often in running water; home range about 2 acres; active year round in warm weather, both diurnal and nocturnal, more nocturnal during hot weather; bears litter July-August

Texas horned lizard *Phrynosoma cornutum* T

open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September

PLANTS

Federal Status State Status

Comal snakewood *Colubrina stricta*

only known Texas population lies at the base of an igneous rock outcrop in the Chihuahuan Desert east of El Paso; flowering late spring or early summer

Desert night-blooming cereus *Peniocereus greggii* var *greggii*

shrublands in lower elevation desert flats and washes; flowering concentrated during a few nights in late May to late June

Hueco rock-daisy *Perityle huecoensis*

dry limestone rock outcrops only known location is in the Hueco Mountains

Resin-leaf brickellbush *Brickellia baccharidea*

mixed desert shrublands on gravelly soils derived from limestone and perhaps also from igneous rocks, on bajada slopes and in arroyos; flowering summer-fall

Sand prickly-pear *Opuntia arenaria*

deep, loose sands in sparsely vegetated dune or sandhill areas; flowering May-June

Sneed's pincushion cactus *Escobaria sneedii* var *sneedii* LE E

EL PASO COUNTY

PLANTS

Federal Status

State Status

dry limestone outcrops on rocky slopes in desert mountains of the Chihuahuan Desert; flowering April-September (peak season in April?)

Texas false saltgrass *Allolepis texana*

sandy to silty soils of valley bottoms and river floodplains; flowering (June-) July-October

Wheeler's spurge *Chamaesyce geyeri* var *wheeleriana*

sparsely vegetated loose sand in reddish sand dunes or coppice mounds; flowering and fruiting August-September?

APPENDIX C
AIR QUALITY CALCULATIONS

CALCULATION SHEET-COMBUSTABLE EMISSIONS

Assumptions for Combustable Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Diesel Road Compactors	0	100	10	60	0
Diesel Dump Truck	0	300	10	60	0
Diesel Excavator	1	300	10	60	180000
Diesel Trenchers	0	175	10	60	0
Diesel Bore/Drill Rigs	0	300	10	60	0
Diesel Cement & Mortar Mixers	2	300	10	60	360000
Diesel Cranes	1	175	10	60	105000
Diesel Graders	1	300	10	60	180000
Diesel Tractors/Loaders/Backhoes	1	100	10	60	60000
Diesel Bull Dozers	1	300	10	60	180000
Diesel Front End Loaders	0	300	10	60	0
Diesel Fork Lifts	0	100	10	60	0
Diesel Generator Set	0	40	10	60	0

Emission Factors							
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr	CO2 g/hp-hr
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740	536.200
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740	536.300
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740	535.800
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730	529.700
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730	529.700
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730	530.200
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740	536.300
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950	691.100
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740	536.300
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740	536.200
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950	690.800
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

CALCULATION SHEET-COMBUSTABLE EMISSIONS

Emission factors (EF) were generated from the NONROAD2005 model for the 2006 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2005 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2005 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Excavator	0.067	0.258	0.912	0.063	0.061	0.147	106.380
Diesel Trenchers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Bore/Drill Rigs	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Cement & Mortar Mixers	0.242	0.920	2.888	0.190	0.186	0.290	210.143
Diesel Cranes	0.051	0.150	0.662	0.039	0.038	0.084	61.349
Diesel Graders	0.069	0.270	0.938	0.065	0.063	0.147	106.380
Diesel Tractors/Loaders/Backhoes	0.122	0.543	0.477	0.091	0.088	0.063	45.696
Diesel Bull Dozers	0.071	0.274	0.944	0.065	0.063	0.147	106.380
Diesel Front End Loaders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Aerial Lifts	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Generator Set	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Emissions	0.624	2.415	6.822	0.515	0.501	0.877	636.329

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-SUMMARY OF EMISSIONS

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)						
Emission source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂
Combustible Emissions	0.62	2.42	6.82	0.51	0.50	0.88
Construction Site-fugitive PM-10	NA	NA	NA	3.41	0.68	NA
Construction Workers Commuter & Trucking	0.12	1.15	0.23	0.00	0.00	NA
OBP New Trainees commuting to Firing Range	0.27	2.60	0.20	0.00	0.00	NA
Total emissions	1.02	6.17	7.25	3.93	1.19	0.88
De minimis threshold	NA	100.00	NA	100.00	NA	NA

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS

Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	60	10	10	0.05	0.06	0.12
CO	12.4	15.7	60	60	10	10	0.49	0.62	1.11
NOx	0.95	1.22	60	60	10	10	0.04	0.05	0.09
PM-10	0.0052	0.0065	60	60	10	10	0.00	0.00	0.00
PM 2.5	0.0049	0.006	60	60	10	10	0.00	0.00	0.00

Heavy Duty Trucks Delivery Trucks to Construction Sight									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55	60	60	2	2	0.00	0.00	0.01
CO	1.32	3.21	60	60	2	2	0.01	0.03	0.04
NOx	4.97	12.6	60	60	2	2	0.04	0.10	0.14
PM-10	0.12	0.33	60	60	2	2	0.00	0.00	0.00
PM 2.5	0.13	0.36	60	60	2	2	0.00	0.00	0.00

OBP Commute to Firing Range									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	4	350	350	0.13	0.15	0.27
CO	12.4	15.7	60	4	350	350	1.15	1.45	2.60
NOx	0.95	1.22	60	4	350	350	0.09	0.11	0.20
PM-10	0.0052	0.0065	60	4	350	350	0.00	0.00	0.00
PM 2.5	0.0049	0.006	60	4	350	350	0.00	0.00	0.00

POV Source: USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway vehicle emission factor model.

Fleet Characterization: 20 POVs commuting to work were 50% are pick up trucks and 50% passenger cars

CALCULATION SHEET-FUGITIVE DUST

Fugitive Dust Emissions at New Construction Site.					
Construction Site	Emission Factor tons/acre/month (1)	Total Area- Construction Site	Months/yr	Total PM-10 Emissions tns/yr	Total PM-2.5 (2)
	0.11	2.58	12	3.41	0.68

1. Mid-Atlantic Regional Air Management Association (MARAMA). Fugitive Dust-Construction Calculation Sheet can be found online at: http://www.marama.org/visibility/Calculation_Sheets/. MRI= Midwest Research Institute, Inventory of Agricultural Tiling, Unpaved Roads, Airstrips and construction Sites., prepared for the U.S. EPA, PB 238-929, Contract 68-02-1437 (November 1977)

2. 20% of the total PM-10 emissions are PM-2.5 (EPA 2006).

Costruction Site Area	Demension (ft)			
Proposed Prioject	Length	Width	Units	Total Acres
New Firing Range	300	300	1	2.07
Modular Firing Range	150	150	1	0.52
Total				2.58

Conversion Factors	Miles to feet	Acres to sq ft	Sq ft to acres	Sq ft in 0.5 acres
	5280	0.000022957	43560	21780

147.5804865

APPENDIX D
CORRESPONDENCE

Agency Coordination Distribution List

Mr. Tim Bone
Texas Parks and Wildlife Department
109 South Cockrell
Alpine, TX 79830

Mr. Bill Seawell
U.S. Fish and Wildlife Service
Austin, Texas Ecological Services Field Office
Compass Bank Bldg, 10711 Burnet Rd, Ste 200
Austin, TX 78758

Mr. Archie Clouse
Texas Commission on Environmental Quality
Region 6
401 E. Franklin Ave., Ste. 560
El Paso, TX 79901-1206

Mr. James Buice
University of Texas System
Real Estate Division
P.O. Box 553
Midland, Texas 79702



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300
March 1, 2007

Planning, Environmental and Regulatory Division

SUBJECT: Environmental Assessment for Fabens Office of Border Patrol Firing Range

Texas Parks and Wildlife
West Texas Wildlife District
ATTN: Mr. Tim Bone
109 South Cockrell
Alpine, TX 79830

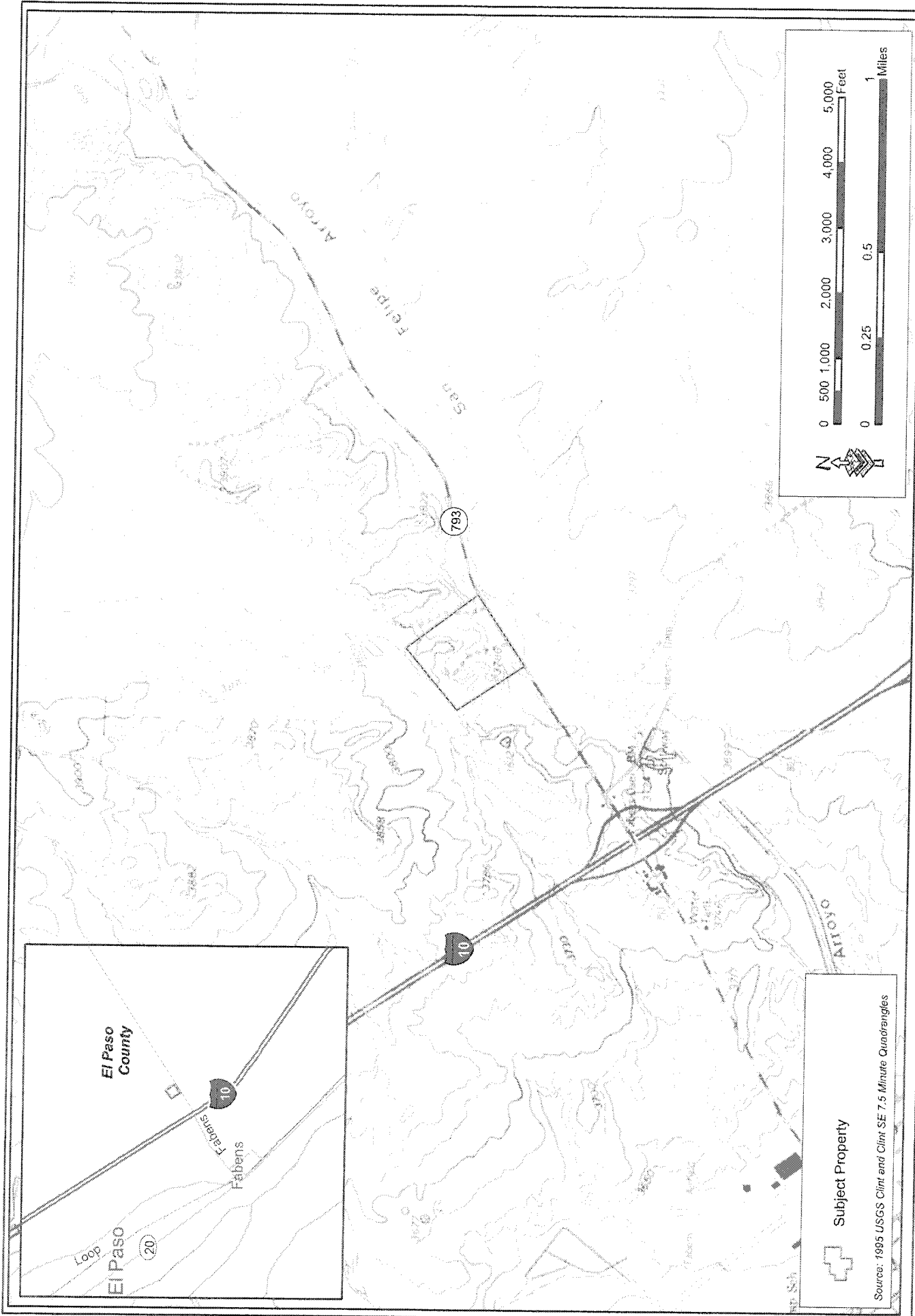
Dear Mr. Bone,


The U.S. Army Corps of Engineers (USACE), Fort Worth District is acting on behalf of the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. The CBP currently leases 15 acres from the University of Texas System and proposes to lease an additional 37 acres for the development, operation and maintenance as an OBP firing range. The proposed construction will consist of the completion of an additional 20 firing lanes on an adjacent 100-yard range and would include the necessary area for administrative and support facilities, as well as a fenced/lighted buffer area. The EA will address the impacts of operating and maintaining the 52 acres of property as a firing range in support of the overall operations of the OBP Fabens Station. The location of the site being considered in the Fabens, Texas area is shown on the attached map.

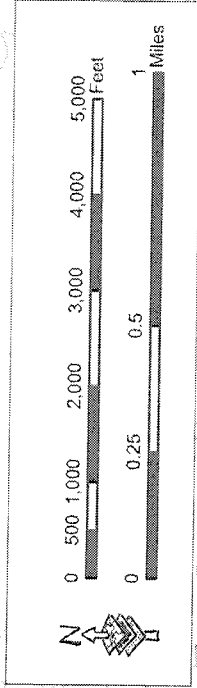
We are currently in the process of gathering the most current information available regarding Federal and state listed species potentially occurring within the Fabens project area in El Paso County. The USACE respectfully requests that your agency provide a list of the protected species of this county along with a description of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species, etc.), and a species location map for those species that you believe may be affected by the proposed OBP activities in El Paso County, Texas.

We intend to provide your agency with a copy of the Draft EA once the document is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Charles McGregor at U.S. Army Corps of Engineers, 819 Taylor Street, Room 3A14, Fort Worth, TX 76140-0300, by FAX at (817) 886-6499, or by e-mail to charles.mcgregor@swf02.usace.army.mil.

William Fickel, Jr.
Chief, Planning, Environmental and
and Regulatory Division



 Subject Property
 Source: 1995 USGS Clint and Clint SE 7.5 Minute Quadrangles



Subject Property Location



Date: February 2007



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

March 1, 2007

REPLY TO
ATTENTION OF:

Planning, Environmental and Regulatory Division

SUBJECT: Environmental Assessment for Fabens Office of Border Patrol Firing Range

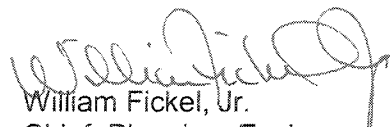
U.S. Fish and Wildlife Service
Texas Ecological Services Field Office
ATTN: Mr. Bill Seawell
Compass Bank Bldg, 10711 Burnet Rd, Ste 200
Austin, TX 78758

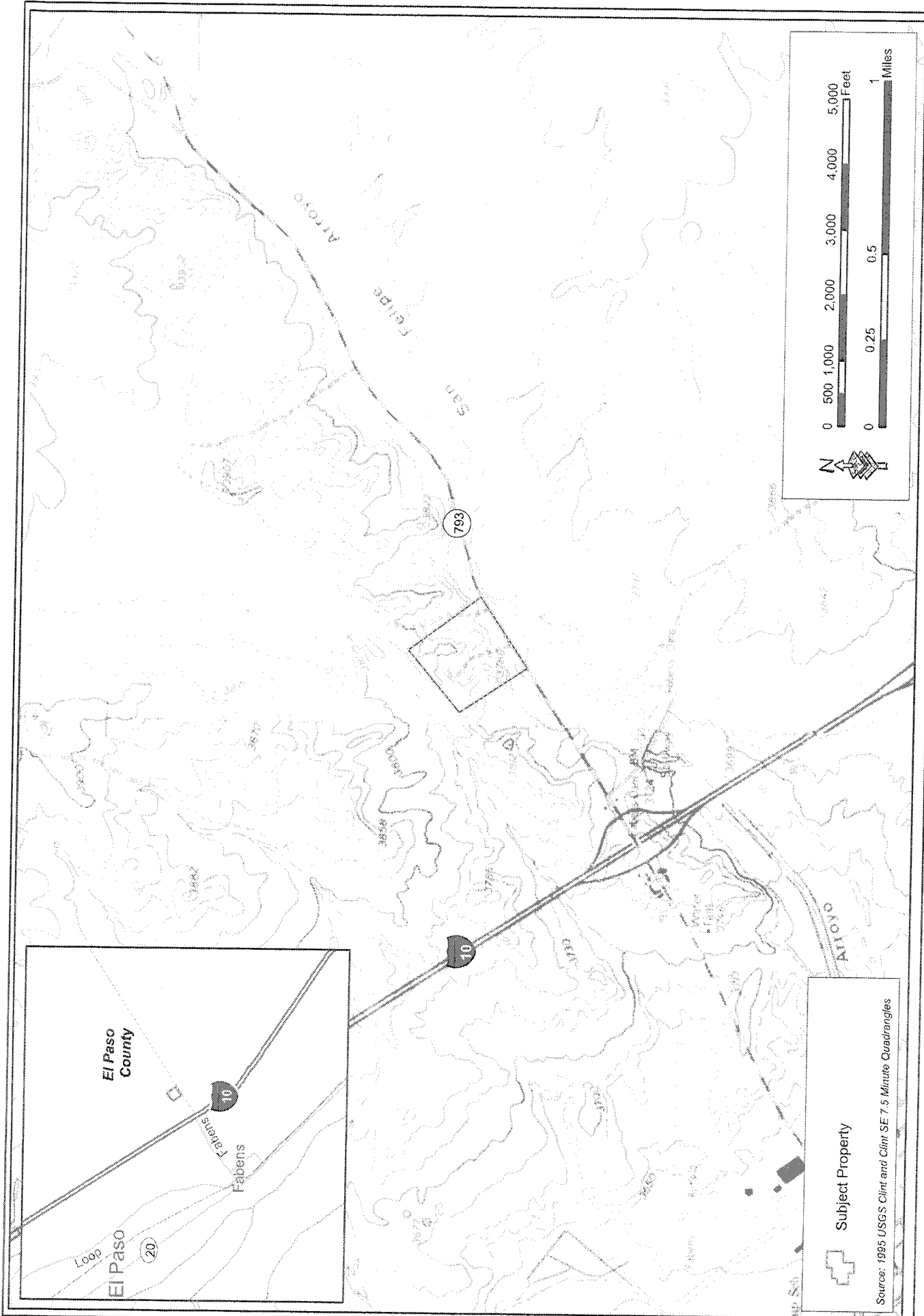
Dear Mr. Seawell:

The U.S. Army Corps of Engineers (USACE), Fort Worth District is acting on behalf of the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. The CBP currently leases 15 acres from the University of Texas System and proposes to lease an additional 37 acres for the development, operation and maintenance as an OBP firing range. The proposed construction will consist of the completion of an additional 20 firing lanes on an adjacent 100-yard range and would include the necessary area for administrative and support facilities, as well as a fenced/lighted buffer area. The EA will address the impacts of operating and maintaining the 52 acres of property as a firing range in support of the overall operations of the OBP Fabens Station. The location of the proposed site is shown on the attached map.

We are currently in the process of gathering the most current information available regarding Federal and state listed species potentially occurring within the Fabens project area in El Paso County. The USACE respectfully requests that your agency provide a list of the protected species of this county along with a description of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species, etc.), and a species location map for those species that you believe may be affected by the proposed OBP activities in El Paso County, Texas.

We intend to provide your agency with a copy of the Draft EA once the document is completed. The Draft EA will document our determination of effect on protected species. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. For additional information, please contact Mr. Charles McGregor at U.S. Army Corps of Engineers, 819 Taylor Street, Room 3A14, Fort Worth, TX 76140-0300, by FAX at (817) 886-6499, or by e-mail to charles.mcgregor@swf02.usace.army.mil.


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division



Subject Property

Source: 1985 USGS Clint and Cim SE 7.5 Minute Quadrangles

Subject Property Location





DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

March 1, 2007

Planning, Environmental and Regulatory Division

SUBJECT: Environmental Assessment for Fabens Office of Border Patrol Firing Range

Texas Commission on Environmental Quality
ATTN: Mr. Archie Clouse
401 E. Franklin Ave., Ste. 560
El Paso, TX 79901-1206

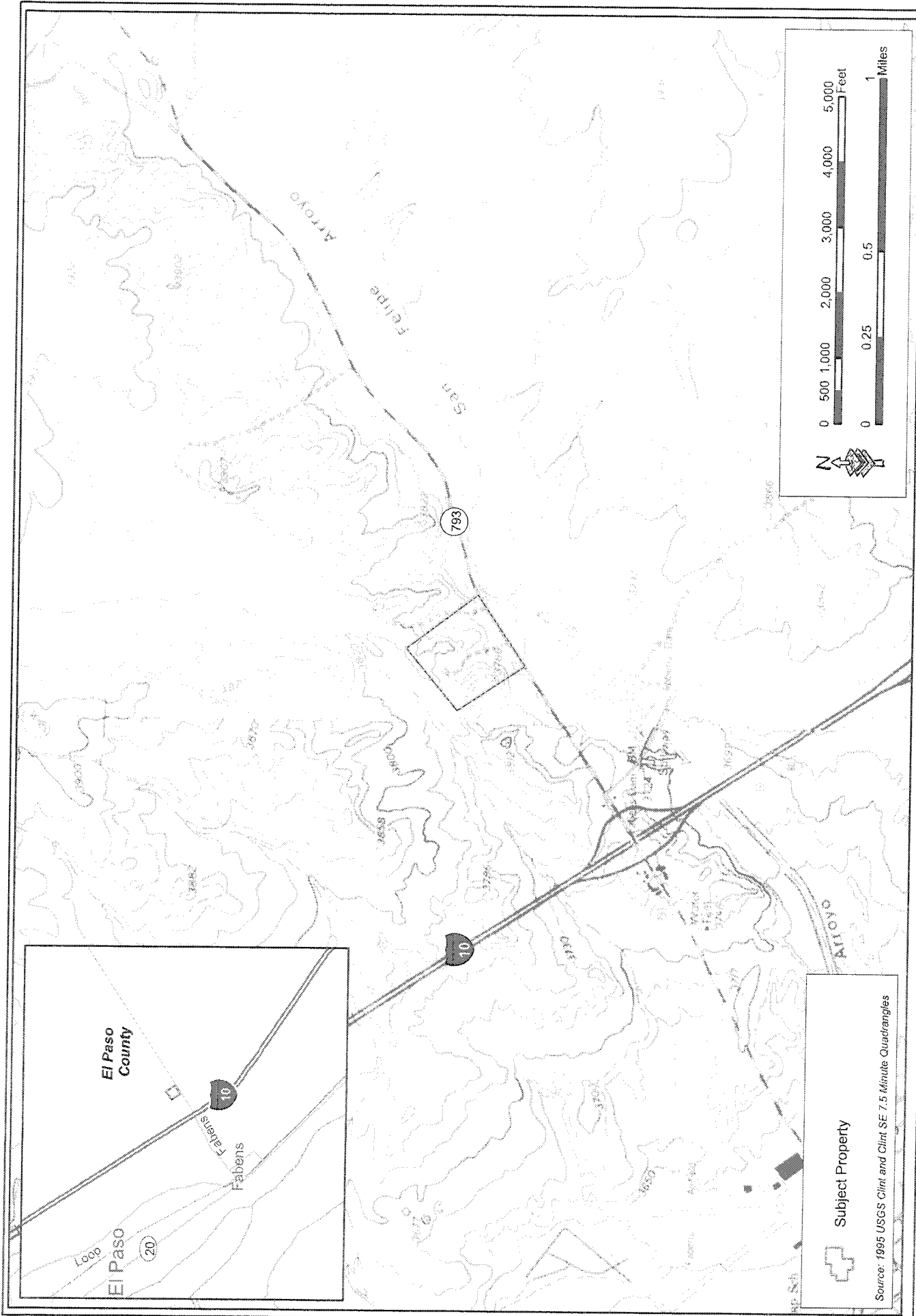
Dear Mr. Clouse:

The U.S. Army Corps of Engineers (USACE), Fort Worth District is acting on behalf of the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. The CBP currently leases 15 acres from the University of Texas System and proposes to lease an additional 37 acres for the development, operation and maintenance as an OBP firing range. The proposed construction will consist of the completion of an additional 20 firing lanes on an adjacent 100-yard range and would include the necessary area for administrative and support facilities, as well as a fenced/lighted buffer area. The EA will address the impacts of operating and maintaining the 52 acres of property as a firing range in support of the overall operations of the OBP Fabens Station. The location of the proposed site is shown on the attached map.

We are currently in the process of gathering the most current information available regarding Federal and state environmental regulations regarding air, water, and solid and hazardous waste within the Fabens project area in El Paso County. Within the proposed 52 acres there is TCEQ no trespassing signage which states there is a closed landfill on the property (Permit No. 136, 1976) any information about this closed landfill would be greatly appreciated. The USACE respectfully requests that your agency provide documentation or clarification of any concerns about the proposed OBP activities in El Paso County, Texas.

We intend to provide your agency with a copy of the Draft EA once the document is completed. The Draft EA will document our determination of any potential environmental concerns indicated by your agency. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Charles McGregor at U.S. Army Corps of Engineers, 819 Taylor Street, Room 3A14, Fort Worth, TX 76140-0300, by FAX at (817) 886-6499, or by e-mail to charles.mcgregor@swf02.usace.army.mil.

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division



Subject Property Location



Date: February 2007



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

March 1, 2007

Planning, Environmental and Regulatory Division

SUBJECT: Environmental Assessment for Fabens Office of Border Patrol Firing Range

University of Texas System
Real Estate Division
ATTN: Mr. James Buice
P.O. Box 553
Midland, Texas 79702

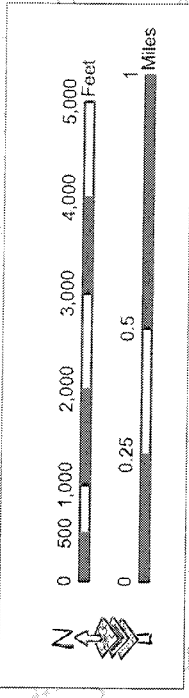
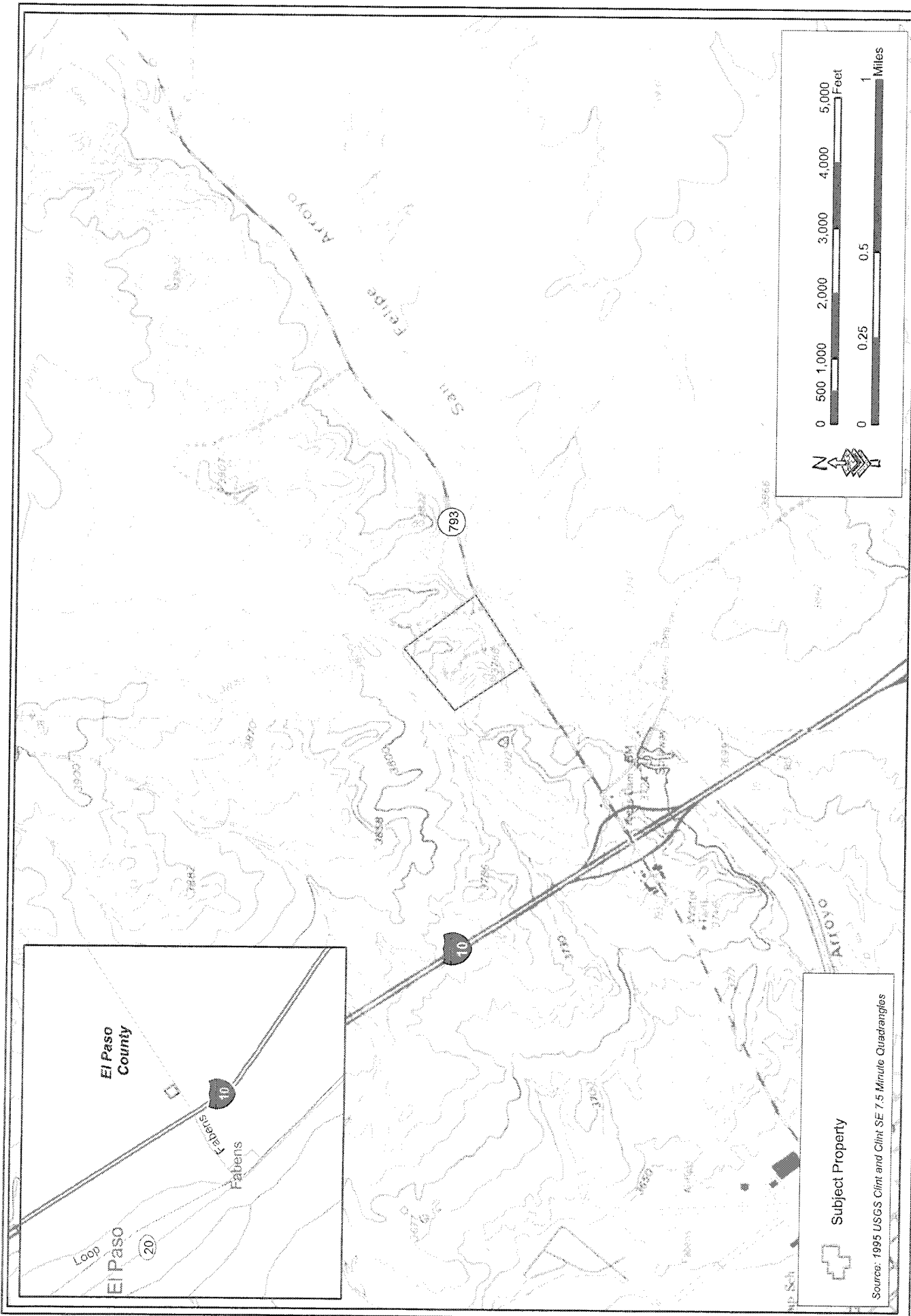
Dear Mr. Buice:

The U.S. Army Corps of Engineers (USACE), Fort Worth District is acting on behalf of the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. The CBP currently leases 15 acres from the University of Texas System and proposes to lease an additional 37 acres for the development, operation and maintenance as an OBP firing range. The proposed construction will consist of the completion of an additional 20 firing lanes on an adjacent 100-yard range and would include the necessary area for administrative and support facilities, as well as a fenced/lighted buffer area. The EA will address the impacts of operating and maintaining the 52 acres of property as a firing range in support of the overall operations of the OBP Fabens Station. The location of the proposed site is shown on the attached map.

We are currently in the process of gathering the most current information available regarding Federal and state regulations regarding the Fabens project area in El Paso County. As the University of Texas System is the current owner of both the existing leased land and the proposed additional 37 acres of land for lease and use any information you can provide about any past or present environmental or ecological concerns would be greatly appreciated. Specifically, any information regarding the closed landfill on the 52 acres property (Permit No. 136, 1976) would be of assistance. The USACE respectfully requests that your agency provide documentation or clarification of any concerns about the proposed OBP activities in El Paso County, Texas.

We intend to provide your agency with a copy of the Draft EA once the document is completed. The Draft EA will document our determination of any potential environmental concerns indicated by your agency. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Charles McGregor at U.S. Army Corps of Engineers, 819 Taylor Street, Room 3A14, Fort Worth, TX 76140-0300, by FAX at (817) 886-6499, or by e-mail to charles.mcgregor@swf02.usace.army.mil.

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division



Subject Property

Source: 1995 USGS Clm and Clnt SE 7.5 Minute Quadrangles

Subject Property Location



From: Allison_Arnold@fws.gov [mailto:Allison_Arnold@fws.gov]
Sent: Wednesday, March 07, 2007 10:11 AM
To: McGregor, Charles SWF
Subject: Proposed firing range at Fabens, Texas

Consultation Number: 21450-2007-TA-0112

Mr. McGregor,

This letter is in response to your March 1, 2007, letter to the U.S. Fish and Wildlife Service (Service) requesting a list of threatened and endangered species for El Paso County, Texas. We are providing this information to assist you in assessing and avoiding potential adverse effects to federally-listed threatened and endangered species, their habitats, and wetlands as a result of the proposed firing range in Fabens, El Paso, County, Texas (proposed project). Our response is pursuant to the Endangered Species Act of 1973, as amended (Act).

Federally listed species

A list of all federally-listed species for El Paso County is enclosed. Also, you may access an electronic list of federally-listed or proposed species by county of occurrence in Texas at <http://ifw2es.fws.gov/EndangeredSpecies/lists/>. A searchable database with information related to the life history and ecology of each of these species can be found at. The proposed project site is not located within designated critical habitat of any federally-listed threatened or endangered species.

Generally, the Service believes that the first step in determining effects to listed species includes a habitat assessment conducted within the project area by a qualified biologist. Often, absence of listed species habitat may be determined and the project can then proceed without additional responsibilities pursuant to the Act. If assessments indicate that suitable habitat may be affected either directly or indirectly, we recommend that presence/absence surveys be conducted and that you consult with us further to minimize and/or avoid potential adverse effects to listed species. If any listed species or their habitats are present, the project can often be modified to avoid all adverse effects. Please send any completed surveys or habitat assessments to our office for assistance in evaluating potential effects along with your determination of whether or not the proposed project may affect the cactus or any other federally-listed species that may occur in your proposed project area.

If effects cannot be avoided, we recommend that the Corps, or their designated non-federal representative, pursue formal consultation through section 7 of the Act. Section 7 requires that all federal agencies consult with the Service to ensure that the actions authorized, funded, or carried out by such agencies do not jeopardize the continued existence of any threatened or endangered species or adversely modify or destroy critical habitat of such species. It is the primary responsibility of the Corps, as the federal action

agency, to determine whether any action it authorizes, funds, or carries out may affect a federally-listed or proposed species.

Candidate Species

We also recommend that you review the potential for your project to affect candidate species. Candidate species are those that are being considered for possible addition to the federal threatened and endangered species list. For many species, there is sufficient information on biological vulnerability and threat(s) to support issuance of a proposal to list, but higher priority listings currently preclude issuance of a proposed rule for those species. Candidate species currently have no legal protection. If you find your project may potentially affect these species, the Service would like to provide technical assistance to help avoid or minimize potential adverse effects. Addressing candidate species at an early stage could better provide for overall ecosystem health in the local area and may avert potential future listing.

State-listed species

The State of Texas also protects certain species of plants and animals. Contact the Texas Parks and Wildlife Department (Endangered Resources Branch), Fountain Park Plaza Building, Suite 100, 3000 South IH-35, Austin, Texas 78704 (512-912-7011) for information concerning fish, wildlife, and plants of State concern.

Wetlands and Native Habitats

If your project will involve filling, dredging, or trenching of a wetland or riparian area it may require a Section 404 permit from the U.S. Army Corps of Engineers. For permitting requirements under Section 404 of the Clean Water Act, please contact the Fort Worth District, Permits Section, CESWF-EV-0, P.O. Box 17300, Fort Worth, Texas, 76102-0300, 817-978-2681.

Wetlands and riparian zones provide valuable fish and wildlife habitat as well as contribute to flood control, water quality enhancement, and groundwater recharge. Wetland and riparian vegetation provide food and cover for wildlife, stabilize banks, and decrease soil erosion. These areas are inherently dynamic and very sensitive to changes caused by such activities as overgrazing, logging, major construction, or earth disturbance. Construction activities near such areas should be carefully designed to minimize effects. If vegetation clearing is needed in riparian areas, these areas should be revegetated with native wetland and riparian vegetation to prevent erosion or loss of habitat. We recommend minimizing the area of soil scarification and initiating incremental reestablishment of herbaceous vegetation at the proposed work sites. Denuded and/or disturbed areas should be revegetated with a mixture of native legumes and grasses. Species commonly used for soil stabilization are listed in the Texas Department of Agriculture's (TDA) Native Tree and Plant Directory, available from TDA at P.O. Box 12847, Austin, Texas, 78711.

We also urge you to take all precautions to ensure sediment loading does not occur to receiving streams in the project area. To prevent and/or minimize soil erosion and

compaction associated with construction activities, avoid any unnecessary clearing of vegetation, and follow established rights-of-way whenever possible. All machinery and petroleum products should be stored outside the floodplain and/or wetland area during construction to prevent possible contamination of water and soils. No permanent structures should be placed in the 100-year floodplain.

Thank you for your concern for endangered and threatened species and other natural resources, and we appreciate the opportunity to comment on the proposed project. If we can be of further assistance or if you have any questions about these comments, please contact me at 512-490-0057, extension 242. Please refer to the Service Consultation number listed above in any future correspondence regarding this project.

Allison Arnold
U.S. Fish & Wildlife Service
Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, Texas 78758-4460
Phone: (512) 490-0057 x 242
Fax: (512) 490-0974

Classification: **UNCLASSIFIED**

Caveats: NONE



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

March 1, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at Fabens,
Texas

Mr. F. Lawrence Oaks
State Historic Preservation Officer
ATTN: Ms. Debra Beene
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701


Dear Mr. Oaks,

The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), is preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. CBP currently leases 15 acres from the University of Texas System that are used as a 20 lane firing range. CBP proposes to lease an additional 37 acres for development, operation and maintenance of an additional 20 firing lanes, administrative and support facilities, and a fenced/lighted buffer area surrounding the firing lanes. The location of the proposed site is shown on the attached map.

We are currently in the process of gathering the most current information available and in accordance with Section 106 of the National Historic Preservation Act, a cultural survey is being conducted for the proposed project area. We will provide you a copy of the cultural resources report for your comment and concurrence once it is prepared.

If you have any questions concerning the proposed project, please contact Ms. Nancy Parrish at (817)886-1725, or by e-mail to nancy.a.parrish@swf02.usace.army.mil.

Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

March 1, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at
Fabens, Texas

Honorable Billy Evans Horse, Chairman
Kiowa Tribe of Oklahoma
Hwy 9 West
Carnegie, OK 73015

Dear Chairman Evans Horse,

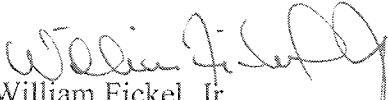
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CBP currently leases 15 acres from the University of Texas System that are used as a 20 lane firing range. CBP proposes to lease an additional 37 acres for development, operation and maintenance of an additional 20 firing lanes, administrative and support facilities, and a fenced/lighted buffer area surrounding the firing lanes. The location of the proposed site is shown on the attached map.

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If you have any questions concerning the proposed project, please do not hesitate to contact Ms. Nancy Parrish at (817)886-1725, or by e-mail to nancy.a.parrish@swf02.usace.army.mil.

Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy furnished without enclosure:
Mr. F. Lawrence Oaks
State Historic Preservation Officer
ATTN: Ms. Debra Beene
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

March 1, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at
Fabens, Texas

The Honorable Arturo Senclair, Governor
Ysleta del Sur Pueblo
119 S Old Pueblo Road
PO Box 17579, Ysleta Station
El Paso, TX 79917

Dear Governor Senclair,


The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), is preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. At this time, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the OBP wishes to initiate its consultation with appropriate, federally-recognized tribes who historically used this region and/or continue to use this area.

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If you have any questions concerning the proposed project, please do not hesitate to contact Ms. Nancy Parrish at (817)886-1725, or by e-mail to nancy.a.parrish@swf02.usace.army.mil.

Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy furnished without enclosure:
Mr. F. Lawrence Oaks
State Historic Preservation Officer
ATTN: Ms. Debra Beene
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

March 1, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at
Fabens, Texas

Honorable Mark Chino, President
Mescalero Apache Tribe
Attn: Ms. Holly Houghten, Cultural Affairs Office
124 Chiricahua Plaza
Mescalero, New Mexico 88340

Dear President Chino,

The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), is preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. At this time, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the OBP wishes to initiate its consultation with appropriate, federally-recognized tribes who historically used this region and/or continue to use this area.

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If you have any questions concerning the proposed project, please do not hesitate to contact Ms. Nancy Parrish at (817)886-1725, or by e-mail to nancy.a.parrish@swf02.usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "William Fickel, Jr.", with a stylized flourish at the end.

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy furnished without enclosure:
Mr. F. Lawrence Oaks
State Historic Preservation Officer
ATTN: Ms. Debra Beene
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

March 1, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at
Fabens, Texas

Honorable Ronnie Lupe, Chairman
White Mountain Apache Tribal Council
Attn: Mark T. Altaha, THPO
202 East Walnut Street
Whiteriver, AZ 85941

Dear Chairman Lupe,

The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), is preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. At this time, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the OBP wishes to initiate its consultation with appropriate, federally-recognized tribes who historically used this region and/or continue to use this area.

CBP currently leases 15 acres from the University of Texas System that are used as a 20 lane firing range. CBP proposes to lease an additional 37 acres for development, operation and maintenance of an additional 20 firing lanes, administrative and support facilities, and a fenced/lighted buffer area surrounding the firing lanes. The location of the proposed site is shown on the attached map.

We are currently in the process of gathering the most current information available and in accordance with Section 106 of the National Historic Preservation Act, a cultural survey is being conducted for the proposed project area. We respectfully request any information you can give us know sacred sites or other traditional cultural properties within the proposed project area. We will provide you a copy of the cultural resources report for your comment and concurrence once it is prepared.

If you have any questions concerning the proposed project, please do not hesitate to contact Ms. Nancy Parrish at (817)886-1725, or by e-mail to nancy.a.parrish@swf02.usace.army.mil.

Sincerely,



William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

Copy furnished without enclosure:
Mr. F. Lawrence Oaks
State Historic Preservation Officer
ATTN: Ms. Debra Beene
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

March 1, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at
Fabens, Texas

Honorable Jeff Houser, Chairman
Ft. Sill Apache Tribe
Attn: Mr. Leland Darrow
2 Miles north of Apache on HWY 281
Apache, Oklahoma 73006

Dear Chairman Houser,

The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), is preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. At this time, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the OBP wishes to initiate its consultation with appropriate, federally-recognized tribes who historically used this region and/or continue to use this area.

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William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

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State Historic Preservation Officer
ATTN: Ms. Debra Beene
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

March 1, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at
Fabens, Texas

Honorable Wallace Coffey, Chairman
Comanche Nation
Attn: Ms. Ruth Toahty
584 NW Bingo Rd
HC 32 Box 908
Lawton, Oklahoma 73502

Dear Chairman Coffey,


The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), is preparing an Environmental Assessment (EA) for the lease and operation of a firing range in Fabens, Texas. At this time, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, the OBP wishes to initiate its consultation with appropriate, federally-recognized tribes who historically used this region and/or continue to use this area.

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Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

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Mr. F. Lawrence Oaks
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Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

April 10, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at Fabens,
Texas

Mr. F. Lawrence Oaks
State Historic Preservation Officer
ATTN: Ms. Debra Beene
Texas Historical Commission
1511 Colorado St.
Austin, Texas 78701


Dear Mr. Oaks,

In a letter dated March 1, 2007, The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), notified you of its intent to prepare an Environmental Assessment (EA) for the lease of 52 acres for the operation of a firing range in Fabens, Texas. The firing range will be located within a larger 304-acre tract that will provide a buffer zone around the 52-acre firing range facility. All 304 acres are currently owned by the University Lands Office.

In February 2007, a cultural resources survey was conducted upon the entire 304 acres under antiquities permit No. 4447. Three prehistoric archaeological sites (41EP5921, 41EP5922, and 41EP5923) were located during the survey. These archaeological sites are not within the 52 acres proposed for the firing range, but rather in the greater buffer area, and therefore will not be impacted by the proposed firing range facility construction. In accordance with 36 CFR Part 800.4(c), the Fort Worth District has determined that none of the three sites meets the criteria for listing on the National Register of Historic Places.

Enclosed is a copy of the cultural resources survey report for your review and comment. Given that sites 41EP5921, 41EP5922, and 41EP5923 are not eligible for the National Register, and in accordance with CFR 36 Part 800.4(d)(1), we ask for your concurrence that No Historic Properties will be Affected by the proposed firing range. If you have any questions concerning the proposed project, please contact Ms. Nancy Parrish at (817)886-1725, or by e-mail to nancy.a.parrish@swf02.usace.army.mil.

Sincerely,


for William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

April 10, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at Fabens,
Texas

Honorable Mark Chino, President
Mescalero Apache Tribe
Attn: Ms. Holly Houghten, Cultural Affairs Office
124 Chiricahua Plaza
Mescalero, New Mexico 88340

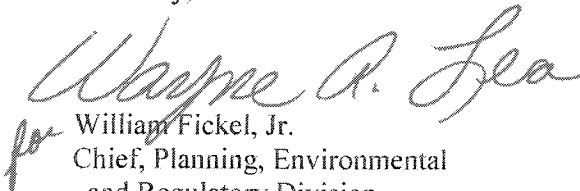
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In February 2007, a cultural resources survey was conducted upon the entire 304 acres. Three prehistoric archaeological sites (41EP5921, 41EP5922, and 41EP5923) were located during the survey. These archaeological sites are not within the 52 acres proposed for the firing range, but rather in the greater buffer area, and therefore will not be impacted by the proposed firing range facility construction. In accordance with 36 CFR Part 800.4(c), the Fort Worth District has determined that none of the three sites meets the criteria for listing on the National Register of Historic Places. We have asked the Texas State Historic Preservation Office for concurrence with this determination.

Enclosed is a copy of the cultural resources survey report. We invite your comments on this report. If you have any questions concerning the proposed project, or comments on the report, please contact Ms. Nancy Parrish at (817)886-1725, or by e-mail at nancy.a.parrish@swf02.usace.army.mil.

Sincerely,


for William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

April 10, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at Fabens,
Texas

The Honorable Arturo Senclair, Governor
Ysleta del Sur Pueblo
119 S Old Pueblo Road
PO Box 17579, Ysleta Station
El Paso, TX 79917


Dear Governor Senclair,

In a letter dated March 1, 2007, The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), notified you of its intent to prepare an Environmental Assessment (EA) for the lease of 52 acres for the operation of a firing range in Fabens, Texas. The firing range will be located within a larger 304-acre tract that will provide a buffer zone around the 52-acre firing range facility.

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Sincerely,


for William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

April 10, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at Fabens,
Texas

Honorable Wallace Coffey, Chairman
Comanche Nation
Attn: Ms. Ruth Toahty
584 NW Bingo Rd
HC 32 Box 908
Lawton, Oklahoma 73502

Dear Chairman Coffey,

In a letter dated March 1, 2007, The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), notified you of its intent to prepare an Environmental Assessment (EA) for the lease of 52 acres for the operation of a firing range in Fabens, Texas. The firing range will be located within a larger 304-acre tract that will provide a buffer zone around the 52-acre firing range facility.

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Chief, Planning, Environmental
and Regulatory Division

Enclosure



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FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

April 10, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at Fabens,
Texas

Honorable Jeff Houser, Chairman
Ft. Sill Apache Tribe
Attn: Mr. Leland Darrow
2 Miles north of Apache on HWY 281
Apache, Oklahoma 73006


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Sincerely,


for William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



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FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

April 10, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at Fabens,
Texas

Honorable Ronnie Lupe, Chairman
White Mountain Apache Tribal Council
Attn: Mark T. Altaha, THPO
202 East Walnut Street
Whiteriver, AZ 85941

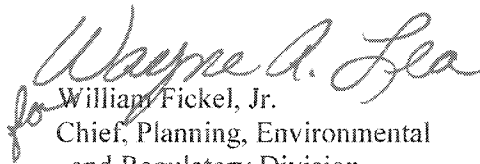
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Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

April 10, 2007

Planning, Environmental and
Regulatory Division

Subject: Environmental Assessment for the Office of Border Patrol Firing Range at Fabens,
Texas

Honorable Billy Evans Horse, Chairman
Kiowa Tribe of Oklahoma
Hwy 9 West
Carnegie, OK 73015


Dear Chairman Evans Horse,

In a letter dated March 1, 2007, The U.S. Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), Office of Border Patrol (OBP), notified you of its intent to prepare an Environmental Assessment (EA) for the lease of 52 acres for the operation of a firing range in Fabens, Texas. The firing range will be located within a larger 304-acre tract that will provide a buffer zone around the 52-acre firing range facility.

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Sincerely,

for 
William Pickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure

From: Mobley, Brandon W SWF [Brandon.W.Mobley@usace.army.mil]
Sent: Wednesday, December 19, 2007 10:02 AM
To: Buice, James R.
Cc: Greg Lacy; McGregor, Charles SWF
Subject: RE: University Lands comments re: December 2007 revised CBP Fabend Firing Range EA
[Thanks for the feedback Jim.](#)

[Brandon](#)

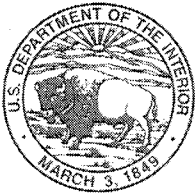
From: Buice, James R. [mailto:jbuice@utsystem.edu]
Sent: Wednesday, December 19, 2007 9:28 AM
To: Mobley, Brandon W SWF
Subject: University Lands comments re: December 2007 revised CBP Fabend Firing Range EA

Brandon,

University Lands concurs with the conclusions and recommendations presented in the December 2007 Revised Draft EA, Firing Range Near Fabens, El Paso County.

Jim Buice
University Lands
704 W. Dengar
Midland, TX 79705

Office 432-684-4404
Cell 432-634-6869



United States Department of the Interior

FISH AND WILDLIFE SERVICE

10711 Burnet Road, Suite 200

Austin, Texas 78758

512 490-0057

FAX 490-0974

DEC 26 2007



William Fickel, Jr.
Chief Planning, Environmental, and Planning Division
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, TX 76102-0300

Consultation #: 21450-2008-TA-0011

Dear Mr. Fickel:

Thank you for your December 3, 2007, letter, revised draft environmental assessment and finding of no significant impact sent to the U. S. Fish and Wildlife Service's (Service) Austin Ecological Services Field Office on behalf of the Department of Homeland Security, Customs and Border Protection (CBP), U.S. Border Patrol (USBP) for the proposed lease and operation of a firing range in Fabens, El Paso County, Texas.

The U.S. Fish and Wildlife Service (Service) has reviewed the *December 2007 Revised Draft Environmental Assessment for the Expansion and Operation of a U.S. Border Patrol Firing Range Near Fabens, El Paso County, Texas*. The revised draft environmental assessment explains that CBP currently leases 15 acres from the University of Texas system and is proposing to expand the current facility to include an indoor 2-lane firing range, an additional 20 firing lanes on an adjacent 100-yard range, and administrative and support facilities. The CBP is also proposing to lease 289 acres surrounding the firing range to be used as a buffer area, in which there would be no construction.

The CBP reviewed the proposed project for potential impacts to four federally-endangered, one threatened, and one candidate species listed in El Paso County. The species are the interior least tern (*Sterna antillarum athalassos*), Mexican spotted owl (*Strix occidentalis lucida*), northern aplomado falcon (*Falco femoralis septentrionalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), Sneed pincushion cactus (*Coryphantha sneedii*), and the candidate species, the yellow-billed cuckoo (*Coccyzus americanus*). The revised draft environmental assessment states that "no federally listed species were observed and none is expected to occur in the project area, since the area does not support habitat suitable for any [federally] listed species."

The CBP determined that the proposed action would have no effect on federally-listed species. Therefore, the Service believes your agency has complied with section 7(a)(2) of the Endangered Species Act by making a determination. No further action is required from this office. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may need to be reconsidered, and a site visit may be appropriate.

TAKE PRIDE
IN AMERICA 

RECEIVED
18 Dec 2007

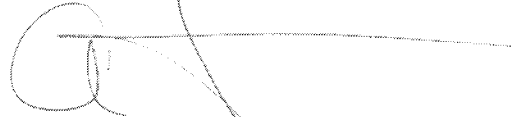
BW/FOIA CBP 005223

Mr. William Fickel, Jr.

2

Please note that for your convenience, we have established a single point of contact for border security projects in Texas. Please continue to send all future correspondence to Mr. Allan Strand, Field Supervisor, Corpus Christi Ecological Services Field Office, U.S. Fish and Wildlife Service, c/o TAMU-CC, 6300 Ocean Drive, Campus Box 338, Corpus Christi, TX 78412. However, you may receive letters signed by myself or Allan Strand, depending upon the geographic location of the project. If you have any further questions please contact Dr. Larisa Ford at (361) 994-9005 or by email at Larisa_Ford@fws.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Adam Zerrenner', with a long horizontal line extending to the right.

Adam Zerrenner
Field Supervisor

cc: Allan Strand, Corpus Christi ESFO, Corpus Christi, Texas



PUBLISHERS AFFIDAVIT

STATE OF TEXAS
COUNTY OF EL PASO

Before me, a Notary in and for El Paso County, State of Texas, on this day personally, appeared TERRIE CARTER who states upon oath that she is the ASSISTANT CLASSIFIED MANAGER of the EL PASO TIMES, a daily newspaper published in the City and County El Paso, State of Texas, which is a newspaper of general circulation and which has been continuously and regularly published for the period of not less than one year in the said County of El Paso, and that she was upon the dates herein mentioned in the EL PASO TIMES.

That the LEGAL NOTICE copy was published in the EL PASO TIMES for the date(s) of such follows 1 DAY(s) to wit DECEMBER 03, 2007.

Signed _____
Terrie A. Carter

Subscribed and sworn to before me,
This 3RD day of DECEMBER, 2007.

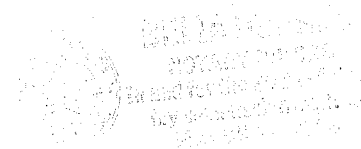
Bela D. [Signature]

NOTICE OF
AVAILABILITY

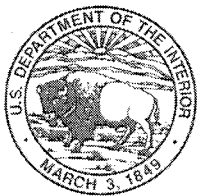
DRAFT ENVIRONMENTAL ASSESSMENT FOR THE EXPANSION AND OPERATION OF A U.S. BORDER PATROL FIRING RANGE NEAR FABENS, EL PASO COUNTY, TEXAS

The public is hereby notified of the availability of the draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) prepared by U.S. Customs and Border Protection and U.S. Border Patrol (USBP) for the construction of a new USBP firing range near Fabens, Texas. The location for the Proposed Action is a 304-acre site near Fabens, El Paso County, Texas. The draft EA and FONSI will be available for review at the Burges Regional Branch and the Ysleta Branch Libraries in El Paso, Texas. It is also available for review and downloading from the U.S. Army Corps of Engineers, Fort Worth District's internet website at the following url address: <http://ecso.swf.usace.army.mil/>.

Comments to the draft EA will be accepted from December 3, 2007 to January 3, 2008. Please send comments to U.S. Army Corps of Engineers, Fort Worth District, ATTN: CESWF-PM-ECSO/McGregor, P.O. Box 17300, Fort Worth, Texas 76102.



WY
PER-E



United States Department of the Interior

FISH AND WILDLIFE SERVICE

10711 Burnet Road, Suite 200

Austin, Texas 78758

512 490-0057

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DEC 26 2007

William Fickel, Jr.
Chief Planning, Environmental, and Planning Division
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, TX 76102-0300

Consultation #: 21450-2008-TA-0011

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The U.S. Fish and Wildlife Service (Service) has reviewed the *December 2007 Revised Draft Environmental Assessment for the Expansion and Operation of a U.S. Border Patrol Firing Range Near Fabens, El Paso County, Texas*. The revised draft environmental assessment explains that CBP currently leases 15 acres from the University of Texas system and is proposing to expand the current facility to include an indoor 2-lane firing range, an additional 20 firing lanes on an adjacent 100-yard range, and administrative and support facilities. The CBP is also proposing to lease 289 acres surrounding the firing range to be used as a buffer area, in which there would be no construction.

The CBP reviewed the proposed project for potential impacts to four federally-endangered, one threatened, and one candidate species listed in El Paso County. The species are the interior least tern (*Sterna antillarum athalassos*), Mexican spotted owl (*Strix occidentalis lucida*), northern aplomado falcon (*Falco femoralis septentrionalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), Sneed pincushion cactus (*Coryphantha sneedii*), and the candidate species, the yellow-billed cuckoo (*Coccyzus americanus*). The revised draft environmental assessment states that "no federally listed species were observed and none is expected to occur in the project area, since the area does not support habitat suitable for any [federally] listed species."

The CBP determined that the proposed action would have no effect on federally-listed species. Therefore, the Service believes your agency has complied with section 7(a)(2) of the Endangered Species Act by making a determination. No further action is required from this office. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may need to be reconsidered, and a site visit may be appropriate.



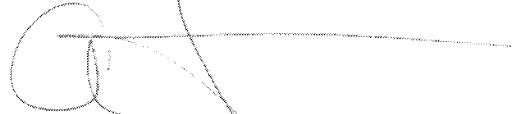
BW/FOIA CBP 005227

Mr. William Fickel, Jr.

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Please note that for your convenience, we have established a single point of contact for border security projects in Texas. Please continue to send all future correspondence to Mr. Allan Strand, Field Supervisor, Corpus Christi Ecological Services Field Office, U.S. Fish and Wildlife Service, c/o TAMU-CC, 6300 Ocean Drive, Campus Box 338, Corpus Christi, TX 78412. However, you may receive letters signed by myself or Allan Strand, depending upon the geographic location of the project. If you have any further questions please contact Dr. Larisa Ford at (361) 994-9005 or by email at Larisa_Ford@fws.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Adam Zerrenner', with a long horizontal line extending to the right.

Adam Zerrenner
Field Supervisor

cc: Allan Strand, Corpus Christi ESFO, Corpus Christi, Texas



White Mountain Apache Tribe Heritage Program
PO Box 507 Fort Apache, AZ 85926

To: Ms. Nancy Parrish
Date: January 4, 2008
Proposed Project: Environmental Assessment for the Expansion of a U.S. Border Patrol Firing Range in Fabens, Texas.

.....

The White Mountain Apache Historic Preservation Office (THPO) appreciates receiving information on the proposed project, dated December 3, 07. In regards to this, please attend to the checked items below;

▶ **There is no need to send additional information unless project planning or implementation results in the discovery of sites and/or items having known or suspected Apache Cultural affiliation.**

The proposed project is located within an area of probable cultural or historical importance to the White Mountain Apache Tribe (WMAT). As part of the effort to identify historical properties that maybe affected by the project we recommend an ethnohistorical study and interviews with Apache Elders. The Cultural Resource Director, *Mr. Ramon Riley* would be the contact person at (928) 338-4625 should this become necessary.

The proposed project is located within or adjacent to a known historic property of cultural concern and/or historical importance to the White Mountain Apache Tribe and will most likely result in adverse affect to said property. Considering this, please refrain from further steps in project planning and/or implementation.

▶ **Please refer to the attached additional notes in regards to the proposed project:**

We have received and reviewed the information regarding the above proposed project - Environmental Assessment for the Expansion of a U.S. Border Patrol Firing Range in Fabens, Texas and we have determined the project *will not have an effect on the tribe's Traditional Cultural Heritage Resources and/or historic properties. The project may proceed with the understanding that all ground disturbance be monitored and in the event subsurface materials or human remains are encountered all construction activities are to be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation.*

We look forward to continued collaborations in the protection and preservation of places of cultural and historical significance.

Sincerely,

**Mark T. Altaha
White Mountain Apache Tribe
Historic Preservation Officer
1 (928) 338-3033 Fax: 338-6055**

Final

**ENVIRONMENTAL ASSESSMENT
FOR THE PROPOSED INSTALLATION, OPERATION, AND
MAINTENANCE OF PRIMARY PEDESTRIAN FENCE
NEAR LUKEVILLE, ARIZONA
U.S. BORDER PATROL
TUCSON SECTOR**



**U.S. Department of Homeland Security
U.S. Customs & Border Protection
U.S. Border Patrol
Washington, D.C.**

February 2008

**FINDING OF NO SIGNIFICANT IMPACT
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PROJECT HISTORY: The United States (U.S.) Border Patrol (USBP) is a law enforcement entity of U.S. Customs and Border Protection (CBP), a component of U.S. Department of Homeland Security (DHS). USBP's priority mission is to prevent the entry of terrorists and terrorist weapons and to enforce the laws that protect the U.S. homeland by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S.

During recent years, illegal aliens (IA) and illegal entry into the U.S. along the U.S.-Mexico border in southern Arizona has become a severe problem. Consequently, USBP has significantly increased its emphasis on deterrence. Deterrence is achieved only when USBP has the ability to create and convey the immediate, credible, and absolute certainty of detection and apprehension. As such, tactical infrastructure components, such as fencing and roads, are a critical element in the current enforcement strategy. Developing trends such as the recognition of environmental preservation concerns and the increase of criminal trans-boundary activities (including trafficking in people, drugs, and terrorism efforts) continue to pose a border enforcement challenge and support the ever increasing need for tactical infrastructure along the international border.

In 2001, the Immigration and Naturalization Service (INS) prepared the Supplemental Programmatic Environmental Impact Statement (SPEIS) for INS and Joint Task Force 6 (JTF-6) Activities along the U.S.-Mexico Border. Additionally, in December 2003, National Park Service (NPS) issued a Final Finding of No Significant Impact (FONSI) and Final EA for the Proposed Permanent Vehicle Barriers (PVB) across the southern boundary of the Organ Pipe Cactus National Monument (OPCNM) in Pima County, Arizona. The PVBs span approximately 30 miles of the U.S.-Mexico border. The PVBs constructed by NPS have served effectively and efficiently in deterring and hindering illegal vehicle traffic on the OPCNM.

PROJECT LOCATION: The project corridor for the proposed action extends 2.1 miles to the west and 3.1 miles to the east of the Lukeville Port of Entry (POE), which encompasses approximately 5.2 miles total.

PURPOSE AND NEED: The purpose and need for the NPS 2003 Final EA was to prevent illegal vehicle traffic from degrading the biological resources of OPCNM as well as to protect the health and safety of Federal staff and visitors. The construction of the PVBs met the stated purpose and need of the NPS 2003 Final EA. However, since the completion of the NPS 2003 Final EA, shifts in IA traffic and recent Federal legislation have required changes in the designs of border tactical infrastructure. Therefore, the purpose of the proposed primary pedestrian fence is to help CBP agents and officers gain effective control of our nation's borders. CBP is developing and deploying the appropriate mix of technology, infrastructure, and personnel. In some locations, primary pedestrian fence is a critical element of border security. In alignment with Federal mandates, USBP has identified this area of the border as a location where primary pedestrian fence would contribute significantly to their priority homeland security mission. The

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need for the proposed action is to meet USBP operational requirements; provide a safer environment for USBP agents, NPS staff, and general public; deter IAs by constructing an impediment to northward movement into the U.S.; enhance the response time of USBP agents; and meet the mandates of Federal legislation (i.e., Secure Fence Act of 2006 and 2007 Department of Homeland Security [DHS] Appropriations Act [HR 5441]).

ALTERNATIVES: Two alternatives were carried forward for analysis: Alternative 1: No Action Alternative and Alternative 2: Proposed Action Alternative (i.e., Preferred Alternative).

Alternative 1: No Action Alternative: The No Action Alternative would preclude the installation of primary pedestrian fence. The existing PVBs would continue to be maintained by NPS. The No Action Alternative does not meet the project's purpose and need, but has been carried forward for analysis, as defined in 40 Code of Federal Regulations (CFR) Section 1502.14. The No Action Alternative does not meet the mandates of Federal legislation and does not enhance the detection, deterrence, or apprehensions of IAs.

Alternative 2: Proposed Action Alternative: The Proposed Action Alternative includes the construction and maintenance of 5.2 miles of primary pedestrian fence along the U.S.-Mexico border near Lukeville, Arizona. The project corridor would extend 2.1 miles to the west and 3.1 miles to the east of the Lukeville POE. Approximately 5.2 miles of primary pedestrian fence would be constructed. Construction activities would remain within the 60-foot Roosevelt Reservation with the exception of the western most 0.65 miles. The western most 0.65 miles, which would be built over Sonoyta Hill, requires a construction footprint of 150 feet. The primary pedestrian fence would be installed approximately 3 feet north of the existing PVBs with the exception of the western most 0.65 miles over Sonoyta Hill. Due to the lack of PVBs over Sonoyta Hill the fence would be constructed approximately 3 feet north of the U.S.-Mexico border within these 0.65 miles. A mesh fence design would be used and would meet design performance measures which dictate that the fence must:

- extend 15 feet above ground and 3 to 6 feet below ground;
- be capable of withstanding a crash of a 10,000-pound (gross weight) vehicle traveling at 40 miles per hour;
- be semi-transparent, as dictated by operational need;
- be vandal resistant;
- be designed to survive the extreme climate changes of a desert environment;
- not impede the natural flow of water; and
- allow for maintenance access to border monuments as required by the U.S. Section, International Boundary and Water Commission.

Furthermore, in most washes or arroyos, the fence would be designed and constructed to ensure proper conveyance of floodwaters and to eliminate the potential to cause backwater flooding on

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either side of the U.S.-Mexico border. CBP will remove debris from the fence within washes/arroyos immediately after rain events to ensure that no backwater flooding occurs.

Staging areas and turnarounds would be located within the Roosevelt Reservation. Construction access would include the use of the existing patrol road adjacent to the U.S.-Mexico border as well as South Puerto Blanco Road in order to construct the primary pedestrian fence and road over Sonoyta Hill. Additionally, the road, existing PVBs, and primary pedestrian fence would be maintained by CBP to ensure the integrity of the road and primary pedestrian fence is not compromised.

ENVIRONMENTAL CONSEQUENCES: The Proposed Action Alternative could permanently impact up to 45 acres. However, approximately 17 acres of the project corridor are previously disturbed from the construction of the existing PVBs. Impacts to wildlife, unique and sensitive areas, vegetation, and aesthetics would be expected. Wildlife movement across the international boundary would be impeded within the corridor, but these impacts would be minimal to local and regional wildlife populations. The viewshed of the OPCNM would be impacted by the construction of the pedestrian fence; however, once completed, the fence would afford greater safety to park visitors and sensitive resources. Temporary impacts to air quality, noise, and water resources are expected during construction.

CBP has determined that the Proposed Action Alternative may adversely affect the lesser long-nosed bat and Sonoran pronghorn. Consequently, CPB and the USFWS are currently in formal Section 7 consultation to address these effects and identify conservation measures. Some conservation measures for the pronghorn that have been identified and would be implemented include:

1. During construction USBP will conduct daily observations of project region as close to dawn as possible to determine if Sonoran pronghorn are within 0.62 mile of project activities. No project work will begin until pronghorn move on their own volition to a distance greater than 0.62 mile from the activities. This measure would be relevant for those activities only on the western slope of Sonoyta Hill, where there is a greater potential for pronghorn to occur.
2. The number of vehicles traveling to and from the project site for construction purposes and the number of trips per day will be minimized to reduce the likelihood of disturbing pronghorn in the area or injuring an animal on the road. The use of vehicle convoys, multi-passenger vehicles, and other methods are appropriate to project construction.
3. CBP will provide assistance to annually fill one supplemental water for Sonoran pronghorn on OPCNM per the CBP programmatic mitigation agreement with USFWS.

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Examples of other conservation measures that have been identified and would be implemented to offset effects to the lesser long-nosed bat include the following:

1. Clearly demarcate the construction footprint to ensure construction contractors do not expand the disturbance area.
2. Salvage of lesser-long nosed bat food plants from areas to be disturbed by project activities as described in the salvage plan.
3. Complete a restoration plan for various illegal trails and roads to compensate for creation or improvement of roads needed for the fence project (in addition to other concerns, this will address the control of non-native, invasive plant species) within six months of issuance of the Biological Opinion.

The potential exists for shifts in illegal pedestrian traffic to adversely impact resources outside of the project corridor; however, these impacts are not quantifiable at this time because it is unknown if, when, or where this shift in traffic may occur. Because the primary pedestrian fence would act as a force multiplier, USBP would be able to deploy agents to those areas that lack pedestrian barriers in an effort to minimize any indirect adverse impacts. Indirect beneficial impacts, such as a reduced amount of trash and debris caused by IAs, would result from the construction of the Proposed Action Alternative.

No significant adverse effects to the natural or human environment, as defined in 40 CFR Section 1508.27 of the Council on Environmental Quality's Regulations for Implementing the National Environmental Policy Act, are expected upon implementation of the Proposed Action Alternative.

MITIGATION MEASURES: Mitigation measures are presented for each resource category that would be potentially affected. Many of these measures have been incorporated as standard operating procedures by the USBP on past projects. It is USBP policy to mitigate adverse impacts through the sequence of avoidance, minimization, and compensation. These mitigation measures would be incorporated into the current Project Management Plan to be carried forward.

General Construction Activities: Best Management Practices (BMPs) would be implemented as standard operating procedures during all construction activities, and would include proper handling, storage, and/or disposal of hazardous and/or regulated materials. To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils and solvents would be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery would be completed following accepted industry guidelines, and all vehicles could have drip pans during storage to contain minor spills and drips. Although it will be unlikely for a major spill to occur, any spill of reportable quantities would be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular,

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pillow, sock, *etc.*) would be used to absorb and contain the spill. Furthermore, any petroleum liquids (e.g., fuel) or material listed in 40 Code of Federal Register (CFR) 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate Federal and state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table 302.4 would be included as part of the Spill Prevention, Control, and Countermeasures Plan (SPCCP). A SPCCP would be in place prior to the start of construction and all personnel would be briefed on the implementation and responsibilities of this plan.

All construction would follow DHS management directive 5100 for waste management. All waste oil and solvents would be recycled. All non-recyclable hazardous and regulated wastes would be collected, characterized, labeled, stored, transported and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures.

Solid waste receptacles would be maintained at staging and bivouac areas. Non-hazardous solid waste (trash and waste construction materials) would be collected and deposited in the on-site receptacles. Solid waste would be collected and disposed of by a local waste disposal contractor. Waste materials and other discarded materials would be removed from the site as quickly as possible in an effort to keep the project area and surroundings free of litter.

Waste water (water used for project purposes that is contaminated with construction materials, was used for cleaning equipment and thus carries oils or other toxic materials or other contaminants in accordance with state regulations) is to be stored in closed containers on site until removed for disposal. Concrete wash water would not be dumped on the ground, but is to be collected and moved offsite for disposal.

Soils: Erosion control techniques, such as the use of straw bales (weed free straw), aggregate materials, wetting compounds (i.e., water) and revegetation with native plant species, where possible, would be incorporated with the design of the Proposed Action Alternative. In addition, other erosion control measures, as required and promulgated through the Storm Water Pollution Prevention Plan (SWPPP), would be implemented before and after construction activities.

Biological Resources: All contractors, work crews (including National Guard and military personnel), and CBP personnel in the field performing construction and maintenance activities would receive training on the habitat and habits of the species that are found in the area, including information on how to avoid impacts to the species from their activities. This training would be provided to all contractor and work crew project managers and senior military leaders who are working onsite. It would be the responsibility of these project managers and senior military leaders to ensure that their personnel are familiar with the BMPs and other limitations and constraints.

The Migratory Bird Treaty Act requires that Federal agencies coordinate with U.S. Fish and Wildlife Service (USFWS) if a construction activity would result in the "take" of a migratory bird.

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If construction or clearing activities are scheduled during the nesting season (typically March 15 through September 15) preconstruction surveys for migratory bird species would occur immediately prior to the start of any construction activity to identify active nests. If construction activities would result in the "take" of a migratory bird, then coordination with USFWS and Arizona Game and Fish Department would occur, and applicable permits would be obtained prior to construction or clearing activities.

Although no Sonoran desert tortoises or Mexican rosy boas were observed during biological surveys the potential exists for these species to occur in and near Sonoyta Hill. In the event a tortoise or boa is observed within the construction corridor during construction activities, a qualified biologist would capture and relocate the individual to an area outside of the corridor but still on Sonoyta Hill.

CBP would truck water into the project site for purposes of construction to ensure that no impacts to flora or fauna near and within Quitobaquito Springs would occur.

A salvage plan would be developed by the CBP, in close coordination with NPS, prior to construction activities. CBP will salvage as many columnar cacti as possible. CBP will develop and fund a restoration plan, in coordination with the NPS to restore illegal trails and roads on OPCNM. This will enhance bat foraging opportunities.

Materials used for on-site erosion control would be free of non-native plant seeds and other plant parts to limit potential for infestation. Additionally, all areas within the construction footprint would be monitored for a period of three years for the spread and eradication of non-native and invasive species. Construction equipment would be cleaned using BMPs prior to entering and departing the OPCNM to minimize the spread and establishment of non-native and invasive species.

Cultural Resources: Construction near the Gachado Line Camp would be monitored by a professional archeological monitor to ensure no impacts would occur. Buffers would be established around the three historic objects that lie within the proposed construction corridor in order to avoid any adverse effects to these significant cultural resources. If any cultural material is discovered during the construction efforts, then all activities would halt until a qualified archeologist can be brought in to assess the cultural remains.

Water Resources: Standard construction procedures would be implemented to minimize the potential for erosion and sedimentation during construction. All work would cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and material. In accordance with regulations of the Environmental Protection Agency Phase II of the National Pollutant Discharge Elimination System stormwater program, a SWPPP would be required for stormwater runoff from construction activities greater than 1 acre and less than 5 acres. Therefore, a SWPPP would be prepared and the Notice of Intent submitted prior to the start

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of any construction. Equipment required for the construction activities would not be staged or stored within 100 feet of any wash to prevent any contamination from accidental petroleum, oil, or lubricant spills that could occur. Primary pedestrian fence constructed in washes/arroyos would be designed to ensure proper conveyance of floodwaters and to eliminate the potential to cause backwater flooding on either side of the U.S.-Mexico border. Immediately after rain events, CBP would be responsible for ensuring that debris is removed from the primary pedestrian fence within washes/arroyos to ensure that no backwater flooding occurs. Additionally, all concrete trucks would be washed and cleaned outside of the project corridor and OPCNM lands.

Air Quality: Standard construction practices such as routine watering of the construction site would be used to control fugitive dust during the construction phases of the proposed project. Additionally, all construction equipment and vehicles would be required to be kept in good operating condition to minimize exhaust emissions.

Noise: During the construction phase, short-term noise impacts are anticipated. All Occupational Safety and Health Administration requirements would be followed. On-site activities would be restricted to daylight hours with the exception of concrete pours and emergency situations. Construction equipment would possess properly working mufflers and would be kept properly tuned to reduce backfires. Implementation of these measures would reduce the expected short-term noise impacts to an insignificant level in and around the construction site.

Aesthetics: In order to minimize potential aesthetic impacts over Sonoyta Hill, CBP would use subdued and non-reflective materials to build the primary pedestrian fence. These materials are expected to blend with the landscape as it naturally rusts.

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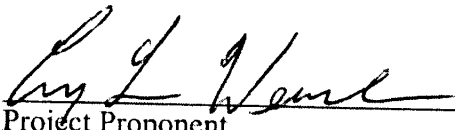
FINDING: Based upon the results of the environmental assessment and the mitigation measures to be incorporated as part of the Proposed Action Alternative, it has been concluded that the Proposed Action Alternative will not have a significant effect on the environment. Therefore, no further environmental impact analysis is warranted.



Robert F. Janson
Office of Finance Management
Acting Executive Director, Asset Management
U.S. Customs and Border Protection

2/13/08

Date



Project Proponent
Assistant Chief Patrol Agent, Craig Weinbrenner
Office of Border Patrol
Tucson Sector Headquarters

1/30/08

Date

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TUCSON SECTOR**

January 2008

Lead Agency: U.S. Customs and Border Protection
Asset Management Division
Portfolio Management Branch
Room 3.4-D
1300 Pennsylvania Avenue, N.W.
Washington, D.C. 20229

Point of Contact: Mr. George Hutchinson
U.S. Customs and Border Protection
Room 3.4-D
1300 Pennsylvania Avenue, N.W.
Washington, D.C. 20229

EXECUTIVE SUMMARY

BACKGROUND: National Park Service (NPS) issued a Finding of No Significant Impact (FONSI) and Final Environmental Assessment (EA) for the Proposed Permanent Vehicle Barriers (PVB) in 2003, which addressed the construction of PVBs across the southern boundary of the Organ Pipe Cactus National Monument (OPCNM) in Pima County, Arizona. The PVBs span approximately 30 miles of the United States (U.S.) – Mexico border. The PVBs constructed by the NPS have served effectively and efficiently in deterring and hindering illegal vehicle traffic on the OPCNM.

PURPOSE AND NEED FOR THE PROPOSED PROJECT: The purpose of the proposed primary pedestrian fence is to help U.S. Customs and Border Protection (CBP) agents and officers gain effective control of our nation's borders. CBP is developing and deploying the appropriate mix of technology, infrastructure, and personnel. In some locations, primary pedestrian fence is a critical element of border security. In alignment with Federal mandates, U.S. Border Patrol (USBP) has identified this area of the border as a location where primary pedestrian fence would contribute significantly to their homeland security mission. The need for the proposed action is to meet USBP operational requirements; provide a safer environment for USBP agents, NPS staff, and general public; deter illegal aliens (IAs) by constructing an impediment to northward movement into the U.S.; enhance the response time of USBP agents; and meet the mandates of Federal legislation (i.e., Secure Fence Act of 2006 and 2007 Department of Homeland Security [DHS] Appropriations Act [HR 5441]).

PROPOSED ACTION: The Proposed Action Alternative includes the construction and maintenance of 5.2 miles of primary pedestrian fence along the U.S.-Mexico border near Lukeville, Arizona. Approximately 3.1 miles and 2.1 miles of primary pedestrian fence would be installed on the east and west sides of the Lukeville POE, respectively. The primary pedestrian fence would be constructed approximately 3 feet north of the existing PVBs with the exception of 0.65 miles over Sonoyta Hill. Construction activities would remain within the 60-foot Roosevelt Reservation with the exception of the western most 0.65 miles. The western most 0.65 miles, which would be built over Sonoyta Hill, requires a construction footprint of 150 feet and the fence would be built approximately 3 feet north of the U.S.-Mexico border due to no PVBs existing over Sonoyta Hill.

The design selected for the primary pedestrian fence is a mesh design. It would be 15 feet high and capable of withstanding a crash from a 10,000-pound (gross weight) vehicle traveling at 40 miles per hour. Currently, an existing patrol road parallels most of the border in the project corridor, which would also be used for access during construction of the primary pedestrian fence and as a maintenance road when construction is completed. However, this road would

need to be widened by approximately 30 feet to accommodate construction equipment needed to install the fence. This construction/maintenance road would encompass the entire 60-foot wide Roosevelt Reservation once completed. In addition, a new road would need to be constructed in order to install the primary pedestrian fence over Sonoyta Hill; this new road would be in the westernmost 0.65 mile of the project corridor. CBP will be responsible for maintaining the road, existing PVBs, and primary pedestrian fence.

ALTERNATIVES TO THE PROPOSED ACTION:

Alternatives addressed in the EA include: Alternative 1: No Action Alternative, which would preclude the construction of any primary pedestrian fence, and Alternative 2: Proposed Action Alternative (i.e., Preferred Alternative). The No Action Alternative would not fully meet the mandate established by Federal legislation and only incrementally enhances the detection, deterrence and apprehension of IAs.

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION:

The Proposed Action Alternative would potentially result in permanent impacts of up to 45 acres. However, approximately 17 acres of the project corridor have been previously disturbed from the construction of the existing PVBs. Direct impacts to vegetation, wildlife, unique and sensitive areas, and aesthetics would be expected. Wildlife movement across the international boundary would be impeded within the corridor, but these impacts would be minimal to local or regional wildlife population. The viewshed of the OPCNM would be impacted by the construction of the primary pedestrian fence; however, once completed, the primary pedestrian fence would afford greater safety to park visitors and sensitive resources. Additionally, mitigation measures would be implemented (i.e., using subdued and non-reflective materials) to ensure impacts to aesthetics would not be considered significant. No significant impacts on any human or natural resources either locally or regionally would be expected upon implementation of the Proposed Action Alternative.

CONCLUSIONS:

Based upon the results of this EA, it has been concluded that the Proposed Action Alternative would not have a significant adverse effect on the environment, and no additional National Environmental Policy Act documentation is warranted.

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SECTION 1.0
INTRODUCTION AND PURPOSE AND NEED

1.0 INTRODUCTION AND PURPOSE AND NEED

1.1 INTRODUCTION

This Environmental Assessment (EA) addresses the potential effects, beneficial and adverse, of the proposed installation of 5.2 miles of primary pedestrian fence near Lukeville, Arizona. The action is proposed by United States (U.S.) Border Patrol (USBP) Tucson Sector and would occur in the Ajo Station's Area of Operation (AO). This EA is tiered from the 2001 Supplemental Programmatic Environmental Impact Statement (SPEIS) for Immigration and Naturalization Service (INS) and Joint Task Force 6 (JTF-6) Activities along the U.S.-Mexico Border (INS 2001). The SPEIS was developed in an attempt to provide the public with USBP's assessment of impacts as they relate to potential future infrastructure projects. Mentioned in the SPEIS is the potential to construct fence, roads, and other infrastructure along the U.S.-Mexico border including Arizona. In addition, information was gleaned from and incorporated by reference from the National Park Service (NPS), Organ Pipe Cactus National Monument (OPCNM) Finding of No Significant Impact (FONSI) and Final EA for the Proposed Permanent Vehicle Barriers (PVB) December 2003 (NPS 2003). The OPCNM Final EA addressed the proposed construction of approximately 30 miles of PVB along OPCNM's U.S.-Mexico border.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) Regulations implementing NEPA (Title 40 of the U.S. Code of Federal Regulations [CFR], Parts 1500-1508), and Department of Homeland Security (DHS) Management Directive 5100.1, which is the Environmental Planning Program Directive that outlines DHS's procedures for the implementation of NEPA.

1.2 HISTORY AND BACKGROUND

1.2.1 CBP History

In 1924, Congress created USBP to serve as the law enforcement entity of INS, which it did until November 25, 2002. With the passage of the Homeland Security Act of 2002 (Public Law 107-296), DHS was established to reorganize Federal law enforcement and border protection agencies into a single department. USBP was officially transferred into the Office of Border Patrol, under DHS, U.S. Customs and Border Protection (CBP), on March 1, 2003.

1.2.2 CBP Strategic Intent and Priorities

The priority mission of CBP is to prevent terrorists and terrorist weapons from entering the U.S. This priority mission involves maintaining a diverse, multi-layered approach, which includes improving security at the international borders and ports of entry (POE). It also extends the physical zone of security beyond the Nation's physical borders so that U.S. borders are the last line of defense, not the first (CBP 2003). As part of this mission, CBP has implemented its *Comprehensive Strategy to Address the Threat of Nuclear and Radiological Terrorism* to identify and seize terrorists' assets and funding sources and enhance the support infrastructure to further develop targets and analyses.

In addition to carrying out its priority mission, CBP must fulfill its traditional missions including:

- controlling the sovereign borders of the U.S. by apprehending individuals attempting to enter the U.S. illegally;
- stemming the flow of illegal drugs and other contraband;
- protecting the Nation's agriculture and economic interest from harmful pests and diseases;
- facilitating international trade;
- collecting import duties; and
- enforcing U.S. trade, immigration and other laws of the U.S. at and beyond the Nation's borders (CBP 2003).

Hereinafter, any individual, including terrorists and smugglers, who attempt to illegally enter the U.S. between POEs is referred to as an illegal alien (IA).

The mission of USBP is to strengthen the U.S. borders to prevent the entry of IAs, terrorist weapons, narcotics and other contraband. The principle objective of USBP is to apply appropriate levels of USBP personnel, intelligence, technology, and infrastructure resources to increase the level of operational effectiveness until the likelihood of apprehension is sufficient to be an effective deterrent that conveys an absolute certainty of detection and apprehension.

During recent years, USBP has significantly increased its emphasis on deterrence. Deterrence is achieved only when USBP has the ability to create and convey the immediate, credible, and absolute certainty of detection and apprehension. As such, tactical infrastructure components, such as pedestrian barriers and roads are a critical element. Trends such as the continued urbanization and industrialization of the immediate border, the recognition of environmental

preservation concerns, and the increase of criminal trans-boundary activities (including trafficking in people, drugs, and terrorism efforts) continue as a border enforcement challenge and increase the need for tactical infrastructure along the international borders.

1.2.3 Background

NPS issued a Final EA and FONSI in 2003, which addressed the construction of PVBs along the southern boundary of OPCNM (NPS 2003). The PVBs extend across the entire southern boundary of OPCNM along the U.S.-Mexico border except over Sonoyta Hill. All of the construction activities completed while building the PVBs were located within the 60-foot Roosevelt Reservation. To date, the entire 30 miles of planned PVBs have been completed by NPS. The PVBs constructed by NPS have served effectively and efficiently in deterring and hindering illegal vehicle traffic on OPCNM; however, PVBs do not deter pedestrian traffic.

1.3 LOCATION OF THE PROPOSED PROJECT

The general location of the proposed project was previously discussed in the December 2003 Final EA (NPS 2003) and is incorporated herein by reference. The project corridor is located along the U.S.-Mexico border near Lukeville, Arizona (Figure 1-1).

1.4 PURPOSE AND NEED

The purpose and need for the NPS 2003 Final EA was to prevent illegal vehicle traffic from degrading the biological resources of OPCNM as well as to protect the health and safety of Federal staff and visitors. The construction of the PVBs met the stated purpose and need of the NPS 2003 Final EA. However, since the completion of the NPS 2003 Final EA, shifts in IA traffic and recent Federal legislation has required changes in the designs of border tactical infrastructure. The purpose of the proposed primary pedestrian fence is to help CBP agents and officers gain effective control of our nation's borders.

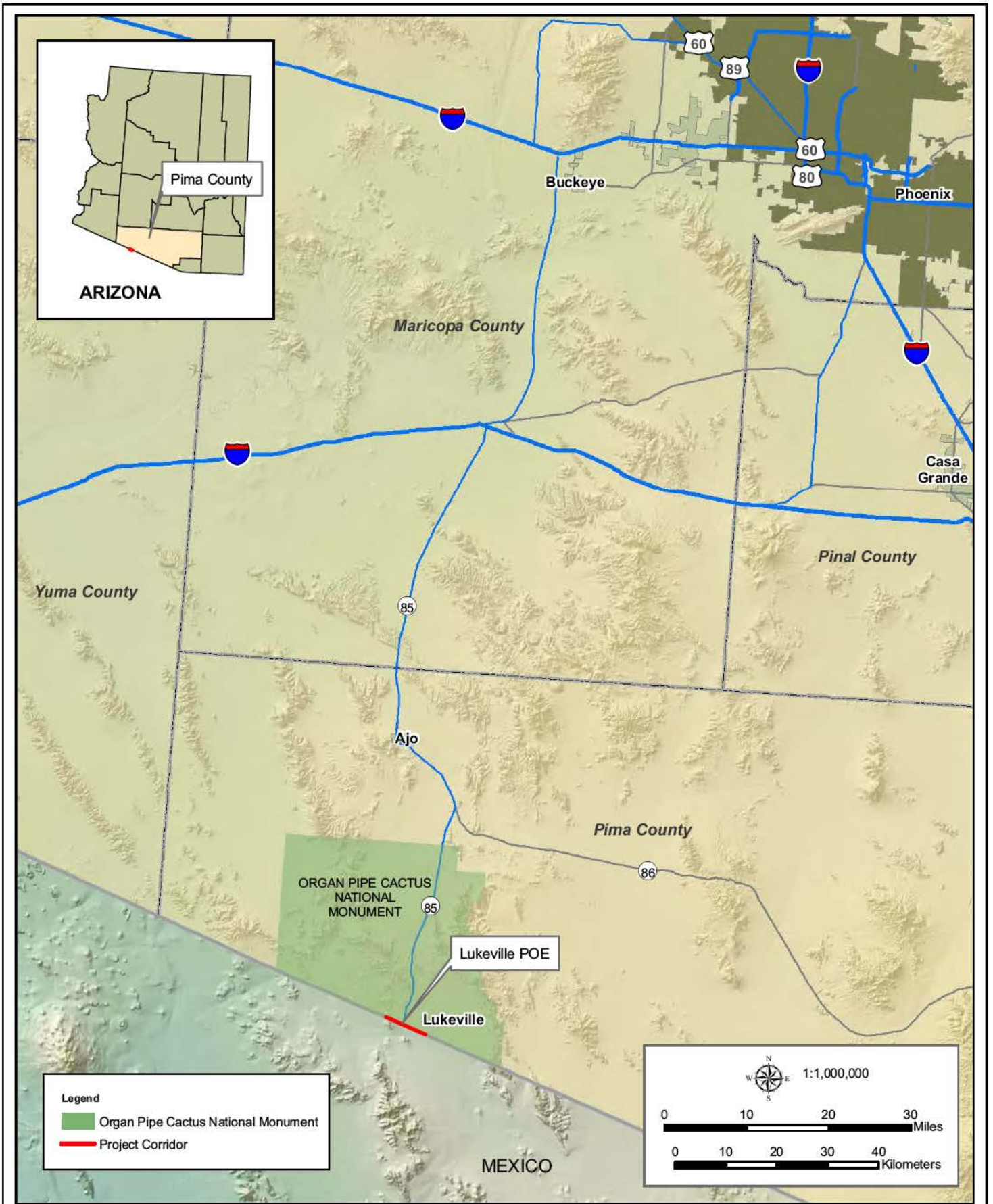


Figure 1-1: Vicinity Map



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CBP is developing and deploying the appropriate mix of technology, infrastructure, and personnel. In some locations, primary pedestrian fence is a critical element of border security. In alignment with Federal mandates USBP has identified this area of the border as a location where primary pedestrian fence would contribute significantly to their priority homeland security mission. The need for the proposed action is to meet USBP operational requirements; provide a safer environment for USBP agents, NPS staff, and general public; deter IAs by constructing an impediment to northward movement into the U.S.; enhance the response time of USBP agents; and meet the mandates of Federal legislation (i.e., Secure Fence Act of 2006 and 2007 Department of Homeland Security [DHS] Appropriations Act [HR 5441]).

1.5 APPLICABLE ENVIRONMENTAL STATUTES AND REGULATIONS

The applicable environmental statutes and regulations for this EA are similar to those of the December 2003 Final EA (NPS 2003) and are hereby incorporated by reference. In summary, this EA was prepared in accordance with, but not limited to the NEPA of 1969; Endangered Species Act (ESA) of 1973, as amended; the National Historic Preservation Act (NHPA) of 1966, as amended; and the Archeological and Historical Preservation Act of 1974, as amended. In addition to these environmental statutes and regulations this EA is guided by Federal legislation, DHS's Management Directive 5100.1, Clean Air Act (CAA), Clean Water Act (CWA), Noise Control Act, Resource Conservation and Recovery Act, and Toxic Substances Control Act. Executive Orders (E.O.) bearing on the proposed action include E.O. 11988 (*Floodplain Management*), E.O. 11990 (*Protection of Wetlands*), E.O. 12088 (*Federal Compliance with Pollution Control Standards*), E.O. 12580 (*Superfund Implementation*), E.O. 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), E.O. 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*), E.O. 13101 (*Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*), E.O. 13123 (*Greening the Government Through Efficient Energy Management*), E.O. 13148 (*Greening the Government Through Leadership in Environmental Management*), E.O. 13175 (*Consultation and Coordination with Indian Tribal Governments*), and E.O. 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*).

1.6 REPORT ORGANIZATION

This report is organized into 10 major sections including this introduction. Section 2.0 describes all alternatives considered for the project. Section 3.0 discusses the environmental features potentially affected by the project, while Section 4.0 discusses the environmental consequences for each of the viable alternatives. Cumulative impacts are discussed in Section 5.0, mitigation measures are discussed in Section 6.0, and public comments and the notice of Availability (NOA) are presented in Section 7.0. Sections 8.0, 9.0, and 10.0 present a list of the references cited in the document, a list of acronyms and abbreviations, and a list of the persons involved in the preparation of this document. Appendix A contains the March 2006 Memorandum of Understanding while Appendix B is a list of state and Federal protected species for Pima County. Appendix C contains correspondence that was sent and received during the preparation of this EA. Appendix D contains the air quality calculations for the Proposed Action Alternative.

SECTION 2.0
ALTERNATIVES



2.0 ALTERNATIVES

Three alternatives were identified and considered during the planning stages of the proposed project: No Action Alternative, Proposed Action Alternative, and Technology in Lieu of Tactical Infrastructure Alternative. The Proposed Action Alternative and Preferred Action Alternative are synonymous terms; however, for the purposes of this EA they will be referred to as the Proposed Action Alternative. The following paragraphs describe the alternatives considered.

2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, no construction activities would occur. The existing PVBs would continue to be maintained by NPS. The No Action Alternative does not meet the project's purpose and need, but has been carried forward for analysis, as required by CEQ regulations. The No Action Alternative will form the basis for evaluation of other action alternatives.

2.2 PROPOSED ACTION ALTERNATIVE

Primary pedestrian fencing has proved invaluable in denying quick access to concealment and escape opportunities for IAs inside the U.S. It performs a dual role in border security by acting as a visual deterrent and a formidable physical barrier, impeding IAs and increasing the window of time USBP agents have to respond to IAs attempting to breach the U.S.-Mexico border. The Proposed Action Alternative includes the construction and maintenance 5.2 miles of primary pedestrian fence along the U.S.-Mexico border near Lukeville, Arizona (Figure 2-1). The project corridor would extend 2.1 miles to the west and 3.1 miles to the east of the Lukeville POE. Approximately 5.2 miles of primary pedestrian fence would be constructed. Construction activities would remain within the 60-foot Roosevelt Reservation with the exception of the westernmost 0.65 miles. The westernmost 0.65 miles, which would be built over Sonoyta Hill, requires a construction footprint of 150 feet.

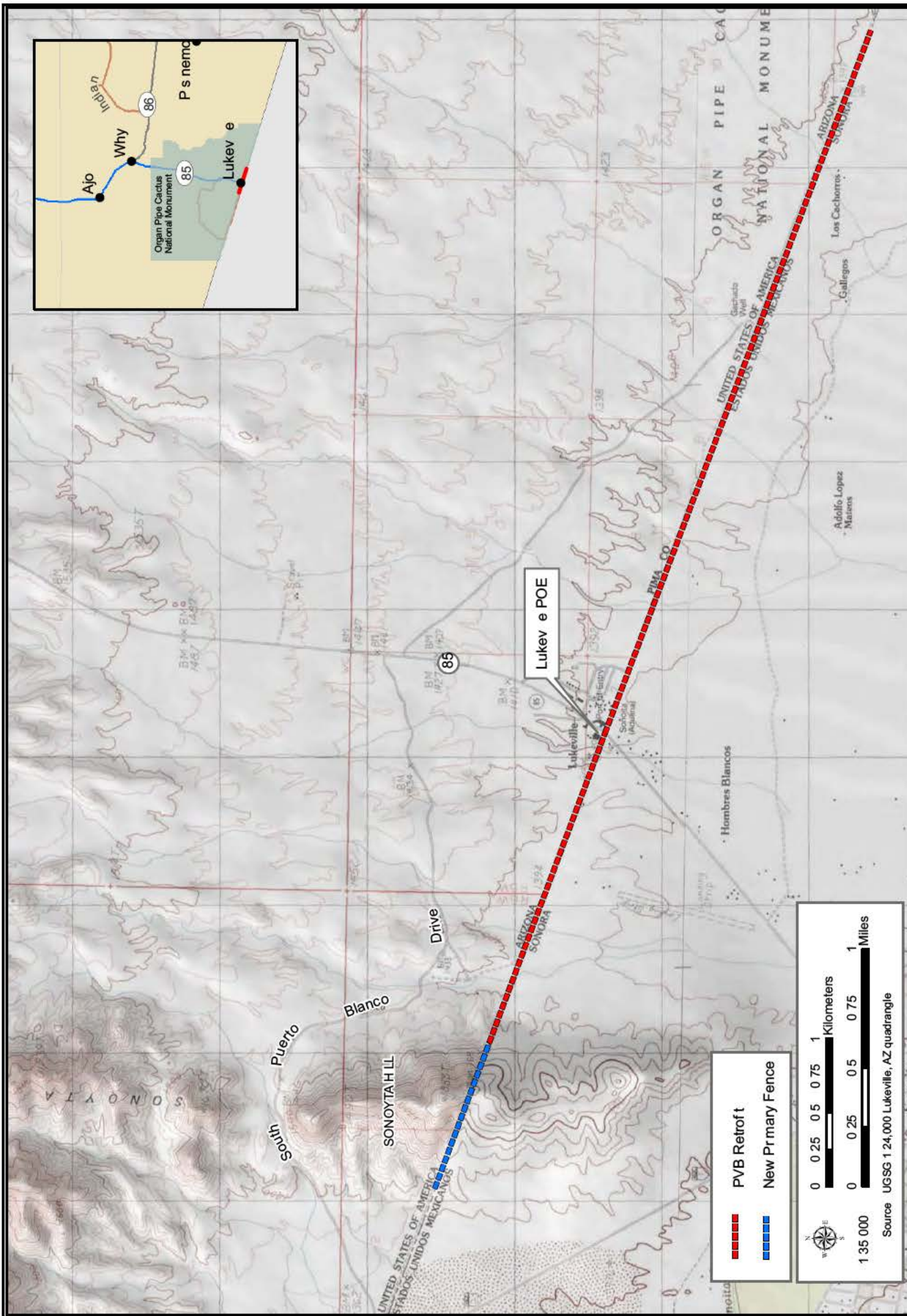
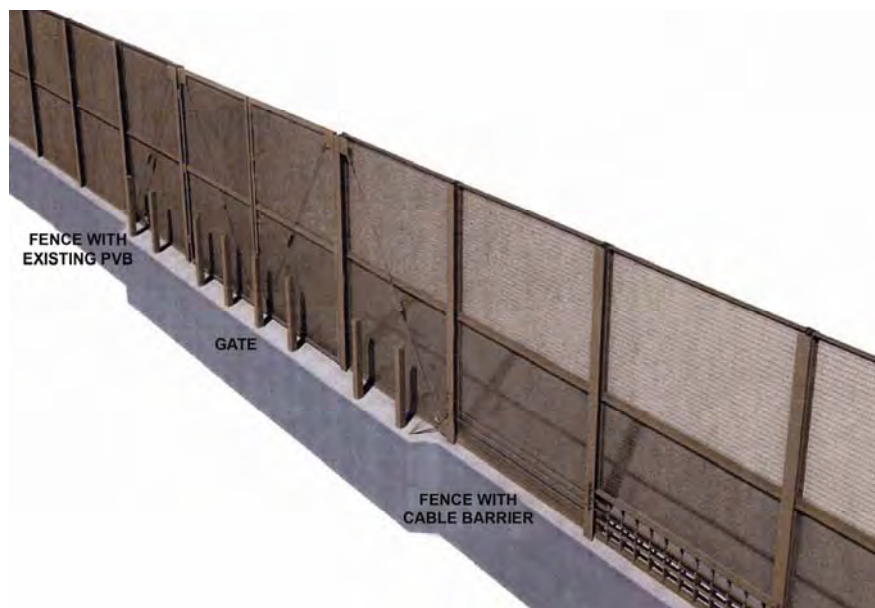


Figure 2-1: Proposed Act on A temat ve

The primary pedestrian fence would be installed approximately 3 feet north of the existing PVBs with the exception of the Sonoyta Hill portion. Due to the lack of PVBs in this area, the fence would be constructed approximately 3 feet north of the U.S.-Mexico border. An example of the mesh fence design is shown in Exhibit 2-1. This design would be used and would meet design performance measures, which dictate that the fence must:

- extend 15 to 18 feet above ground and 3 to 6 feet below ground;
- be capable of withstanding a crash of a 10,000-pound (gross weight) vehicle traveling at 40 miles per hour;
- be semi-transparent, as dictated by operational need;
- be vandal resistant;
- be designed to survive the extreme climate changes of a desert environment;
- not impede the natural flow of water; and
- allow for maintenance access to border monuments as required by the U.S. Section, International Boundary and Water Commission.

Exhibit 2-1. Example of Mesh Fence Design



Furthermore, in most washes or arroyos, the primary pedestrian fence would be designed and constructed to ensure proper conveyance of floodwaters and to eliminate the potential to cause backwater flooding on either side of the U.S.-Mexico border. CBP will remove debris from the

fence within washes/arroyos immediately after rain events to ensure that no backwater flooding occurs.

Staging areas and turnarounds would be located within the Roosevelt Reservation. Construction access would include the use of the existing patrol road adjacent to the U.S.-Mexico border as well as South Puerto Blanco Road in order to construct the primary pedestrian fence and road up and over Sonoyta Hill. Additionally, the road, existing PVBs, and primary pedestrian fence would be maintained by CBP to ensure the integrity of the road, PVBs, and primary pedestrian fence is not compromised.

2.3 OTHER ALTERNATIVES EVALUATED BUT ELIMINATED FROM CONSIDERATION

One other alternative was evaluated but eliminated from further consideration due to impediments to construction or failure to meet the purpose and need for the project. This alternative is discussed in the following subsection.

2.3.1 Technology in Lieu of Tactical Infrastructure

Under this alternative, USBP would use radar, cameras, lights, and other technology to identify illegal border crossings. The use of technology is a critical component of *SBI_{net}* and an effective force multiplier that allows USBP to monitor large areas and deploy agents to where they will be most effective. However, in the more populated areas within the Tucson Sector, physical barriers represent the most effective means to control illegal entry into the U.S. The use of technology alone would not provide a practical solution to achieving effective control of the border in USBP Tucson Sector. Therefore, this alternative would not meet the purpose and need as described in Section 1.4 and will not be carried forward for further analysis.

2.4 CONSTRUCTION PERSONNEL AND EQUIPMENT

Private contractors would complete the proposed construction and installation of the infrastructure components. All project personnel will not exceed a speed limit of 25 miles per hour within the OPCNM during construction and maintenance related activities. The project is expected to be completed by December 2008. Equipment staging would be located within previously disturbed areas to minimize potential effects to the environment. The equipment

anticipated to be used during the construction includes a backhoe, trencher, auger, crane, bulldozer, front-end loader, flatbed truck, water truck and roller/compactor.

2.5 SUMMARY

The two alternatives carried forward for analysis are the No Action Alternative and Proposed Action Alternative. An alternative matrix (Table 2-1) compares the two alternatives relative to the purpose and need. Table 2-2 presents a summary matrix of the impacts from the three alternatives analyzed and how they affect the environmental resources in the region.

Table 2-1. Relationship between Purpose and Need and Project

Requirements	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative
Provide a safer work environment for the USBP agents	PARTIALLY	YES
Deter illegal pedestrian traffic by constructing an impediment to northward movement	NO	YES
Satisfy Federal legislation	NO	YES

Table 2-2. Summary Matrix

Affected Environment	No Action Alternative	Proposed Action Alternative
Land Use	No impacts are expected.	Approximately 7 acres (0.65 mile X 90 feet) of NPS lands over Sonoita Hill would be used as USBP infrastructure. The lands would remain as NPS lands; however, USBP would be allowed use of the 7 acres as articulated through a Special Use Permit. The remainder of the project corridor is within the Roosevelt Reservation; therefore, land use would not change in these areas. No significant impacts are expected as the indirect beneficial impacts would greatly outweigh the minor direct impacts. No significant impacts are expected as the indirect beneficial impacts would greatly outweigh the minor direct impacts.
Soils	No impacts are expected.	Up to 45 acres of soils could be permanently impacted. No prime farmlands would be impacted. Indirect impacts could occur to areas outside the project corridor. No significant impacts would occur as a result of the Proposed Action Alternative.
Vegetation	No impacts are expected.	Up to 28 acres of vegetation would be permanently altered. The remaining 17 acres of the total footprint of the project corridor are previously disturbed. The 28 acres that would be affected are comprised of vegetation communities that are regionally and locally common. Thus, no significant impacts would be expected. Indirect impacts could occur to areas outside the project corridor.
Wildlife	No impacts are expected.	If implemented, approximately 45 acres of wildlife habitat could be impacted; however, approximately 17 acres within the project corridor is previously disturbed from the construction of the existing PVBs. Therefore, no significant impacts are expected. Wildlife movement across the international boundary would be impeded within the corridor; however, these impacts would be minimal to wildlife, locally or regionally. Indirect impacts could occur to areas outside the project corridor.
Unique and Sensitive Areas	No impacts are expected.	The project footprint is primarily located within the Roosevelt Reservation. The viewshed of the OPCNM would be impacted by the construction of the primary pedestrian fence; however, once completed, the primary pedestrian fence will afford greater safety to park visitors and sensitive resources. Indirect impacts could occur as construction is ongoing or by IAs outside of the corridor if they try to circumvent the proposed infrastructure.
Wilderness	No impacts are expected	No direct impacts are expected. Indirect impacts could occur if IAs attempt to circumvent the proposed infrastructure. USBP would use the primary pedestrian fence as a force multiplier, which would all USBP to deploy agents to areas lacking infrastructure, thus, minimizing any indirect impacts.

Table 2-2, continued

Affected Environment	No Action Alternative	Proposed Action Alternative
Protected Species	No impacts are expected.	Although approximately 17 acres of the total project footprint (45 acres) have been previously disturbed due to the construction of the existing PVBs, food sources (columnar cacti) for the lesser long-nosed bat (<i>Leptonycteris curasoae yerbabuena</i>) and habitat for the Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>) would be impacted. The Proposed Action Alternative may affect and is likely to adversely affect these two species. Section 7 consultation is on-going with the U.S. Fish and Wildlife Service (USFWS); conservation measures have been identified and would be implemented to off-set impacts to the bat and pronghorn. Indirect impacts could occur to habitat or species outside of the corridor if IAs attempt to circumvent the proposed infrastructure.
Cultural Resources	No impacts are expected.	No cultural resources would be impacted either directly or indirectly.
Air Quality	No impacts are expected.	Pima County is in attainment for all criteria pollutants. Minor, temporary impacts would occur during construction but would cease upon completion of the Proposed Action Alternative.
Water Resources	No impacts are expected.	Up to 11.4 acre-feet of groundwater would be used for dust suppression and mixing concrete. All water will be trucked into the project site from sources north of the OPCNM (i.e., Why, Ajo, or Gila Bend). No deficit would occur to the region's available groundwater sources; therefore, no significant impacts to water resources would occur.
Socioeconomics	No impacts are expected.	Minor, temporary impacts could occur. Indirect beneficial impacts would occur within the region due to the reduction of IA foot traffic and the associated societal cost.
Noise	No impacts are expected.	The project corridor is located adjacent to the busy Lukeville POE; therefore, the impacts would be minimal and temporary. No significant impacts to ambient noise levels would occur.
Aesthetics	No impacts are expected.	The project footprint is located within or adjacent to previously disturbed areas. The visibility of the primary pedestrian fence from within the OPCNM would have minimal adverse impacts; however, the beneficial impacts from the reduction of IAs and associated trash would be expected to outweigh any adverse impacts. No significant impacts would occur. Indirect impacts could occur outside of the project corridor.

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SECTION 3.0
AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

In accordance with CEQ regulations (40 CFR § 1502.15), this chapter of the EA describes the baseline environment of the area(s) that would be affected by the viable alternatives under consideration. Data and analyses are commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced. For those resources that have not changed, or where updates were not required, the discussions presented in the NPS 2003 Final EA are incorporated by reference (NPS 2003). Each of these resources is identified as such.

Resources such as prime farmlands, geology, communications, climate, and Wild and Scenic Rivers would not be impacted by this project and, thus, will not be evaluated in this EA for the following reasons:

- Prime Farmlands: There are no prime or unique farmlands in the project area.
- Geology: The construction activities proposed for this project do not include practices that would alter the geology of the area. These activities would result in negligible and localized effects to geological features, primarily due to the construction of concrete fence foundations and minimal cut and fill activities over Sonoyta Hill.
- Communications: The project would not affect communications systems in the area.
- Climate: The project would not affect nor be affected by the climate.
- Wild and Scenic Rivers: The proposed project would not affect any designated Wild and Scenic Rivers because no rivers designated as such are located within the project corridor.

3.1 LAND USE

This section was discussed in the 2003 Final EA and is incorporated herein by reference (NPS 2003). OPCNM is used for public use and recreation, species conservation, and as an International Biosphere Reserve. However, the project corridor is located within the Roosevelt Reservation along the U.S.-Mexico border. In March 2006, a Memorandum of Understanding (MOU) was established between DHS, U.S. Department of the Interior, and U.S. Department of Agriculture stating that all parties recognize that CBP operation and construction within the Roosevelt Reservation is the intended land use of the reservation (see Appendix A). Thus, land use within the majority of the project corridor is USBP infrastructure and operations. The

construction footprint over Sonoyta Hill and the use of South Puerto Blanco Road are north of the 60-foot Roosevelt Reservation and would require the issuance of a Special Use Permit by the NPS.

3.2 SOILS

Soils found within the project corridor were previously discussed in the 2003 Final EA and are hereby incorporated by reference (NPS 2003). No prime farmlands are located in the project corridor. There are 7 soils series found within the project corridor, as follows:

- Antho fine sandy loam
- Gilman very fine sandy loam, saline
- Gunsight very gravelly loam, 2-15% slopes
- Harqua very gravelly loam, 0-3% slopes
- Harqua-Gunsight complex
- Lomitas very stony loam, 8-40% slopes
- Torrifluvents (wash beds)

3.3 BIOLOGICAL RESOURCES

3.3.1 Vegetation Communities

Vegetation communities within the project corridor were discussed in the 2003 NPS Final EA and are incorporated herein by reference (NPS 2003). In general, the dominant biotic community of OPCNM is the mixed Sonoran desertscrub. This community is predominantly composed of palo verde (*Cercidium* spp.), organ pipe cactus (*Stenocereus thurberi*), saguaro (*Carnegiea gigantea*), ocotillo (*Fouquieria splendens*), Sonora barrel cactus (*Ferocactus covillei*), California barrel cactus (*Ferocactus cylindraceus*), and brittlebush (*Encelia farinosa*) (INS 2001). The creosote-bursage vegetation community is the second most common vegetation community on OPCNM and is comprised of creosotebush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), and triangle-leaf bursage (*Ambrosia deltoidea*) (NPS 2003). Saltbush (*Atriplex* sp.) is common throughout most of the project corridor, especially east of the Lukeville POE (Baiza 2007).

3.3.2 Wildlife

A detailed discussion of wildlife resources was presented in the 2003 NPS Final EA and is incorporated herein by reference (NPS 2003). In summary, a large diversity of animal species

are known to occur on OPCNM; these species include 55 mammals, 277 bird species, 48 reptiles and amphibians, one fish and two invertebrates. Many of the wildlife species found on OPCNM are obligate desert species; however, the riparian habitat available at Quitobaquito and Aquajita Springs support some aquatic species such as the Sonoran toad (*Bufo alvarius*) and Quitobaquito pupfish (*Cyprinodon macularius*).

3.3.3 Non-Native and Invasive Species

Non-native vegetation was previously discussed in the 2003 Final EA and is incorporated herein by reference (NPS 2003). Although the OPCNM has a minimal amount of non-native or invasive species in relation to the overall habitat area, these species have become a major problem in certain areas. One such area is Quitobaquito Springs. The common non-native species observed on the OPCNM include buffelgrass (*Pennisetum ciliare*), blue panic (*Panicum antidotale*), and ice plants (*Mesembryanthemum* sp.). More specifically, the common non-native plant located in the project corridor is Bermuda grass (*Cynodon dactylon*) (Baiza 2007).

3.4 UNIQUE AND SENSITIVE AREAS

Southwestern Arizona has many unique and sensitive areas. Ongoing efforts by many government agencies, as well as private entities, have set aside areas for preservation. These areas are intended for use by the public in hopes of better understanding the myriad of biological and physical systems exhibited in their natural state. The unique or sensitive areas located within or near the project corridor are discussed below.

Organ Pipe Cactus National Monument

OPCNM was established in 1937 by President Franklin D. Roosevelt to “celebrate the life and landscape of the Sonoran desert” (Desert USA 2004a). In 1976, the United Nations designated OPCNM as an International Biosphere Reserve; it is an almost pristine example of the Sonoran Desert (NPS 2005). In OPCNM, three distinctive desert habitats (i.e., desert wilderness, vast mountain ranges, and plains) converge within 500 square miles, representing diverse plant communities (Desert USA 2004b). OPCNM encompasses approximately 330,000 acres, of which 312,600 acres, or 94 percent, are designated as Wilderness Area (NPS 2004). With 26 species of cacti, OPCNM exhibits an extraordinary collection of plants of the Sonoran desert, including the organ pipe cactus, which is rarely found in the U.S. (NPS 2004). Within the project corridor lies components (i.e., xeroriparian areas and rocky hillsides) that make up the Sonoran Desert

ecosystem for which the OPCNM was set aside to preserve. These components are common throughout the Sonoran Desert, although the concentrations of certain Sonoran Desert species (e.g., organ pipe, senita) are higher within the OPCNM.

Cabeza Prieta National Wildlife Refuge (CPNWR)

CPNWR shares 56 miles of border with Sonora, Mexico, and is home to seven mountain ranges (USFWS 2002, Defenders of Wildlife 2004). CPNWR, established in 1939 to conserve natural wildlife resources (e.g., desert bighorn sheep [*Ovis canadensis mexicana*]), occupies 860,010 acres and is the third largest National Wildlife Refuge in the contiguous 48 states (USFWS 2002, 2005). The Arizona Desert Wilderness Act of 1990 designated over 90 percent (approximately 799,000 acres) of CPNWR as Wilderness Area making it the largest Wilderness Area in the state of Arizona (Arizona Wilderness Coalition 2004). CPNWR supports more than 391 plant species and 300 wildlife species, including the Federally listed Sonoran pronghorn (*Antilocapra americana sonoriensis*) (USFWS 2002). The refuge is characterized by creosote and bursage flats, ocotillo, western honey mesquite (*Prosopis glandulosa*), palo verde, ironwood (*Olneya tesota*), and an abundance of cacti, including cholla (*Opuntia* spp.) and saguaro.

Barry M. Goldwater Range (BMGR)

BMGR, established in 1941 as an aerial gunnery and bombing range, lies to the north and west of the project corridor and CPNWR. BMGR is a 1.7 million acre military tactical aviation training area with 57,000 cubic miles of restricted airspace. It is the second largest range within Department of Defense, and at one time over 2.7 million acres were set aside for the range. Within the boundaries of BMGR, at least 100 important cultural resource sites have been identified, three BLM designated areas of critical environmental concern, and the Flat-tailed Horned Lizard Management Area (BMGR Visitor Information Brochure, n.d.). The “southern westernmost” boundary of BMGR shares approximately 37 miles with the U.S.-Mexico border (U.S. Department of Air Force *et al.* 2006).

The Tohono O’odham Nation

Tohono O’odham Nation (TON) is comprised of four non-contiguous areas (Inter Tribal Council of Arizona 2003). The largest of the four areas within TON is located east of the project corridor. This area stretches 70 miles across the U.S.-Mexico border and occupies 2,773,357 acres. The total population of TON was 23,750 in 1999 (Arizona Department of Commerce 2004). The town

of Sells serves as the Nation's capital and other small, scattered villages are located within TON. Members of the Nation live in both the U.S. and Mexico.

3.5 WILDERNESS

The Wilderness Act of 1964 allowed for the establishment of a National Wilderness Preservation System. The act allows for the establishment of wilderness on Federally owned lands designated by Congress. Areas designated as wilderness are to be administered for the use and enjoyment of the public in such a manner as to leave the lands undisturbed for future use and enjoyment as wilderness, and to provide protection of these areas, and the preservation of their wilderness character. To maintain the wilderness characteristics of designated wilderness areas certain activities are prohibited and include permanent roads (except as necessary to meet minimum requirements for administration of the area, including measures required for emergencies involving human health and safety), temporary roads, motor vehicles, motorized equipment, motorboats, landing of aircraft, any form of mechanical transport, and structures (16 United States Code [U.S.C.] 1121 [note], 1131-1136).

In furtherance of the purpose of the Wilderness Act of 1964, the Arizona Desert Wilderness Act of 1990 was established to provide for the designation of certain public lands as wilderness in the state of Arizona (Public Law 88-577, found in 16 U.S.C. 1131-1136). There are no designated wilderness areas within the project corridor. However, most of OPCNM beginning 150 feet north of South Puerto Blanco Road is designated as Wilderness.

3.6 PROTECTED SPECIES AND CRITICAL HABITATS

3.6.1 Federal

An in-depth discussion of this resource was presented in the 2003 NPS Final EA and is incorporated herein by reference (NPS 2003). Within Pima County, 13 species are listed as Federally endangered, two are Federally threatened, one has been proposed for endangered status and three for candidate species (Table 3-1). Not all of these species occur within the vicinity of the project corridor; however, several have the potential to occur within or near the project corridor. These include the lesser long-nosed bat, Sonoran pronghorn and the Acuna cactus (*Echinomastus erectocentrus* var. *acuñensis*).

Table 3-1. Federally Listed and Proposed Species Potentially Occurring Within Pima County, Arizona

Common/Scientific Name	Federal/State Status	Habitat	Potential to Occur within or near Project Corridor
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Candidate	Large blocks of riparian woods.	No – No suitable habitat.
Masked bobwhite (<i>Colinus virginianus ridgewayi</i>)	Endangered	Desert grasslands with diversity of dense native grasses, forbs, and brush.	No – Presently only known to occur on Buenos Aires NWR.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	Endangered	Cottonwood/willow and tamarisk vegetation communities along river and streams.	No – No suitable habitat.
California brown pelican (<i>Pelecanus occidentalis californicus</i>)	Endangered	Coastal lands and islands, also found around lakes and rivers inland.	No – No suitable habitat.
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	Threatened	Nests in canyons and dense forests with multi-layered foliage structure.	No – No suitable habitat.
Sonoran pronghorn (<i>Antilocapra americana sonoriensis</i>)	Endangered	Broad intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associations. Current distribution known to occur on the CPNWR.	Yes- Species present on CPNWR and OPCNM.
Ocelot (<i>Leopardus pardalis</i>)	Endangered	Dense, thorny chaparral communities and cedar breaks.	No – No suitable habitat.
Lesser long-nosed bat (<i>Leptonycteris curasoae yerbabuena</i>)	Endangered	Desertscrub habitat with agave and columnar cacti present as food plants.	Yes – Potential foraging habitat present.
Jaguar (<i>Panthera onca</i>)	Endangered	Found in Sonoran desertscrub up through subalpine conifer forest.	No – Extirpated from the area.
Sonoyta mud turtle (<i>Kinosternon sonoriense longifemorale</i>)	Candidate	Occurs in pond and streams; however, it is restricted to Quitobaquito Springs and nearby stream habitat.	No – Known to occur at Quitobaquito Springs, but outside of project corridor.
Chiricahua leopard frog (<i>Rana chiricahuensis</i>)	Threatened	Streams, rivers, ponds, backwaters, and stock tanks that are mostly free from exotic species at elevations ranging from 1,200 to 4,000 feet.	No – No suitable habitat.
Quitobaquito pupfish (<i>Cyprinodon macularius</i>)	Endangered	Shallow springs, small streams, and marshes. Tolerant of saline and warm water.	No – Critical Habitat designated within the OPCNM at Quitobaquito Springs and Pond, but outside of the project corridor.
Gila chub (<i>Gila intermedia</i>)	Proposed Endangered	Pools, springs, cienegas, and streams within the Gila River system.	No – Known populations occur within the Gila River drainage.
Gila topminnow (<i>Poeciliopsis occidentalis occidentalis</i>)	Endangered	Small streams, springs, and cienegas within the Gila River system.	No – Known populations occur within the Gila River drainage.
Kearney blue star (<i>Amsonia kearneyana</i>)	Endangered	West-facing drainages in the Baboquivari mountains.	No –Project corridor west of Baboquivari Mountains.
Pima pineapple cactus (<i>Coryphantha scheeri</i> var. <i>robustispina</i>)	Endangered	Ridges in semi-desert grassland and alluvial fans in Sonoran desertscrub with elevation ranges from approximately 2,300 to 5,000 feet.	No – Known populations occur in east Pima County at high elevations.

Table 3-1, continued

Common/Scientific Name	Federal/State Status	Habitat	Potential to Occur within or near Project Corridor
Nichol Turk's head cactus (<i>Echinocactus horizonthalonius</i> var. <i>nicholii</i>)	Endangered	Unshaded microsites in Sonoran desertscrub on dissected limestone mountains.	No – Known populations occur in east Pima and south Pinal counties.
Huachuca water umbel (<i>Liaeopsis schaffneriana</i> var. <i>recurva</i>)	Endangered	Cienegas, perennial low gradient streams, wetlands.	No – Known populations found in San Pedro River Basin.
Acuña cactus (<i>Sclerocactus erectocentrus</i> Synonym: <i>Echinomastus erectocentrus</i> var. <i>acunensis</i>)	Candidate	Acuña cacti are found on granite substrates on rounded small hills at elevations ranging from 1,300-2,000 feet.	Yes – Potential to occur, known populations are located on OPCNM approximately 8 miles north of the U.S.-Mexico border.

Source: USFWS 2007.

3.6.1.1 Sonoran Pronghorn

The Sonoran pronghorn was listed as Federally endangered on March 11, 1967 (32 Federal Register [FR] 4001), and is currently recognized as one of five subspecies of pronghorn (USFWS 1998). Sonoran pronghorn range from the plains of central and western Sonora, Mexico north to southwestern Arizona (USFWS 2003). In Arizona, Sonoran pronghorn occur on the CPNWR, the BMGR, and OPCNM, from State Route 85 west to the Cabeza Prieta Mountains and from the vicinity of the Wellton-Mohawk Canal south to the U.S.-Mexico border (Figure 3-1). Although, the Sonoran pronghorn is known to inhabit the OPCNM west of State Route 85, the likelihood of encountering a Sonoran pronghorn within the project corridor is limited because Mexico Highway 2 is near the project corridor, the existing barbed wire fence, and human activity near Sonoyta, Mexico. All of these elements are considered an impediment to pronghorn movement (NPS 2003).

3.6.1.2 Lesser Long-nosed Bat

The lesser long-nosed bat was listed as endangered on September 30, 1988 (53 FR 38456). Lesser long-nosed bats are a nectar, pollen, and fruit eating species that migrates into southern New Mexico and Arizona seasonally from Mexico (Arizona Game and Fish Department [AGFD] 2003). Lesser long-nosed bats migrate starting in early April, apparently following the flowering of columnar cacti and desert agave (*Agave deserti simplex*), returning to Mexico during September (USFWS 1995). A total of 206 saguaro and 295 organ pipe cacti were observed within the survey corridor during the field surveys. It should be noted that over 85 percent of the columnar cacti observed within the project corridor were located within the 0.65 miles across Sonoyta Hill.

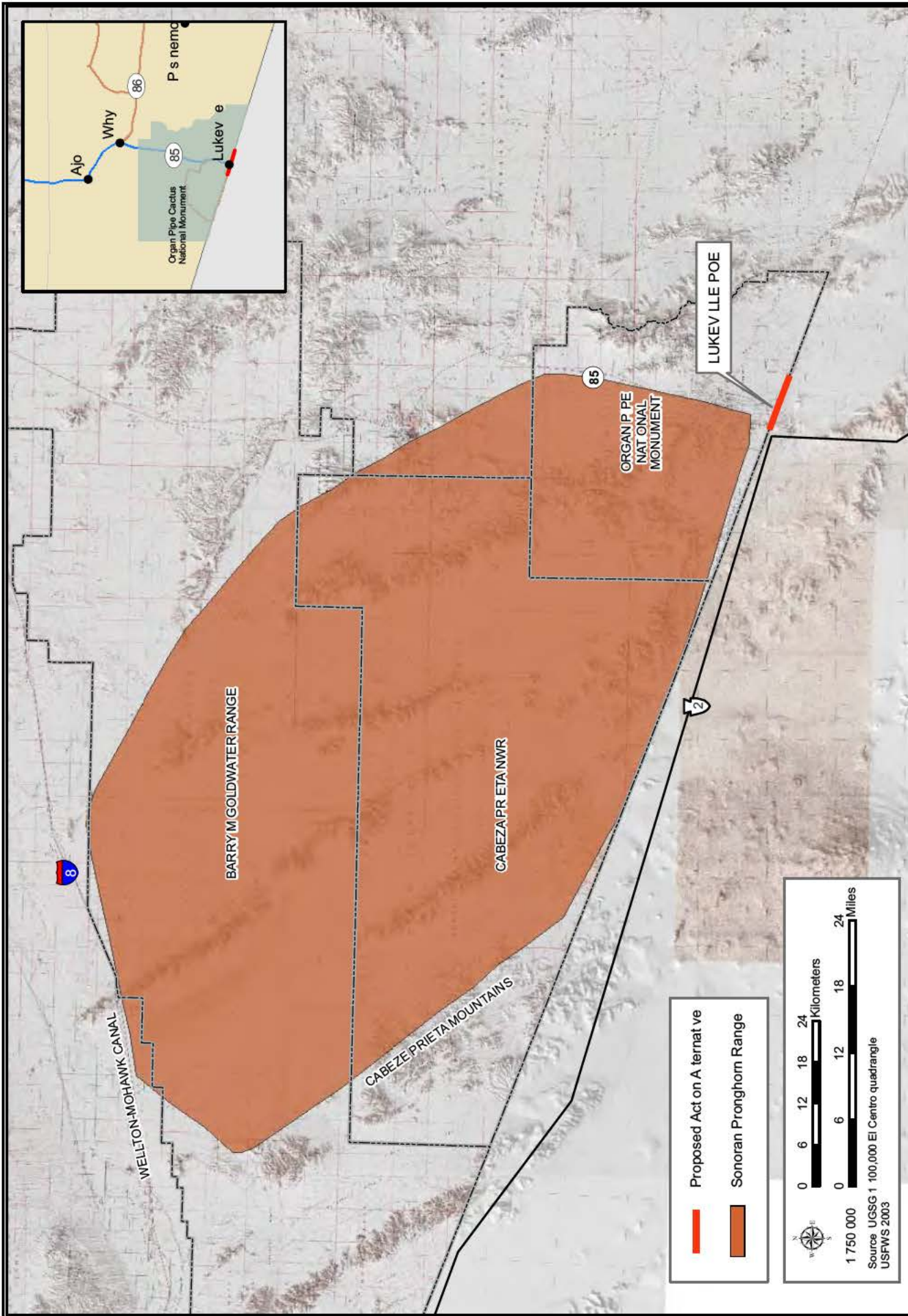


Figure 3-1: Sonoran Pronghorn Range within Project Corridor

The lesser long-nosed bat is found during the summer within desert grasslands and scrublands. The lesser long-nosed bat spends the day in caves and tunnels and forages at night upon plant nectar and pollen. This bat is an important pollinator of agave, and organ pipe and saguaro cacti (AGFD 2003). Roosting occurs in caves, abandoned buildings, and mines, which are usually located at the base of mountains where food sources are present (AGFD 2003). The lesser long-nosed bat is a seasonal resident of the OPCNM. Roosting sites are located in the OPCNM, but no known roosting sites occur within the project corridor (NPS 2003). The closest location of a known maternity colony to the project corridor would be approximately 15 miles (NPS 2003).

3.6.1.3 *Acuña Cactus*

The candidate status of *Acuña cactus* was last reviewed on May 11, 2005 (70 FR 24870). Seven populations of *Acuña cactus* are currently known to exist (Baiza 2007). The species is restricted to well drained knolls and gravel ridges between major washes on substrates, including granite hills and flats and bright red to white andesite, occurring from 1,300 to 2,000 feet in elevation (AGFD 2004). The species requires insect vectors for pollination, with polylectic bee species being the primary agent (AGFD 2004). Dispersal occurs primarily through gravity, and secondarily by wind, rain, and small insects.

As a candidate species, the *Acuña cactus* is not Federally protected, but is protected by the Arizona's Native Plant Law. Consideration is given to candidate species because of the potential for their listing during project activities, which could require USFWS Section 7 consultation. Although the *Acuña cactus* is known to inhabit the OPCNM, the known population is outside of the project corridor (approximately 8 miles north of U.S.-Mexico border) and no specimens were found within the project corridor during recent field surveys.

3.6.2 State

Suitable habitat for state sensitive species exists within the project corridor. All of the faunal species listed in Table 3-1 have a state-sensitive designation of Wildlife of Special Concern (WSC). State protected species (i.e., WSC) potentially found in the project corridor that are not Federally protected include the Great Plains narrow mouthed toad (*Gastrophylax olivacea*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), Sonoran desert tortoise (*Gopherus agassizii*), California leaf-nosed bat (*Macrotus californicus*), Mexican rosy boa (*Charina trivirgata trivirgata*), and tropical kingbird (*Tyrannus melancholicus*). The Sonoran

desert tortoise and the Mexican rosy boa have the potential to exist near Sonoyta Hill within the project corridor. A complete list of state and Federal protected species for Pima County is included in Appendix B.

3.6.3 Critical Habitat

The Quitobaquito pupfish (*Cyprinodon macularius*) is the only species near the project corridor which has designated critical habitat. The critical habitat includes the Quitobaquito Springs and pond, and a 100-foot riparian buffer (USFWS 1986). Although the Quitobaquito pupfish critical habitat is located within the OPCNM, it is approximately 10.5 miles west of the project corridor.

3.7 CULTURAL RESOURCES

The NHPA of 1966 establishes the Federal government's policy to provide leadership in the preservation of historic properties and to administer Federally owned or controlled historic properties in a spirit of stewardship. Section 106 of the NHPA of 1966, as amended, requires Federal agencies to identify and assess the effects of their undertakings on cultural properties included in or eligible for inclusion in the National Register of Historic Places (NRHP), and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. Federal agencies must consult with the appropriate state and local officials, Indian tribes, applicants for Federal assistance, and members of the public and consider their views and concerns about historic preservation issues. The ACHP is authorized to promulgate such rules and regulations as it deems necessary to govern the implementation of Section 106 in its entirety. Those regulations are contained in the Code of Federal Regulations as 36 CFR Part 800, "Protection of Historic Properties".

Several other important pieces of legislation include the Archeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), along with EO 13007 and EO 13175. ARPA strengthened the permitting procedures required for conducting archeological fieldwork on Federal lands, originally mandated by the Antiquities Act. It also established more rigorous fines and penalties for unauthorized excavation on Federal land. NAGPRA mandates Federal agencies to summarize, inventory, and repatriate cultural items in the possession of or control of the Federal agency to lineal descendants or to culturally affiliated Federally recognized Indian tribes. NAGPRA also requires that certain procedures be followed when there is an intentional excavation of or an inadvertent discovery of human remains. EO

13007 was issued on May 24, 1996 in order to facilitate the implementation of the American Indian Religious Freedom Act of 1978. It specifically charges Federal agencies to: (1) accommodate, to the extent practical, American Indian access to and use of sacred sites by religious practitioners; (2) avoid adversely affecting the physical integrity of sacred sites; and (3) to maintain the confidentiality of these sites. E.O. 13175 outlines the official U.S. government policy on consultation and coordination with American tribal governments. The order emphasizes formal recognition of the American Indian Tribes' status as...“domestic independent nations” that have entered into treaties with the U.S. guaranteeing their right to self-government. It stipulates that this consultation would be done on a “government to government basis.”

3.7.1 Cultural History

The archaeology of southern Arizona is relatively complex considering the various geographic and related cultural features. The OPCNM lies within a cultural area known as the Western Papaguería, which includes the region bounded by the Colorado River to the west, the Gila River to the north, the TON to the east, and Puerto Peñasco, Sonora, Mexico to the south (USFWS 2001). The cultural history of OPCNM can be divided into five periods:

Period	Dates
Preceramic	10,000 B.C. to A.D. 200
Ceramic	A.D. 200 to 1500
Early Historic	A.D. 1540 to 1848
Late Historic	A.D. 1848-1945
World War II and Cold War	A.D. 1945-1989

Source: USFWS 2001

3.7.2 Previous Investigation

A cultural resources survey was conducted in 2002 for the proposed construction of vehicle barriers along the U.S.-Mexico Border with the OPCNM. The survey corridor consisted of a 100 foot survey corridor along the international border within the OPCNM. The survey identified seven cultural resources that would be potentially impacted by the proposed vehicle barriers (NPS 2003).

3.7.3 Current Investigation

A site records check and cultural resources survey was conducted for the construction footprint of the Proposed Action Alternative. Three previously recorded historic objects, International Boundary Monuments 166, 167, and 168 were relocated during the current surveys. The International Boundary Monuments are listed on the NRHP and are considered significant

cultural resources. In addition, one previously recorded archaeological site, the Gachado Well and Line Camp (AZ C:1:17[ASM]) was also relocated and mapped during the current survey. This archaeological site is also listed on the NRHP and is considered a significant cultural resource. It should be noted that the Gachado Well and Line Camp, however, are not located within the 60-foot wide project corridor (Tuomey 2007).

3.8 AIR QUALITY

A detailed discussion of air quality conditions was presented in the 2003 NPS Final EA and is incorporated herein by reference (NPS 2003). Pima County is classified as being in attainment for all criteria pollutants under the National Ambient Air Quality Standards (NAAQS) (Pima County Department of Environmental Quality [PCDEQ] 2007).

According to 40 CFR 51.853(b), Federal actions require a Conformity Determination for each pollutant where the total of direct and indirect emissions in a non-attainment or maintenance area caused by a Federal action would equal or exceed any of the rates in paragraphs 40 CFR 51.853(b)(1) or (2). If emissions from a Federal action do not exceed *de minimis* thresholds, and if the Federal action is not considered a regionally significant action, it is exempt from further conformity analysis. Therefore, because Pima County is in attainment for all criteria pollutants and because any alternative chosen would not exceed *de minimis* thresholds, a conformity analysis is not warranted (see Section 4.8.2).

3.9 WATER RESOURCES

A detailed discussion of this resource was presented in the 2003 NPS Final EA and is incorporated herein by reference (NPS 2003). Surface waters on OPCNM are limited as water availability varies seasonally with the majority of rainfall occurring in late summer. Section 404 of the CWA of 1977 (PL 95-217) authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into waters of the U.S., including wetlands. Any area that meets these criteria is commonly classified as "Waters of the U.S." Waters of the U.S. are further defined as all other waters such as intrastate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, or impoundments of waters, tributaries of waters, and territorial seas. Activities that result in the dredging and/or filling of jurisdictional Waters of the U.S., including wetlands, are

regulated under Section 404 of the CWA. There are 16 intermittent streams which cross the project corridor; however, there are no perennial streams on OPCNM (NPS 2003). Wetlands are sparse on OPCNM and are limited to those areas with perennial water flow such as Quitobaquito Springs and Aquajito Springs. Both of these wetland areas are outside of the project corridor and would not be impacted (NPS 2003).

The project corridor is within the Western Mexican Drainage Basin (WMDB), which covers approximately 730 square miles in southern Arizona (INS 2001). The WMDB is similar in structure to the surrounding Basin and Range Province basins that are characterized by broad alluvium-filled valleys dissected by elongated mountain ranges. The Arizona Department of Water Resources (ADWR) estimated that in 1988 approximately 4.1 million acre-feet of groundwater was stored at a depth of 1,200 feet below the land surface (ADWR 2005, INS 2001). The annual recharge rate for the WMDB is 2,400 acre-feet per year (Leake 2005). In 1985, the ADWR estimated approximately 220 acre-feet of water was withdrawn from the WMDB (ADWR 2005). Since the recharge rate far exceeds the withdrawal rate, the WMDB currently provides ample groundwater supply for the current users.

The Lower Gila River Basin is situated north of the WMDB and OPCNM, within this basin, groundwater occurs in both floodplain and basin fill deposits. Streambed or floodplain deposits (consisting of sand, gravel, cobbles, and boulders) range from approximately 10 ft thick in the smaller drainages to as much as 110 ft thick in the Gila River floodplain (Babcock *et al.* 1947). The basin fill deposits may be divided into three separate units; the upper sandy unit, a middle fine-grained unit, and a lower coarse-grained unit (ADWR 2004). These units vary in thickness and may not be present at all locations. Groundwater recharge is from infiltration of rainfall runoff and underflow from groundwater basins that are hydraulically up gradient (Weist 1965). The groundwater for the construction of the proposed project would come from within this basin and more than likely from the town of Why or Ajo, Arizona. Because much of the land surrounding the towns of Ajo and Why is undeveloped public land and the need for water in the region is limited to the populated areas, the municipal wells often maintain high water levels (Tibbits 2004).

Pursuant to the National Flood Insurance Act of 1968, as amended (42 USC 4001 et seq.), and the Flood Disaster Protection Act of 1973 (P.L. 93-234, 87 Stat. 975), EO 11988, floodplain management requires that each Federal agency take actions to reduce the risk of flood loss,

minimize the impact of floods on human safety, health and welfare, and preserve the beneficial values which floodplains serve. EO 11988 requires that agencies evaluate the potential effects of actions within a floodplain and avoid floodplains unless the agency determines that there is no practicable alternative. Where the only practicable alternative is to site in a floodplain, a planning process is followed to ensure compliance with EO 11988. In summary, this process includes the following steps:

- determine whether or not the action is in the regulatory floodplain;
- conduct early public notice;
- identify and evaluate practicable alternatives, if any;
- identify the impact of the action;
- minimize the impact;
- reevaluate alternatives;
- present the findings and a public explanation; and
- implement the action.

This process is further outlined on the FEMA's Environmental Planning and Historic Preservation Program Web site (FEMA 2006). As a planning tool, the NEPA process incorporates floodplain management through analysis and public coordination, ensuring that the floodplain management planning process is adhered to. In addition, floodplains are managed at the local municipal level through the assistance and oversight of FEMA. According to FEMA Map Panel number 0007643050B, approximately 550 feet of the project corridor is located within the 100-year floodplain. This area is located immediately west of the Lukeville POE.

3.10 SOCIOECONOMICS

The socioeconomic environment for the Region of Influence (ROI), Pima County, was described in the 2003 Final EA and is herein incorporated by reference (NPS 2003). The population of Pima County in 2006 was estimated at 902,720 (U.S. Census Bureau 2005). The 2005 racial mix of Pima County was predominantly Caucasian (71.1 percent), followed by American Indians and Alaskan Natives (3.2 percent), African Americans (2.9 percent) and Asian persons (2.4 percent), with the remaining 20.4 percent of the population reporting other races (U.S. Census Bureau 2005). Persons of any race can claim Hispanic or Latino origin; 32 percent of the 2005 population of Pima County claim to be of Hispanic or Latino origin (U.S. Census Bureau 2005). The total number of jobs in Pima County in 2005 was 486,165, an increase of 26 percent over the number of jobs in 1995 (384,604; Bureau of Economic Analysis [BEA] 2005). The 2005 annual average unemployment rate for Pima County was 4.6 percent (Arizona Department of

Commerce 2005). This is lower than the 4.7 percent average annual unemployment rate for the state of Arizona (Arizona Department of Commerce 2005).

In 2005, Pima County had a per capita personal income (PCPI) of \$28,869. This PCPI ranked 2nd in the state of Arizona, and was 96 percent of the state average of \$30,019, and 84 percent of the National average of \$34,471. Total personal income (TPI) for Pima County in 2005 was \$26.7 billion.

3.10.1 Environmental Justice

E.O. 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations) was signed in February 1994. This order was intended to direct Federal agencies "...to make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the [U.S.]..." To comply with the E.O., minority and poverty status in the vicinity of the project was examined to determine if any minority and/or low-income communities would potentially be disproportionately affected by implementation of the Proposed Action Alternative. Both low-income and minority populations are prevalent within the ROI. No residential areas exist in or near the project corridor in the U.S. However, developed areas (i.e., residential) are located adjacent to the project corridor in Sonoyta, Mexico.

3.10.2 Protection of Children

E.O. 13045 requires each Federal agency "to identify and assess environmental health risks and safety risks that may disproportionately affect children", and "ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks". This E.O. was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. The potential for impacts to the health and safety of children is greater where projects are located near residential areas. No residential areas exist in or near the project corridor in the U.S. However, developed areas (i.e., residential) are located adjacent to the project corridor in Sonoyta, Mexico.

3.11 NOISE

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

Sound levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise measurement recommended by the U.S. Environmental Protection Agency (EPA) and has been adopted by most Federal agencies (EPA 1974). A-weighted decibels (dBA) are used to express the relative loudness of sounds in air as perceived by the human ear (Generac Power Systems, Inc. 2004). A-weighting is necessary to compare the effects of sounds on the human body, because the human ear is less sensitive at low frequencies than at high frequencies. A DNL of 65 dBA is most commonly used for noise planning purposes, and represents a compromise between community impact and the need for activities like construction. Areas exposed to DNL above 65 dBA are generally not considered suitable for residential use. A DNL of 55 dBA was identified by EPA as a level below which there are effectively no adverse impacts (EPA 1974).

Noise levels surrounding the project corridor are variable depending on the time of day and climatic conditions. The construction activities potentially causing elevated noise levels within the project corridor would include diesel and gasoline powered generators, trucks, and construction equipment.

Heavy duty trucks generate a noise level of approximately 90 dBA. Attenuation to 55 dBA occurs at a distance of approximately 2,600 feet depending on climatic conditions, topography, vegetation, and man-made barriers (Generac Power Systems, Inc. 2004). Noise levels for other types of construction equipment range from the loudest, tractors and backhoes (70 to 95 dBA) to pumps and generators (65 to 85 dBA) (Bugliarello *et al.* 1976). The Lukeville POE is a busy port with continuous traffic during its hours of operation. Therefore, noise generated near the POE is expected to be elevated due to the operation of the POE and associated traffic. The OPCNM and its associated Wilderness Area as well as the residences in Mexico are considered sensitive noise receptors and are located near the project corridor.

3.12 AESTHETICS

Aesthetic resources consist of the natural and man-made landscape features that appear indigenous to the area and give a particular environment its visual characteristics. The major visual characteristic of southern Arizona lies in its vast areas of naturally occurring landscape, tranquil dark skies, and scenic mountain ranges. The project corridor is located near Sonoyta, Mexico and the town of Lukeville, Arizona (i.e., Lukeville POE). OPCNM and its associated Wilderness Areas are located adjacent to the project corridor and are visited for recreational purposes, natural settings, and aesthetic values. However, the project corridor currently has a limited aesthetic value due to the disturbed nature of the project footprint, existing PVBs and chain link fence, illegal trails, trash (Photograph 3-1), Sonoyta, Mexico (Photograph 3-2), and Lukeville POE (Photograph 3-3).



Photograph 3-1. Trails and trash left by IAs near Lukeville, Arizona POE.



Photograph 3-2. View of Sonoyta, Mexico residential areas from U.S. Border near Lukeville, Arizona.



Photograph 3-3. Lukeville, Arizona-Sonoyta, Mexico POE.

3.13 WASTE

3.13.1 Hazardous Waste

EPA's mission is to protect humans and the environment and work to develop and enforce regulations that implement environmental laws enacted by Congress (from such legislation as the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980). The EPA maintains a list of hazardous waste sites, particularly waste storage/treatment facilities or former industrial manufacturing sites in the U.S. The chemical contaminants released into the environment (air, soil or groundwater) from hazardous waste sites may include heavy metals, organic compounds, solvents and other chemicals. The potential adverse human health impact of hazardous waste sites is a considerable source of concern to the general public, as well as government agencies and health professionals.

EPA databases, Environmental and Compliance History Online and Envirofacts Data Warehouse, were reviewed for the locations of hazardous waste sites within or near the proposed project corridor (EPA 2007a, 2007b). According to both of these databases, no hazardous waste sites are located near or within the project corridor.

3.13.2 Unregulated Solid Waste

Unregulated solid waste within OPCNM has become a severe problem in recent years due to illegal vehicle and foot traffic. According to the Ninth Report of the Good Neighbor Environmental Board (GNEB) to the President and Congress of the U.S., the average IA disposes of approximately 8 pounds of waste a day. This waste consists of backpacks, clothing, blankets, water bottles, plastic sheeting, food, and other debris (GNEB 2006). Within the project area these forms of unregulated solid waste are the most commonly observed.

SECTION 4.0
ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

In accordance with CEQ regulations (40 CFR § 1502.16), this section of the EA addresses potential impacts to the affected environment within the project corridor for the two alternatives outlined in Section 2 of this document. An impact (consequence or effect) is defined as a modification to the human or natural environment that would result from the implementation of an action. The impacts can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action. The effects can be temporary, short-term, long-term or permanent. For purposes of this EA, temporary effects are defined as those that would occur during construction or immediately after construction; short-term impacts would last less than 3 years after completion of the action. Long-term impacts are defined as those that would last 3 to 10 years. Permanent impacts would indicate an irretrievable loss or alteration of resources.

Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. The significance of the impacts presented in this EA is based upon existing regulatory standards, scientific and environmental knowledge, and best professional opinions. Significant impacts are those effects that would result in substantial changes to the environment (as defined by 40 CFR 1500-08) and should receive the greatest attention in the decision making process.

This EA describes the potential permanent impacts assuming that the entire 60-foot Roosevelt Reservation and 150-foot project footprint over Sonoyta Hill would be disturbed. It is also assumed that within the construction footprint any impacts would be permanent. Therefore, the permanent impacts described for the Proposed Action Alternative would total approximately 45 acres (12 acres within 150-foot wide footprint and 33 acres the within 60-foot wide footprint).

Other assumptions were also made in this EA regarding the primary pedestrian fence. It was assumed that in order to build the road and fence would require a range of 5.2 to 11.4 acre-feet (1.7 million gallons to 3.7 million gallons) of water for the concrete footer and dust suppression. One acre-foot is equivalent to 325,000 gallons of water. The primary pedestrian fence would require, as needed, maintenance activities to be performed by USBP that would be mostly limited to minor patchwork repairs and standard maintenance operations. These maintenance activities would not result in significant impacts to the natural or human environment.

The following discussions describe and, where possible, quantify the potential effects of each alternative on the resources within or near the project corridor. All impacts described below are considered to be adverse unless stated otherwise.

4.1 LAND USE

4.1.1 Alternative 1: No Action Alternative

Under the No Action Alternative, no infrastructure proposed as part of this project would be constructed. Although land use would not change, IA pedestrian traffic on OPCNM would continue and potentially increase with the implementation of other border enforcement activities along the southwest border.

4.1.2 Alternative 2: Proposed Action Alternative

The majority of the project corridor is within the Roosevelt Reservation. However, some of the project corridor (i.e., 7 acres) over Sonoyta Hill is not within the Roosevelt Reservation and would be used for USBP infrastructure maintenance and enforcement operations. A Special Use Permit articulating USBP's use of the 7 acres would be obtained from the NPS prior to construction, since the area would remain under NPS's management. The use of 7 acres represents less than 0.002 percent of the total OPCNM.

Indirect impacts to land use could occur outside of the project corridor as IAs attempt to circumvent the proposed infrastructure. These impacts cannot be quantified at this time because IA patterns and migration routes are completely out of USBP's control. However, the primary pedestrian fence would act as a force multiplier and allow for USBP to deploy agents to areas without pedestrian barriers. Therefore, potential adverse indirect impacts to land use would be minimal. Indirect beneficial impacts to land use on OPCNM are expected as a result of decreased illegal traffic within the project corridor. By reducing illegal traffic within and adjacent to the project corridor, damage to OPCNM north of the project corridor would also be reduced or possibly eliminated. OPCNM has identified that implementation of the Proposed Action Alternative might allow OPCNM to re-open some areas east of Lukeville (i.e., Gachado Line Camp) to the public that have been closed in the past due to IA activity (Kralovec 2007).

4.2 SOILS

4.2.1 Alternative 1: No Action Alternative

No ground disturbing activities would be conducted as a result of this alternative. Therefore, the No Action Alternative would have no direct impacts, either beneficial or adverse, on the soils within the project corridor. However, soils are currently indirectly impacted by illegal pedestrian traffic on OPCNM. In the absence of the primary pedestrian fence, IA foot traffic would continue and potentially increase, disturbing additional soils and causing soil erosion north of the project corridor.

4.2.2 Alternative 2: Proposed Action Alternative

The Proposed Action Alternative would permanently impact approximately 45 acres of soils within the project corridor through the construction of the primary pedestrian fence. About 17 acres of the total footprint are highly disturbed from the construction of the existing PVBs. Although these impacts would be permanent, they would not be considered significant because the impacts would primarily affect previously disturbed soils, and because of the vast amounts of similar soil types adjacent to the project corridor. No impacts to prime farmlands would occur.

As a result of this alternative, the volume of illegal pedestrian traffic would be expected to decrease and, consequently, would result in long-term indirect beneficial impacts to soils north of the project corridor. Indirect adverse effects to soils could occur in adjacent areas where the border infrastructure proposed under this alternative is not employed, as IAs try to circumvent the improved areas to avoid detection.

A Stormwater Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) under the CWA's National Pollutant Discharge Elimination System (NPDES) would be required for all construction sites greater than 1 acre (33 U.S.C. §1342). These and other mitigation measures proposed to reduce or minimize erosion and ensure the hydrology of the project corridor is not permanently altered are discussed in Section 6.0.

4.3 BIOLOGICAL RESOURCES

4.3.1 Vegetation Communities

4.3.1.1 Alternative 1: No Action Alternative

There would be no direct impacts to the project corridor's vegetation communities as no construction would occur. Adverse, long term impacts to vegetation and vegetation communities would continue to occur from the continued damage caused by IA foot traffic on OPCNM. The No Action Alternative would not increase deterrence of illegal entry nor expand the window of opportunity for USBP agents to detect and respond to illegal entry attempts. Implementation of the No Action Alternative would result in continued indirect adverse impacts to vegetation communities from illegal traffic.

4.3.1.2 Alternative 2: Proposed Action Alternative

Implementation of the Proposed Action Alternative would result in the permanent loss of approximately 28 acres within the project corridor. The remaining 17 acres within the project corridor has no vegetation due to past construction and other human disturbances. The vegetation that does occur consists of locally and regionally common species; therefore, negligible effects would occur to the region's vegetation. Erosion within the disturbed areas would occur but would be minimized by implementing pre- and post-construction BMPs identified in the SWPPP. The proposed primary pedestrian fence and road would be designed and constructed in a manner that would not alter drainage patterns; thus, increased downstream erosion or sedimentation, which could affect vegetation communities, would not be expected.

Beneficial indirect impacts, such as a reduction of native vegetation being damaged from illegal activities and consequent USBP enforcement activities, would occur as IAs and smuggling activities are reduced or potentially eliminated within the area. Conversely, areas outside of the project corridor could be indirectly impacted as IAs attempt to avoid detection and circumvent the proposed infrastructure. These impacts cannot be quantified at this time because IA patterns and migration routes are completely out of USBP's control. However, the primary pedestrian fence would act as a force multiplier and allow USBP to deploy agents to areas without pedestrian barriers, therefore, minimizing potential adverse indirect impacts.

4.3.2 Wildlife

4.3.2.1 Alternative 1: No Action Alternative

No impacts to fish and wildlife resources would occur as a result of the implementation of the No Action Alternative because no construction activities would occur. However, indirect adverse impacts to wildlife from continued illegal pedestrian traffic degrading habitat would occur and could potentially increase.

4.3.2.2 Alternative 2: Proposed Action Alternative

Although approximately 45 acres would be permanently impacted from the Proposed Action Alternative, these impacts would be considered negligible, since much of the project corridor (17 acres) has been previously disturbed, and the remainder has limited and somewhat disturbed vegetation. The Proposed Action Alternative would not have direct impacts to fish or other aquatic species, because the proposed construction activities would not take place in naturally flowing or standing water. Mitigation measures would be implemented for construction in or near washes as stated in Section 6.0 and follow the measures described in the project's SWPPP to reduce potential impacts to riparian areas from erosion or sedimentation.

Mobile animals (e.g., birds) would escape to areas of similar habitat, while other slow or sedentary species of reptiles, amphibians, and small mammals could potentially be lost. As a result, direct minor adverse impacts to wildlife species in the vicinity of the project corridor are expected. Although some animals may be lost, this alternative would not result in any substantial reduction of the breeding opportunities for birds and other animals on a regional scale due to the tens of thousands of acres of suitable, similar habitat adjacent to the project corridor. Additionally, mitigation measures would be implemented to ensure that no "take" of migratory birds occurs if this alternative is implemented, in accordance with the Migratory Bird Treaty Act (MBTA).

Although the primary pedestrian fence could preclude transboundary migration patterns of animals, especially larger mammals (e.g., mule deer [*Odocoileus hemionus*]), and thus fragmenting habitat within the project corridor, these impacts would be considered minimal. Habitat fragmentation typically affects species with small population sizes or that are dependent upon migration to obtain spatially or temporally limited resources (Gilpin and Hanski, 1991). The primary pedestrian fence would be designed and constructed in the washes to allow proper conveyance of flood flows. It is expected that these designs would also allow the transboundary migration of reptiles, amphibians, and small mammals, which would reduce the fragmentation

effects. Wildlife would also still be able to migrate across the U.S.-Mexico border either to the east or west of the project footprint terminus. In addition, the species located within the project corridor are regionally common in both the U.S. and Mexico. Therefore, no significant adverse effects are anticipated to the region's wildlife population.

Indirect adverse impacts to wildlife habitat adjacent to the project corridor could occur as illegal pedestrian traffic attempts to circumvent the proposed infrastructure. It is possible for IAs to attempt illegal entry outside of the project corridor. However, the primary pedestrian fence would act as a force multiplier and allow USBP to deploy agents to areas without pedestrian barriers, minimizing potential adverse indirect impacts. Beneficial indirect impacts would be expected from the protection afforded to areas to the north of the project corridor due to the implementation of the Proposed Action Alternative.

4.3.3 Non-native and invasive species

4.3.3.1 Alternative 1: No Action Alternative

No impacts to non-native and invasive plants are expected as a result of the No Action Alternative because no construction activities would occur. However, indirect adverse impacts, such as the spread of non-native or invasive plants, could occur as a result of continued illegal pedestrian traffic.

4.3.3.2 Alternative 2: Proposed Action Alternative

Disturbance of 45 acres (total) of soils during the construction activities would result in favorable conditions for the establishment of non-native and invasive species. Disturbances would occur in vegetated areas that would create dispersal corridors for invasive species. However, because the project corridor would be patrolled and maintained by NPS and USBP (limiting potential for growth of new sprouts) and would be monitored for the spread of invasive species, potential impacts would not be considered significant. With the exception of Sonoyta Hill, some of the project corridor has been previously disturbed from the construction of the existing PVBs. Regardless, the establishment of invasive species within disturbed areas would be minimized through mitigation measures mentioned above and as described later in Section 6.0. The Proposed Action Alternative would also serve as a barrier to the spread of non-native and invasive plants, as many invasive plant propagules are transported into the U.S. on clothing of IAs (INS 2002).

4.4 UNIQUE AND SENSITIVE AREAS

4.4.1 Alternative 1: No Action Alternative

No impacts to unique and sensitive areas would result from the implementation of the No Action Alternative, as no construction would occur. However, indirect adverse impacts to unique and sensitive areas due to continued illegal pedestrian traffic would occur and could potentially increase.

4.4.2 Alternative 2: Proposed Action Alternative

Noise increases due to construction activities would be temporary; therefore, no long-term significant impacts to unique and sensitive areas, as a result of increases in ambient noise levels, would occur. The construction crews and equipment would access the project corridor along the border road primarily within the Roosevelt Reservation, limiting visual and noise impacts to the OPCNM. However, the use of South Puerto Blanco Road would be required to access the project corridor on the western face of Sonoyta Hill. A Special Use Permit from NPS would be needed for construction to access areas outside of the Roosevelt Reservation. This permit would be obtained prior to construction activities. Temporary impacts to aesthetics would be expected for the duration of the construction activities; however, these would be eliminated upon completion of this alternative. Permanent impacts to aesthetics would also be expected due to the additional infrastructure. However, these impacts would occur primarily within previously disturbed areas and mitigation measures (i.e., using non-reflective materials) would be implemented to ensure any impacts would be less than significant.

Furthermore, approximately 7 acres of unique and sensitive area (i.e., OPCNM) would be directly impacted. This area is located on Sonoyta Hill along the western terminus of the project corridor. Although OPCNM would be adversely impacted, these impacts would not be considered significant as the indirect beneficial impacts from long-term protection of the remaining portions of OPCNM would be expected to outweigh the direct impacts.

The proposed infrastructure would have indirect beneficial impacts to unique and sensitive areas by reducing the frequency of illegal pedestrian traffic on OPCNM and subsequent creation of trails and disposal of trash. Furthermore, long-term protection of OPCNM resources such as natural vegetation, landscapes, and cultural sites would be expected under the Proposed Action Alternative. Indirect adverse impacts such as a decline in visitor attendance may occur during

construction activities; however, once the construction activities are complete, OPCNM would be afforded better protection and a safer environment. Thus, in the long-term, visitor experiences would be potentially enhanced (see Section 4.1.2). Other indirect adverse impacts to unique and sensitive areas outside of the project corridor could occur if IAs chooses to circumvent the proposed primary pedestrian fence. However, the primary pedestrian fence would act as a force multiplier and allow USBP to deploy agents to areas without pedestrian barriers; therefore, potential adverse indirect impacts would be minimized.

4.5 WILDERNESS

4.5.1 Alternative 1: No Action Alternative

No impacts to Wilderness Areas would occur from the implementation of the No Action Alternative, as no construction would occur. However, indirect adverse impacts to Wilderness Areas north and west of the project corridor could occur, since illegal pedestrian traffic would continue to occur and could potentially increase.

4.5.2 Alternative 2: Proposed Action Alternative

Wilderness Areas as defined in the Wilderness Act of 1964 are lands in an area where the earth and its community of life are untrammelled by man. The Proposed Action Alternative would not directly impact any areas designated as Wilderness Area. However, noise associated with construction equipment and construction activities would adversely affect Wilderness Area characteristics. These impacts would be temporary because noise levels near the OPCNM Wilderness would return to preconstruction levels upon completion of construction activities. Additionally, aesthetic qualities inherent to Wilderness Areas would be adversely impacted by the sight of the primary pedestrian fence within the viewshed. Two schematic representations of how the fence would appear from South Puerto Blanco road (near the OPCNM Wilderness) are presented in Exhibit 4-1 and 4-2. Additionally, as shown previously in Photographs 3-1 through 3-3, the area along the border contains a lot of development, litter, trails, and other types of disturbances. The primary pedestrian fence would reduce the amount of IA-associated litter and trails and screen the surrounding development from park visitors. Therefore, the adverse impacts of the primary pedestrian fence, when compared to the No Action Alternative and the long-term benefits of the primary pedestrian fence, would be considered insignificant.

Exhibit 4-1. Schematic Representation of View from South Puerto Blanco Road Facing Southwest



Exhibit 4-2. Schematic Representation of View from South Puerto Blanco Road Facing Southeast



There is a potential for areas adjacent to the project corridor to experience an increase in illegal foot traffic with the implementation of this alternative. All or none of the illegal foot traffic could shift to either east or west of the project corridor and potentially into designated Wilderness Areas. However, the Proposed Action Alternative would allow USBP to deploy agents, as needed, to other areas that are unprotected, which would reduce IA traffic impacts to Wilderness Areas near the project corridor. Therefore, no significant direct or indirect impacts to Wilderness Areas would be expected upon implementation of the Proposed Action Alternative.

4.6 PROTECTED SPECIES AND CRITICAL HABITAT

4.6.1 Alternative 1: No Action Alternative

The No Action Alternative would not directly impact any protected species as no construction activities would occur. However, indirect adverse impacts to protected species, such as habitat degradation as a result of continued illegal pedestrian traffic, would occur and could potentially increase.

4.6.2 Alternative 2: Proposed Action Alternative

The potential impacts to the Sonoran pronghorn associated with the Proposed Action Alternative would be similar to those discussed in the 2003 NPS Final EA and are incorporated herein by reference (NPS 2003). As seen on Figure 3-1, the Sonoran pronghorn range is not within the project corridor. Additionally, the project corridor is located along the U.S.-Mexico border (which is rarely visited by the pronghorn), within 2.1 miles of the Lukeville POE (pronghorn are very reclusive and do not like human interaction), and contains previously disturbed habitat. Although no direct impacts would occur to the pronghorn, there is the potential for indirect adverse impacts if IA traffic shifts west of the proposed infrastructure. Therefore, through consultation with USFWS, CBP and USBP has determined that this alternative would adversely effect the Sonoran pronghorn. CBP and USBP would implement conservation measures, identified during the Section 7 consultation process, to offset these impacts. Some conservation measures that have been identified and would be implemented include:

1. During construction USBP would conduct daily observations of project region as close to dawn as possible to determine if Sonoran pronghorn are within 0.62 mile of project activities. No project work will begin until pronghorn move on their own volition to a distance greater than 0.62 mile from the activities. This measure would be relevant for those activities only on the western slope of Sonoyta Hill, where there is a greater potential for pronghorn to occur.

2. The number of vehicles traveling to and from the project site for construction purposes and the number of trips per day would be minimized to reduce the likelihood of disturbing pronghorn in the area or injuring an animal on the road. The use of vehicle convoys, multi-passenger vehicles, and other methods are appropriate to project construction.
3. CBP will provide assistance to annually fill one supplemental water for Sonoran pronghorn on OPCNM per the CBP programmatic mitigation agreement with USFWS.

The project corridor is not located near any known bat roosting sites, and therefore, would not affect any roost sites, including maternity roosts. Almost all of the Sonoran Desert is considered foraging habitat for the lesser long-nosed bat and OPCNM consist of over 330,300 acres of Sonoran Desert. The permanent disturbance of 28 acres of foraging habitat would amount to the loss of less than 0.0006 percent of foraging habitat within the OPCNM. However, USBP and USFWS have determined that this loss would constitute an adverse impact on the lesser long-nose bat. Conservation measures developed through the Section 7 consultation process would be implemented by USBP to offset these impacts. For example, saguaro and other columnar cacti, which are main food sources for the lesser long-nosed bats, that are located within the project footprint would be removed, avoided, relocated, or replaced as part of the construction activities. Specifications regarding the size of columnar cacti to be relocated or replaced are presented in Section 6.0. Examples of other conservation measures that have been identified and would be implemented include the following:

1. Clearly demarcate the construction footprint to ensure construction contractors do not expand the disturbance area.
2. Salvage of lesser-long nosed bat food plants from areas to be disturbed by project activities as described in the salvage plan.
3. Complete a restoration plan for various illegal trails and roads to compensate for creation or improvement of roads needed for the fence project (in addition to other concerns, this will address the control of non-native, invasive plant species) within six months of issuance of the Biological Opinion.

Although no Sonoran desert tortoises or Mexican rosy boas were observed within the project corridor, the potential exists for them to occur near Sonoyta Hill. Wildlife strikes could be caused by construction vehicles or USBP patrol vehicles during project construction, maintenance activities, and during future USBP operations. However, the likelihood of these strikes are low because of the ability of most wildlife species to escape to surrounding habitat and the relatively low vehicle speed of construction and USBP patrol vehicles, especially in this rugged terrain. Due to the beneficial impacts of a reduction of habitat degradation north of the project corridor

combined with mitigation measures discussed in Section 6, these potential impacts to these two species are considered insignificant.

Additionally, the cactus ferruginous-pygmy owl has the potential to exist in the project corridor. However, the habitat in the project corridor is extremely limited and classified as ranging from poor to moderate with the exception of the western slope of Sonoyta Hill (NPS 2003). Therefore, due to the previously disturbed nature of some of the project corridor in conjunction with the limited quality habitat available, CBP has determined that the Proposed Action Alternative would not adversely affect the cactus ferruginous pygmy owl.

Indirect adverse impacts to potentially suitable habitat for protected species along the southwest border could occur due to IAs shifting their activities in order to avoid apprehension. It is impossible, however, for USBP to determine how much of the illegal pedestrian traffic currently entering the project corridor would shift either to the east, west, or be eliminated completely. The implementation of the Proposed Action Alternative would reduce or eliminate illegal foot traffic north of the primary pedestrian fence within the project corridor, protecting habitat that could otherwise be disturbed and permanently degraded. Further, because the primary pedestrian fence would act as a force multiplier, USBP would be able to deploy agents to those areas without primary pedestrian fence, minimizing potential indirect impacts to protected species habitat.

4.6.3 Critical habitat

No critical habitat exists near or within the project corridor; therefore, no direct impacts would be expected. Indirect adverse impacts could occur to areas outside of the project corridor (*i.e.*, Quitobaquito Springs); however, these potential impacts are outside of the USBP's control. IA movement, if any, to avoid the proposed infrastructure would be totally at the IAs discretion. Because the primary pedestrian fence would act as a force multiplier, USBP would be able to deploy agents to those areas lacking primary pedestrian fence and therefore, minimize potential indirect impacts.

Water would be trucked into the project corridor from sources located north of the OPCNM. These sources would be located within a completely different watershed and basin than Quitobaquito Springs. Therefore, the use of groundwater for the implementation of this project is

not expected to cause a deficit of water availability nor a drop in hydrostatic pressure for Quitobaquito Springs.

4.7 CULTURAL RESOURCES

4.7.1 Alternative 1: No Action Alternative

No impacts to cultural resources are expected, as no construction activities would occur. However, indirect adverse impacts to cultural resources as a result of continued IA pedestrian traffic disturbing cultural resources north of the project corridor could occur, and could potentially increase.

4.7.2 Alternative 2: Proposed Action Alternative

Three historic objects, International Boundary Monument 166, 167, and 168 are located within the project corridor and could be potentially affected by the Proposed Action Alternative. The historic objects are listed on the NRHP and are considered significant cultural resources. Mitigation measures to avoid adverse impacts to the cultural resources are outlined in Section 6 of this document. These measures, as well as other potential mitigation measures developed through consultation with the Arizona State Historic Preservation Officer (SHPO), would assure that no adverse impacts would occur to these cultural resources. SHPO concurrence with USBP's determination of "no affect to historic properties" is included in Appendix C.

As a result, the Proposed Action Alternative would not result in significant impacts on cultural resources provided mitigation measures, which will be identified through the Section 106 process, are properly implemented.

4.8 AIR QUALITY

4.8.1 Alternative 1: No Action Alternative

No impacts to air quality are expected as no construction activities would occur. However, indirect adverse impacts to air quality from illegal pedestrian traffic and subsequent USBP enforcement activities would occur, and could potentially increase.

4.8.2 Alternative 2: Proposed Action Alternative

Fugitive dust or PM-10 from soil disturbance, and emissions associated with construction equipment engines, are expected to create temporary, minor increases in air pollution in the project corridor. Due to the short duration of the construction project, any increases or impacts on ambient air quality are expected to be short-term and below levels that would cause Pima County to be in non-attainment for air quality standards.

A model was used to estimate the total air emissions from the new construction activities. Calculations were made for standard construction equipment such as drilling rigs, hole cleaners, generators, cement trucks, backhoes, cranes, and bulldozers using emission factors from EPA approved emission model NONROAD6.2. Model results for air emissions are presented in Appendix D. Fugitive dust emissions were calculated using emission factors from Mid-Atlantic Regional Air Management Association (MARAMA 2006) for the primary pedestrian fence construction.

Assumptions were made regarding the type of equipment, duration of the project, and the number of hours per day each type of equipment would be used. The assumptions, emission factors, and resulting calculations are presented in Appendix D. A summary of the total emissions are presented in Table 4-1. As Pima County is in attainment for all air quality standards, an air conformity analysis is not required.

Table 4-1. Total Air Emissions (tons/year) from Construction Activities

Pollutant	Total (tons/year)
Carbon Monoxide	23.49
Volatile Organic Compounds	5.28
Nitrogen Oxides	43.93
Particulate Matter <10 microns	32.92
Particulate Matter < 2.5 microns	9.52
Sulfur Dioxide	5.38

Source: 40 CFR 51.853 and Gulf South Research Corporation (GSRC) 2007

Impacts from combustible air emissions due to everyday USBP traffic are expected to be the same after the primary pedestrian fence is built as they are currently. Construction workers would temporarily increase the combustible emissions in the air shed during their commute to and from work. Supplies would have to be delivered to the site by large delivery trucks. The

emissions from supply trucks and workers commuting to work were included in the air emission analysis (Appendix D) and in the totals presented in Table 4-1.

During the construction of the proposed project, proper maintenance of all vehicles and other construction equipment shall be implemented to ensure that emissions are within the design standards of all construction equipment. Dust suppression methods (e.g., watering of soils) shall be implemented to minimize fugitive dust emissions. Such measures would further ensure that air emissions generated by the Proposed Action Alternative would be temporary and would not significantly impair air quality in the region.

Indirect impacts to air quality due to the shifting of illegal traffic in order to avoid the proposed infrastructure is possible; however, it is unknown where IAs would choose to breach the U.S.-Mexico border. Therefore, it is impossible for USBP to determine how much of the illegal traffic currently entering the project corridor would shift either to the west or be eliminated completely.

4.9 WATER RESOURCES

4.9.1 Alternative 1: No Action Alternative

No impacts to water resources as a result of the No Action Alternative are expected because no construction activities would occur.

4.9.2 Alternative 2: Proposed Action Alternative

No wetlands would be either directly or indirectly impacted as a result of this alternative as none exist within the project corridor. A total of 16 intermittent streams cross the project corridor. All appropriate CWA Section 404 Permits from the U.S. Army Corps of Engineers (USACE) Los Angeles District Regulatory Branch, as well as Section 401 Water Quality Certifications from the Arizona Department of Environmental Quality, would be obtained prior to any fill material being placed in potential jurisdictional waters of the U.S. As mentioned previously, the primary pedestrian fence and road would be designed and constructed in a manner that would not alter drainage patterns or exacerbate erosion and sedimentation problems. Pre- and post-construction BMPs would also be implemented to further reduce the potential for erosion and sedimentation. Some of these measures are described in Section 6.0. Furthermore, as mentioned in Section 2.2, USBP would be responsible for maintaining the primary pedestrian fence and assuring that any

debris accumulated along the primary pedestrian fence during rain events is quickly removed to prevent backwater flooding.

Although the project corridor traverses the 100-year floodplain, no adverse impacts are expected. The design of the primary pedestrian fence will incorporate features to ensure that flows and flood elevations within the floodplain are not adversely modified, both locally and regionally. CBP has determined that there is no other practicable alternative to constructing sections of the fence within the floodplain, as the border bisects the floodplain and the proposed fence must be located on the border. Therefore, the Proposed Action Alternative would not contradict E.O. 11988 nor create significant impacts to floodplains.

It is estimated that a range of 5.2 to 11.4 acre-feet of water would be required for dust suppression and construction activities. Water would be obtained from a source north of the OPCNM (e.g., Why, Ajo, or Gila Bend) and be trucked in to the project corridor. The use of water from these sources would not create a deficit either locally or regionally. Therefore, no significant impacts to groundwater within the project corridor would be expected.

During construction activities, degradation of water quality as a result of sediment transported by stormwater within any of the washes located within the project corridor would be minimized by implementing the SWPPP and best management practices (BMPs). Equipment required for the construction activities would not be staged or stored within 100 feet of washes to prevent any contamination from accidental petroleum, oil, and lubricants (POL) spills that could occur. Additionally, the primary pedestrian fence within washes would be designed and constructed to ensure that the primary pedestrian fence does not impede flow nor contribute significantly to sedimentation or erosion within the washes. Therefore, no significant impacts to surface waters would be expected.

Indirect impacts associated with the construction process would be insignificant, and minimized through the implementation of mitigation measures discussed in Section 6.0. Additional indirect impacts to water quality outside of the project corridor could also occur as IAs attempt to circumvent the proposed infrastructure. However, it is unknown at this time where, when, or if IAs will try to circumvent the project corridor, as this is completely out of USBP control and totally at the IAs' discretion. Although it is unknown where IAs might try to circumvent the proposed infrastructure, the primary pedestrian fence would act as a force multiplier and allow USBP to

deploy agents to unprotected areas. Thus, any potential indirect impacts to water resources outside the project corridor would be further minimized.

4.10 SOCIOECONOMICS

4.10.1 Alternative 1: No Action Alternative

No impacts to the region's socioeconomic resources would occur under the No Action Alternative, as no construction activities would take place. However, the current level of illegal pedestrian traffic would continue at its current rate and possibly increase. As a result, illegal traffic and the crimes and social costs associated with it would also continue or increase; thus, long-term, adverse socioeconomic impacts across the region would be incurred.

4.10.2 Alternative 2: Proposed Action Alternative

Direct beneficial impacts from the Proposed Action Alternative include minor and temporary increases in sales volumes, housing demands for construction crews, material purchases, and sales taxes. Additionally, implementation of the Proposed Action Alternative would reduce the amount of illegal pedestrian traffic in the region, which, in turn, would reduce the associated societal and economic costs to the region. These societal and economic costs include but are not limited to the costs of removal of trash, overall degradation of property, reduction in property value, and degradation of natural and cultural resources (*i.e.*, OPCNM). Consequently, this reduction in illegal traffic would have an indirect beneficial long-term impact to the local economy.

Impacts regarding E.O. 13045 and E.O. 12898 from the implementation of the Proposed Action Alternative would be similar to those previously discussed in the 2003 Final EA and are incorporated herein by reference (NPS 2003). Given the remote location of the primary pedestrian fence, there is no potential for disproportionately high and adverse impacts to minority populations and low income families. The primary pedestrian fence would reduce illegal traffic north of the project corridor, making it safer for everyone regardless of race, nationality, age, or income level. Therefore, no significant impacts relative to environmental justice or protection of children issues are expected as a result of the Proposed Action Alternative.

Indirect impacts could occur to areas outside of the project corridor if illegal pedestrian traffic shifts to other areas of the U.S.-Mexico border (*i.e.*, TON). However, it is impossible to determine what those impacts would be, if any, as the direction or lack thereof is solely at the discretion of the

IAs. As mentioned previously, the primary pedestrian fence would allow USBP to deploy agents to those areas lacking infrastructure to minimize impacts from any potential shift in IA traffic.

4.11 NOISE

4.11.1 Alternative 1: No Action Alternative

No noise impacts would occur as a result of the No Action Alternative because construction activities would not occur. However, indirect adverse impacts from illegal pedestrian traffic and consequent USBP enforcement activities would continue and possibly increase.

4.11.2 Alternative 2: Proposed Action Alternative

Noise levels created by the transport of construction vehicles, construction equipment, and construction activities would vary depending on several factors, such as climatic conditions, season, and the condition of the equipment. All construction and transport activities would occur during daylight hours. OPCNM and its associated Wilderness Area are considered sensitive noise receptors within the region. However, noise levels would decrease to an inaudible level as the distance between the construction activities and the noise receptors (OPCNM and Wilderness Area) increases. As mentioned in Section 3.11, noise from construction equipment would be reduced to 55 dBA (*i.e.*, acceptable noise level) within 2,600 feet. Additionally, the project corridor is located adjacent to the Lukeville POE and Sonoyta, Mexico, which are constant sources of noise within the region. Therefore, because the increased noise levels would be temporary and minor, no direct significant impacts to ambient noise levels would occur upon completion of construction.

Indirect impacts as a result of IAs trying to circumvent the proposed infrastructure could occur to areas outside the project corridor. However, it is impossible for USBP to determine how much of the illegal traffic would shift either to the east, west, or be eliminated completely.

4.12 AESTHETICS

4.12.1 Alternative 1: No Action Alternative

No impacts to aesthetics would occur upon implementation of the No Action Alternative as no construction activities would occur. However, indirect adverse impacts to aesthetics as a result of IAs trampling vegetation and leaving trash and debris would continue and possibly increase.

4.12.2 Alternative 2: Proposed Action Alternative

The construction of 0.65 miles of primary pedestrian fence over the Sonoyta Hill would create additional impacts as compared to the No Action Alternative. However, due to the existing infrastructure surrounding Sonoyta Hill combined with mitigation measures (see Section 6.8), these impacts would not be considered significant. The construction of 5.2 miles of primary pedestrian fence would not differ substantially from the existing border infrastructure (e.g., chain link fence, PVBs). In addition, the Lukeville POE, illegal trails, trash, and developments within Sonoyta, Mexico also detract from the visual qualities of the project corridor, as shown previously in Photographs 3-1 through 3-3. A short term minimal impact to aesthetics would occur during construction; however, there would be no long term significant adverse impacts on the visual quality of the region.

Indirect adverse impacts related to the possibility of IAs circumventing the proposed primary pedestrian fence would be similar to those mentioned previously. Beneficial indirect impacts would be expected as the primary pedestrian fence would eliminate IA traffic and associated trash and illegal trails in the project corridor.

4.13 Hazardous and Solid Waste

4.13.1 Alternative 1: No Action Alternative

No impacts regarding hazardous or solid waste are expected, as no construction activities would occur.

4.13.2 Alternative 2: Proposed Action Alternative

The potential exists for POL spills to occur while refueling construction equipment used during the implementation of the Proposed Action Alternative. However, clean-up materials (e.g., oil mops) would be maintained at the project site to allow immediate action in case an accidental spill occurs. Drip pans would be provided for stationary equipment to capture any POL that is accidentally spilled during maintenance activities or leaks from equipment. In addition, a Spill Prevention, Control, and Countermeasures Plan (SPCCP) would be in place prior to the start of construction, and all personnel would be briefed on the implementation and responsibilities of this plan. OPCNM would be provided a copy of the SPCCP prior to construction activities.

Sanitary facilities would be provided during construction activities and waste products would be collected and disposed of by licensed contractors. No gray water would be discharged to the ground. Disposal contractors would disposed of all waste in strict compliance with Federal, state, and local regulations, in accordance with the contractor's permits.

The proposed infrastructure would also have indirect beneficial impacts through the reduction of solid waste. As illegal foot traffic is reduced or eliminated within the project corridor, so would the solid waste that is associated with it.

SECTION 5.0
CUMULATIVE IMPACTS



5.0 CUMULATIVE IMPACTS

This section of the EA addresses the potential cumulative impacts associated with the implementation of the alternatives and other projects/programs that are planned for the region. The CEQ defines cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). This section continues, “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

USBP has been conducting law enforcement actions along the border since its inception in 1924 and has continuously transformed its methods as new missions, IA modes of operations, agent needs and national enforcement strategies have evolved. Development and maintenance of training ranges, station and sector facilities, detention facilities, and roads and fences have impacted thousands of acres with synergistic and cumulative impacts to soil, wildlife habitats, water quality, and noise. Beneficial effects, too, have resulted from the construction and use of these roads and fences including, but not limited to, increased employment and income for border regions and its surrounding communities; protection and enhancement of sensitive resources north of the border; reduction in crime within urban areas near the border; increased land value in areas where border security has increased; and increased knowledge of the biological communities and pre-history of the region through numerous biological and cultural resources surveys and studies.

With continued funding and implementation of CBP’s environmental conservation measures, including environmental education and training of its agents; use of biological and archeological monitors; wildlife water systems; and restoration activities, adverse impacts due to future and on-going projects would be avoided or minimized. However, recent, on-going and reasonably foreseeable proposed projects will result in cumulative impacts. In particular, within the next 2 years, 225 miles are scheduled to be completed. The first phase of construction would occur in areas that have already been developed (e.g., currently contains PVB or temporary vehicle barriers [TVB]) and thus, little or no additional environmental impacts would be expected. The second phase of construction would generally occur in more remote areas, and would inevitably result in cumulative impacts. It should be noted that the final locations for the primary

pedestrian fence have not been determined yet so, these should be considered only as planning estimates.

A list of the past, on-going, and other proposed projects within the region surrounding the Ajo Station's AO are summarized in Table 5-1:

Table 5-1. Recently Completed or Reasonably Foreseeable USBP projects in Ajo Station's AO

Project	Approximate Distance from Project Corridor (miles)	Approximate Acres Permanently Impacted
Installation of 26 emergency beacons within the CPNWR and BMGR	24	0
Implementation of Operation Skywatch (a seasonal search and rescue mission using helicopters and fixed-wing aircraft)	0	0
Proposed construction of 36 miles of pedestrian barrier, 35 miles of patrol and drag road, eight water wells, two new temporary staging areas, five existing staging areas, and approximately 7.5 miles of improvements to north-south access roads	70	198
Proposed acquisition of 30 acres adjacent to the USBP Ajo Station for horse corral, station expansion, and parking	30	30
Proposed installation of five camp details, access and maintenance of approximately 300 miles of roads on CPNWR and BMGR, installation of eight temporary vehicle barriers, construction of 104 miles of all-weather road, construction of 114 miles of drag roads, and construction of approximately 36 miles of permanent vehicle barriers on the CPNWR	40	589
Proposed installation of two additional rescue beacons on CPNWR	18	0
Proposed installation of 12 RVS systems along the U.S.-Mexico border south of Ajo, Arizona	30	1
Proposed improvement of 80 miles of all weather patrol road and construction of 50 miles of PVBs on TON as well as a construction access road for the installation and maintenance of the PVBs	15	72
Proposed installation of a water well and upgrade of Desert Grip camp detail including road improvements in the Wellton Station's AO	25	14
New infrastructure at the Lukeville – Sonoyta crossing including office space, light industrial space, health unit space, and warehouse/storage space (Garcia 2007)	0	1
Proposed widening of the El Camino Del Diablo to approximately 18-feet wide.	15	62
Proposed installation of 14 tower sites in the Ajo Station AO.	15	7
Total		974 acres

The USBP might be required to implement other activities and operations that are currently not foreseen or mentioned in this document. These actions could be in response to National emergencies or security events like the terrorist attacks on September 11, 2001 or to changes in the mode of operations of the potential IAs.

In addition, projects are currently being planned by other Federal entities which could affect areas in use by USBP. CBP should maintain close coordination with these agencies to ensure that CBP activities do not conflict with other agency(s) policies or management plans. CBP will consult with applicable state and Federal agencies prior to performing any construction activities and will coordinate operations so that it does not impact the mission of other agencies. The following is a list of projects other Federal agencies and tribes are conducting or have completed within the U.S.-Mexico border region.

OPCNM:

1. Planned installation of fiber optic cable along State Route 85 from the northern boundary of the OPCNM to the Visitors Center (Kralovec 2007b).
2. Proposed installation of approximately 2 miles of new water line from the Visitors Center to the Camp Grounds (Kralovec 2007b).

A summary of the anticipated cumulative impacts relative to the Proposed Action Alternative (*i.e.*, construction of 5.2 miles of primary pedestrian fence within the Ajo Station) is presented below. These discussions are presented for each of the resources described previously.

Land Use. A significant impact would occur if any action is inconsistent with adopted land use plans or an action would substantially alter those resources required for, supporting or benefiting the current use. The Proposed Action Alternative would only permanently affect 45 acres, of which 38 are located in the Roosevelt Reservation that was set aside specifically for border control actions. The use of 7 acres of NPS lands on the OPCNM would not be considered cumulatively significant as the OPCNM encompasses over 330,000 acres and the impact would account for less than 0.002 percent of the OPCNM total acreage. In addition, a Special Use Permit would be obtained by USBP for the use of this land for construction of the road and fence which acts as a tool to protect the remainder of the park. Therefore, this action within the Roosevelt Reservation is consistent with the authorized land use and, when

considered with other potential alterations of land use, would not be expected to result in a significant cumulative adverse effect.

Soils. A significant impact would occur if the action exacerbates or promotes long-term erosion, if the soils are inappropriate for the proposed construction, and would create a risk to life or property; or if there would be a substantial reduction in agricultural production or loss of prime farmland soils. The proposed action and other USBP actions have not reduced prime farmland soils or agricultural production. Pre- and post-construction SWPPP measures would be implemented to control soil erosion. No inappropriate soil types are located in the project corridor that would present a safety risk. The impact to 45 acres, including 17 acres of previously disturbed soils, when combined with past and proposed projects in the region, would not be considered a significant cumulative adverse impact.

Biological Resources. The significance threshold for biological resources would include a substantial reduction in ecological process, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be off-set or otherwise compensated. Removal of 28 acres of locally common habitat would result in insignificant cumulative impacts to vegetation communities and wildlife populations since habitat in the project corridor is regionally common. The long-term viability of species and communities in the project region would not be threatened. The loss of 28 acres of wildlife habitat, when combined with other ground disturbing or development projects in the project region, would not result in significant cumulative negative impacts on the region's biological resources.

Cultural Resources. The proposed action would have no effect on cultural resources. Therefore, this action, when combined with other existing and proposed projects in the region, would not result in significant cumulative impacts to historical properties.

Air Quality. Impacts to air quality would be considered significant if the action resulted in a violation of air quality standards, obstructs implementation of an air quality plan, or exposes sensitive receptors to substantial pollutant concentrations. The emissions generated during and after the construction of the proposed primary pedestrian fence would be short-term and minor. Although maintenance of the primary pedestrian fence would result in cumulative impacts to the region's airshed, these impacts would not be considered significant even when combined with

the other proposed developments in the border region. Deterrence of and improved response time to IAs created by the construction of the primary pedestrian fence would reduce off-road enforcement actions that are currently required by USBP agents.

Water Resources. The significance threshold for water resources include any action that substantially depletes groundwater or surface water supplies or interferes with groundwater recharge, substantially alters drainage patterns, or results in the loss of waters of the U.S. that cannot be compensated. No significant impact to water resources would occur as a result of the construction and maintenance of the proposed primary pedestrian fence. The required SWPPP and BMPs would reduce erosion and sedimentation during construction to negligible levels and would eliminate post-construction erosion and sedimentation from the site. The same measures would be implemented for other construction projects; therefore, cumulative impacts would not be significant.

Socioeconomics. Significance threshold for socioeconomic conditions include displacement or relocation of residences or commercial buildings; increases in long-term demands to public services in excess of existing and projected capacities; and disproportionate impacts to minority and low income families. Construction of the proposed infrastructure would result in temporary cumulative beneficial impacts to the region's economy. No impacts to residential areas, population, or minority or low-income families would occur. These effects, when combined with the other currently proposed or on-going projects within the region, would not be considered as significant cumulative impacts.

Noise. Actions would be considered to cause significant impacts if they permanently increase ambient noise levels over 65 dBA. Most of the noise generated by the proposed action would occur during construction and, thus, would not contribute to cumulative impacts to ambient noise levels. Routine maintenance of the primary pedestrian fence would result in slight temporary increases in noise levels that would continue to sporadically occur over the long-term and would be similar to ongoing PVB maintenance within the project corridor. Potential sources of noise from other projects are not enough (temporal or spatial) to increase ambient noise levels above the 65 dBA range at the proposed sites. Thus, the noise generated by the construction and maintenance of the proposed infrastructure, when considered with the other existing and proposed projects in the region, would not be considered a significant cumulative adverse effect.

Aesthetics. Actions that cause the permanent loss of the characteristics that make an area visually unique or sensitive would be considered to cause a significant impact. No major impacts to visual resources would occur from implementing the proposed action, due in part to the heavily degraded nature of the project corridor, development on the south side of the border, and the existing border tactical infrastructure. Construction and maintenance of the proposed primary pedestrian fence, when considered with existing and proposed developments in the surrounding area, would not result in a significant cumulative negative impact on the visual quality of the region. Areas north of the border would experience beneficial, indirect cumulative effects by the reduction of trash and debris produced by IAs.

Hazardous and Solid Wastes. Significant impacts would occur if an action creates a public hazard, the site is considered a hazardous waste site that poses health risks, or if the action would impair the implementation of an adopted emergency response or evacuation plan. Only minor increases in the use of hazardous substances (*e.g.*, POL) would occur as a result of the construction and maintenance of the primary pedestrian fence. No health or safety risks would be created by the proposed action. The effects of this proposed action, when combined with other on-going and proposed projects in the region, would not be considered a significant cumulative effect.

SECTION 6.0
MITIGATION MEASURES

6.0 MITIGATION MEASURES

This chapter describes those measures that would be implemented to reduce or eliminate potential adverse impacts to the human and natural environment. Many of these measures have been incorporated as standard operating procedures by USBP on past projects. It is USBP policy to mitigate adverse impacts through the sequence of avoidance, minimization, and finally, compensation. Mitigation measures are presented below for each resource category that would be potentially affected. It should be noted that if any of the alternatives for this project are implemented, the following mitigation measures could be employed.

6.1 GENERAL CONSTRUCTION ACTIVITIES

BMPs would be implemented as standard operating procedures during all construction activities, and would include proper handling, storage, and/or disposal of hazardous and/or regulated materials. To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils and solvents would be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery would be completed following accepted industry guidelines, and all vehicles could have drip pans during storage to contain minor spills and drips. Although it will be unlikely for a major spill to occur, any spill of reportable quantities would be contained immediately within an earthen dike, and the application of an absorbent (*e.g.*, granular, pillow, sock, *etc.*) would be used to absorb and contain the spill. Furthermore, any petroleum liquids (*e.g.*, fuel) or material listed in 40 CFR 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate Federal and state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table 302.4 would be included as part of the SPCCP. A SPCCP would be in place prior to the start of construction and all personnel would be briefed on the implementation and responsibilities of this plan.

All construction would follow DHS management directive 5100 for waste management. All waste oil and solvents would be recycled. All non-recyclable hazardous and regulated wastes would be collected, characterized, labeled, stored, transported and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures.

Solid waste receptacles would be maintained at staging and bivouac areas. Non-hazardous solid waste (trash and waste construction materials) would be collected and deposited in the on-site receptacles. Solid waste would be collected and disposed of by a local waste disposal contractor. Waste materials and other discarded materials would be removed from the site as quickly as possible in an effort to keep the project area and surroundings free of litter.

Waste water (water used for project purposes that is contaminated with construction materials, was used for cleaning equipment and thus carries oils or other toxic materials or other contaminants in accordance with state regulations) is to be stored in closed containers on site until removed for disposal. Concrete wash water would not be dumped on the ground, but is to be collected and moved offsite for disposal.

6.2 SOILS

Erosion control techniques, such as the use of straw bales (weed free straw), aggregate materials, wetting compounds (*i.e.*, water) and revegetation with native plant species, where possible, would be incorporated with the design of the Proposed Action Alternative. In addition, other erosion control measures, as required and promulgated through the SWPPP, would be implemented before and after construction activities.

6.3 BIOLOGICAL RESOURCES

All contractors, work crews (including National Guard and military personnel), and CBP personnel in the field performing construction and maintenance activities would receive training on the habitat and habits of the species that are found in the area, including information on how to avoid impacts to the species from their activities. This training would be provided to all contractor and work crew project managers and senior military leaders who are working onsite. It would be the responsibility of these project managers and senior military leaders to ensure that their personnel are familiar with the BMPs and other limitations and constraints.

CBP would truck water into the project site for purposes of construction to ensure that no impacts to flora or fauna near and within Quitobaquito Springs would occur.

The MBTA requires that Federal agencies coordinate with USFWS if a construction activity would result in the “take” of a migratory bird. Since construction or clearing activities cannot be scheduled to avoid the nesting season (typically March 15 through September 15), preconstruction surveys for migratory bird species would occur immediately prior to the start of any construction activity to identify active nests. If construction activities would result in the “take” of a migratory bird, then coordination with USFWS and AGFD would occur, and applicable permits would be obtained prior to construction or clearing activities.

Although no Sonoran desert tortoises or Mexican rosy boas were observed during biological surveys the potential exists for these species to occur in and near Sonoyta Hill. In the event a tortoise or boa is observed within the construction corridor during construction activities, a qualified biologist would capture and relocate the individual to an area outside of the corridor but still on Sonoyta Hill.

CBP would truck water into the project site for purposes of construction to ensure that no impacts to flora or fauna near and within Quitobaquito Springs would occur.

A salvage plan would be developed by the CBP, in close coordination with NPS, prior to construction activities. CBP will salvage as many columnar cacti as possible. CBP will develop and fund a restoration plan, in coordination with the NPS to restore illegal trails and roads on OPCNM. This will enhance bat foraging opportunities.

Materials used for on-site erosion control would be free of non-native plant seeds and other plant parts to limit potential for infestation. Additionally, all areas within the construction footprint would be monitored for a period of three years for the spread and eradication of non-native and invasive species. Construction equipment would be cleaned using BMPs prior to entering and departing the OPCNM to minimize the spread and establishment of non-native and invasive species.

6.4 CULTURAL RESOURCES

Construction near the Gachado Line Camp would be monitored by a professional archeological monitor to ensure no impacts would occur. Buffers would be established around the three historic objects that lie within the proposed construction corridor in order to avoid any adverse effects to

these significant cultural resources. If any cultural material is discovered during the construction efforts, then all activities would halt until a qualified archeologist can be brought in to assess the cultural remains.

6.5 WATER RESOURCES

Standard construction procedures would be implemented to minimize the potential for erosion and sedimentation during construction. All work would cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and material. In accordance with regulations of the EPA Phase II of the NPDES stormwater program, a SWPPP would be required for stormwater runoff from construction activities greater than 1 acre and less than 5 acres. Therefore, a SWPPP would be prepared and the NOI submitted prior to the start of any construction. Equipment required for the construction activities would not be staged or stored within 100 feet of any wash to prevent any contamination from accidental POL spills that could occur. Primary pedestrian fence constructed in washes/arroyos would be designed to ensure proper conveyance of floodwaters and to eliminate the potential to cause backwater flooding on either side of the U.S.-Mexico border. Immediately after rain events, CBP would be responsible for ensuring that debris is removed from the primary pedestrian fence within washes/arroyos to ensure that no backwater flooding occurs. Additionally, all concrete trucks would be washed and cleaned outside of the project corridor and OPCNM lands.

6.6 AIR QUALITY

Standard construction practices such as routine watering of the construction site would be used to control fugitive dust during the construction phases of the proposed project. Additionally, all construction equipment and vehicles would be required to be kept in good operating condition to minimize exhaust emissions.

6.7 NOISE

During the construction phase, short-term noise impacts are anticipated. All Occupational Safety and Health Administration requirements would be followed. On-site activities would be restricted to daylight hours with the exception of concrete pours and emergency situations. Construction equipment would possess properly working mufflers and would be kept properly tuned to reduce

backfires. Implementation of these measures would reduce the expected short-term noise impacts to an insignificant level in and around the construction site.

6.8 AESTHETICS

In order to minimize potential aesthetic impacts over Sonoyta Hill, CBP would use subdued and non-reflective materials to build the primary pedestrian fence. These materials are expected to blend with the landscape as it naturally rusts.

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SECTION 7.0
PUBLIC INVOLVEMENT

7.0 PUBLIC INVOLVEMENT

7.1 AGENCY COORDINATION

This chapter discusses consultation and coordination that has occurred during preparation of this document. Agency correspondence and consultation letters are included in Appendix C. Formal and informal coordination has been conducted with the following agencies:

- U.S. Fish and Wildlife Service (USFWS)
- U.S. Environmental Protection Agency (EPA)
- U.S. Section, International Boundary and Water Commission (USIBWC)
- Natural Resource Conservation Service (NRCS)
- Arizona State Historic Preservation Office (SHPO)
- Arizona Game and Fish Department (AGFD)
- Pima County Department of Environmental Quality
- National Park Service (NPS)
- Organ Pipe Cactus National Monument (OPCNM)
- U.S. Army Corps of Engineers, Los Angeles District (USACE)
- Federally Recognized Tribes

7.2 PUBLIC REVIEW

The draft EA was made available for public review for a period of 30 days, beginning on September 17, 2007, which is the day the Notice of Availability (NOA) was published in local newspapers. A copy of the NOA that was published, announcing the availability of the draft EA, is included on the following page. Comments received concerning the draft EA were addressed and, where appropriate, changes were incorporated into the final EA.

During the public review period, comments were received from USIBWC, TON, OPCNM, and AGFD. Copies of the comment letters are included in Appendix C as well as the comment/response matrix developed by CBP. In summary, USIBWC expressed their jurisdictional concerns pertaining to overland drainage flow into Mexico, maintenance of border monuments, and the structural integrity of proposed primary pedestrian fence. AGFD expressed its natural resource management concerns pertaining to habitat fragmentation and degradation, as well as the need to coordinate its responsibilities with CBP's mission. The OPCNM expressed concerns with traversing Sonoyta Hill and potential effects to groundwater supplies. The TON was

mainly concerned with viewshed and cultural landscape issues, and indirect effects of shifts in illegal traffic to the TON (see Appendix C).

Revisions to the Draft EA have been incorporated, as appropriate, to this Final EA, based on the comments received. In addition, CBP has coordinated with OPCNM to ensure that its primary concerns have been sufficiently addressed in this document.

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Sept. 17, 2007

Debbie Capanear

Subscribed and sworn to before me this 20th day of

Sept. 2007

Silvia H Valdez

Notary Public



SILVIA H VALDEZ
Notary Public - Arizona
Pima County
Expires 12/15/09

My commission expires

TNI AD NO.

NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL ASSESSMENT AND DRAFT FINDING OF NO SIGNIFICANT IMPACT FOR THE INSTALLATION OF 5.2 MILES OF PRIMARY FENCE U.S. BORDER PATROL TUCSON SECTOR, ARIZONA
The public is hereby notified of the availability of the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to construct 5.2 miles of Primary Fence along the U.S.-Mexico border within the Ajo Station's Area of Operations (AO). This document addresses the construction of 0.65 miles of new primary fence and retrofitting 4.55 miles of existing permanent vehicle barriers with primary fence near the Lukeville Port-of-Entry.
This Draft EA and FONSI are available for review at the Ajo Public Library in Ajo, Arizona and are also available at the following URL: http://ecso.swi.usace.army.mil. Additional copies are available upon written request. Written comments can be submitted to: U.S. Army Corps of Engineers, Fort Worth District, ATTN: CESWF-PM-ECSS/McGregor, 819 Taylor Street, Room 3A28, Fort Worth, TX 76102 or via facsimile at (817) 886-6404. Comments must be received within 30 calendar days of the date of this publication.
Publish September 17, 2007
The Arizona Daily Star
Tucson Citizen

Publisher's Affidavit of Publication

oOo

STATE OF ARIZONA }
COUNTY OF YUMA }

Julie Moreno or Patrick Norris, having been first duly sworn, deposes
and says: that The Sun is a newspaper of general circulation
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**NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL
ASSESSMENT AND
DRAFT FINDING OF NO
SIGNIFICANT IMPACT
FOR THE INSTALLATION OF
5.2 MILES OF PRIMARY FENCE
U.S. BORDER PATROL
TUCSON SECTOR, ARIZONA**

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CESWF-PM-ECISO/McGregor, 819 Taylor Street, Room 3A28, Fort Worth, TX 76102 or via facsimile at (817) 886-6404. Comments must be received within 30 calendar days of the date of this publication. Daily September 17, 2007 #L35684

NOTICE OF AVAILABILITY

a printed copy of which, as it appeared in said paper, is hereto attached
and made a part of this affidavit, was published in The Sun

For ONE issues; that the date of the first
publication of said NOTICE OF AVAILABILITY

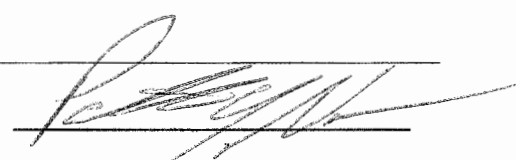
was SEPTEMBER 17, 2007 and the date of the last publication

being SEPTEMBER 17, 2007 and that the dates when said

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was printed and published in said paper were

SEPTEMBER 17, 2007



Subscribed and sworn to before me, by the said Julie Moreno or
Patrick Norris

19th day of September, 2007

Vigen P. Perez Notary Public

My commission expires May 10, 2009

SECTION 8.0
REFERENCES



8.0 REFERENCES

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SECTION 9.0
LIST OF PREPARERS

9.0 LIST OF PREPARERS

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

NAME	AGENCY/ORGANIZATION	DISCIPLINE/EXPERTISE	EXPERIENCE	ROLE IN PREPARING EA
Patience E. Patterson, RPA	Architect-Engineer Resource Center	Archaeology	29 years, Professional Archeologist/Cultural Resource Manager	Project Manager, cultural resources review, and EA coordination
Charles McGregor	USACE, Fort Worth District, AERC	NEPA	10 years Environmental Management and Review	ECSO Project Manager, EA review and coordination
Suna Adam Knaus	Gulf South Research Corporation	Forestry/Wildlife	17 years, natural resources	EA review
Eric Webb, Ph.D.	Gulf South Research Corporation	Ecology/Wetlands	15 years experience in natural resources and NEPA studies	EA technical review
Chris Ingram	Gulf South Research Corporation	Biology/ Ecology	30 years EA/EIS studies	Project Coordinator/EA technical review
Josh McEnany	Gulf South Research Corporation	Forestry/Wildlife	7 years, natural resources and NEPA studies	Project Manager
Sharon Newman	Gulf South Research Corporation	GIS/graphics	11 years, GIS/graphics experience	GIS/graphics
Howard Nass	Gulf South Research Corporation	Forestry/Wildlife	17 years, natural resources	EA review
Shanna McCarty	Gulf South Research Corporation	Forestry	3 years natural resources	EA preparation
Steve Kolian	Gulf South Research Corporation	Environmental Science	10 years natural resources	EA preparation
Joanna Cezniak	Gulf South Research Corporation	Wildlife	9 years natural resources	EA preparation

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SECTION 10.0
ACRONYMS



10.0 ACRONYMS

AO	Area of Operation
ACHP	Advisory Council on Historic Preservation
ADWR	Arizona Department of Water Resources
AGFD	Arizona Game and Fish Department
ARPA	Archeological Resources Protection Act
BEA	Bureau of Economic Analysis
BMP	Best Management Practice
BMGR	Barry M. Goldwater Range
CAA	Clean Air Act
CBP	U.S. Customs and Border Protection
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CPNWR	Cabeza Prieta National Wildlife Refuge
CWA	Clean Water Act
DNL	Day-Night average sound Level
dB	Decibel
dBA	A-weighted Decibel
DHS	Department of Homeland Security
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
E.O.	Executive Order
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FR	Federal Register
GNEB	Good Neighbor Environmental Board
GSRC	Gulf South Research Corporation
IA	Illegal Alien
INS	Immigration and Naturalization Service
JTF-6	Joint Task Force Six
MBTA	Migratory Bird Treaty Act
MARAMA	Mid-Atlantic Regional Air Management Association
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NOA	Notice of Availability
NOI	Notice of Intent
OPCNM	Organ Pipe Cactus National Monument
PCDEQ	Pima County Department of Environmental Quality
PCPI	Per Capita Personal Income
POE	Port of Entry
POL	Petroleum, Oils, and Lubricants
PVB	Permanent Vehicle Barrier
ROI	Region of Influence

SHPO	State Historic Preservation Officer
SPCCP	Spill Prevention, Control, and Countermeasures Plan
SPEIS	Supplemental Programmatic Environmental Impact Statement
SWPPP	Storm Water Pollution Prevention Plan
TON	Tohono O'odham Nation
TPI	Total Personal Income
TVB	Temporary Vehicle Barrier
U.S.	United States
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
USFWS	U.S. Fish and Wildlife Service
WSC	Wildlife of Special Concern
WMDB	Western Mexican Drainage Basin

APPENDIX A
March 2006 Memorandum of Understanding

**Memorandum of Understanding
Among
U. S. Department of Homeland Security
and
U. S. Department of the Interior
and
U. S. Department of Agriculture
Regarding
Cooperative National Security and Counterterrorism
Efforts on Federal Lands along the United States' Borders**

I. Purpose and Scope

A. This Memorandum of Understanding (MOU) is made and entered into by the Department of Homeland Security (DHS), including and on behalf of its constituent bureau U.S. Customs and Border Protection (CBP) and the CBP Office of Border Patrol (CBP-BP); the Department of the Interior (DOI), including and on behalf of its constituent bureaus, the National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), and the Bureau of Reclamation (BOR); and the Department of Agriculture (USDA), including and on behalf of its constituent agency the U.S. Forest Service (USFS). Throughout this MOU, these three Departments, including their constituent agencies, may be referred to as “the Parties.” Any reference to a bureau, agency, or constituent component of a Party shall not be deemed to exclude application to any appropriate bureau or constituent component of that Party. DHS recognizes that the BIA enters into this agreement only on its own behalf and not on behalf of any Indian tribe.

B. The geographic and jurisdictional scope of this MOU is nationwide. The Parties recognize the national security and counterterrorism significance of preventing illegal entry into the United States by cross-border violators (CBVs), including but not limited to the following: drug and human smugglers and smuggling organizations, foreign nationals, and terrorists and terrorist organizations. The Parties further recognize that damage to DOI and USDA-managed lands and natural and cultural resources is often a significant consequence of such illegal entry. The Parties are committed to preventing illegal entry into the United States, protecting Federal lands and natural and cultural resources, and - where possible - preventing adverse impacts associated with illegal entry by CBVs.

C. This MOU is intended to provide consistent goals, principles, and guidance related to border security, such as law enforcement operations; tactical infrastructure installation; utilization of roads; minimization and/or prevention of significant impact on or impairment of natural and cultural resources; implementation of the Wilderness Act, Endangered Species Act, and other related environmental law, regulation, and policy across land management agencies; and provide for coordination and sharing information

on threat assessments and other risks, plans for infrastructure and technology improvements on Federal lands, and operational and law enforcement staffing changes. This MOU provides guidance in the development of individual agreements, where appropriate, between CBP and land management agencies to further the provisions contained herein.

D. This MOU is entered into pursuant to the governing statutory authorities of each of the Parties.

E. The Parties acknowledge that CBP operation and construction within the sixty-foot "Roosevelt Reservation" of May 27, 1907 (along the US-Mexico border) and the sixty-foot "Taft Reservation" of May 3, 1912 (along the US-Canada border) is consistent with the purpose of those reservations and that any CBP activity (including, but not limited to, operations and construction) within the sixty-foot reservations is outside the oversight or control of Federal land managers.

F. This MOU supersedes any conflicting provision of any prior MOU or Memorandum of Agreement between the Parties or their subordinate bureaus or components.

II. Background

A. DHS, through its constituent bureaus (including CBP and its CBP-BP), is statutorily mandated to control and guard the Nation's borders and boundaries, including the entirety of the northern and southern land and water borders of the United States.

B. DOI and USDA, through their constituent bureaus, are statutorily charged as managers of Federal lands throughout the United States, including DOI and USDA lands in the vicinity of international borders that are administered as wilderness areas, conservation areas, national forests, wildlife refuges, units/irrigation projects of the Bureau of Reclamation, and/or units of the national park system. Tribal governments have primary management roles over tribal lands; however, the United States, through the BIA, may also have a stewardship or law enforcement responsibility over these lands. Many of these Federal and tribal lands contain natural and cultural resources that are being degraded by activities related to illegal cross-border movements.

C. The volume of CBVs can and has, in certain areas, overwhelmed the law enforcement and administrative resources of Federal land managers. In order to more effectively protect national security, respond to terrorist threats, safeguard human life, and stop the degradation of the natural and cultural resources on those lands, DOI and USDA land managers will work cooperatively with CBP to benefit from the enforcement presence, terrorist and CBV interdiction, and rescue operations of CBP.

III. Common Findings and Affirmation of the Parties

A. The Parties to this MOU recognize that CBP-BP access to Federal lands can facilitate rescue of CBVs on Federal lands, protect those lands from environmental damage, have a role in protecting the wilderness and cultural values and wildlife resources of these lands, and is necessary for the security of the United States. Accordingly, the Parties understand that CBP-BP, consistent with applicable Federal laws and regulations, may access public lands and waterways, including access for purposes of tracking, surveillance, interdiction, establishment of observation points, and installation of remote detection systems.

B. The Parties recognize that DOI and USDA have responsibility for enforcing Federal laws relating to land management, resource protection, and other such functions on Federal lands under their jurisdiction.

IV. Responsibilities and Terms of Agreement

A. The Parties Agree to the Following Common Goals, Policies, and Principles:

1. The Parties enter into this MOU in a cooperative spirit with the goals of securing the borders of the United States, addressing emergencies involving human health and safety, and preventing or minimizing environmental damage arising from CBV illegal entry on public lands;
2. The Parties will strive to both resolve conflicts at and delegate resolution authority to the lowest field operational level possible while applying the principles of this MOU in such manner as will be consistent with the spirit and intent of this MOU;
3. The Parties will develop and consistently utilize an efficient communication protocol respecting the chain of command for each of the Parties that will result in the consistent application of the goals, policies, and principles articulated in this MOU, and provide a mechanism that will, if necessary, facilitate the resolution of any conflicts among the Parties. If resolution of conflict does not occur at the local level, then the issue will be elevated first to the regional/sector office; if not resolved at the regional/sector level, then the issue will be elevated to the headquarters level for resolution;
4. The Parties will cooperate with each other to complete, in an expedited manner, all compliance that is required by applicable Federal laws not otherwise waived in furtherance of this MOU. If such activities are authorized by a local agreement as described in sub-article IV.B below, then the DOI, USDA, and CBP will complete the required compliance before executing the agreement;

5. The Parties will cooperate with each other to identify methods, routes, and locations for CBP-BP operations that will minimize impacts to natural, cultural, and wilderness resources resulting from CBP-BP operations while facilitating needed CBP-BP access;
6. The Parties will, as necessary, plan and conduct joint local law enforcement operations consistent with all Parties' legal authorities;
7. The Parties will establish a framework by which threat assessments and other intelligence information may be exchanged, including intelligence training to be conducted by all parties so that the intelligence requirements of each may be identified and facilitated;
8. The Parties will establish forums and meet as needed at the local, regional, and national levels to facilitate working relationships and communication between all Parties;
9. The Parties will develop and share joint operational strategies at the local, regional, and national levels, including joint requests for infrastructure and other shared areas of responsibility;
10. The Parties will share the cost of environmental and cultural awareness training unless otherwise agreed; and
11. The Parties will, as appropriate, enter into specific reimbursable agreements pursuant to the Economy Act, 31 U.S.C. §1535 when one party is to furnish materials or perform work or provide a service on behalf of another party.

B. Responsibilities and Terms Specific to DOI and USDA. The DOI and the USDA hereby recognize that, pursuant to applicable law, CBP-BP is authorized to access the Federal lands under DOI and USDA administrative jurisdiction, including areas designated by Congress as wilderness, recommended as wilderness, and/or wilderness study areas, and will do so in accordance with the following conditions and existing authorities:

1. CBP-BP agents on foot or on horseback may patrol, or pursue, or apprehend suspected CBVs off-road at any time on any Federal lands administered by the Parties;
2. CBP-BP may operate motor vehicles on existing public and administrative roads and/or trails and in areas previously designated by the land management agency for off-road vehicle use at any time, provided that such use is consistent with presently authorized public or administrative use. At CBP-BP's request, the DOI and the USDA will provide CBP-BP with keys, combinations, or other means necessary to

access secured administrative roads/trails. CBP-BP may drag existing public and administrative roads that are unpaved for the purpose of cutting sign, subject to compliance with conditions that are mutually agreed upon by the local Federal land manager and the CBP-BP Sector Chief. For purposes of this MOU, "existing public roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows members of the general public to operate motor vehicles, and "existing administrative roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows persons specially authorized by the agency, but not members of the general public, to operate motor vehicles;

- 3 CBP-BP may request, in writing, that the land management agency grant additional access to Federal lands (for example, to areas not previously designated by the land management agency for off-road use) administered by the DOI or the USDA for such purposes as routine patrols, non-emergency operational access, and establishment of temporary camps or other operational activities. The request will describe the specific lands and/or routes that the CBP-BP wishes to access and the specific means of access desired. After receiving a written request, the local Federal land manager will meet promptly with the CBP-BP Sector Chief to begin discussing the request and negotiating the terms and conditions of an agreement with the local land management agency that authorizes access to the extent permitted by the laws applicable to the particular Federal lands. In each agreement between CBP-BP and the local land management agency, the CBP-BP should be required to use the lowest impact mode of travel and operational setup reasonable and practicable to accomplish its mission. The CBP-BP should also be required to operate all motorized vehicles and temporary operational activities in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands. However, at no time should officer safety be compromised when selecting the least impactful conveyance or operational activity. Recognizing the importance of this matter to the Nation's security, the CBP-BP Sector Chief and the local Federal land manager will devote to this endeavor the resources necessary to complete required compliance measures in order to execute the local agreement within ninety (90) days after the Federal land manager has received the written request for access. Nothing in this paragraph is intended to limit the exercise of applicable emergency authorities for access prior to the execution of the local agreement. The Secretaries of the Interior, Agriculture, and Homeland Security expect that, absent compelling justification, each local agreement will be executed within that time frame and provide the maximum amount of access requested by the CBP-BP and allowed by law;

4. Nothing in this MOU is intended to prevent CBP-BP agents from exercising existing exigent/emergency authorities to access lands, including authority to conduct motorized off-road pursuit of suspected CBVs at any time, including in areas designated or recommended as wilderness, or in wilderness study areas when, in their professional judgment based on articulated facts, there is a specific exigency/emergency involving human life, health, safety of persons within the area, or posing a threat to national security, and they conclude that such motorized off-road pursuit is reasonably expected to result in the apprehension of the suspected CBVs. Articulated facts include, but are not limited to, visual observation; information received from a remote sensor, video camera, scope, or other technological source; fresh “sign” or other physical indication; canine alert; or classified or unclassified intelligence. For each such motorized off-road pursuit, CBP-BP will use the least intrusive or damaging motorized vehicle readily available, without compromising agent or officer safety. In accordance with paragraph IV.C.4, as soon as practicable after each such motorized off-road pursuit, CBP-BP will provide the local Federal land manager with a brief report;
5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources, or if other significant issues warrant consultation, then the Federal land manager and the CBP-BP will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;
6. CBP may request, in writing, that the land management agency authorize installation or construction of tactical infrastructure for detection of CBVs (including, but not limited to, observation points, remote video surveillance systems, motion sensors, vehicle barriers, fences, roads, and detection devices) on land under the local land management agency’s administrative jurisdiction. In areas not designated as wilderness, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency. In areas designated or managed as wilderness, the local Federal land manager, in consultation with CBP, will promptly conduct a “minimum requirement,” “minimum tool,” or other appropriate analysis. If supported by such analysis, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency;

7. The DOI and USDA will provide CBP-BP agents with appropriate environmental and cultural awareness training formatted to meet CBP-BP operational constraints. The DOI and USDA will work with CBP-BP in the development and production of maps for use or reference by CBP-BP agents including, as appropriate, site-specific and resource-specific maps that will identify specific wildlife and environmentally or culturally sensitive areas;
8. The DOI and USDA will, as applicable, provide CBP-BP with all assessments and studies done by or on behalf of DOI or USDA on the effects of CBVs on Federal lands and native species to better analyze the value of preventative enforcement actions;
9. The DOI and USDA will assist CBP-BP in search and rescue operations on lands within the respective land managers' administration when requested;
10. The CBP-BP and land management agencies may cross-deputize or cross-designate their agents as law enforcement officers under each other agency's statutory authority. Such cross-deputation or cross-designation agreements entered into by the local land management agency and the field operations manager for the CBP-BP shall be pursuant to the policies and procedures of each agency; and
11. DOI and USDA will work at the field operations level with affected local CBP-BP stations to establish protocols for notifying CBP-BP agents when DOI or USDA law enforcement personnel are conducting law enforcement operations in an area where CBP-BP and DOI/USDA operations can or will overlap.

C. Responsibilities and Terms Specific to the CBP. DHS hereby agrees as follows:

1. Consistent with the Border Patrol Strategic Plan, CBP-BP will strive to interdict CBVs as close to the United States' international borders as is operationally practical, with the long-term goal of establishing operational control along the immediate borders;
2. If the CBP-BP drag any unpaved roads for the purpose of cutting sign under provision IV.B.2 above, then CBP-BP will maintain or repair such roads to the extent that they are damaged by CBP-BP's use or activities;
3. If CBP-BP agents pursue or apprehend suspected CBVs in wilderness areas or off-road in an area not designated for such use under

paragraph IV.B.5, then the CBP-BP will use the lowest impact mode of travel practicable to accomplish its mission and operate all motorized vehicles in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands, provided officer safety is not compromised by the type of conveyance selected;

4. CBP-BP will notify the local Federal land manager of any motorized emergency pursuit, apprehension, or incursion in a wilderness area or off-road in an area not designated for such use as soon as is practicable. A verbal report is sufficient unless either CBP-BP or the land managing agency determines that significant impacts resulted, in which case a written report will be necessary;
5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources as determined by a land manager, or if other significant issues warrant consultation, then the CBP-BP and Federal land manager will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;
6. CBP will consult with land managers to coordinate the placement and maintenance of tactical infrastructure, permanent and temporary video, seismic and other remote sensing sites in order to limit resource damage while maintaining operational efficiency;
7. CBP-BP will ensure that current and incoming CBP-BP agents attend environmental and cultural awareness training to be provided by the land management agencies;
8. CBP-BP will provide land management agencies with appropriate and relevant releasable statistics of monthly CBV apprehensions, search and rescue actions, casualties, vehicles seized, drug seizures and arrests, weapons seizures and arrests, and other significant statistics regarding occurrences on the lands managed by the land manager;
9. CBP-BP will consult with land managers in the development of CBP-BP's annual Operational-Requirements Based Budgeting Program to ensure affected land managers can provide input and are, in the early stages of planning, made aware what personnel, infrastructure, and technology the CBP-BP would like to deploy along the border within their area of operation; and
10. CBP-BP will work at the field operations manager level with affected local land management agencies to establish protocols for notifying

land management agency law enforcement officers when BP is conducting special operations or non-routine activities in a particular area.

V. Miscellaneous Provisions

A. Nothing in this MOU may be construed to obligate the agencies or the United States to any current or future expenditure of funds in advance of the availability of appropriations, nor does this MOU obligate the agencies or the United States to spend funds for any particular project or purpose, even if funds are available.

B. Nothing in this MOU will be construed as affecting the authority of the Parties in carrying out their statutory responsibilities.

C. This MOU may be modified or amended in writing upon consent of all Parties, and other affected Federal agencies may seek to become a Party to this MOU.

D. The Parties shall retain all applicable legal responsibility for their respective personnel working pursuant to this MOU with respect to, *inter alia*, pay, personnel benefits, injuries, accidents, losses, damages, and civil liability. This MOU is not intended to change in any way the individual employee status or the liability or responsibility of any Party under Federal law.

E. The Parties agree to participate in this MOU until its termination. Any Party wishing to terminate its participation in this MOU shall provide sixty (60) days written notice to all other Parties.

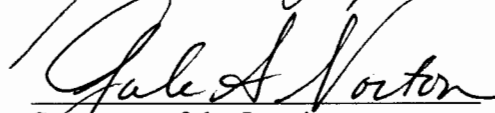
F. This document is an intra-governmental agreement among the Parties and does not create or confer any rights, privileges, or benefits upon any person, party, or entity. This MOU is not and shall not be construed as a rule or regulation.

In witness whereof, the Parties hereto have caused this Memorandum of Understanding to be executed and effective as of the date of the last signature below.

Date: 3/24/06


Secretary of Homeland Security

Date: 3/31/06


Secretary of the Interior

Date: 3/29/06


Secretary of Agriculture

APPENDIX B
List of State and Federal Protected Species for Pima County

Pima County

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened	Large, adults have white head and tail. Height 28-38 inches; wingspan 66-96 inches. Dark with varying degrees of mottled brown plumage. Feet bare of feathers.	Apache, Cochise, Coconino, Gila, Graham, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	Varies	Large trees or cliffs near water (reservoirs, rivers, and streams) with abundant prey.	Some birds are nesting residents while a larger number winters along rivers and reservoirs. An estimated 200 to 300 birds winter in Arizona. Once endangered (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) because of reproductive failures from pesticide poisoning and loss of habitat, this species was down listed to threatened on August 11, 1995. Illegal shooting, disturbance, and loss of habitat continues to be a problem. Species has been proposed for delisting (64 FR 36454) but still receives full protection under the ESA.
California Brown pelican	<i>Pelecanus occidentalis californicus</i>	Endangered	Large dark gray-brown water bird with a pouch underneath long bill and webbed feet. Adults have a white head and neck, brownish black breast, and silver gray upper parts.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	Varies	Coastal land and islands; species found around many Arizona lakes and rivers.	Subspecies is found on Pacific Coast and is endangered due to pesticides. It is an uncommon transient in Arizona on many Arizona lakes and rivers. Individuals wander up from Mexico in summer and fall. No breeding records in Arizona.
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	Threatened	Cream colored tubercles (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Pima, Santa Cruz, Yavapai	3300-8900 ft	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs.	Require permanent or nearly permanent water sources. Populations north of the Gila River may be a closely-related, but distinct, undescribed species. A special rule allows take of frogs due to operation and maintenance of livestock tanks on State and private lands.
Desert pupfish	<i>Cyprinodon macularius</i>	Endangered	Small (2 inches) smoothly rounded body shape with narrow vertical bars on the sides. Breeding males blue on head and sides with yellow on tail. Females and juveniles tan to olive colored back and silvery sides.	Graham, La Paz, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 5,000 ft	Shallow springs, small streams, and marshes. Tolerates saline and warm water.	Critical habitat includes Quitobaquito Springs, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California. Two subspecies are recognized: Desert Pupfish (<i>C.m.macularis</i>) and Quitobaquito Pupfish (<i>C.m.ereumus</i>).

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Gila chub	<i>Gila intermedia</i>	Endangered	Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.	Cochise, Gila, Graham, Greenlee, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	2,000 - 5,500 ft	Pools, springs, cienegas, and streams.	Found on multiple private lands, including the Nature Conservancy, the Audubon Society, and others. Also occurs on Federal and state lands and in Sonora, Mexico. Critical habitat occurs in Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz and Yavapai counties.
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	Endangered	Small (2 inches), guppy-like, live bearing, lacks dark spots on its fins. Breeding males are jet black with yellow fins.	Gila, Graham, La Paz, Maricopa, Pima, Pinal, Santa Cruz, Yavapai	< 4,500 ft	Small streams, springs, and cienegas vegetated shallows.	Species historically occurred in backwaters of large rivers but is currently isolated to small streams and springs.
Huachuca water umbel	<i>Lilaeopsis schaffneriana ssp. recurva</i>	Endangered	Herbaceous, semi-aquatic perennial in the parsley family (Umbelliferae) with slender erect, hollow, leaves that grow from the nodes of creeping rhizomes. Flower: 3 to 10 flowered umbels arise from root nodes.	Cochise, Pima, Santa Cruz	3500-6500 ft	Cienegas, perennial low gradient streams, wetlands.	Species also occurs in adjacent Sonora, Mexico, west of the continental divide. Critical habitat in Cochise and Santa Cruz counties (64 FR 37441, July 12, 1999).
Jaguar	<i>Panthera onca</i>	Endangered	Largest species of cat native to Southwest. Muscular, with relatively short, massive limbs, and a deep-chested body. Usually cinnamon-buff in color with many black spots. Weights ranges from 40-135 kg (90-300 lbs).	Cochise, Santa Cruz, Pima	1,600 - >9,000 ft	Found in Sonoran desertscrub up through subalpine conifer forest.	Also occurs in New Mexico. A Jaguar conservation team is being formed that is being led by Arizona and New Mexico state entities along with private organizations.
Kearney blue star	<i>Amsonia kearneyana</i>	Endangered	A herbaceous perennial about 2 feet tall in the dogbane family (Apocynaceae). Thickened woody root and many pubescent (hairy) stems that rarely branch. Flowers: white terminal inflorescence in April and May.	Pima	3600-3800 ft	West-facing drainages in the Baboquivari Mountains.	Plants grow in stable, partially shaded, coarse alluvium along a dry wash in the Baboquivari Mountains. Range is extremely limited. Protected by Arizona Native Plant Law.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	Endangered	Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.	Cochise, Gila, Graham, Pima, Pinal, Maricopa, Santa Cruz	< 6000 ft	Desert scrub habitat with agave and columnar cacti present as food plants.	Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. This species is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.
Masked bobwhite	<i>Colinus virginianus ridgewayi</i>	Endangered	Males brick-red breast and black head and throat. Females are generally nondescript but resemble other races such as the Texas bobwhite.	Pima	1000-4000 ft	Desert grasslands with diversity of dense native grasses, forbs, and brush.	Species is closely associated with <i>Acacia angustissima</i> . Formerly occurred in Altar and Santa Cruz valleys, as well as Sonora, Mexico. Presently only known from reintroduced populations on Buenos Aires NWR.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened	Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai	4100-9000 ft	Nests in canyons and dense forests with multi-layered foliage structure.	Generally nest in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was finalized on August 31, 2004 (69 FR 53182). Critical habitat in Arizona occurs in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties.
Nichol Turk's head cactus	<i>Echinocactus horizontalis var. nicholii</i>	Endangered	Blue-green to yellowish-green, columnar, 18 inches tall, 8 inches in diameter. Spine clusters have 5 radial and 3 central spines; one downward short; 2 spines upward and red or vasally gray. Flower: pink fruit: woolly white.	Pima, Pinal	2400-4100 ft	Sonoran desertscrub.	Found in unshaded microsites in Sonoran desertscrub on dissected alluvial fans at the foot of limestone mountains and on inclined terraces and saddles on limestone mountain sides.
Ocelot	<i>Leopardus (=Felis) pardalis</i>	Endangered	Medium-sized spotted cat whose tail is about 1/2 the length of head and body. Yellowish with black streaks and stripes running from front to back. Tail is spotted and face is less heavily streaked than the back and sides.	Cochise, Pima, Santa Cruz	< 8000 ft	Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub.	May persist in partly-cleared forests, second-growth woodland, and abandoned cultivated areas reverted to brush. Universal component is presence of dense cover. Unconfirmed reports of individuals in the southern part of the State continue to be received.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Pima pineapple cactus	<i>Coryphantha scheeri var. robustispina</i>	Endangered	Hemispherical stems 4-7 inches tall 3-4 inches diameter. Central spine 1 inch long straw colored hooked surrounded by 6-15 radial spines. Flower: yellow, salmon, or rarely white narrow floral tube..	Pima, Santa Cruz	2300-5000 ft	Sonoran desertscrub or semi-desert grassland communities.	Occurs in alluvial valleys or on hillsides in rocky to sandy or silty soils. This species can be confused with juvenile barrel cactus (<i>Ferocactus</i>). However, the spines of the later are flattened, in contrast with the round cross-section of the <i>Coryphantha</i> spines. 80-90% of individuals on state or private land.
Sonoran pronghorn	<i>Antilocapra americana sonoriensis</i>	Endangered	Buff on back and white below, hooped with slightly curved black horns having a single prong. Smallest and palest of the pronghorn subspecies	Maricopa, Pima, Yuma	500 - 2,000 ft	Broad intermountain alluvial valleys with creosote-bursage and palo verde-mixed cacti associations.	Typically, bajadas are used as fawning areas and sandy dune areas provide food seasonally. Historical range was probably larger than exists today. This subspecies also occurs in Mexico.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	<8500 ft	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	Migratory riparian-obligate species that occupies breeding habitat from late April to September. Distribution within its range is restricted to riparian corridors. Difficult to distinguish from other members of the <i>Empidonax</i> complex by sight alone. Training seminar required for those conducting flycatcher surveys. Critical habitat was finalized on October 19, 2005 (50 CFR 60886) and can be viewed at http://arizonaes.fws.gov . In Arizona there are critical habitat segments in Apache, Cochise, Gila, Graham, Greenlee, Maricopa, Mohave, Pima, Pinal, and Yavapai counties.
Acuna cactus	<i>Echinomastus erectocentrus var. acunensis</i>	Candidate	<12 inches high; spine clusters borne on tubercles, each with a groove on the upper surface. 2-3 central spines and 12 radial spines. Flowers pink to purple.	Pima, Pinal	1300-2000 ft	Well drained knolls and gravel ridges in Sonoran desertscrub.	Immature plants distinctly different from mature plants. They are disc-shaped or spherical and have no central spines until they are about 1.5 inches. Radial spines are dirty white with maroon tips.
Sonoyta mud turtle	<i>Kinosternon sonoriense longifemorale</i>	Candidate	Primarily a pond turtle, prefers mud or sandy bottoms. Body 3 1/2 to 6 1/2 inches. Head and neck mottled with contrasting light and dark markings. Found in Quitobaquito Springs.	Pima	1,100 ft	Ponds and streams.	Species also found in Rio Sonoyta, Sonora, Mexico.

COMMON NAME	SCIENTIFIC NAME	STATUS	DESCRIPTION	COUNTY	ELEVATION	HABITAT	COMMENTS
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate	Medium-sized bird with a slender, long-tailed profile, slightly down-curved bill, which is blue-black with yellow on the lower half of the bill. Plumage is grayish-brown above and white below, with rufous primary flight feathers.	Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma	< 6,500 ft	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	Listing was found warranted, but precluded as a distinct vertebrate population segment in the western U.S. on July 25, 2001. This finding indicates that the Service has sufficient information to list the bird, but other, higher priority listing actions prevent the Service from addressing the listing of the cuckoo at this time.
Gooddings onion	<i>Allium gooddingii</i>	Conservation Agreement	Herbaceous perennial plant; broad, flat, rather blunt leaves; flowering stalk 14-17 inches tall, flattened, and narrowly winged toward apex; fruit is broader than long; seeds are short and thick.	Apache, Greenlee, Pima	> 7,500 ft	Forested drainage bottoms and on moist north facing slopes of mixed conifer and spruce fir forests.	Conservation agreement between the Service and the Forest Service signed in February 1998. In New Mexico on the Lincoln and Gila National Forests.
San Xavier talussnail	<i>Sonorella eremita</i>	Conservation Agreement	Land snail, less than one inch in diameter (about .75 inches), 4.5 whorls, round shell, white to pinkish tint.	Pima	3,850-3,920 ft	Deep, limestone rockslide with outcrops of limestone and decomposed granite.	Conservation agreement signed by the Service, Arizona Game and Fish Department, El Paso Natural Gas Company, and Arizona Electric Power Cooperative, Inc. in September 1998.

**Special Status Species Documented within 5 Miles of the US/Mexico Border in the Organ
Pipe Cactus National Monument**

NAME	COMNAME	ESA	USFS	BLM	STATE
<i>Anthocharis cethura</i>	Felder's Orange Tip		S		
<i>Antilocapra americana sonoriensis</i>	Sonoran Pronghorn	LE	S		WSC
<i>Aspidoscelis burti xanthonota</i>	Red-back Whiptail	SC	S		
<i>Charina trivirgata trivirgata</i>	Mexican Rosy Boa	SC		S	
<i>Chionactis palarostris organica</i>	Organ Pipe Shovel-nosed Snake		S		
<i>Coccyzus americanus occidentalis</i>	Western Yellow-billed Cuckoo	C	S		WSC
<i>Cyprinodon eremus</i>	Quitobaquito Desert Pupfish	LE			WSC
<i>Echinomastus erectocentrus var. acunensis</i>	Acuna Cactus	C			HS
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat	SC			
<i>Eumops underwoodi</i>	Underwood's Bonneted Bat	SC		S	
<i>Ferocactus emoryi</i>	Emory's Barrel-cactus				SR
<i>Gastrophryne olivacea</i>	Great Plains Narrow-mouthed Toad				WSC
<i>Glaucidium brasilianum cactorum</i>	Cactus Ferruginous Pygmy-owl	SC			WSC
<i>Gopherus agassizii</i> (Sonoran Population)	Sonoran Desert Tortoise	SC			WSC
<i>Kinosternon sonoriense longifemorale</i>	Sonoyta Mud Turtle	C	S		
<i>Leptonycteris curasoae yerbabuenae</i>	Lesser Long-nosed Bat	LE	S		WSC
<i>Lophocereus schottii</i>	Senita				SR
<i>Macrotus californicus</i>	California Leaf-nosed Bat	SC			WSC
<i>Mammillaria thornberi</i>	Thornber Fishhook Cactus				SR
<i>Myotis velifer</i>	Cave Myotis	SC		S	
<i>Nyctinomops femorosaccus</i>	Pocketed Free-tailed Bat			S	
<i>Peniocereus striatus</i>	Dahlia Rooted Cereus				SR
<i>Phyllorhynchus browni lucidus</i>	Maricopa Leaf-nosed Snake		S		
<i>Rallus longirostris yumanensis</i>	Yuma Clapper Rail	LE			WSC
<i>Stenocereus thurberi</i>	Organ Pipe Cactus				SR
<i>Tryonia quitobaquitae</i>	Quitobaquito Tryonia	SC	S		
<i>Tumamoca macdougalii</i>	Tumamoc Globeberry		S	S	SR
<i>Tyrannus melancholicus</i>	Tropical Kingbird				WSC

Designated Critical Habitat for the Quitobaquito Desert Pupfish within project area.

Arizona Game and Fish Department, Heritage Data Management System, May 7, 2007.

APPENDIX C
Correspondence



United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 FAX: (602) 242-2513

In Reply Refer To:
AESO/SE
22410-2008-F-0011

February 11, 2008

Mr. George Hutchinson
U.S. Department of Homeland Security
Customs and Border Protection
1300 Pennsylvania Avenue NW
Room 3.4-D
Washington, D.C. 20229

RE: Biological Opinion for the Proposed Installation of 5.2 Miles of Primary Fence near
Lukeville, Arizona

Dear Mr. Hutchinson:

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). You requested initiation of formal consultation on September 17, 2007. At issue are impacts that may result from your proposed primary fence project on Organ Pipe Cactus National Monument in Pima County, Arizona. The proposed action may affect Sonoran pronghorn (*Antilocapra americana sonoriensis*) and lesser long-nosed bats (*Leptonycteris curasoae yerbabuena*).

This biological opinion is based on information provided in the "Final Environmental Assessment for the Proposed Installation of 5.2 Miles of Primary Fence near Lukeville, Arizona - U.S. Border Patrol, Tucson Sector, November 2007" (EA) and other sources of information as described in the consultation history. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern; primary fence installation and maintenance activities and their effects; road improvement and maintenance activities and their effects; or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at the Phoenix, Arizona, Ecological Services Office (AESO).

CONSULTATION HISTORY

- June 11, 2007: We received your¹ June 4, 2007, request for information on threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may occur in your proposed project area.
- July 10, 2007: We sent you a letter that included the aforementioned information you requested as well as other recommendations to consider during the preparation of your Environmental Assessment for the project.
- September 17, 2007: We received your “Draft Environmental Assessment for the Proposed Installation of 5.2 Miles of Primary Fence near Lukeville, Arizona - U.S. Border Patrol, Tucson Sector, September 2007” and August 14, 2007, letter requesting our concurrence that the Installation of 5.2 Miles of Primary Fence near Lukeville, Border Patrol (BP) Tucson Sector Project, Pima County, Arizona (proposed project), may affect, but is not likely to adversely affect, the federally endangered lesser long-nosed bat and will have no effect on the endangered Sonoran pronghorn.
- October 9, 2007: We held a conference call with Chris Ingram and Josh McEnany of Gulf South Research Corporation (GSRC) to discuss the project’s effects on the Sonoran pronghorn and lesser long-nosed bat. During the call, GSRC revised the determination and concluded that the project may result in adverse effects to both species and that formal section 7 consultation is warranted.
- October 12, 2007: We received your electronic mail confirming the aforementioned revision.
- October 19, 2007: We sent you a letter initiating formal consultation. This letter also included a request for information needed to complete our Biological Opinion.
- December 3, 2007: We received an electronic mail from GSRC with the Final EA attached.
- December 19, 2007: We received your electronic mail inquiring about the status of our Draft BO and informing us that the Final EA was submitted to our office. In a separate electronic mail you stated that the Final EA addressed all requests in our October 19, 2007, letter. We sent you an electronic mail stating that the Final EA did not address all of our requests, but that it contained enough information to start working on the Biological Opinion. A conference call was scheduled for January 8, 2008, to discuss outstanding information needs.
- January 8 to February 5, 2007: We had numerous conference calls to discuss outstanding concerns and information needs regarding your project. During these calls we agreed to a

¹ For the purposes of this biological opinion, “your” and “you” means either Customs and Border Protection or the Army Corps of Engineers.

number of conservation measures that are now incorporated into the “Description of the Proposed Action” of this biological opinion.

- February 6, 2008: We received your electronic mail providing the conservation measures that CBP will implement as part of this project.
- February 6, 2008: We sent you our draft biological opinion for the project.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

U.S. Customs and Border Protection (CBP) and U.S. Border Patrol (USBP) propose to construct and maintain 5.2 miles of primary fence along the U.S.-Mexico border near Lukeville, Arizona to help agents and officers gain effective control of the border. The proposed action, summarized below, is described in detail in the “Final Environmental Assessment for the Proposed Installation of 5.2 Miles of Primary Fence near Lukeville, Arizona - U.S. Border Patrol, Tucson Sector, November 2007” (EA), as well as electronic mail correspondence from Army Corps of Engineers (ACOE) and GSRC to FWS, and notes from conference calls with CBP, ACOE, and GSRC. The project corridor (Figure 1) is within the Organ Pipe Cactus National Monument (OPCNM) and encompasses 5.2 linear miles of the U.S. - Mexico border, including 3.1 miles to the east and 2.1 miles to the west of the Lukeville Port of Entry (POE); the project area is described in the Final EA.

Approximately 4.55 miles of primary fence will be installed approximately 6 feet north of the U.S.-Mexico border on either side of the Lukeville POE and 3 feet north of the existing Permanent Vehicle Barriers (PVBs). Approximately 0.65 mile of primary fence over Sonoyta Hill (also known as Monument Hill) will be installed 3 feet north of the U.S.-Mexico border. Construction activities associated with the installation of 4.55 miles of fence will occur entirely within the 60-foot Roosevelt Reservation² (RR); construction of the 0.65 mile of fence will require a footprint of 150 feet, 90 feet beyond the RR.

The fence will be made of 9-gauge mesh and though the final design will be developed by the design/build contractor, at a minimum, it must extend 15 feet above ground and three to six feet below ground; not impede the natural flow of water; and result only in minimal impacts on small animal movements (see EA for a complete list of minimum fence requirements). Furthermore, in most washes or arroyos, the fence will be designed and constructed to ensure proper conveyance

² The 60-foot wide Roosevelt Reservation along the border was set aside from public use, with the exception of public highways, as a protection against the smuggling of goods between the U.S. and Mexico by Presidential Proclamation in 1907 by President Theodore Roosevelt. The Roosevelt Reservation includes all lands under Federal ownership in California, Arizona and New Mexico at the time the proclamation was signed, creating a formal border enforcement zone between the U.S. and Mexico (International Boundary Commission 1936).

of floodwaters and to eliminate the potential to cause backwater flooding on either side of the U.S.-Mexico border. During rain events the USBP will be responsible for ensuring that debris does not become wedged against the fence creating backwater flooding.

An existing patrol road that parallels the border for 4.55 miles of the project corridor will be used for access during construction and subsequent maintenance of most of the fence (no improvement to this portion of the road is proposed). To install and maintain primary fence over Sonoyta Hill, west of the Lukeville POE, a new road will be constructed. The existing South Puerto Blanco Road will be used for construction access and maintenance of the Sonoyta Hill portion of the fence. Staging areas and turnarounds for the project will be located in previously disturbed areas, within the RR, to minimize potential effects to the environment. Between 5.2 and 11.4 acre-feet (1.7 to 3.7 million gallons) of water for fence and road construction-related activities will be required. All water will be trucked into the project site from sources north of the OPCNM (i.e., Why, Ajo, or Gila Bend).

A total of about 45 acres (12 acres within the 150-foot wide footprint [this represents 5 acres within the RR and 7 acres outside of the RR] and 33 acres within the 60-foot wide footprint) will be permanently disturbed. About 17 acres of the total footprint have been previously disturbed from the construction of the existing PVBs. Within the project footprint, up to 206 saguaros and 295 organ pipe cacti will be removed or salvaged (85 percent of these occur within the 0.65-mile project corridor over Sonoyta Hill).

The road and fence will be maintained by the USBP on an as-needed basis to ensure the integrity of the road and fence is not compromised. All project personnel will not exceed a speed limit of 25 miles per hour within OPCNM during construction and maintenance related activities (excluding travel on Highway 85). The number of vehicles traveling to and from the project site and the number of trips per day will be minimized to reduce the likelihood of disturbing pronghorn in the area or injuring an animal on the road. The project is expected to be completed by December 2008. Nighttime construction is not anticipated, however, it may occur.

CBP anticipates that the fence will facilitate increased border control within the 5.2-mile project corridor. Therefore, the enforcement resources once used for security in that area will be more available to respond to illegal activity on either side of the fence. Furthermore, CBP aims to interdict illegal activity as close to the border as possible.

Conservation Measures

To reduce impacts to the environment, CBP and their representatives (i.e., ACOE, contractors, and consultants) will implement a number of Environmental Design and Conservation Measures, including: 1) demarcate the project area to be impacted before construction begins; 2) implement a Stormwater Pollution Prevention Plan (SWPPP), including pre- and post-construction Best Management Practices (BMPs) identified in the SWPPP; 3) implement erosion

control techniques; 4) construct the fence in arroyos in a way that ensures proper conveyance of floodwaters and that eliminates the potential for backwater flooding on either side of the U.S.-Mexico border; 5) remove debris from the fence immediately after rain events to ensure that no backwater flooding occurs; 6) comply with the Migratory Bird Treaty Act; 7) check all construction-related holes and trenches on a daily-basis and immediately remove and relocate all animals that have fallen in the holes and trenches away from the site (>100 feet) (checking may be done by anyone on-site; however, removal of animals will be done by a qualified biologist); and 8) clean construction equipment prior to entering OPCNM to minimize the spread and establishment of non-native and invasive species. A biological monitor will be on-site daily to ensure project compliance (i.e., ensure contractors are staying within the demarcated impact area; move animals, such as desert tortoise, out of the project corridor; etc.). When contractors are working on the western slope of Sonoyta Hill, the biological monitor will conduct surveys for Sonoran pronghorn as close to dawn as possible. If Sonoran pronghorn are detected within 0.62 mile of project activities, no project work will begin until pronghorn move on their own volition to a distance greater than 0.62 mile from the activities. All contractors, work crews (including National Guard and military personnel), and CBP personnel in the field performing construction and maintenance activities would receive training on the habitat and habits of species found in the project area, including information on how to avoid impacts to the species from their activities.

To help offset impacts to lesser long-nosed bat foraging habitat and other natural resources, CBP and their representatives will (or provide funding for): 1) in close coordination with OPCNM, salvage all columnar cacti less than three feet tall to the extent practicable (approximately 74 saguaro and 68 organ pipe cacti³) and attempt to salvage columnar cacti between three and six feet (approximately 41 saguaro and 55 organ pipe cacti³) that face danger of destruction within the project corridor as determined by the biological monitor and that have been identified using GPS-technology (either by GSRC or OPCNM), as well as about 20 barrel cacti; 2) transport the salvaged cacti to an area, likely the OPCNM nursery, where they will be temporarily planted in prepared beds; 3) care for them until they are ready to be replanted; and 4) replant (water and monitor) them in areas to be restored within OPCNM (as identified in the restoration plan-see below). The contractor responsible for constructing the fence will also be responsible for cactus salvage and transportation, as well as care until funds become available through the programmatic mitigation agreement (explained below). Non-salvageable plants destroyed in the project corridor and not needed for on-site erosion control or restoration, as determined by an erosion-control/restoration specialist and OPCNM staff, will be hauled away to an appropriate disposal site outside of OPCNM.

³ During a recent survey (February 2008), OPCNM staff counted a total of 140 salvageable saguaros and 112 salvageable organ pipe cacti. These numbers differ from those provided by GSRC; however, regardless of the exact number, all saguaros and organ pipe determined to be salvageable within the project footprint will be salvaged.

To help offset impacts to lesser long-nosed bats, Sonoran pronghorn, and other natural resources CBP will provide funding in the amount of \$955,000.00⁴ to restore 84 acres (to be identified by OPCNM personnel) within OPCNM, including illegal roads and trails within the Monument. We anticipate that about 60 percent of the restoration will benefit the conservation of the lesser long-nosed bat and about 40 percent will benefit the Sonoran pronghorn. A restoration plan will be developed and implemented by a qualified Sonoran Desert restoration specialist, in close coordination with OPCNM. Development of the plan will be the responsibility of the fence contractor, however, implementation of it will be the responsibility of DOI. The plan will be completed within 6 months of the issuance of the biological opinion and, among other components, will include replanting, watering as needed, and monitoring the success of salvaged cacti; eradication of non-native invasive species; and general maintenance and monitoring of the restoration areas for 5 years. No restoration will occur within the project footprint, as the area will be needed for future CBP operations; however, non-native invasive plants will be monitored and controlled in the area for three years.

To aid in the conservation and recovery of pronghorn and to help offset potential impacts to pronghorn that may occur as a result of this project, the CBP will provide funding to the FWS to fill a Sonoran pronghorn water for 10 years at a cost per year of \$2,500.00 (for a total of \$25,000).

The aforementioned funding (\$955,000 and \$25,000) will be incorporated within a programmatic mitigation agreement between Department of Homeland Security/CBP and Department of the Interior (DOI)/FWS. Once funding is provided to DOI through this agreement, DOI will be responsible for implementing the restoration plan and filling the Sonoran pronghorn water.

SONORAN PRONGHORN STATUS OF THE SPECIES

A. Description, Legal Status, and Recovery Planning

The Sonoran subspecies of pronghorn (*Antilocapra americana sonoriensis*) was first described by Goldman (1945) and is the smallest of the five subspecies of pronghorn (Nowak and Paradiso 1983). The subspecies was listed throughout its range as endangered on March 11, 1967 (32 FR 4001) under the Endangered Species Preservation Act of October 15, 1966 without critical habitat. Three sub-populations of the Sonoran pronghorn are extant: 1) a U.S. sub-population in southwestern Arizona, 2) a sub-population in the Pinacate Region of northwestern Sonora, and 3) a sub-population on the Gulf of California west and north of Caborca, Sonora. The three sub-populations are geographically isolated due to barriers such as roads and fences, and in the case of the two Sonora sub-populations, by distance.

⁴ These funds will also be used to pay for the care of salvaged cactus at the temporary holding facility until they are ready to be replanted. If the salvage occurs before the funds are available, the salvaged cactus will be cared for by CBP or their representatives until the funds become available.

The 1982 Sonoran Pronghorn Recovery Plan (U.S. Fish and Wildlife Service 1982) was revised in 1998 (U.S. Fish and Wildlife Service 1998). The recovery criteria presented in the revised plan entailed the establishment of a population of 300 adult pronghorn in one self-sustaining population for a minimum of five years, as well as the establishment of at least one other self-sustaining population in the U.S. to reclassify the subspecies to threatened. Actions identified as necessary to achieve these goals include the following: 1) enhance present sub-populations of pronghorn by providing supplemental forage and/or water; 2) determine habitat needs and protect present range; 3) investigate and address potential barriers to expansion of presently used range and investigate, evaluate, and prioritize present and potential future reintroduction sites within historical range; 4) establish and monitor a new, separate herd(s) to guard against catastrophes decimating the core population, and investigate captive breeding; 5) continue monitoring sub-populations and maintain a protocol for a repeatable and comparable survey technique; and 6) examine additional specimen evidence available to assist in verification of taxonomic status. In 2001 a supplement and amendment to the 1998 Final Revised Sonoran Pronghorn Recovery Plan was prepared (U.S. Fish and Wildlife Service 2001). We concluded that data do not yet exist to support establishing delisting criteria. Tasks necessary to accomplish reclassification to threatened status (as outlined in the 1998 plan) should provide the information necessary to determine if and when delisting will be possible and what the criteria should be.

B. Life History and Habitat

Sonoran pronghorn inhabit one of the hottest and driest portions of the Sonoran Desert. They forage on a large variety of perennial and annual plant species (Hughes and Smith 1990, Hervert *et al.* 1997b, U.S. Fish and Wildlife Service 1998). During drought years, Hughes and Smith (1990) reported cacti were the major dietary component (44 percent). Consumption of cacti, especially chain fruit cholla (*Cylindropuntia fulgida*, Pinkava 1999), provides a source of water during hot, dry conditions (Hervert *et al.* 1997b). Other important plant species in the diet of the pronghorn include pigweed (*Amaranthus palmeri*), ragweed (*Ambrosia* sp.), locoweed (*Astragalus* sp.), brome (*Bromus* sp.), and snakeweed (*Gutierrezia sarothrae*) (U.S. Fish and Wildlife Service 1998). Pronghorn will move in response to spatial limitations in forage availability (Hervert *et al.* 1997a). Water intake from forage is not adequate to meet minimum water requirements (Fox *et al.* 2000), hence pronghorn need and readily use both natural and artificial water sources (Morgart *et al.* 2005).

Sonoran pronghorn rut during July-September, and does have been observed with newborn fawns from February through May. Parturition corresponds with annual spring forage abundance. Fawning areas have been documented in the Mohawk Dunes and the bajadas of the Sierra Pinta, Mohawk, Bates, Growler, and Puerto Blanco mountains. Does usually have twins, and fawns suckle for about 2 months. Does gather with fawns, and fawns sometimes form nursery groups (U.S. Fish and Wildlife Service 1998). Sonoran pronghorn form small herds of up to 21 animals (Wright and deVos 1986).

Telemetry locations of 35 Sonoran pronghorn demonstrated that during 1995-2002, pronghorn used creosote/bursage and palo verde/mixed cactus vegetation associations less than expected or equal to availability. Pronghorn use of palo verde/chain fruit cholla associations and desert washes occurred more than expected. However, during the cool and wet winter on 1997-1998, pronghorn were found in creosote/bursage associations more than expected (Hervert *et al.* 2005). In contrast, during 1983-1991, pronghorn used creosote/bursage and palo verde mixed cacti associations more than expected (deVos and Miller 2005). Differences between these study results may be due in part to differences in precipitation and forage patterns between these periods. The earlier period was wetter with greater forage availability in flats and valleys where creosote/bursage associations predominate. In wet winters and early spring pronghorn are often found in flats and valleys, such as Pinta Sands, the Mohawk Dunes west of the Mohawk Mountains, and the west side of the Aguila Mountains. In late spring and summer, pronghorn then move from the flats and valleys upslope into bajadas and often south or southeast where palo verde associations, chain fruit cholla, and washes are more common. Movements are most likely motivated by the need for thermal cover provided by leguminous trees and water available in succulent chain fruit cholla (Hervert *et al.* 1997b). Home range size of Sonoran pronghorn during 1995-2002 ranged from 16.6 to 1,109 mi², with an average of 197 ± 257 mi² (Hervert *et al.* 2005).

From 1995-2002, adult mortality rates varied from 11-83%. Adults were killed by coyotes, bobcats, mountain lions, capturing efforts, drought, and unknown causes (Bright and Hervert 2005). However, during 1983-1991, apparently a more favorable period for pronghorn during which the population grew significantly, mean annual survival of females and males was $96\% \pm 0.04$ and $92\% \pm 0.04$ (DeVos and Miller 2005). Disease may affect mortality, but has not been thoroughly investigated (Bright and Hervert 2005). Hervert *et al.* (2000) found that the number of fawns surviving until the first summer rains was significantly correlated to the amount of preceding winter rainfall, and negatively correlated to the number of days without rain between the last winter rain and the first summer rain. Drought may be a major factor in the survival of adults and fawns (Bright and Hervert 2005). Three radio-collared pronghorn died in July and August of 2002 with no obvious cause of death. Given that 2002 was one of the driest years on record, the proximate cause of these mortalities was likely heat stress and/or malnutrition resulting from inadequate forage conditions due to drought.

C. Distribution and Abundance

United States

Historically, the Sonoran pronghorn ranged in the U.S. from approximately the Santa Cruz River in the east, to the Gila Bend and Kofa Mountains to the north, and to Imperial Valley, California, to the west (Mearns 1907, Nelson 1925, Monson 1968, Wright and deVos 1986, Paradiso and Nowak 1971; Figure 2). Bright *et al.* (2001) defined the present U.S. range of the Sonoran pronghorn as bordered by Interstate 8 to the north, the International Border to the south, the Copper and Cabeza mountains to the west, and SR 85 to the east (see Figure 3). This area encompasses 2,508 mi² (Bright *et al.* 2001).

While Mearns (1907) suggested that pronghorn may have been common in some areas in the late 1800s, evidence suggests that the sub-population declined dramatically in the early 20th century. Sub-population estimates for Arizona, which only began in 1925, have never shown the pronghorn to be abundant (Table 1). Repeatable, systematic surveys were not conducted in Arizona until 1992. Since 1992, Sonoran pronghorn in the United States have been surveyed biennially (Bright *et al.* 1999, 2001) using aerial line transects (Johnson *et al.* 1991). Sub-population estimates from these transects have been derived using three different estimators (Table 2); currently the sightability model (Samuel and Pollock 1981) is considered the most reliable estimator (Bright *et al.* 1999, 2001). Table 2 presents observation data from transects and compares estimates derived from the three population models from 1992 through 2006.

The sightability model population estimates from 1992 to 2000 showed a 45 percent decrease in sub-population size (Table 2). The estimates indicate a steady decline in sub-population size, with the exception of the 1994 survey. The 1994 estimate may be somewhat inflated due to inconsistencies in survey timing (U.S. Fish and Wildlife Service 1998, Bright *et al.* 2001). High fawn mortality in 1995 and 1996 and the death of half (8 of 16) of the adult, radio-collared pronghorn during the 13 months preceding the December 1996 survey corresponded to five consecutive six-month seasons of below normal precipitation (summer 1994 through summer 1996) throughout most of the Sonoran pronghorn range, which likely contributed, in part, to observed mortality (Bright *et al.* 2001, Hervert *et al.* 1997b).

Mortality of Sonoran pronghorn in 2002 was exceptionally high (Bright and Hervert 2005). At the start of the year, seven radio-collared Sonoran pronghorn were at large in the U.S. sub-population. By December 2002, all but one of these had died. For most, drought stress was considered to be the proximate cause. For those animals that may have succumbed to predation, it was suspected that drought stress was again a factor, by making the animal more vulnerable to predation, due to an emaciated physical condition and being forced into predator habitats by drought. The 2002 drought was one of the driest on record. As an example, annual rainfall at the OPCNM visitor center was only 2.54 inches in 2002 (T. Tibbitts, Organ Pipe Cactus NM, pers. comm. 2002); *average* annual rainfall for the visitor center is 9.2 inches (Brown 1982). The November/December 2002 population survey revealed the U.S. sub-population had declined to the lowest level ever recorded. A total of 18 pronghorn were observed, in three groups (8, 9, and 1). The sightability model resulted in a population estimate of 21 animals, or a 79% decline from 2000. Also, very few fawns survived in 2002 to replace these dying adults.

Although drought was likely the proximate cause of the dramatic decline of the U.S. sub-population in 2002, anthropogenic factors almost certainly contributed to or exacerbated the effects of the drought. Historically, pronghorn likely moved to wetted areas and foraged along the Rio Sonoyta, Sonora, and the Gila and probably Colorado rivers during drought. These areas are no longer accessible to the U.S. population due to fences, Interstate 8, Mexico Highway 2, and other barriers. The rate of decline in the U.S. sub-population from 2000-2002 (79 percent) was also much greater than that observed in either the sub-population southeast of Highway 8 (18 percent decline) or the El Pinacate sub-population (26 percent) during the same period (see discussion of Mexican sub-populations in the next section). Observations of forage availability

suggest the El Pinacate sub-population experienced the same severe drought that occurred on the Arizona side (T. Tibbitts, J. Morgart, pers. comm. 2003). Yet that sub-population fared much better than its U.S. counterpart. The high level of human activities and disturbance on the U.S. side, particularly in regard to undocumented alien traffic, smugglers, and required law enforcement response, as compared to what occurs in the El Pinacate area, is a likely contributing factor in the differing rates of decline observed north and south of the border. See the section entitled “Drought” in the Environmental Baseline and “Cumulative Effects” for further discussion.

The December 2004 survey resulted in an estimated 58 wild pronghorn in the U.S. sub-population, a substantial increase brought on by favorable conditions since 2002. Based on casual surveys and estimated fawn survival, the population in 2005 was roughly 75 wild pronghorn. Based on a December 2006 aerial survey, the U.S. sub-population was estimated at 68 (Table 2). Based, again, on casual surveys as well as aerial tracking of ten telemetered pronghorn, the 2007 wild population is now estimated at about 70.

Semi-captive breeding facility

As part of a comprehensive emergency recovery program, adult pronghorn were first captured and placed into a semi-captive breeding facility at CPNWR in 2004. There are currently (as of January 2008) 37 pronghorn in the enclosure. Two yearling bucks were released from the pen into the wild herd in November 2006, and another two were released in January 2007. The objective is to produce 10-25 fawns each year to be released into the U.S. sub-population, and potentially to establish a second U.S. sub-population at Kofa NWR. Planning for the second herd is underway. Various alternatives are being considered, but a second herd could be established in King Valley of Kofa NWR within five years. A captive facility with a forage enhancement plot, and development of waters in King Valley would likely be needed. The population would probably be introduced as an experimental, nonessential population under section 10(j) of the Act.

Mexico

Historically, Sonoran pronghorn ranged in Sonora from the Arizona border south to Hermosillo and Kino Bay, west to at least the Sierra del Rosario, and east to the area south of the Baboquivari Valley on the Tohono O’odham Nation (Nelson 1925, Carr 1974, Monson 1968). The distribution in Baja California Norte is less clear, but observations by Mearns (1907) indicate they occurred in the Colorado Desert west of the Colorado River, as well. Sonoran pronghorn are currently extant in two sub-populations in Mexico, including: (1) Pinacate sub-population west of Highway 8 near the Pinacate Lava flow; and (2) north and west of Caborca and southeast of Highway 8.

Sub-populations of Sonoran pronghorn in Sonora had not been thoroughly surveyed until the December 2000 surveys (Bright *et al.* 2001), at which time 346 pronghorn were estimated to occur in Sonora. Although the 1993 estimate was approximate, survey results suggested a decline in the sub-populations of 16 percent from 1993 to 2000 (Table 3). The two Mexico sub-populations were resurveyed in December 2002. A grand total (both El Pinacate and southeast

of Highway 8) of 214 pronghorn in 32 groups were seen for a tentative population estimate of 280, indicating further decline. Only 19 pronghorn were observed in the Pinacate area for an estimate of 25, which is a decline of 26% from the 2000 estimate. Surveys conducted in December 2004 and February 2005 demonstrated that the population southeast of Highway 8 increased to 625 (439 observed), while the Pinacate population increased to 59 (30 observed). In January 2006, surveys indicated that pronghorn numbers are remaining steady with an estimated total of 634 (486 observed) individuals (combined for both populations). Nine of these were captured, of which five were fitted with radio-collars and released and four were transferred to the semi-captive breeding facility in the U.S.

Population Viability Analysis

In 1996, a workshop was held in which a population viability analysis (PVA) was conducted for the U.S. sub-population of Sonoran pronghorn (Defenders of Wildlife 1998). A PVA is a structured, systematic, and comprehensive examination of the interacting factors that place a population or species at risk (Gilpin and Soulé 1986). Based on the best estimates of demographic parameters at the time, the likelihood of extinction of Sonoran pronghorn was calculated as one percent in the next 25 years, nine percent in the next 50 years, and 23 percent in the next 100 years. More severe threats include population fluctuation, periodic decimation during drought (especially of fawns), small present population size, limited habitat preventing expansion to a more secure population size, and expected future inbreeding depression. At populations of less than 100, population viability declined at an increasingly steep rate. To maintain genetic diversity over the long term, a population of at least 500 is desirable (Defenders of Wildlife 1998). The likelihood of extinction increased markedly when fawn mortality exceeded 70 percent. Thus, a 30 percent fawn crop (30 fawns/100 does) each year is necessary to ensure the continuance of the U.S. sub-population. The authors concluded that “this population of the Sonoran pronghorn, the only one in the U.S., is at serious risk of extinction.” The authors made these conclusions prior to the severe drought and decline in the species in 2002. On the other hand, Hosack *et al.* (2002) found that some management actions were possible that could improve the chances of population persistence significantly. Actions that would ameliorate the effects of drought or minimize mortality of pronghorn were of particular importance for improving population persistence.

E. Threats

Barriers that Limit Distribution and Movement

Highways, fences, railroads, developed areas, and irrigation canals can block access to essential forage or water resources. Highways 2 and 8 in Sonora, and SR 85 between Gila Bend and Lukeville, Arizona support a considerable amount of fast-moving vehicular traffic, and are fenced in some areas, and are likely a substantial barrier to Sonoran pronghorn. Interstate 8, the Wellton-Mohawk Canal, agriculture, a railroad, and associated fences and human disturbance near the Gila River act as barriers for northward movement of pronghorn. De-watering of reaches of the Río Sonoyta and lower Gila River, and barriers to pronghorn accessing the Gila River, such as Interstate 8 and the Wellton-Mohawk Canal, have caused significant loss of habitat and loss of access to water (Wright and deVos 1986). Agricultural, urban, and

commercial development at Sonoyta, Puerto Peñasco, and San Luis Río Colorado, Sonora; in the Mexicali Valley, Baja California Norte; and at Ajo, Yuma, and along the Gila River, Arizona, have further removed habitat and created barriers to movement.

Human-caused Disturbance

A variety of human activities occur throughout the range of the pronghorn that have the potential to disturb pronghorn or its habitat, including livestock grazing in the U.S. and Mexico; military activities; recreation; poaching and hunting; clearing of desert scrub and planting of buffelgrass (*Pennisetum ciliare*) in Sonora; gold mining southeast of Sonoyta, dewatering and development along the Gila River and Río Sonoyta; increasing undocumented immigration and drug trafficking across the international border and associated required law enforcement response; and roads, fences, canals, and other artificial barriers.

Studies of captive pronghorn, other than the Sonoran subspecies, have shown that they are sensitive to disturbance such as human presence and vehicular noise. Human traffic, such as a person walking or running past pronghorn in an enclosed pen, a motorcycle driving past, a truck driving past, a truck blowing its horn while driving past, or a person entering a holding pen, caused an increased heart-rate response in American pronghorn in half-acre holding pens (Workman *et al.* 1992). The highest heart rates occurred in female pronghorn in response to a person entering a holding pen, or a truck driving past while sounding the horn. The lowest heart rates occurred when a motorcycle or truck was driven past their pen. Pronghorn were more sensitive to helicopters, particularly those flying at low levels or hovering, than fixed wing aircraft. Other investigators have shown that heart rate increases in response to auditory or visual disturbance in the absence of overt behavioral changes (Thompson *et al.* 1968, Cherkovich and Tatoyan 1973, Moen *et al.* 1978). Hughes and Smith (1990) found that pronghorn immediately ran 1,310-1,650 feet from a vehicle. Krausman *et al.* (2001, 2004, 2005a) examined effects of military aircraft and ground-based activities on Sonoran pronghorn at the North and South TACs on the Barry M. Goldwater Range (BMGR) and concluded that military activities, both ground-based and aerial, were associated with some changes in behavior (e.g., from standing to trotting or running, or bedded to standing) but the authors concluded that these changes were not likely to be detrimental to the animals. Sightings of pronghorn were biased towards disturbed habitats on the TACs and other areas of military activities, which also corresponded to areas of favorable ephemeral forage production (Krausman *et al.* 2005a). No conclusions could be drawn about effects of military activities on fawns due to poor fawn productivity during the Krausman *et al.* study. During times of drought, disturbances that cause pronghorns to startle and run would energetically have a more significant effect. Such energetic expenditures, particularly during times of stress, may lead to lower reproductive output and/or survival of individual animals (Geist 1971).

Habitat Disturbance

Livestock grazing has the potential to significantly alter pronghorn habitat and behavior (Leftwich and Simpson 1978, Kindschy *et al.* 1982, Yoakum *et al.* 1996). Overgrazing well into the 19th century by Spaniards and their descendants caused widespread habitat changes throughout much of the Sonoran Desert, particularly in more settled areas such as central Sonora,

Mexico (Sheridan 2000). The effects of cattle grazing are largely historical; cattle were removed from OPCNM, CPNWR, and the BMGR in 1979, 1983, and 1986, respectively (U.S. Fish and Wildlife Service 1998, Rutman 1997). In 2004, the Bureau of Land Management (BLM) closed the Cameron Allotment on the borders of CPNWR and OPCNM, but grazing still occurs in the nearby Childs and Coyote Flat allotments near Ajo. In Sonora, livestock grazing occurs at Pozo Nuevo and at Ejido Puerto Peñasco, but cattle typically stay close to feed and water except in seasons with abundant annual growth when cattle range widely in the Pinacate region.

Mining occurred historically throughout much of the U.S. range of the pronghorn, but is currently not a significant threat to Sonoran pronghorn in the U.S. During recent pronghorn surveys in Mexico, increasing effects from gold mining activities were noted in habitats used by the sub-population located southeast of Highway 8.

Illegal crossings by undocumented immigrants and drug smugglers in the U.S. range of the pronghorn have increased dramatically in recent years. In 2001, estimates of undocumented migrants traffic reached 1,000 per night in OPCNM alone (Organ Pipe Cactus National Monument 2001), and an estimated 150,000 people entered the monument illegally from Mexico (Milstead and Barns 2002). Apprehensions of illegal immigrants and smugglers by the Ajo Station of the Tucson USBP Sector increased from 2837 in 1997 to 6327 in 2005 (personal communication with David BeMiller, February 10, 2006). From October 2005 to February 2006, 6908 apprehensions were made by the Ajo Station (personal communication with David BeMiller, February 10, 2006). The Wellton Station of the Yuma USBP Sector made 2080 apprehensions in fiscal year 2005 and 3339 apprehensions from October 2005 to February 2006 (personal communication with David BeMiller, February 10, 2006). USBP agents have indicated, however, that apprehensions have recently decreased due to USBP presence at Camp Grip (electronic mail from David Guzewich, February 8, 2008). Illegal border-related activities and required USBP response have resulted in widespread habitat degradation and increased human presence in remote areas. For instance, all the valleys at Cabeza Prieta NWR are now criss-crossed with a network of north-south roads and trails, even though those areas are designated as wilderness. Illegal immigrants and smugglers have shifted their activities to more remote areas, including Sonoran pronghorn habitat in southwestern Arizona, as USBP has been able to successfully gain control of more urban areas. There is anecdotal evidence that pronghorn are avoiding areas of high illegal traffic and law enforcement activities (personal communication with Curtis McCasland, CPNWR, 2007).

Fire

The winter and spring of 2004/2005 were very wet, resulting in some of the highest productivity of cool season annual plants in recent memory. As these annual plants dried out, they created fuel for wildfire. In 2005, Mediterranean grass combined with high densities of the native wooly plantain (*Plantago ovata*) and other species created fuels adequate to carry fire. Military training, such as strafing and bombing in the tactical ranges, as well as fires set by illegal immigrants or smugglers, provided the ignition sources. Exact numbers are unknown; however, in 2005 roughly 7,500 acres of pronghorn habitat burned on the CPNWR (personal communication with Curtis McCasland, CPNWR, February 15, 2006) and more than 63,000

acres burned on the BMGR-East during that time. Approximately 29,260 acres of pronghorn habitat were consumed as a result of these fires.

Most Sonoran Desert trees, shrubs, and cacti are poorly adapted to fire (Brown and Minnich 1986, Schwalbe *et al.* 2000, Alford and Brock 2002). If areas burn repeatedly, permanent changes are likely in the flora. Even in the best scenario it is likely to be many years before trees once again provide thermal cover in wash communities and cholla recover to a point that they are useful forage plants for pronghorn. In 2007, pronghorn were attracted to the burned areas, which often supported better growth of annual plants and forbs than adjacent unburned areas. However, in the long term and if these areas continue to burn, removal of thermal cover (trees) and chain fruit cholla, which they depend on in drought, would likely adversely affect pronghorn and probably limit the use of these areas to wetter and cooler periods and seasons.

Drought

As discussed, drought may be a major factor in the survival of adults and fawns (Bright and Hervert 2005), and the major decline in 2002 was driven by drought. Mean annual temperatures rose 2.0-3.1 °F in the American Southwest in the 20th century, and are predicted to rise 8.1-11.0 °F in the 21st century. Most of the observed increases in globally averaged temperatures since the mid-20th century are very likely due to the observed increases in anthropogenic greenhouse gas concentrations (Intergovernmental Panel on Climate Change 2007). In the Sonoran Desert, anthropogenic climate change is causing warming trends in winter and spring, decreased frequency of freezing temperatures, lengthening of the freeze-free season, and increased minimum temperatures in winter, which will likely cause changes in vegetation communities (Weiss and Overpeck 2005). These increases in temperature are predicted to be accompanied by a more arid climate in the Southwest (Seager *et al.* 2007, Intergovernmental Panel on Climate Change 2007). As a result, the Sonoran pronghorn is expected to be confronted with more frequent drought, which increases the importance of recovery actions, such as forage enhancement plots and water developments, which can offset the effects of drought.

Small Population Size and Random Changes in Demographics

At populations of less than 100, population viability declines at an increasingly steep rate. To maintain genetic diversity over the long term, a population of at least 500 is desirable (Defenders of Wildlife 1998). At an estimated 21 in 2002, and roughly 70 wild pronghorn in 2007, the U.S. sub-population is critically endangered and is going through a genetic bottleneck. At an estimated 25 in 2002 and 59 in 2004, the Pinacate sub-population is also well below desired numbers. At 625, the third sub-population (southeast of Highway 8) is marginally large enough to maintain genetic diversity. Loss of the U.S. sub-population would dramatically reduce our ability to manage or recover this subspecies. Populations at low levels may experience random variations in sex ratios, age distributions, and birth and death rates among individuals, which can cause fluctuations in population size and possibly extinction (Richter-Dyn and Goel 1972). In very sparse populations, males may have trouble finding females, reducing productivity (Ehrlich and Roughgarden 1987). Small populations are also sensitive to variations in natural processes, such as drought and predation (Hecht and Nickerson 1999).

Disease

Sonoran pronghorn can potentially be infected by a variety of viral and bacterial diseases. Blood testing has shown pronghorn exposure to these diseases by increases in antibody titers over time. The diseases relevant to pronghorn can be transmitted indirectly through vectors, such as infected midges or ticks, or directly via aerosolized or direct contact of infected fluids or tissues. Diseases that potentially infect pronghorn are all serious diseases of cattle, which can act as vectors. Cattle within the current range of the pronghorn have not been tested for these diseases.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, state, or private actions in the action area; the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation; and the impact of state and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform from which to assess the effects of the action now under consultation.

A. Action Area

The “action area” means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. Within the U.S. portion of the Sonoran pronghorn’s range, pronghorn interact to form one sub-population in which interbreeding may occur. The U.S. sub-population is effectively separated from sub-populations in the El Pinacate Region and on the Gulf Coast of Sonora by Mexico Highways 2 and 8. Activities that may affect animals in any portion of the U.S. range of the pronghorn may affect the size or structure of the U.S. sub-population, or habitat use within the U.S. range. The action area for this biological opinion is defined as the current range of the pronghorn within the U.S. (Figure 3), plus areas along the border 3.1 miles to the east and 2.1 miles to the west of the Lukeville POE.

Management of the action area is almost entirely by Federal agencies. The BMGR (roughly 1.6 million acres) is managed by Luke Air Force Base and MCAS-Yuma primarily for military training. OPCNM manages 329,000 acres in the southeastern corner of the action area for scenic, ecological, natural, and cultural values. CPNWR lies along the border west of OPCNM and encompasses 860,000 acres. CPNWR is managed to protect, maintain, and restore the diversity of the Sonoran Desert. Most of the refuge and OPCNM are designated as wilderness. The BLM manages lands near Ajo for recreation, grazing, and other multiple uses in accordance with the Lower Gila Resource Management Plan. OPCNM and CPNWR are critically important for Sonoran pronghorn recovery because of their management for protection of natural resources. Lands on the BMGR are managed primarily for military training, and although important recovery is ongoing on these lands and the Department of Defense has generously contributed to the recovery program both on and off the BMGR, changing military priorities could, in the future, limit the value of the BMGR for Sonoran pronghorn recovery.

B. Terrain, Vegetation Communities, and Climate in the Action Area

The action area is characterized by broad alluvial valleys separated by block-faulted mountains and surface volcanics. The Yuma Desert on the western edge of the BMGR is part of a broad valley that includes the Colorado River. Major drainages and mountain ranges run northwest to southeast. Major drainages flow mostly northward to the Gila River, although southern portions of OPCNM and the southern slope of the Agua Dulce Mountains drain south to the Río Sonoyta.

Climate is characterized by extreme aridity, mild winters, and hot summers. Approximately 2.7 inches of precipitation fall annually at Yuma, with slightly more than half of this occurring in the winter months (Brown 1982). Annual precipitation increases from west to east across the BMGR; at Aguajita/Quitobaquito, precipitation is 10.5 inches annually.

The vegetation community of the western portion of the BMGR has been classified as the lower Colorado River Valley subdivision of Sonoran Desert scrub (Brown 1982). It is the largest and most arid subdivision of Sonoran Desert scrub. The Arizona Upland subdivision of Sonoran Desert scrub is found in the Growler, Puerto Blanco, Ajo and Bates mountains, and surrounding bajadas.

C. Status of the Sonoran Pronghorn in the Action Area

Distribution, Abundance, and Life History

The distribution and abundance of the Sonoran pronghorn in the action area is the same as that described above in the Status of the Species for the U.S. sub-population. Life history, including demographics, chronology of breeding and movements, diet, and other factors were also described above for the U.S. population.

Drought

As discussed in the Status of the Species, anthropogenic climate change in the Southwest and the Sonoran Desert is predicted to result in warming trends and drier conditions, with accompanying changes in vegetation communities (Weiss and Overpeck 2005, Seager *et al.* 2007). Rowlands (2000) examined trends in precipitation for southwestern Arizona and OPCNM from 1895-1999. For southwestern Arizona, no trend in precipitation was found for the period, but low precipitation occurred around 1895 and during the 1950s. Periods of high precipitation occurred in 1915-1920 and in the 1980s. For OPCNM, there was a slightly increasing trend in monthly and annual precipitation over the period 1895-1999, a strong drought occurred in the 1950s, and a lesser drought occurred in the 1970s. No discernable trend in precipitation in southwestern Arizona or OPCNM was found in the 1990s, which is when the current decline in the U.S. pronghorn sub-population began.

Since Rowland's analysis, we had one year characterized by above-average rainfall and abundant ephemeral forage (2001) followed by a year with virtually no precipitation or ephemeral forage (2002). Recruitment and survival were high in 2001 and very low in 2002 (Bright and Hervert 2005). Based on the lack of forage and water, and the condition of pronghorn observed, drought is

considered the proximate cause of the 79% decline in the U.S. pronghorn sub-population from 2000 to 2002. The December 2007 long-term (48-months) drought status report (http://www.azwater.gov/dwr/drought/documents/December_2007_Drought_Monitor_Report.pdf) indicates that southwestern Arizona continues to experience abnormally dry to severe drought conditions. Despite this, since 2002, winter and summer precipitation, in conjunction with emergency recovery actions, has been adequate to maintain pronghorn reproduction and fawn survival.

Historically, pronghorn populations must have weathered many severe droughts in the Sonoran Desert, including many that were more severe and longer term than what has occurred recently. Given that pronghorn populations survived the droughts of the 1890s, 1950s, 1970s, and others before those, it is unreasonable to solely attribute recent declines in the U.S. pronghorn population to drought. OPCNM (2001) concluded, "If (individual) recent dry years have had an impact on Sonoran pronghorn, it is most likely because in recent decades Sonoran pronghorn have much more limited options for coping with even brief moderate drought. Because of restrictions on their movements and range, and increasing human presence within their range, pronghorn are less able to employ their nomadic strategy in search of relief. It is not that drought itself is an impact, but possibly that drought has *become* an impact, due to other factors confounding the species' normal ecological strategy."

Emergency Recovery Actions

A number of critically important emergency recovery projects have been recently initiated in an attempt to reverse the decline of the U.S. sub-population of the Sonoran pronghorn (Krausman *et al.* 2005b). These projects are designed to increase availability of green forage and water during dry periods and seasons to offset to some extent the effects of drought and barriers that prevent pronghorn from accessing greenbelts and water, such as the Gila River and Río Sonoyta. Nine emergency water sources (six on CPNWR, one on OPCNM, and two on BMGR-West) have been constructed in recent years throughout the range of the U.S. sub-population. Four forage enhancement plots, each consisting of a well, pump, pipelines and irrigation lines, have been developed to irrigate the desert and produce forage for pronghorn. One plot is currently being constructed and two additional plots will be installed over the next five years.

A semi-captive breeding facility at CPNWR was first stocked with pronghorn in 2004 and now contains 37 animals. As described above, this facility will be used to augment the current U.S. sub-population, and potentially to establish a second herd at Kofa NWR. These crucial projects, which we hope will pull the U.S. population back from the brink of extinction, have been cooperative efforts among FWS, Arizona Game and Fish Department, MCAS-Yuma, Luke Air Force Base, and OPCNM, with volunteer efforts from the Arizona Desert Bighorn Sheep Society, Arizona Antelope Foundation, and the Yuma Rod and Gun Club.

D. Past and Ongoing Non-Federal Actions in the Action Area

The Status of the Species section describes a variety of human activities that have affected the Sonoran pronghorn since initiation of livestock grazing over 300 years ago (Officer 1993). Most

non-Federal activities that have affected the pronghorn are historical in nature, and pronghorn have been all but extirpated from private, state, and Tribal lands.

E. Past and Ongoing Federal Actions in the Action Area

Because of the extent of Federal lands in the action area, most activities that currently, or have recently, affected the U.S. sub-population or their habitat are Federal actions. The primary Federal agencies involved in activities in the action area include the MCAS-Yuma, Luke Air Force Base, FWS, BLM, OPCNM, and Border Patrol. In the following discussion, we have categorized Federal actions affecting the pronghorn as: 1) those actions that have not yet undergone section 7 consultation (although in some cases consultation has been completed on components of the Federal activity), and 2) Federal actions that have undergone consultation.

Federal Actions For Which Consultation Has Not Been Completed

1) Tucson Sector of the Border Patrol

We have been in informal consultation with the Tucson Sector Border Patrol regarding development of a biological assessment for several years (consultation number 02-21-99-I-0138). This consultation will encompass all field activities conducted by the Tucson Sector under their program to detect, deter, and apprehend undocumented immigrants and drug traffickers. Activities within the Ajo Station of the Tucson Sector have the greatest potential to adversely affect pronghorn; although currently that Station is being operated out of the Yuma Sector. Adverse effects may result from patrol and drag road activities, off-road operations, aircraft overflights, the use and maintenance of sensors, construction of vehicle barriers and fences, and installation, operation, and maintenance of cameras and communication towers. From 2002 to 2006, about 180 miles of illegal roads were created in wilderness areas of CPNWR (Segee and Neeley 2006). These routes were likely created both by Border Patrol and smugglers, and all are probably used by Border Patrol. Furthermore, the potential for disturbance to pronghorn due to human presence may increase in areas where agents live on site (i.e., Operation Grip). Border Patrol activities can be beneficial as well, in that they deter illegal border crossings, foot traffic, and off-road vehicles in pronghorn habitat associated with undocumented aliens and smuggling. At the same time, effectiveness of Border Patrol operations elsewhere along the U.S/Mexico border have driven illegal activities into remote areas, such as CPNWR. McCasland (pers. comm. 2007) has anecdotal observations suggesting a negative correlation between areas of high Border Patrol and smuggling traffic and pronghorn use.

2) Smuggler/Drug Interdiction

We are aware of U.S. Customs, Drug Enforcement Authority, and Arizona Army National Guard smuggler or drug interdiction activities in pronghorn habitat, including vehicle and helicopter activities. However, none of these agencies have provided information to us about the extent or types of activities they conduct, and no consultation has occurred on these activities. Impacts are probably similar in scope to those described for the Tucson Sector activities.

3) BLM Off-Road Vehicle Use Area

We are aware of an off-road vehicle (ORV) use area located north of Ajo on BLM land, near the CPNWR, and adjacent to suitable pronghorn habitat. The BLM has not authorized the use of this ORV area but plans to in the updated Resource Management Plan (RMP) they are developing for BLM lands in the vicinity. They will request formal section 7 consultation on the updated RMP. To date, BLM has not provided us with information about the extent and type of use of the ORV area or its possible effects to pronghorn.

Federal Actions Addressed in Section 7 Consultations

As part of our comprehensive discussion of all past and present actions affecting pronghorn within the action area, we describe below all biological opinions issued to date on actions that may affect the pronghorn.

Several opinions addressed projects with minor effects to the pronghorn (capture and collaring of pronghorn for research purposes, consultation numbers 02-21-83-F-0026 and 02-21-88-F-0006; installation of a water source in the Mohawk Valley for pronghorn, consultation number 02-21-88-F-0081; implementation of the CPNWR Comprehensive Conservation Plan, consultation number 22410-2006-F-0416; a change in aircraft type from the F-15A/B to the F-15E on BMGR-East [F-15E Beddown Project], consultation number 02-21-89-F-0008; and the following projects at OPCNM: widen North Puerto Blanco Road project, consultation number 02-21-01-F-0109; roadway and drainage improvements to SR 85, consultation 02-21-01-F-0546; vehicle barrier, consultation number 02-21-02-F-237; and improvement, maintenance, and use of the West Boundary Route, consultation number 02-21-05-M-0100 (this opinion has not yet been finalized)). Incidental take was anticipated only for the Beddown Project in the form of harassment as a result of aircraft overflights. This project was later incorporated into the biological opinion on Luke Air Force Base's activities on the BMGR, discussed below. All of these formal consultations can be viewed on our website at <http://www.fws.gov/arizonaes/Biological.htm>.

Nine biological opinions evaluated major projects with greater effects to pronghorn:

Border Patrol Activities in the Yuma Sector, Wellton Station, Yuma, Arizona

This biological opinion (consultation number 02-21-96-F-0334), issued September 5, 2000, addressed all Border Patrol activities along the United States/Mexico border in Yuma County from the Colorado River to about the area of Pinta Sands at the southern end of the Sierra Pinta Mountains. The Yuma Sector requested reinitiation of consultation, and we delivered a draft biological opinion in 2004; however, we have not received comments from the Border Patrol to date. Currently, Border Patrol activities within the Yuma Sector/Wellton Station include helicopter and ground patrols; drag road preparation and assessment of road maintenance; remote sensor installation and maintenance; maintenance of pedestrian fences east and north of San Luis, construction of a vehicle barrier on the CPNWR, apprehensions and rescues; and assistance to other sectors and agencies. Disturbance to pronghorn was anticipated as a result of on-the-ground Border Patrol operations, and direct injury or mortality of pronghorn as a result of collision with Border Patrol vehicles or by low-level helicopter flights abruptly approaching and startling pronghorn, which may result in injury or energetic stress, particularly during drought.

Pronghorn may also be adversely affected by noise and visual impacts of helicopter overflights. To reduce adverse effects on pronghorn, the Border Patrol agreed to implement a number of conservation measures. We determined that the proposed action was not likely to jeopardize the continued existence of the pronghorn. We anticipated take in the form of harassment that is likely to injure up to one pronghorn in 10 years. The following reasonable and prudent measures were provided: 1) minimize injury of pronghorn; 2) monitor and study reactions of pronghorn on BMGR to Border Patrol activities; and 3) provide a means to determine the level of incidental take that results from Border Patrol activities. Several conservation recommendations were also provided. We are not aware of any incidental take attributable to Yuma Sector activities.

BLM's Lower Gila South Management Area

Three biological opinions address BLM's Lower Gila South Management Area. The Lower Gila South Resource Management Plan-Goldwater Amendment (consultation number 02-21-90-F-0042), proposed specific and general management guidance for non-military activities on the BMGR. The non-jeopardy biological opinion, issued April 25, 1990, was programmatic, requiring BLM to consult when site-specific projects are proposed. No incidental take was anticipated. The Lower Gila South Habitat Management Plan (HMP) (consultation number 02-21-89-F-0213) provided management guidance for both specific and general actions in southwestern Arizona. Four actions were addressed in the HMP, including an exchange of 640 acres near Ajo, rehabilitation work on two catchments, and assessment of livestock removal from pronghorn habitat. Exchange of land out of public ownership may facilitate development or other uses that would preclude use by pronghorn. The non-jeopardy opinion was issued on May 15, 1990. The biological opinion for the Lower Gila South Resource Management Plan and Amendment (consultation number 02-21-85-F-0069) addressed programmatic management of lands in southwestern Arizona, including livestock grazing, wilderness, cultural resources, fire, minerals and energy, recreation, wildlife management, wood cutting, Areas of Critical Environmental Concern, and other land uses. The non-jeopardy biological opinion was issued on March 27, 1998; no incidental take was anticipated. In regard to management on the BMGR, these three opinions have been replaced by the opinion on the BMGR's Integrated Natural Resources Management Plan (INRMP) (see below). The Air Force and MCAS-Yuma have assumed BLM's management responsibilities on the BMGR.

BLM grazing allotments in the vicinity of Ajo, Arizona

The original biological opinion (consultation number 02-21-94-F-0192), issued December 3, 1997, addressed effects to pronghorn resulting from issuance of grazing permits on five allotments, four of which were located near Ajo and Why (Cameron, Childs, Coyote Flat, and Why allotments); and the fifth near Sentinel (Sentinel allotment). All but portions of allotments east of Highway 85 were considered to be within the current distribution of the Sonoran pronghorn. Reinitiations resulted in revised biological opinions dated November 16, 2001, September 30, 2002, June 21, 2004, March 3, 2005, and March 8, 2007. Under the current proposed action, the Cameron Allotment is closed, the Sentinel Allotment has been in non-use for several years, the Coyote Flat and Why allotments were combined into one (Coyote Flat Allotment), and the Childs Allotment remains relatively unchanged in terms of management. Effects of livestock grazing activities included reduced forage availability for pronghorn, human

disturbance due to livestock management, barriers to movement caused by pasture and allotment fences, and potential for disease transfer from cattle to pronghorn. The March 8, 2007 opinion concluded that the proposed action was not likely to jeopardize the continued existence of the pronghorn. No incidental take was anticipated, and none is known to have occurred.

Organ Pipe Cactus National Monument General Management Plan

The original biological opinion (consultation number 02-21-89-F-0078), issued June 26, 1997, addressed implementation of OPCNM's General Management Plan (GMP). This opinion was reinitiated five times, resulting in revised biological opinions dated November 16, 2001, April 7, 2003, March 10 and August 23, 2005, and March 8, 2007. GMP plan elements included: 1) continuing travel and commerce on SR 85 while enhancing resource protection, 2) seeking designation of OPCNM as the Sonoran Desert National Park, 3) establishment of partnerships, 4) increased wilderness and an interagency wilderness and backcountry management plan, 5) changes in trails, facilities, and primitive camping, and 6) implementation of a Cultural Resources Management Plan. Included were a number of conservation measures to minimize impacts to pronghorn. Effects of the action included human disturbance to pronghorn and habitat due to recreation and management activities. We determined that the proposed action was not likely to jeopardize the continued existence of the pronghorn. In the latest versions of the opinion, no incidental take of pronghorn was anticipated. No incidental take is known to have occurred.

Marine Corps Air Station-Yuma in the Arizona Portion of the Yuma Training Range Complex

The original biological opinion (consultation number 02-21-95-F-0114), was issued on April 17, 1996. That opinion was reinitiated and revised opinions were issued November 16, 2001 and August 6, 2003. These opinions addressed all proposed and authorized actions on the BMGR by MCAS-Yuma, including ongoing and proposed changes to military flights over CPNWR and the BMGR, operation of various training facilities such as landing strips, a rifle range, targets, a parachute drop zone, a transmitter/telemetry system, ground support areas, and Weapons Tactics Instructor courses, conducted twice a year (March-April and October-November) that involve overflights, ground-based activities, and deliverance of ordnance at targets in BMGR-East. Ground-based activities, such as those of troops and vehicles at ground-support areas were determined to adversely affect pronghorn habitat use. In areas where helicopters fly particularly low and create noise and visual stimuli, disturbance of pronghorn was anticipated. Ordnance delivery at North and South TACs could disturb pronghorn, and ordnance, live fire, and shrapnel could potentially strike and kill or injure a pronghorn. MCAS-Yuma proposed measures to reduce the direct and indirect impacts of the proposed action, including measures to reduce or eliminate take of Sonoran pronghorn and to minimize destruction and degradation of habitat. We determined that the proposed action was not likely to jeopardize the continued existence of the pronghorn. In the 2003 version of the BO, no incidental take of pronghorn was anticipated and none is known to have occurred.

Luke Air Force Base Use of Ground-Surface and Airspace for Military Training on the BMGR

The original biological opinion (consultation number 02-21-96-F-0094), issued August 27, 1997, addressed military use of the airspace above and the ground space on BMGR-East and CPNWR by Luke Air Force Base. Military activities within the area of overlap with the CPNWR were limited to use of airspace and operation of four Air Combat Maneuvering Instrumentation sites. Military activities occurring within BMGR-East included: airspace use, four manned air-to-ground ranges, three tactical air-to-ground target areas, four auxiliary airfields, Stoval Airfield, and explosive ordnance disposal/burn areas. Primary potential effects of the action included habitat loss due to ground-based activities, harassment and possible mortality of pronghorn at target areas, and disturbance of pronghorn due to military overflights. We determined that the proposed action was not likely to jeopardize the continued existence of the pronghorn. This opinion was reinitiated in 2001 and 2003, resulting in revised opinions dated November 16, 2001 and August 6, 2003. In the latest (2003) opinion, no incidental take was anticipated. We are not aware of any take of pronghorn confirmed attributable to Luke Air Force Base use of the ground-surface and airspace on the BMGR. A pronghorn found dead near a target may have been strafed, but it may also have died from other causes (see "Effects of the Proposed Action" in the 2003 opinion for a full discussion of this incident).

During the development of these opinions, Luke Air Force Base made substantial commitments to minimize the effects of their activities on the Sonoran pronghorn, and additionally committed to implementing a variety of recovery projects recommended by the Sonoran Pronghorn Recovery Team.

Western Army National Guard Aviation Training Site Expansion Project

The non-jeopardy biological opinion for WAATS (consultation number 02-21-92-F-0227) was issued on September 19, 1997; however, Sonoran pronghorn was not addressed in formal consultation until reinitiations and revised opinions dated November 16, 2001 and August 6, 2003. The purpose of WAATS is to provide a highly specialized environment to train ARNG personnel in directed individual aviator qualification training in attack helicopters. The WAATS expansion project included: 1) expansion of the existing Tactical Flight Training Area, which includes establishing four Level III touchdown sites, 2) development of the Master Construction Plan at the Silver Bell Army Heliport, and 3) establishment of a helicopter aerial gunnery range for use by the ARNG on East TAC of the BMGR. All activities that are part of the proposed action occur outside the current range of the pronghorn, with the exception of training at North TAC. Training at North TAC only occurs when East TAC is closed for annual maintenance and EOD clearances (4-6 weeks each year). Effects to pronghorn at North TAC are minimized by monitoring protocols established by Luke Air Force Base. Training at East TAC could preclude recovery of historical habitat if the many other barriers that prevent pronghorn use of East TAC were removed. The November 16, 2001 and August 6, 2003 opinions found that the proposed action was not likely to jeopardize the continued existence of the pronghorn. No incidental take was anticipated and none is known to have occurred as a result of the proposed action. ARNG included the following conservation measures as part of their proposed action: 1) they proposed to study the effects of low-level helicopter flights on a surrogate pronghorn population at Camp Navajo, and 2) they committed to funding up to five percent of emergency recovery actions on the BMGR.

BMGR Integrated Natural Resources Management Plan

The non-jeopardy opinion for this action was issued on August 26, 2005. The Military Lands Withdrawal Act (MLWA) of 1999 required that the Secretaries of the Air Force, Navy, and Interior jointly prepare an INRMP for the BMGR, the purpose of which was to provide for the “proper management and protection of the natural and cultural resources of [the range], and for sustainable use by the public of such resources to the extent consistent with the military purposes [of the BMGR].” The proposed action was comprehensive land management, including public use restrictions, authorizations, and permitting on portions of the BMGR regarding camping, vehicle use, shooting, entry into mines, firewood collection and use, rockhounding, and other activities; natural resources monitoring, surveys, and research; habitat restoration; wildlife water developments; development of a wildfire management plan; law enforcement; limitations on the locations of future utility projects and the Yuma Area Service Highway; control of trespass livestock; and designation of special natural/interest areas, while allowing other designations to expire. The proposed action included many land use prescriptions that would improve the baseline for the pronghorn. No incidental take was anticipated, and none is known to have occurred from the proposed action.

Department of Homeland Security Permanent Vehicle Barrier

This biological opinion (consultation number 22410-2006-F-0113), issued September 15, 2006, addressed the CBP - Office of the Border Patrol’s installation of a permanent vehicle barrier (as well as access improvements, construction/improvement of border roads, and associated maintenance and patrol activities) along the border from the western end of the OPCNM barrier to Avenue C just east of San Luis, Arizona. Effects to pronghorn included 1) disturbance of a narrow swath of habitat along the border, 2) presence of construction crews and vehicles that may disturb or preclude use of the area by pronghorn, 3) presence of maintenance and patrol vehicles and crews along the barrier access road, and 4) dramatic reduction or elimination of illegal drive-throughs and required law enforcement response, with much reduced route proliferation and habitat damage from off-highway vehicles. We determined that the proposed action was not likely to jeopardize the continued existence of the pronghorn. No incidental take of pronghorn was anticipated. Subsequent to issuing the biological opinion, the action was changed to include the installation of a hybrid-style fence designed to prevent the passage of pedestrians. Because all environmental laws were waived (as permitted by the Real ID Act of 2005) by Secretary of the DHS, CBP never reinitiated consultation with us regarding this change to their proposed action.

F. Summary of Activities Affecting Sonoran Pronghorn in the Action Area

Historically, livestock grazing, hunting or poaching, and development along the Gila River and Río Sonoyta were all probably important factors in the well-documented Sonoran pronghorn range reduction and apparent population decline that occurred early in the 20th century. Historical accounts and population estimates suggest pronghorn were never abundant in the 20th century, but recently, the estimated size of the wild population in the action area declined from 179 (1992) to 21 (December 2002) and 68 (2006). At 21 and 68, genetic diversity could erode, and the sub-population is in imminent danger of extirpation due to human-caused impacts, or

natural processes, such as predation or continued drought. Although the proximate cause of the decline during 2002 was drought, human activities limit habitat use options by pronghorn and increase the effects of drought on the sub-population. The U.S. pronghorn sub-population is isolated from other sub-populations in Sonora by a highway and the U.S./Mexico boundary fence, and access to the greenbelts of the Gila River and Río Sonoyta, which likely were important sources of water and forage during drought periods, has been severed.

Within its remaining range, the pronghorn is subjected to a variety of human activities that disturb the pronghorn and its habitat, including military training, increasing recreational activities, grazing, increasing presence of undocumented immigrants and smugglers, and in response, increased law enforcement activities. MCAS-Yuma (2001) quantified the extent of the current pronghorn range that is affected by various activities and found the following: recreation covers 69.6 percent of the range, military training on North and South TACs covers 9.8 percent, active air-to-air firing range covers 5.8 percent, proposed EOD five-year clearance areas at North and South TACs and Manned Range 1 cover 1.0 percent, and MCAS-Yuma proposed ground support areas and zones cover 0.29 percent. Border Patrol enforcement and smuggling activities occur throughout the range of the pronghorn, and anecdotal evidence suggests pronghorn are avoiding areas of high enforcement and illegal activities. Historically, pronghorn tended to migrate to the southeastern section of their range (southeastern CPNWR and OPCNM) during drought and in the summer. Within the last few years, very few pronghorn have been observed south of El Camino del Diablo on CPNWR. This suggests illegal smuggling and the interdiction of these illegal activities have resulted in pronghorn avoiding areas south of El Camino del Diablo; these areas are considered important summer habitat for pronghorn and may have long-term management and recovery implications (McCasland pers. comm. 2007). All of the valleys at CPNWR, which were once nearly pristine wilderness Sonoran Desert, now have many braided, unauthorized routes through them and significant vehicle use by USBP agents pursuing illegal immigrants and smugglers. OPCNM (2001) identified 165 human activities in the range of the pronghorn, of which 112 were adverse, 27 were beneficial, 26 had both adverse and beneficial effects, and four had unknown effects. OPCNM (2001) concluded that in regard to the pronghorn, "while many projects have negligible impacts on their own, the sheer number of these actions is likely to have major adverse impacts in aggregate."

Although major obstacles to recovery remain, since 2002, numerous crucial recovery actions have been implemented in the U.S. range of the species, including nine emergency waters and four forage enhancement plots, with additional waters and forage plots planned. The projects tend to offset the effects of drought and barriers to prevent movement of pronghorn to greenbelts such as the Gila River and Río Sonoyta. A semi-captive rearing facility, built on Cabeza Prieta NWR, currently holds 37 pronghorn. This facility will provide pronghorn to augment the existing sub-population and hopefully to establish a second U.S. sub-population at Kofa NWR.

The current range of the pronghorn in the U.S. is almost entirely comprised of lands under Federal jurisdiction; thus authorized activities that currently affect the pronghorn in the action area are almost all Federal actions. However, illegal, unauthorized foot traffic and off-road vehicle activity, but also required Federal law enforcement response have been and continue to be significant threats to the pronghorn and its habitat. Prior to November 2001, in seven of 12 biological opinions issued by FWS that analyzed impacts to the pronghorn, we anticipated that

take would occur. In total, we anticipated take of five pronghorn in the form of direct mortality every 10-15 years, and an undetermined amount of take in the form of harassment. Given the small and declining population of pronghorn in the U.S. at the time the opinions were written, take at the levels anticipated in the biological opinions would constitute a substantial impact to the population.

Changes made in proposed actions and reinitiated biological opinions from 2001 to the present, plus the findings in other recent opinions, reduced the amount or extent of incidental take anticipated to occur from Federal actions. Significantly, we have been successful working with action agencies to modify proposed actions and to include significant conservation measures that reduce adverse effects to the pronghorn and its habitat. The only current opinion that anticipates incidental take is the Yuma Sector opinion, in which we anticipated take in the form of harassment that is likely to injure up to one pronghorn in 10 years. With the exception of likely capture-related deaths during telemetry studies (which were addressed in 10(a)(1)(A) recovery permits), we are unaware of any confirmed incidental take resulting from the Federal actions described here (although a pronghorn may have been strafed near one of the targets on BMGR-East – see above).

We believe the aggregate effects of limitations or barriers to movement of pronghorn and continuing stressors, including habitat degradation and disturbance within the pronghorn's current range resulting from a myriad of human activities, exacerbated by periodic dry seasons or years, are responsible for the present precarious status of the Sonoran pronghorn in the action area. However, collaborative, multi-agency and multi-party efforts to develop forage enhancement plots and emergency waters, combined with the success of the semi-captive breeding facility, plus planned future recovery actions, including establishment of a second U.S. sub-population, provide hope that recovery of the Sonoran pronghorn in the U.S. is achievable.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Sonoran Pronghorn

The proposed fence project may result in disturbance to Sonoran pronghorn and/or degradation of pronghorn habitat. Construction and maintenance of the fence and roads, as well as possible increased illegal pedestrian and law enforcement activity to the west of the project will result in removal, destruction, and disturbance of vegetation that may provide forage and cover to pronghorn and may visually and auditorily disturb pronghorn. Though activities associated with the proposed project may be detrimental to pronghorn, conservation measures included in the project description will minimize and help offset disturbance to pronghorn and degradation of

their habitat. The fence may have a beneficial effect on pronghorn and pronghorn habitat in the Lukeville area if it is successful in reducing the number of illegal pedestrians that currently cross into the pronghorn range from Mexico. However, habitat damage and disturbance of pronghorn to the west of the project may increase if illegal traffic is redirected to the west of the fence.

Effects from Construction and Maintenance Activities

Construction and maintenance activities associated with the project may result in some, though we anticipate minimal, disturbance to Sonoran pronghorn, particularly on the western slope of Sonoyta Hill, where there is a greater chance for pronghorn to occur. At least during the project construction phase, disturbance will be minimized by having a biological monitor present (only during construction activities on the western slope of Sonoyta Hill) to ensure that all project construction activities are suspended if Sonoran pronghorn are detected within 0.62 mile of project activities. Access to the western portion of the construction site (i.e., west of Highway 85) will be along the OPCNM border road and South Puerto Blanco road. Though use of these roads may result in some disturbance to Sonoran pronghorn, because pronghorn are not likely to occur near the border or South Puerto Blanco roads between Highway 85 and Sonoyta Hill (based on pronghorn detections for the last 13 years and abundant near-by human presence), we anticipate disturbance to pronghorn will be minimal. Vehicles associated with construction and maintenance could also collide with pronghorn causing injury and/or death. However, we believe the likelihood of collisions with construction and maintenance vehicles is probably low because, as described in the “Status of the Species”, pronghorn are relatively rare, particularly within the project corridor; vehicles will travel at speeds less than 25 miles per hour; and because we are not aware of any such collisions in the U.S., or along unpaved routes anywhere within the range of the Sonoran pronghorn.

Effects from Pedestrian Traffic and Patrol Activities

The fence may have a beneficial effect on Sonoran pronghorn if it reduces illegal pedestrian activities and law enforcement pursuits within the Sonoran pronghorn range. These benefits are most likely to accrue immediately north of the pedestrian fence in the Lukeville area. However, if illegal traffic is redirected, particularly to the west of fence, disturbance to pronghorn and important pronghorn habitat in that area will increase. Patrol activities, which are expected to increase to the west of the fence if illegal traffic shifts west, may additionally disturb pronghorn and their habitat. As noted in the Environmental Baseline, pronghorn appear to be avoiding areas south of the Camino del Diablo in CPNWR possibly due to high levels of smuggling and required law enforcement response. Shifting traffic to west of the Lukeville fence would exacerbate these effects. Increased illegal and law enforcement activities in pronghorn habitat could cause pronghorn to flee and result in short-term denial of access to habitat, both of which would likely result in severe adverse physiological effects to pronghorn. As discussed in the “Status of the Species” and below, Sonoran pronghorn are sensitive to human disturbance. Vehicle traffic is disturbing to pronghorn and will often cause flight or startle responses with associated adverse physiological changes. Hughes and Smith (1990) found that pronghorn immediately ran 1,310-1,650 feet from a vehicle. Krausman *et al.* (2001) found that Sonoran pronghorn reacted to ground disturbances (vehicles or people on foot) with a change in behavior 37 percent of the time, resulting in the animals running or trotting away 2.6 percent of the time. Wright and deVos (1986) noted that Sonoran pronghorn exhibit “a heightened response to human traffic” as compared to other subspecies of pronghorn. Disturbance and flight of

ungulates are known to result in a variety of physiological effects that are adverse, including elevated metabolism, lowered body weight, reduced fetus survival, and withdrawal from suitable habitat (Geist 1971, Harlow *et al.* 1987), which may be exacerbated in harsh environments such as those occupied by Sonoran pronghorn. Disturbance may also lead to mortality, including increased vulnerability to predator attack and susceptibility to heat stress and malnutrition.

Because pronghorn are rare, encounters with illegal immigrants and smugglers should be a relatively rare event. The likelihood of encounters will increase however if illegal traffic increases to the west of the fence. Patrol vehicles pursuing illegal immigrants/smugglers along the improved vehicle route adjacent to the pedestrian fence or in areas to west of the fence in response a shift in illegal traffic could also collide with pronghorn causing injury and/or death. However, we believe the likelihood of collisions with patrol vehicles is probably low because vehicles will not likely be traveling at high speeds (due to traveling primarily along unimproved routes); we are not aware of any such collisions in the U.S., or along unpaved routes anywhere within the range of the Sonoran pronghorn; and pronghorn are relatively rare. Shifts in illegal and law enforcement activity to the west could also further degrade pronghorn habitat in that area. Trails and other soil disturbance can increase erosion, promote the spread of invasive species, and increase the potential for fires, which can adversely affect Sonoran pronghorn habitat. Additionally, off-road vehicle travel can cause changes in surface hydrology (from channelization of water in entrenched vehicle track prisms), which may substantially impact vegetation that provides forage and cover to pronghorn.

However, if patrol increases to the west of the fence along the border, and illegal activity is more successfully interdicted at the border, we anticipate the frequency of law enforcement pursuits through the action area should decrease, which will minimize disturbance to pronghorn and degradation of their habitat. Increased patrol along the border may disturb pronghorn and cause them to avoid or less frequently use the border area. However, because pronghorn are rare along the border, encounters with patrol activities near the border should be a relatively rare event.

Habitat Loss and Degradation

The proposed project would result in the direct disturbance of approximately 45 acres (this includes 17 acres of previously disturbed area); however, much of this is not considered suitable habitat for pronghorn due to abundant near-by human presence or rocky, steep terrain. However, the 45 acres of disturbed ground will be susceptible to colonization by invasive non-native plants such as buffelgrass, Sahara mustard, and *Eruca vesicaria*. Non-native species may outcompete natives and carry fire which could impact near-by pronghorn habitat. As stated in the "Status of the Species", most Sonoran Desert trees, shrubs, and cacti, which provide thermal cover and forage for pronghorn, are very fire intolerant.

Removal of vegetation via fire and direct disturbance in the pronghorn's range decreases the amount of thermal cover and forage available to pronghorn, with adverse effects to pronghorn, especially in drought situations when less forage is already available. The amount of habitat loss due to fence and road construction, however, is extremely small in the context of the approximately 2 million acres of potentially suitable habitat available to the U.S. sub-population of Sonoran pronghorn. The amount of habitat loss due to potential fire cannot be predicted; however, fire could impact a significant amount of pronghorn habitat. Control of non-native

plants within the project footprint, as proposed by CBP, should help decrease the risk of fire within the Sonoran pronghorn range. Additionally, restoration of 84 acres, if it occurs within the Sonoran pronghorn range, should help offset impacts to pronghorn habitat caused by the project.

Barriers to Pronghorn Movement

The proposed project overlays an existing barrier to Sonoran pronghorn movement, the international boundary. It is generally thought that pronghorn currently do not cross the international boundary due to the combined barrier effects of: (1) the international-boundary livestock fence; (2) Mexican Highway 2; (3) right-of-way fencing and livestock fencing that is intermittent along Highway 2 between Sonoyta and San Luis; and (4) human settlements and activity concentrations, which are expanding linearly along the boundary. Mexican Highway 2 does not continue near the border east of Lukeville (it turns south) and thus does not act as a barrier to trans-border Sonoran pronghorn movement along the eastern portion of the proposed project. Sonoran pronghorn, however, in recent years have only rarely been documented using the eastern portion of the proposed project area, likely due to the barrier effect of Highway 85. The proposed fence would completely impede any attempted trans-border Sonoran pronghorn movements near Lukeville. However, because Sonoran pronghorn are not known to cross the international border due to aforementioned existing barriers, we do not anticipate the fence will affect their trans-border movement patterns.

Conservation Measures

CBP's commitments to provide funding to fill a Sonoran pronghorn water for 10 years (at an annual cost of \$2,500.00) will help offset potential impacts to pronghorn that may occur as a result of this project and will generally aid in the conservation and recovery of pronghorn. Furthermore, restoration of 84 acres, if it occurs with the Sonoran pronghorn range, will also help offset project impacts to pronghorn.

Pronghorn Status

The most recent formal Sonoran pronghorn survey in December 2006 resulted in an estimated 68 wild pronghorn in the U.S. population, which was a substantial increase from an estimated 18 wild pronghorn in the U.S. in 2002. This increase can likely be attributed to improved habitat conditions since 2002 when a severe drought occurred, as well as emergency recovery actions such as forage enhancement plots and waters (see details under the "Environmental Baseline"), which undoubtedly offset to some extent the effects of drought and barriers that prevent pronghorn from accessing greenbelts and water, such as the Gila River and Río Sonoyta. We expect these recovery actions may also help offset adverse effects from this project as well as other activities within the action area that disturb pronghorn and their habitat. Because pronghorn remain critically endangered, however, it is imperative that all adverse effects to pronghorn from the proposed action and other activities are minimized and offset to the greatest extent possible.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future

Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Most lands within the action area (current range of the pronghorn within Arizona) are managed by Federal agencies; thus, most activities that could potentially affect pronghorn are Federal activities that are subject to section 7 consultation. The effects of these Federal activities are not considered cumulative effects. Relatively small parcels of private and State lands occur within the currently-occupied range of the pronghorn near Ajo and Why, north of the BMGR from Dateland to Highway 85, and from the Mohawk Mountains to Tacna. State inholdings in the BMGR were acquired by the USAF. Continuing rural and agricultural development, recreation, vehicle use, grazing, and other activities on private and State lands adversely affect pronghorn and their habitat. MCAS-Yuma (2001) reports that 2,884 acres have been converted to agriculture near Sentinel and Tacna. These activities on State and private lands and the effects of these activities are expected to continue into the foreseeable future. Historical habitat and potential recovery areas currently outside of the current range are also expected to be affected by these same activities on lands in and near the action area in the vicinity of Ajo, Why, and Yuma.

Of particular concern are illegal border crossings by undocumented immigrants and smugglers. In fiscal year 2005, the Yuma Sector of the Office of Border Patrol (OBP) apprehended record numbers of illegal immigrants and smugglers, and from October 1, 2005 to May 2006, 96,000 were made, which was a 13% increase over the same time period in 2005 (Gerstenzang 2006). In 2001, estimates of undocumented migrant traffic reached 1,000 per night in OPCNM alone (National Park Service 2001 or OPCNM 2001) and an estimated 150,000 people entered the OPCNM illegally from Mexico (Milstead and Barns 2002). Increased presence of the Border Patrol in the Douglas, Arizona area, and in San Diego (Operation Gatekeeper) and southeastern California, pushed illegal immigrant and smuggler traffic into remote desert areas, such as CPNWR, OPCNM, and BMGR (Klein 2000). Though the operation of Camp Grip within the CPNWR and the temporary camp detail at Bates Well on the OPCNM reduced the number of illegal drive-throughs in the eastern portion of the CPNWR in FY 2005 (Hubbard 2005, as cited in U.S. Customs and Border Protection 2005). In recent years, the number of illegal roads and foot trails created by illegal immigrants within the CPNWR has increased substantially (U.S. Customs and Border Protection 2005, C. McCasland pers. comm. 2007). These illegal crossings and required law enforcement response have resulted in route proliferation, off-highway vehicle activity, increased human presence in backcountry areas, discarded trash, abandoned vehicles, cutting of firewood, illegal campfires, and increased chance of wildfire. Habitat degradation and disturbance of pronghorn almost certainly result from these illegal activities. Currently, much of the illegal traffic travels through the southern passes of the Growler Mountains and lead either through or by all of our forage enhancements and captive rearing pen in the Child's Valley, with potential to impact these recovery projects and use of the area by pronghorn (C. McCasland pers. comm. 2007). Probably due to increased enforcement presence, ongoing construction of a vehicle barrier at CPNWR, and the vehicle barrier at OPCNM, all forms of illegal activities except narcotics trafficking are significantly down so far in fiscal year 2008 as compared to the same period in fiscal year 2007. Apprehensions are down from 40-67% at OPCNM and CPNWR over this period, and thus far in FY 08 no drive-throughs have occurred at OPCNM (CBP presentation to the Borderlands Management Task Force, January 16, 2008). Despite high levels of illegal activity and required law enforcement response throughout the action area,

pronghorn in the U.S. have managed to increase since 2002, although their use of areas subject to high levels of illegal use and law enforcement have likely declined, as discussed above.

We expect illegal activities and their effects on pronghorn to continue, though they should be reduced once the PVB on CPNWR is completed (as of this writing, the PVB has been installed from the border of OPCNM and CPNWR to the boundary of Pima and Yuma counties).

CONCLUSION

After reviewing the current status of the Sonoran pronghorn, the environmental baseline for the action area, the effects of the proposed activities associated with the Lukeville fence project, and the cumulative effects, it is our biological opinion the proposed action is not likely to jeopardize the continued existence of the Sonoran pronghorn. No critical habitat has been designated for this species, therefore, none will be affected. Our conclusion is based on the following:

1. The Sonoran pronghorn population has increased since 2002, despite high levels of human use in the form of off- and on-road vehicle and foot travel by smugglers, illegal immigrants, and law enforcement.
2. Completion of forage enhancement plots, waters, and the semi-captive breeding facility have helped make the pronghorn population in the U.S. more secure and more resistant to drought and other stressors.
3. Loss of pronghorn habitat resulting from this project is very small in the context of the approximately 2 million acres of potentially suitable habitat available to the U.S. sub-population of Sonoran pronghorn. Additionally, habitat disturbance will be minimized by conducting project activities within previously disturbed areas to the extent practicable.
4. The likelihood of pronghorn crossing the international boundary with Mexico in the project area is currently very low because of current physical barriers (e.g., Mexico Highway 2) and human activities. Therefore, the presence of the Lukeville fence is unlikely to result in additional barriers to pronghorn movement across the international boundary.
5. Conservation measures included in the proposed action will reduce disturbance to pronghorn during project construction activities (i.e., the presence of a biological monitor to ensure that all project construction activities are suspended if pronghorn are detected within 0.62 mile of project activities).
6. Conservation measures included in the proposed action (i.e., funding to fill a pronghorn water and habitat restoration) will help offset adverse effects to pronghorn that could result from implementation of the project.
7. When added to the environmental baseline, the status of the species, and cumulative effects, the effects of the proposed action do not reduce appreciably the likelihood of

survival and recovery of the subspecies in the wild. Therefore, the proposed action will not jeopardize the continued existence of the subspecies. Though illegal activity could increase to the west of the fence, such activity should be reduced by CPB/USBP's assignment of additional agents to unprotected areas. The presence of a vehicle barrier to the west of the fence also halts most or all illegal vehicle traffic. Consequently, adverse effects to pronghorn from possible increased illegal activity should be minimized. Additionally, once the Lukeville fence is completed we expect to see a dramatic decrease in illegal traffic in the Lukeville area. Decreased illegal and legal human activity within pronghorn habitat in the vicinity of Lukeville will be beneficial to pronghorn.

The conclusions of this biological opinion are based on full implementation of the project as described in the "Description of the Proposed Action" section of this document, including any conservation measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). "Harass" is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering (50 CFR 17.3). "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

AMOUNT OR EXTENT OF TAKE ANTICIPATED

We do not anticipate the proposed action will result in incidental take of Sonoran pronghorn for the following reasons:

1. Pronghorn are rare; making encounters with human activities (both legal and illegal) associated with the Lukeville fence project a relatively rare event.
2. Measures included in the proposed action, such as the daily surveys for Sonoran pronghorn, will further reduce the potential for take.
3. No incidental take of Sonoran pronghorn is known to have occurred in Arizona due to CBP/OBP or illegal immigrant/smuggler activities.

LESSER LONG-NOSED BAT

STATUS OF THE SPECIES

A. Species Description

The lesser long-nosed bat is a medium-sized, leaf-nosed bat. It has a long muzzle and a long tongue, and is capable of hover flight. These features are adaptations for feeding on nectar from the flowers of columnar cacti (e.g., saguaro; cardon, *Pachycereus pringlei*; and organ pipe cactus, *Stenocereus thurberi*) and from paniculate agaves (e.g., Palmer's agave, *Agave palmeri*) (Hoffmeister 1986). The lesser long-nosed bat was listed (originally, as *Leptonycteris sanborni*; Sanborn's long-nosed bat) as endangered in 1988 (U.S. Fish and Wildlife Service 1988). No critical habitat has been designated for this species. A recovery plan was completed in 1994 (U.S. Fish and Wildlife Service 1997). Loss of roost and foraging habitat, as well as direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current endangered status of the species. Recovery actions include roost monitoring, protection of roosts and foraging resources, and reducing existing and new threats.

B. Distribution and Life History

The lesser long-nosed bat is migratory and found throughout its historical range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador. It has been recorded in southern Arizona from the Picacho Mountains (Pinal County) southwest to the Agua Dulce Mountains (Pima County) and Copper Mountains (Yuma County), southeast to the Peloncillo Mountains (Cochise County), and south to the international boundary. Roosts in Arizona are occupied from late April to September (Cockrum and Petryszyn 1991) and on occasion, as late as November (Sidner 2000); the lesser long-nosed bat has only rarely been recorded outside of this time period in Arizona (U. S. Fish and Wildlife Service 1997, Hoffmeister 1986, Sidner and Houser 1990). In spring, adult females, most of which are pregnant, arrive in Arizona gathering into maternity colonies. These roosts are typically at low elevations near concentrations of flowering columnar cacti. After the young are weaned these colonies mostly disband in July and August; some females and young move to higher elevations, primarily in the southeastern parts of Arizona near concentrations of blooming paniculate agaves. Adult males typically occupy separate roosts forming bachelor colonies. Males are known mostly from the Chiricahua Mountains and recently the Galiuro Mountains (personal communication with Tim Snow, Arizona Game and Fish Department, 1999) but also occur with adult females and young of the year at maternity sites (U. S. Fish and Wildlife Service 1997). Throughout the night between foraging bouts, both sexes will rest in temporary night roosts (Hoffmeister 1986).

Lesser long-nosed bats appear to be opportunistic foragers and extremely efficient fliers. They are known to fly long distances from roost sites to foraging sites. Night flights from maternity colonies to flowering columnar cacti have been documented in Arizona at 15 miles, and in Mexico at 25 miles and 36 miles (one way) (Dalton *et al.* 1994; personal communication with V. Dalton, 1997; personal communication with Y. Petryszyn, University of Arizona, 1997). Steidl (personal communication, 2001) found that typical one-way foraging distance for bats in southeastern Arizona is roughly 12.5 miles. A substantial portion of the lesser long-nosed bats at the Pinacate Cave in northwestern Sonora (a maternity colony) fly 25-31 miles each night to

foraging areas in OPCNM (U.S. Fish and Wildlife Service 1997). Horner *et al.* (1990) found that lesser long-nosed bats commuted 30-36 miles round trip between an island maternity roost and the mainland in Sonora; the authors suggested these bats regularly flew at least 47 miles each night. Lesser long-nosed bats have been observed feeding at hummingbird feeders many miles from the closest known potential roost site (personal communication with Yar Petryszyn, University of Arizona, 1997).

Lesser long-nosed bats, which often forage in flocks, consume nectar and pollen of paniculate agave flowers and the nectar, pollen, and fruit produced by a variety of columnar cacti. Nectar of these cacti and agaves is high energy food. Concentrations of some food resources appear to be patchily distributed on the landscape, and the nectar of each plant species used is only seasonally available. Cacti flowers and fruit are available during the spring and early summer; blooming agaves are available primarily from July through October. In Arizona, columnar cacti occur in lower elevational areas of the Sonoran Desert region, and paniculate agaves are found primarily in higher elevation desert scrub areas, semi-desert grasslands and shrublands, and into the oak woodland (Gentry 1982). Lesser long-nosed bats are important pollinators for agave and cacti, and are important seed dispersers for some cacti.

C. Status and Threats

Recent information indicates that lesser long-nosed bat populations appear to be increasing or stable at most Arizona roost sites identified in the recovery plan (AGFD 2005, Tibbitts 2005, Wolf and Dalton 2005). Lesser long-nosed bat populations additionally appear to be increasing or stable at other roost sites in Arizona and Mexico not included for monitoring in the recovery plan (Sidner 2005). Less is known about lesser long-nosed bat numbers and roosts in New Mexico. Though lesser long-nosed bat populations appear to be doing well, many threats to their stability and recovery still exist, including excess harvesting of agaves in Mexico; collection and destruction of cacti in the U.S.; conversion of habitat for agricultural and livestock uses, including the introduction of buffleggrass, a non-native, invasive grass species; wood-cutting; drought; fires; human disturbance at roost sites; and urban development.

Approximately 20 – 25 large lesser long-nosed bat roost sites, including maternity and late-summer roosts, have been documented in Arizona (personal communication with Scott Richardson, FWS, 2006). Of these, 10 – 20 are monitored on an annual basis depending on available resources. Monitoring in Arizona in 2004 documented approximately 78,600 lesser long-nosed bats in late-summer roosts and approximately 34,600 in maternity roosts. Ten to 20 lesser long-nosed bat roost sites in Mexico are also monitored annually. Over 100,000 lesser long-nosed bats are found at just one natural cave at the Pinacate Biosphere Reserve, Sonora, Mexico (Cockrum and Petryszyn 1991). The numbers above indicate that although a relatively large number of lesser long-nosed bats exist, the relative number of known large roosts is quite small.

Maternity roosts, suitable day roosts, and concentrations of food plants are all critical resources for the lesser long-nosed bat. All of the factors that make roost sites useable have not yet been identified, but maternity roosts tend to be very warm and poorly ventilated (U.S. Fish and Wildlife Service 1997). Human presence/disturbance at roosts is clearly an important factor as

bats appear to be particularly sensitive to human disturbance at roost sites. For example, the illegal activity, presumably by immigrants or smugglers, at the Bluebird maternity roost site, caused bats to abandon the site in 2002, 2003, and 2005. The presence of alternate roost sites may be critical when this type of disturbance occurs.

The lesser long-nosed bat recovery plan (U.S. Fish and Wildlife Service 1997) identifies the need to protect foraging areas and food plants such as columnar cacti and agaves. More information regarding the average size of foraging areas around roosts would be helpful to identify the minimum area around roosts that should be protected to maintain adequate forage resources.

The 2005 fires referred to under Sonoran Pronghorn "Status of the Species" affected some lesser long-nosed bat foraging habitat, though the extent is unknown. For example, the Goldwater, Aux, and Sand Tank Fire Complexes on BMGR-East burned through and around isolated patches of saguaros, but the immediate effects and longer term impacts of the fires on saguaros are not yet known. Monitoring of saguaro mortality rates should be done to assess the impacts on potential lesser long-nosed bat foraging habitat. Fire suppression activities associated with the 2005 fires could also have affected foraging habitat. For example, slurry drops may have left residue on saguaro flowers, which could have impacted lesser long-nosed bat feeding efficiency or resulted in minor contamination.

Drought (see the "Status of the Species" and "Environmental Baseline" for Sonoran pronghorn for further details regarding drought) may affect lesser long-nosed bat foraging habitat, though the effects of drought on bats are not well understood. The drought in 2004 resulted in near complete flower failure in saguaros throughout the range of lesser long-nosed bats. During that time however, in lieu of saguaro flowers, lesser long-nosed bats foraged heavily on desert agave (*Agave deserti*) flowers, a plant not typically used by lesser long-nosed bats (personal communication with Scott Richardson, FWS, March 20, 2006). Similarly, there was a failure of the agave bloom in southeastern Arizona in 2006, probably related to the ongoing drought. As a result, lesser long-nosed bats left some roosts earlier than normal, and increased use of hummingbird feeders by lesser long-nosed bats was observed in the Tucson area (personal communication with Scott Richardson, FWS, January 11, 2008). Monitoring bats and their forage during drought years is needed to better understand the effects of drought on this species.

We have produced numerous biological opinions on the lesser long-nosed bat since it was listed as endangered in 1988, some of which anticipated incidental take. Incidental take has been in the form of direct mortality and injury, harm, and harass and has typically been only for a small number of individuals. Because incidental take of individual bats is difficult to detect, incidental take has often been quantified in terms of loss of forage resources, decreases in numbers of bats at roost sites, or increases in proposed action activities.

A few examples of more recent biological opinions that anticipated incidental take for lesser long-nosed bats are summarized below. The 2007 biological opinion for the installation of one 600 kilowatt wind turbine and one 50KW mass megawatts wind machine on Fort Huachuca included incidental take in the form of 10 bats caused by blade-strikes for the life (presumed indefinite) of the proposed action. The 2005 biological opinion for implementation of the Coronado National Forest Land and Resource Management Plan (U.S. Forest Service) included

incidental take in the form of harm or harass. The amount of take for individual bats was not quantified; instead take was to be considered exceeded if simultaneous August counts (at transitory roosts in Arizona, New Mexico, and Sonora) drop below 66,923 lesser long-nosed bats (the lowest number from 2001 – 2004 counts) for a period of two consecutive years as a result of the action. The 2004 biological opinion for the Bureau of Land Management Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management included incidental take in the form of harassment. The amount of incidental take was quantified in terms of loss of foraging resources, rather than loss of individual bats. The 2003 biological opinion for Marine Corps Air Station (MCAS) – Yuma Activities on the BMGR included incidental take in the form of direct mortality or injury (five bats every 10 years). Because take could not be monitored directly, it was to be considered exceeded if nocturnal low-level helicopter flights in certain areas on the BMGR increased significantly or if the numbers of bats in the Agua Dulce or Bluebird Mine roosts decreased significantly and MCAS-Yuma activities were an important cause of the decline. The 2002 biological opinion for Department of the Army Activities at and near Fort Huachuca (Fort), Arizona anticipated incidental take in the form of direct mortality or injury (six bats over the life of the project), harassment (20 bats per year), and harm (10 bats over the life of the project).

ENVIRONMENTAL BASELINE

A. Action Area

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR §402.02). The FWS has determined that the action area for the lesser long-nosed bat includes the areas directly impacted by the installation of primary fence (including the fence and access roads) and an area around the project defined by a circle with a radius of 36 miles (the maximum documented one-way foraging distance of the lesser long-nosed bat). The action area represents only a small portion of the lesser long-nosed bat's range.

Management of the action area is largely by Federal agencies, as described in the "Action Area" for Sonoran pronghorn. The action area for the lesser long-nosed bat also includes part of the Tohono O'odham Nation (TON) and lands near the border in Sonora.

B. Terrain, Vegetation Communities, and Climate in the Action Area

A description of the region encompassing the action area has been previously provided (see "Environmental Baseline", part B. Terrain, Vegetation Communities, and Climate in the Action Area" for the Sonoran pronghorn).

The project is near the Sonoyta and Puerto Blanco mountains. Suitable day and night roosting potentially occur within the immediate project vicinity, however, these areas have not recently been surveyed for lesser long-nosed bat roosts.

C. Status of the Lesser Long-Nosed Bat in the Action Area

Based on the known foraging distances for lesser long-nosed bats, it is likely that this species forages throughout portions of the OPCNM, CPNWR, TON, and BLM lands, where flowers and fruit of saguaro, organ pipe, prickly pear, and agave are available.

Three large maternity roosts occur in the action area, including Bluebird Mine, Copper Mountain Mine, and Pinacate Cave. Bluebird Mine, located along the eastern border of CPNWR in the Growler Mountains, is over 15 miles northwest of the nearest border portion of the project site and generally supports an estimated 3,000 lesser long-nosed bats at the peak of annual occupancy (U.S. Fish and Wildlife Service 1997). The highest estimate of lesser long-nosed bats using Bluebird Mine from 2001-2005 was 4,500. They abandoned the mine however in 2002, 2003, and 2005 due to disturbance from illegal activities. In 2004, the bats returned to the mine after CPNWR staff placed a high steel fence around the mine to prevent disturbance. The bats returned to the mine in 2005, however abandoned the site once again after the fence was damaged, presumably by illegal immigrants or smugglers.

Copper Mountain Mine, located within the OPCNM, is about 15 miles north of the nearest border portion of the project and supports approximately 25,000 bats at the peak of annual occupancy (National Park Service 2002). The highest estimate of lesser long-nosed bats using Copper Mountain Mine from 2001-2005 was 35,000.

The largest maternity roost in the project area is Pinacate Cave in northern Sonora, Mexico. Approximately 40 miles south of the nearest border portion of project site, this roost is estimated to support about 130,000 bats each year (U.S. Fish and Wildlife Service 1997). In May 2006, approximately 200,000 lesser long-nosed bats were counted at the Pinacate Cave. However, in 2007, a significantly lower number of lesser long-nosed bats (83,000) were observed at this roost.

Before they give birth, female bats probably occasionally move between the Bluebird and Copper Mountain roosts, and it has been recommended that these two roosts be censused simultaneously to avoid double-counting bats (U.S. Fish and Wildlife Service 1997). Observations at Copper Mountain and Pinacate Cave indicate that they are occupied from mid-April to early-to-mid-September (U.S. Fish and Wildlife Service 1997), although these roosts reach their peak occupancy in late spring/early summer.

Though OPCNM and CPNWR monitor the Copper Mountain and Bluebird roosts annually to determine the presence, abundance, and disturbance of lesser long-nosed bats, including examining the roost year round for evidence of human entry, the rest of OPCNM and CPNWR has not been well surveyed to determine the number of additional day and night roosts that might exist in natural caves and/or mineshafts. A small roost or roosts is known to occur in the Agua Dulce Mountains in the southeastern corner of the CPNWR, though the current status (i.e., whether lesser long-nosed bats are still using the site) of the roost is unknown. Smaller day roosts are known in other mine tunnels, and are also suspected in other mines and natural rock crevices and caves. Short-term night roosts are known in natural caves, under the eaves of buildings, and inside several abandoned buildings associated with past ranching activities. It is likely that there is within- and between-season interchange between these colonies, perhaps even within and between nights (U. S. Fish and Wildlife Service 1997).

Flowers and fruits of saguaro, organ pipe cactus, and cardon provide nearly all of the energy and nutrients obtained by pregnant and lactating females roosting in the Sonoran Desert in the spring and early summer (U.S. Fish and Wildlife Service 1997). Saguaro, which is common and abundant throughout much of the BMGR, CPNWR, and OPCNM; and organ pipe cactus, which is common at OPCNM and localized in the eastern portions of CPNWR and BMGR, and portions of the TON, flower in May and fruit mature in June and July (Benson and Darrow 1982). Lesser long-nosed bats feed on both the nectar and fruits of these cacti. When cacti fruit are scarce or unavailable in late July or early August, agave nectar may be the primary food resource for lesser long-nosed bats in OPCNM, CPNWR, and TON. Agaves typically bolt or flower and provide a nectar resource for foraging bats from about July into October. Desert agave occurs in mountainous areas within the action area. As mentioned above under "Status of the Species", fires and drought may affect some lesser long-nosed bat foraging habitat within the action area, though the extent is unknown.

A number of activities occur in the action area that could affect bats. For example, our 1997 biological opinion on the OPCNM General Management Plan, found that the proposed action could result in incidental take of bats from recreation, specifically from unauthorized human disturbance to the Copper Mountain maternity roost. Our 2003 biological and conference opinion for the installation of the international boundary vehicle barrier on the OPCNM did not find the action could result in incidental take, but found that the project would result in the disturbance of 70 acres of potential lesser long-nosed bat foraging habitat, including the destruction of up to 750 to 1000 saguaro and 80 to 100 organ pipe cacti (about 400 to 600 of these were to be salvaged). Our 2006 biological opinion on the CBP - Office of the Border Patrol's installation of a permanent vehicle barrier (as well as access improvements, construction/improvement of border roads, and associated maintenance and patrol activities) along the border from the western end of the OPCNM barrier to Avenue C just east of San Luis, Arizona, did not find the action could result in incidental take. It did find, however, that the project would result in the direct disturbance of approximately 207 acres of potential lesser long-nosed bat foraging habitat, including the destruction of up to 50 saguaros and 3 organ pipe cacti. About 200 saguaros in the project corridor were to be avoided or salvaged.

High levels of undocumented immigrant activities and narcotics trafficking (see "Environmental Baseline, part E. Threats" for the Sonoran pronghorn for further detail about undocumented immigrant activity) and the associated damage resulting to the landscape from their activities, as well the activities of law enforcement in pursuit of undocumented immigrants, is becoming an increasing threat, not just to lesser long-nosed bats but to all wildlife of the region. As stated earlier, much illegal traffic occurs through the Growler Mountains, and Bluebird Mine on CPNWR in the Growlers was vandalized by suspected illegal immigrants in June 2002, which resulted in at least four dead bats and abandonment of the roost. The bats returned to the mine in 2005; however, abandoned the site once again after the fence was damaged by illegal immigrants. Both OPCNM and CPNWR are planning to implement additional protective measures at Copper Mountain and Bluebird Mine, such as the possible construction of bat-friendly gates at roost entrances to prevent illegal human entry. However, lesser long-nosed bats are sensitive to bat gates and may not adapt readily to their use. Therefore, use of bat gates to protect these roosts may not be a feasible alternative

EFFECTS OF THE ACTION

Effects to Roosts

No known or suspected roost sites will be directly impacted by the proposed action. At its closest point, the proposed project is approximately 15 miles from the Copper Mountain roost on OPCNM and the Bluebird Mine roost on CPNWR, and will have no direct impact on these sites or the Pinacate Cave roost site. Neither will the proposed action directly impact any potential roosting habitat (mines, caves, etc.) on OPCNM.

The proposed action may have an indirect positive effect on lesser long-nosed bats using the Copper Mountain roost if the fence decreases the amount of illegal pedestrian traffic in areas directly north of the fence (the Copper Mountain roost site is located 15 miles north of the proposed fence). Decreases in illegal pedestrian traffic near roost sites decrease the possibility of illegal entry into these sites which can cause disturbance to bats (i.e., roost abandonment). The proposed action, however, may adversely affect lesser long-nosed bats using the Bluebird Mine roost if the fence results in the redirection of and subsequent increase in illegal pedestrian traffic through the eastern portions of CPNWR. We anticipate the likelihood of this occurring is relatively low.

Effects to Cross-Border Movements

The effects of fences on lesser long-nosed bat movement patterns are unknown. We do not anticipate the fence will greatly impact cross-border movement of lesser long-nosed bats because they are agile fliers and because the fence will not be installed along the entire border of OPCNM. If the fence does impede their cross-border movements, the ability of lesser long-nosed bats using the Pinacate roost to obtain adequate food resources will be diminished given their heavy reliance on these resources in OPCNM.

Effects to Foraging Habitat

The proposed project will result in the disturbance of lesser long-nosed bat food plants (approximately 206 to 266 saguaros and 295 to 397 organ pipe cacti⁵); however, as stated in the "Description of the Proposed Action", CBP will salvage (remove and replant outside the project corridor) all columnar cacti less than three feet tall to the extent practicable (approximately 74 saguaros and 68 organ pipe cacti⁵) and will attempt to salvage all columnar cacti between three and six feet tall (41 saguaro and 55 organ pipe cacti⁵) that face danger of destruction within the project corridor as determined by the biological monitor and that have been identified using GPS-technology (either by GSRC or OPCNM). Because saguaros and organ pipe cacti less than 6 feet tall generally do not flower, the salvaged cacti, once replanted, will not be available as a forage resource for lesser long-nosed bats until they reach the size at which they flower. Construction activities associated with the proposed project will likely destroy approximately 91 to 126 saguaros and 172 to 285 organ pipe cacti on the OPCNM; approximately 115 to 140 saguaros and 112 to 123 organ pipe within the project corridor will be salvaged. Seedlings that

⁵ During a recent survey (February 2008), OPCNM staff counted a total of 140 salvageable saguaros and 112 salvageable organ pipe cacti and 126 non-salvageable saguaros and 285 non-salvageable. These numbers differ from those provided by GSRC; however, regardless of the exact number, all saguaros and organ pipe determined to be salvageable within the project footprint will be salvaged.

may have been missed during the surveys⁶ will likely be destroyed by project activities. Additionally, the roots and rooting areas of plants adjacent to the project corridor might also be damaged, which may affect plant vigor and cause increased plant mortality.

According to BP, the proposed project will result in the permanent disturbance of about 45 acres. Of this, about 17 acres was previously disturbed by the installation of PVBs; however, about 28 acres of potential lesser long-nosed bat foraging habitat adjacent to the international border will be newly disturbed. The 45 acres of disturbed ground will be susceptible to colonization by invasive non-native plants such as buffelgrass, Sahara mustard, and *Eruca vesicaria*. Non-native species may prevent the recruitment of lesser long-nosed bat forage species (columnar cacti and agaves) and may also carry fire that could also impact lesser long-nosed bat forage species. Most Sonoran Desert trees, shrubs, and cacti are very fire intolerant. For example, fires at Saguaro National Park resulted in greater than 20 percent mortality of mature saguaros (Schwalbe *et al.* 2000).

In addition to areas directly disturbed by the project, we anticipate some, unquantifiable amount of potential lesser long-nosed bat foraging habitat will be affected by altered hydrology and increased erosion and sedimentation caused by the fence and associated road. Though the Final EA says that the fence and road will be designed and constructed in a way that would not alter drainage patterns or cause increased downstream erosion and sedimentation, we expect some effects to hydrological function based on the effects of the OPCNM PVB. According to the Research and Endangered Species Coordinator at OPCNM, after significant rainfall events, debris becomes lodged on the OPCNM PVBs (six inch-wide posts on five-foot centers), which creates a dam that causes water to pool upstream (up to 100+ feet) and laterally (up to 300+ feet)(electronic mail from Tim Tibbits, October 4, 2007). We anticipate the fence and road will cause at least some changes in hydrology, as well as increased erosion and sedimentation.

Destruction of and damage to lesser long-nosed bat forage plants and disturbance of potential bat foraging habitat will reduce food available to the lesser long-nosed bat; this will likely adversely affect bats, especially during drought periods when forage availability is already impaired. It is difficult to evaluate the significance of the loss of foraging habitat; however, this loss is small compared to the large amount of potentially suitable foraging habitat available to the lesser long-nosed bat throughout the action area. However, it is still extremely important that effects to forage resources are minimized.

The proposed project may result in fewer disturbances to lesser long-nosed bat foraging habitat directly north of the fence if the fence decreases the amount of illegal pedestrian and pursuant law enforcement traffic in these areas. Construction of the fence, if it redirects illegal pedestrian and pursuant law enforcement activities to the east and west of the fence, however, may result in greater disturbance of lesser long-nosed bat foraging habitat in these areas. Trails and other soil disturbance can increase erosion, promote the spread of invasive plant species, and increase the potential for fires, which can adversely affect lesser long-nosed bat food resources. Off-road vehicle travel may damage the shallow root systems of large columnar cacti, causing loss of

⁶ Gulf South Research Corporation conducted surveys in August 2007 by walking, with 30 feet between two surveyors, the project corridor and recording the species and location of each columnar cactus seen.

vigor or death, and result in destruction of numerous columnar cacti, and can be assumed to destroy large numbers of seedlings. Also, off-road travel can cause changes in surface hydrology (from channelization of water in entrenched vehicle track prisms), which can adversely affect vegetation, including lesser long-nosed bat forage species.

Though nighttime construction is not anticipated, if it occurs within bat foraging habitat, bat foraging behavior may be temporarily affected. Because bats are nocturnal, we do not anticipate that daytime construction and maintenance activities will affect bat foraging behavior.

Conservation measures

Environmental design measures incorporated into the project, such as implementing erosion control techniques and constructing the fence in arroyos in a way that ensures proper conveyance of floodwater, will help minimize project impacts to lesser long-nosed bat foraging habitat.

Additionally, CBP's commitment to salvage, replant, and monitor the success of 238 columnar cacti; restore 84 acres within OPNCM, and control non-native plants within the project footprint, will help offset project impacts to lesser long-nosed bats.

CUMULATIVE EFFECTS

Most lands within the action area are managed by Federal agencies; thus, most activities that could potentially affect bats are Federal activities that are subject to section 7 consultation. The effects of these Federal activities are not considered cumulative effects. However, a portion of the action area also occurs on the TOIR, on private lands in the U.S., and in Mexico. Residential and commercial development, farming, livestock grazing, surface mining and other activities occur on these lands and are expected to continue into the foreseeable future. These actions, the effects of which are considered cumulative, may result in small-scale loss or degradation of lesser long-nosed bat foraging habitat, and potential disturbance of roosts. Illegal immigrant/smuggler activities, described above under "Cumulative Effects" for pronghorn, can result in loss or degradation of potential lesser long-nosed bat foraging habitat (impacts to foraging habitat have not been quantified however) and disturbance to and abandonment of roosts, as has been documented at the Bluebird Mine roost site. Though immigrant/smuggler activity has been high in recent years, it has declined recently, likely due to increased law enforcement presence (see Cumulative Effects for the pronghorn). In spite of these activities, lesser long-nose bat populations appear to be increasing or stable at many roost sites within and outside the action area.

CONCLUSION

After reviewing the current status of the lesser long-nosed bat, the environmental baseline for the action area, the effects of the proposed activities associated with the Lukeville fence project, and the cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the lesser long-nosed bat. No critical habitat has been designated for this species, therefore, none will be affected. Our conclusion is based on the following:

1. Lesser long-nosed bat populations appear to be increasing or stable at many roost sites in Arizona and Mexico.
2. The project will not directly affect any known bat roosts in the action area (Bluebird Mine, Copper Mountain Mine, and Pinacate Cave).
3. The project may increase the possibility of disturbance to bats at the Bluebird Mine roost site if it results in the redirection of and subsequent increase in illegal pedestrian traffic through the eastern portions of CPNWR; however, we anticipate the likelihood of this occurring is relatively low.
4. The project will result in direct loss of 28 acres of lesser long-nosed bat foraging habitat, but disturbance to and loss of foraging habitat and forage plants will be minimized through environmental design measures, such as implementing erosion control, and offset through conservation measures, such as the salvage of columnar cacti and habitat restoration. Specifically, CBP will salvage (remove and replant outside the project corridor) all columnar cacti less than three feet tall to the extent practicable and will attempt to salvage all columnar cacti between three and six feet tall (an estimated 238 saguaro and organ pipe cacti will be salvaged) that face danger of destruction within the project corridor as determined by the biological monitor and that have been identified using GPS-technology (either by GSRC or OPCNM). Additionally, CBP will fund the restoration of 84 acres within OPCNM.

The conclusions of this biological opinion are based on full implementation of the project as described in the “Description of the Proposed Action” section of this document, including any conservation measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. “Take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). “Harass” is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering (50 CFR 17.3). “Incidental take” is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

AMOUNT OR EXTENT OF TAKE ANTICIPATED

We do not anticipate the proposed action will result in incidental take of lesser long-nosed bat for the following reasons:

1. The project will not directly affect any known bat roosts.
2. Impacts to bat foraging habitat and plants will be minimized and offset.

DISPOSITION OF DEAD OR INJURED LISTED SPECIES

Upon locating a dead, injured, or sick listed species initial notification must be made to the FWS's Law Enforcement Office, 2450 West Broadway Road, Suite 113, Mesa, Arizona, 85202, telephone: 480/967-7900), made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care and in handling dead specimens to preserve the biological material in the best possible state.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. We recommend implementing the following actions:

1. In conjunction with OPCNM, CPNWR, BMGR, BLM, and TON facilitate restoration (i.e., re-contour entrenched areas, ensure the establishment of native vegetation, etc.) of areas degraded by off-route travel (by illegal immigrants/smugglers and OBP) within the action area (in addition to the areas that will be restored as part of the proposed action).
2. Monitor or provide funding to land managers to monitor future ecological conditions in the action area, including the overall success of active and passive restoration (i.e., the degree to which native vegetation becomes reestablished on illegal routes, the degree to which non-native invasive plants have decreased or increased, etc.).
3. Assist agencies in the control of non-native plants that may alter fire frequencies and intensities within OPCNM, CPNWR, BMGR, BLM, and TON, and in developing methods for controlling these species (lesser long-nosed bat Recovery Plan task 2).
4. Provide annual financial assistance (at least until illegal CPNWR immigrant/smuggler entry into southwestern Arizona is significantly reduced) to OPCNM, CPNWR, BMGR, BLM, and TON to monitor the effects of illegal immigrants/smugglers on lesser long-

- nosed bat roosts and foraging habitat and to restore habitat and implement protective measures for lesser long-nosed bats, such as fencing around roost sites.
5. Provide annual financial assistance (at least until illegal immigrant/smuggler entry into southwestern Arizona is significantly reduced) to OPCNM, CPNWR, BMGR, and BLM to monitor the effects of illegal immigrants/smugglers on pronghorn and their habitat, particularly near forage enhancement plots, water sites, and the semi-captive breeding pen, and to restore habitat and implement recovery actions for the Sonoran pronghorn.
 6. Provide ongoing financial support to agencies to implement the Sonoran pronghorn and lesser long-nosed bat recovery plans, as appropriate.
 7. Tucson and Yuma Sector offices should each have a full-time biologist or environmental specialist to assist OBP compliance with ESA, NEPA, and other environmental requirements; to provide environmental training to agents; and to coordinate with agencies regarding environmental issues.

In order for us to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in this biological opinion. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

We appreciate CBP's efforts to identify, minimize, and offset effects to listed species from the project. For further information, please contact Erin Fernandez (x238) or Jim Rorabaugh (x230) of our Tucson Suboffice at (520) 670-6150. Please refer to the consultation number 22410-2008-F-0011 in future correspondence concerning this project.

Sincerely,

Steven L. Spangle
Field Supervisor

Mr. George Hutchinson

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cc: Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Superintendent, Organ Pipe Cactus National Monument, Ajo, AZ
Refuge Manager, Cabeza Prieta National Wildlife Refuge, Ajo, AZ
Director Construction and Support Office, Army Corps of Engineers, Ft. Worth, TX (Attn:
Charles McGregor)
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ
Regional Supervisor, Arizona Game and Fish Department, Yuma, AZ
Gulf South Research Corporation, Baton Rouge, LA (Attn: Chris Ingram)
Chairperson, Tohono O'Odham Nation, Sells, AZ

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TABLES AND FIGURES

Table 1. A summary of population estimates from literature and field surveys for Sonoran pronghorn in the U.S.

Date	Population estimate (95 percent CI ^a)	Source
1925	105	Nelson 1925
1941 ^b	60	Nicol 1941
1957	<1,000	Halloran 1957
1968	50	Monson 1968
1968-1974	50 - 150	Carr 1974
1981	100 - 150	Arizona Game and Fish Department 1981
1984	85 - 100	Arizona Game and Fish Department 1986
1992	179 (145-234)	Bright <i>et al.</i> 1999
1994	282 (205-489)	Bright <i>et al.</i> 1999
1996	130 (114-154)	Bright <i>et al.</i> 1999
1998	142 (125-167)	Bright <i>et al.</i> 1999
2000	99 (69-392)	Bright <i>et al.</i> 2001
2002	21 (18-33)	Bright and Hervert 2003
2004	58 (40-175)	Bright and Hervert 2005
2006	68 (52-116)	Unpublished data

^a Confidence interval; there is only a 5 percent chance that the population total falls outside of this range.

^b Population estimate for southwestern Arizona, excluding Organ Pipe Cactus National Monument.

Table 2. Comparison of U.S. Sonoran pronghorn population surveys, 1992-2006.

Date	<u>Pronghorn observed</u>		<u>Population estimates</u>		
	On transect	Total observed	Density estimate using DISTANCE (95 percent CI ^a)	Lincoln-Peterson (95 percent CI)	Sightability model (95 percent CI)
Dec 92	99	121	246 (103-584)	---	179 (145-234)
Mar 94	100	109	184 (100-334)	---	282 (205-489)
Dec 96	71	82 (95 ^b)	216 (82-579)	162 (4-324)	130 (114-154)
Dec 98	74	86 (98 ^b)	---	172 (23-321)	142 (125-167)
Dec 00	67	69 ^b	N/A	N/A	99 (69-392)
Dec 02	18	18	N/A	N/A	21 (18-33) ^c
Dec 04	39	51	N/A	N/A	58
Dec 06	51	59	N/A	N/A	68

^a Confidence interval; there is only a 5 percent chance that the population total falls outside of this range.

^b Includes animals missed on survey, but located using radio telemetry.

^c Jill Bright, Arizona Game and Fish Department, pers. comm. 2003

Figure 1. Proposed Lukeville Primary Fence Project corridor (Final EA, November 2007)

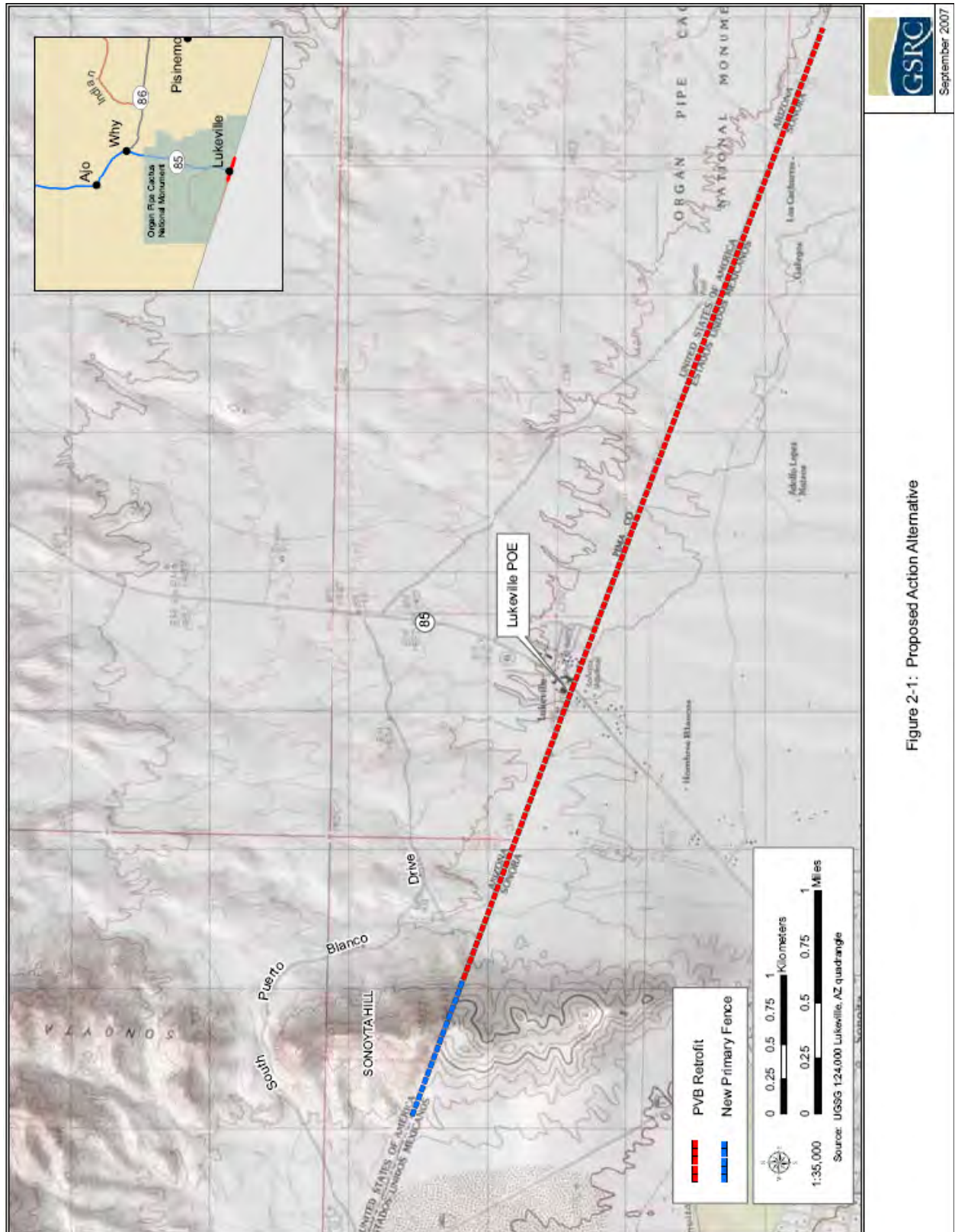
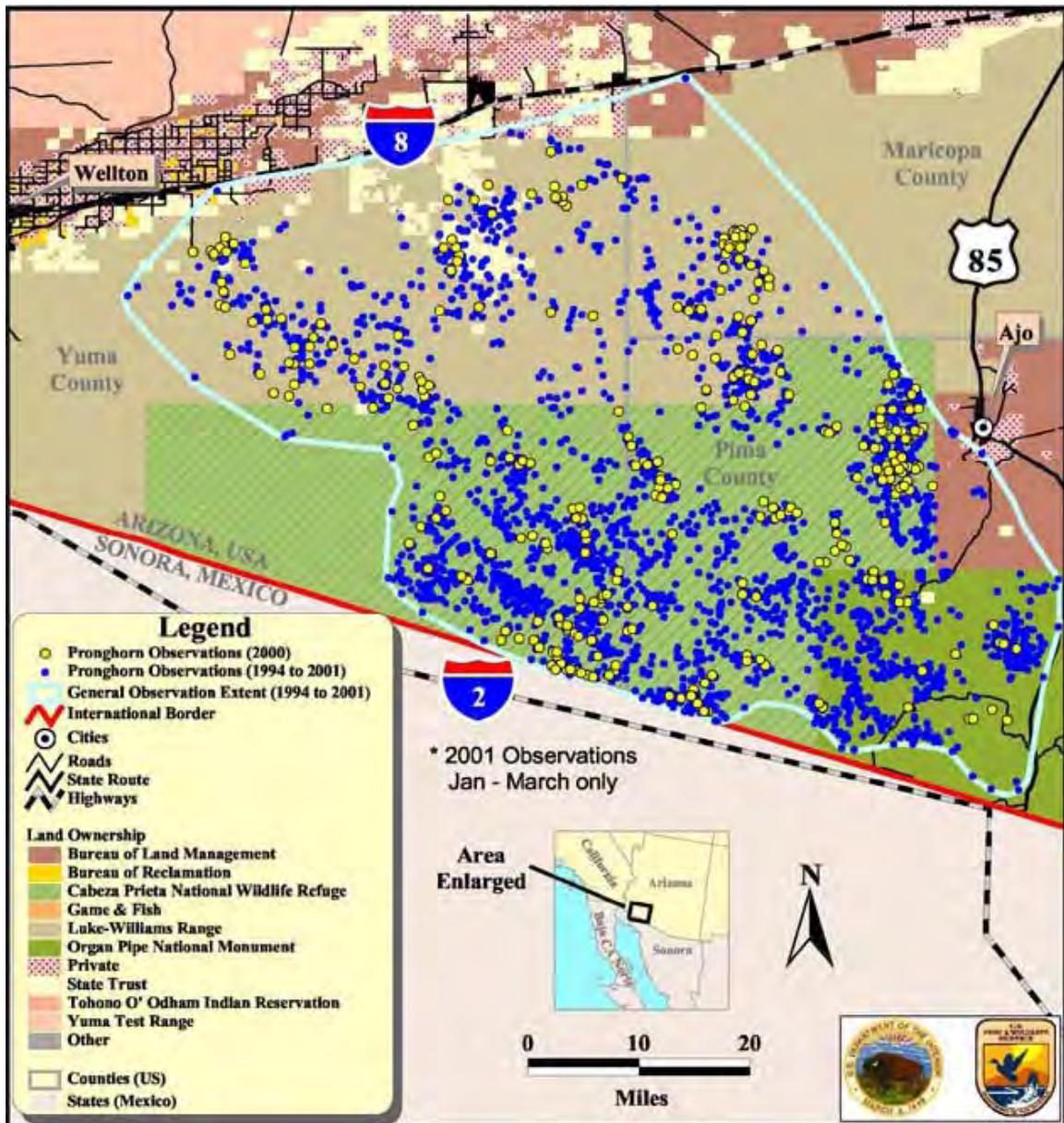


Figure 2-1: Proposed Action Alternative

Figure 2. Historic range of Sonoran pronghorn in the Unites States and Mexico.



Figure 3. Current Sonoran pronghorn distribution in the United State: Records from 1994-2001.





United States Department of the Interior

NATIONAL PARK SERVICE
Organ Pipe Cactus National Monument
10 Organ Pipe Drive
Ajo, Arizona 85321-9626

IN REPLY REFER TO:

December 19, 2007

Mr. Eric W. Verwers
Director Engineering, Construction and Support Office
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Subject: Comments on November 2007 Final Environmental Impact Statement for the proposed installation of primary fence near Lukeville, Arizona

Thank you for the opportunity to comment on the subject document. We offer the following comments and recommendations.

General Comments

Organ Pipe Cactus National Monument (OPCNM) can not support the inclusion of the proposed 7 acres over Sonoyta Hill outside of the Roosevelt Reservation for construction of a road to access proposed work. National Park Service policy and practice in this area is clear. The decision to issue or deny a permit for a special use such as this proposed undertaking flows from the appropriate compliance under the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act of 1966 (NHPA), and other applicable laws. This November Environmental Assessment is inadequate as it lacks appropriate alternatives for construction, design of proposed work and mitigation to list a few of the concerns. It is within our mandate to protect these very important resources to this ecosystem and feel that with additional technology being discussed some fencing such as this proposed undertaking would not be necessary. The use of technology, such as the proposed SBInet (Southern Border Initiative network), should be evaluated with fence placement since they could support each other. The technological solution would cause much less long-term impacts to natural and cultural resources on OPCNM than would the proposed pedestrian fence.

The November 2007 Final Environmental Assessment (FEA) states that the pedestrian fence would be ineffectual without SBInet and vice versa. Since SBInet and the pedestrian fence form the basis for the border enforcement strategy in the OPCNM area, these actions should be evaluated in one NEPA document and not evaluated separately. We believe the proposed alternatives will have a significant and long-term impact on resources managed by the NPS.

The proposed action in the Executive Summary and the Alternatives does not agree. The alternative mentions the requirement of a construction footprint of 150 which is a major attribute of this project and should be in the summary if that is the intent.

In our comments on the October 2007 draft EA, we asked that the design allows for continued maintenance of the existing vehicle barrier. The request does not appear to be addressed in the FEA therefore that responsibility will be shifted to U.S. Department of Homeland Security since there will be no immediate and safe access for our staff. NPS will continue to maintain the permanent vehicle barrier in areas outside of the pedestrian fence.

The FEA repeatedly references the 2003 NPS FEA for the vehicle barrier. Although the 2003 EA is a convenient reference, it should not be used to describe the affected environment of the area that will be impacted by the proposed project. The pedestrian fence is proposed for only 5.2 miles, while the 2003 NPS FEA addresses impacts for a barrier more than 20 miles long and the construction differs immensely from a post and rail system to solid 10x15 foot panels.

References to resources at Quitobaquito are made throughout the document. Most of these should be removed, as the proposed project would not affect resources there and this site is remotely located from subject work area.

We include, by this reference, comments on the draft EA that we continue to believe are unaddressed issues.

Specific Comments

Page FONSI-5, Biological Resource: The revegetation plan that is mentioned to be completed after the construction activities should be reviewed and in place prior to the construction work. Additionally many elements missing such as what is being planned for all columnar cacti larger than 6 feet!

Page FONSI-5, Cultural Resources: We wish to clarify that the professional archeological monitors will be provided by the U.S. Border Patrol (USBP). Also, please identify the three historic objects that lie within the proposed construction corridor that will be monitored.

Page FONSI-5, Cultural Resources: Due to the amount of ground-clearing and digging involved with this project, we recommend that a professional archeological monitor be present for the entire extent of the project.

Page FONSI-5, Water Resources: If the Storm Water Pollution Protection Plan (SWPPP) requires a restoration plan, we request the opportunity to review and approve it.

Page 1-3, part 1.2.3. Background: Please correct the statement that all of the construction activities for the PVB along OPCNM's southern boundary occurred within OPCNM. Most of the construction activities occurred within the 60-ft Roosevelt Reservation.

Page 2-3, part 2.3.1. Technology: The FEA justifies the need for a fence in the Lukeville area by stating that physical barriers are the most effective at preventing illegal border crossings in the more populated areas of the Tucson sector. This rationale is unsupported in the Lukeville/Sonoyta area, where many of the more intensively used illegal border crossing areas along the southern boundary of OPCNM are in the more unpopulated areas.

Page 2-4, part 2.5 Summary: Table one states that the technological solution will not deter illegal pedestrian traffic, yet the USBP will be relying on this method to deter pedestrian traffic outside the pedestrian fence. Please explain.

Pages 2-5 and 2-6, Table 2-2 Summary Matrix: Please see our comments on these items in the Affected Environment Section (Part 3.0). Also in the unique and sensitive areas section; the comment regarding the "7 acres over Sonoyta Hill would change from NPS lands to USBP infrastructure" is incorrect. As was mentioned in the opening comments, the work and results of work will be articulated in a special use permit once all elements of NEPA are satisfied and will remain NPS lands. Noise; the clatter/chafing between double layer panels will become quite pronounced especially with windy and alternatives need to be developed to correct this. Aesthetics; Disagree that no significant impacts would occur and minimizing trash is expected to outweigh adverse impact.

Page 3-2, part 3.2 Soils: We recommend that the engineering plans consider the salinity of the soils in a proportion of the construction zone. Due to the proximity of the area to the Rio Sonoyta, these soils contain a high concentration of sodium, which can corrode concrete. Salinity is indicated by the presence of saltbush species *Atriplex polycarpa* and *A. linearis*, both salt-tolerant species.

Page 3.3.1. Vegetation Communities: Please correct the FEA statements about vegetation. The vegetation within the project corridor is a subset of the vegetation described in the 2003 NPS final EA for the vehicle barrier. *Atriplex polycarpa*, *A. linearis*, *Larrea divaricata* ssp. *tridentata* are the dominant species on the bottoms and dissected hills. This vegetation type is uncommon on OPCNM, occurring less than 2-3 miles of the international boundary. This vegetation type is bearing the brunt of environmental impacts due to border-related activities on OPCNM.

Dominant species in the xeroriparian corridors in the proposed project area include *Prosopis velutina*, *Olneya tesota*, *Parkinsonia floridum*, *Condalia globosa*, *Ambrosia ambrosioides*, and various *Lycium* species. On Monument Hill (Sonoyta Hill), dominant plant species include *Parkinsonia floridum*, *Olneya tesota*, *Prosopis velutina*, *Stenocereus thurberi*, *Carnegiea gigantea*, *Fouquieria splendens*, *Larrea divaricata*, *Lycium* species, and *Ambrosia deltoidea*.

Page 3-2, Part 3.3.2. Wildlife: OPCNM considers the cactus ferruginous pygmy owl (*Glaucidium brasilianum cactorum*) to be a species of management concern. Suitable habitat occurs in the proposed project area and should be addressed in this final EA.

Page 3-3, part 3.3.3. Non-native and Invasive Species: Rather than identify the most common species on OPCNM, the FEA should identify the invasive species in the proposed project area. For example, *Mesembryanthemum* does not occur in the project area, but *Cynodon dactylon* does.

Page 3-5, part 3.6 Protected Species: This section does not address sensitive species that require special management attention but are not protected by the Endangered Species Act. A small population of *Peniocereus striatus*, which is known from a few locations in the U.S., is located in the proposed project corridor. We recommend avoiding the disturbance of any plants in the Roosevelt Reservation. If avoidance is not possible, then salvage should be overseen by OPCNM.

The cactus ferruginous pygmy owl (*Glaucidium brasilianum cactorum*) is another species that is specially managed by OPCNM. Potential habitat occurs in the construction zone, and the breeding period overlaps with the proposed construction period. Surveys should be performed and the impacts to this species should be evaluated.

Page 3-7, part 3.6.1.2. Lesser long-nosed bat: Sonora barrel cactus and California barrel cactus are not columnar cacti and are not used as a food resource by bats. Do not include them in the count of columnar cacti.

Page 3-8, Figure 3-1 Map of Sonoran pronghorn range: Please cite the information source used to prepare this map. OPCNM does not agree with the stated range boundaries.

Page 3-9, part 3.6.1.3 Acuña Cactus: Seven (not five) populations of acuña cactus are known; the Pima County 2001 reference is outdated. This subspecies is not known to occur on limestone; please remove the reference.

Page 3-12, part 3.9 Water Resources: Although they are not perennial streams, it is likely that the larger drainages in the proposed project area are regulated by Section 404 of the Clean Water Act. Please indicate if the drainages in the project area have been evaluated to determine if they are jurisdictional waters. Clarify the criteria used to determine the 16 intermittent streams and also identify locations. There are easily additionally another 24 streams that should also be evaluated. Please clarify where the water for the project (**1.7 million gallons-3.7 million gallons** /referenced on page 4.1) will come from. There is discussion regarding groundwater recharge rates and mention hauling water from Ajo or Why. If this is not the case and water is purchased locally from the property owner at Lukeville, the drawdown on this well needs to be monitored daily while in production. In addition we are requesting that both domestic wells that serve our infrastructure 4 miles due north near our Visitor Center also be monitored for drawdown. There is immense concern for extensive water and the possibility of effects on our two wells.

Page 3-13, last sentence: The correct spelling of Tibbets is Tibbits.

Page 4-1, part 4.0 Environmental Consequences: Disagree with the comment that this "EA describes the potential permanent impacts". How can this be possible when it's also stated that the design/build process will be utilized? How can the potential for impact are assessed if you don't know the design not only of the fence but how and where it will be constructed. In most cases from my experience it's difficult to evaluate impact of a project without final design incorporated in the EA process.

Page 4-2, part 4.1.2 Alternative 2, second paragraph: It is predictable that the proposed fence will cause indirect impacts. If the fence performs as expected and USBP agents are deployed to areas without the pedestrian fence, then OPCNM predicts that additional enforcement-related off-road driving will occur in those areas. These environmental impacts should be included in this document. The change from NPS lands to USBP infrastructure and enforcement operations was discussed previously. Support the statement that a Special Use permit would need to be obtained from NPS for this action of using the additional 7 acres outside the Roosevelt Reservation prior to construction.

Page 4-3, part 4.2.2. Alternative 2, first paragraph: OPCNM believes the proposed action would have widespread, long-term and significant impacts on soils, with special emphasis on the Holocene, sandy loam alluviums of the valley bottoms. Ground disturbing activities that cause soil structure loss and deflation (e.g. disturbance, compaction, blading) usually trigger accelerated erosion that can not be treated with infrastructure, including best management practices. Gilman and Antho Series soils are the two soil types most prone to accelerated erosion on OPCNM. A significant portion of the proposed action occurs on these soils.

Once accelerated erosion is triggered, the resulting watershed instability will cause deep gullying on Gilman and Antho soils and will have far-reaching implications in the affected watersheds. These impacts need to be considered in the FEA and in the project design. Fence design will be a critical part of minimizing impacts on soils. Since most of the impacts will occur on OPCNM, the NPS should be closely involved with the SWPPP.

Page 4-4, part 4.3.1.2 Alternative 2: As previously mentioned, the saltbush vegetation association is uncommon on OPCNM and is regionally threatened. A significant portion of the project is in this vegetation type.

Page 4-5, part 4.3.2.2, first paragraph: Here and elsewhere, please correct the statement that most of the project corridor has been previously disturbed. Most of the Roosevelt Reserve over Monument Hill has not been disturbed, and about half of the Roosevelt Reserve in the remaining section has not been disturbed.

Page 4-5, part 4.3.2.2, third paragraph: Please provide citations for the sentence beginning, "Habitat fragmentation typically affects....". OPCNM continues to disagree with the statement that the fence will have no significant adverse effects on wildlife.

Page 4-6, part 4.3.3.2: The project corridor, particularly Monument Hill, will not be regularly patrolled by a person qualified to identify and respond to non-native, invasive species. Will qualified USBP monitors be monitoring the construction zone in perpetuity? Also, please provide citations that document the statement that "many invasive plant propagules are transported into the U.S. on clothing of IAs." We are aware of no such studies.

Page 4-7, part 4.4.2, first paragraph: This paragraph has several conflicting statements regarding access that should be corrected. A special use permit from NPS would not be needed if only the Roosevelt Reservation was used during construction.

Page 4-7, part 4.4.2, paragraph 2: We disagree with the statement that the impacts of the proposed project are outweighed by the impacts of illegal activity. We believe the permanent direct impacts and the long-lasting indirect impacts of the pedestrian fence will be far greater than the relatively impermanent impact of illegal border activities.

Page 4-8, part 4.5.2, paragraph 1: We agree that noise due to construction of the fence would be temporary. We are more concerned with constant noise/clatter from the double mesh segments on the panels especially with natural wind action. The EA needs to include an evaluation of how the fence and the access road over Monument Hill will adversely, permanently and significantly affect the viewshed, particularly from the wilderness. Again there is no comparison with the impacts to the view shed between the vehicle barrier and this pedestrian fence especially with size and scale.

Page 4-9, part 4.6.2, paragraph 2: As previously mentioned, please cite the information source used to create the Sonoran pronghorn range map. We do not agree with the boundaries as provided. Section 7 consultation needs to be initiated!

Page 4-11, part 4.7.2, and paragraph 1: We believe the environmental design measures to avoid adverse impacts to these significant historic boundary monuments are not sufficient to ensure that no adverse impacts will occur. The fence will exclude the monuments from NPS protection.

Also, please include the letter indicating SHPO concurrence with USBP's determination of "no affect to historic properties". It is not currently included in Appendix C.

OPCNM believes that the quality of the viewshed and the context of the historic border monuments will be adversely affected by the fence. An important feature of the historic border monuments is the view of the vast expanse of land on both sides of the border, a view that provides context for the border monuments. The impact of the fence on these values should be evaluated in this FEA.

Page 4-13, part 4.8.2, first paragraph: Instead of spraying water as a dust palliative, we recommend using a product similar to lignosulfonate. Not only a dust palliative, lignosulfonate will stabilize the road surface and reduce maintenance costs.

Page 4-15, part 4.10.2: Property value reduction is not of concern to the monument.

Page 4-16, part 4.12.2: As previously mentioned, we disagree with the conclusion that the aesthetic impacts would be insignificant. The comparison between trash/litter scatter and this proposed fence is not even close to being comparable. We can get the litter picked up and this impact is removed, not the same with the fence especially over monument hill.

Page 4-17, part 4.13.2: The construction contractor should be required to rinse concrete truck mixers and other equipment out side of the Roosevelt Reservation and the monument lands.

Page 5-2, table 5-1: The table and the ensuing evaluation should include all ongoing USBP, National Guard, and other border-related operations, such as checkpoints, observation towers, scouting sites, off-road vehicle travel, helicopter activities and other actions having environmental impacts that have not been included. One example is the re-opening and continued use of formerly closed roads in wilderness areas.

Page 5-3, Land use: Disagree with the statement that "alteration of 7 acres of land on the OPCNM would not be considered cumulatively significant as the OPCNM encompasses over 330,000 acres". OPCNM legislation or General Management Plan does not identify excess lands within the monument boundaries. If we wanted to parallel your statement to this project then the 65 miles of fence over Sonoyta Hill encompasses a similarly less percentage of the 225 miles of border fence that DHS is proposing to construct! It's not about the acreage lost but about the resources impacted on this small area due to this project. Soils: As previously mentioned, two soil types that are prone to accelerated erosion occur in the proposed project area. The writers may be incorrectly interpreting Natural Resource Conservation Service soil descriptions, which indicate a low erosion potential for these soils. When dirt roads are built on these soils, the high and nearly inescapable potential for erosion is widely known. Increasing the width of the road (and de-vegetated area), increased blading and increased vehicle traffic contribute to significant cumulative impacts. Also please address what will be done with spoils from ditches cut for the concrete footer.

Page 6-1, part 6.1: Please see previous comments about containing concrete rinsate from trucks/equipment.

Page 6-2, part 6.2: We believe that all of the techniques mentioned in this paragraph will be insufficient to reduce or eliminate the accelerated erosion and watershed instability caused by the fence. The accelerated erosion is likely to increase the frequency of road blading and general maintenance. Please provide a long-term plan for addressing this issue.

Page 6-2, paragraph beginning on page 6-2 and extending onto 6-3: The FEA states that a revegetation plan will be implemented by the USBP upon completion of construction activities. If the restoration plan is 'similar to' the one established for the vehicle barrier, it should include pre-construction activities, such as plant salvage. If the USBP implements a revegetation plan after construction is complete, salvage will no longer be an option. When does the USBP plan to consult with the NPS on a restoration plan? Also, who will be monitoring the construction footprint for 3 years after construction?

Page 6-3, part 6.5 Water Resources: Please see earlier comments on the NPS's contribution to the SWPPP.

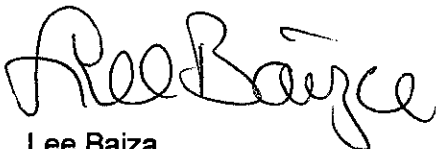
Please explain how the USBP will remove debris during a flood event without posing a safety hazard to the agent. When in flood stage, many washes can not be crossed safely with a vehicle, so vehicle access to flooding drainages will not be possible. Damage to resources will have occurred before debris will be removed.

Please explain where the flood debris will be placed. Normally, the debris would be washed into Mexico, which will no longer be an option.

Page 7-1, Agency Coordination: There is no indication that the Zuni Tribe has been contacted regarding this project. It is a federally recognized tribe having affiliation with OPCNM.

Please contact Lee Baiza (520-387-6489 extension 7500) if you would like to discuss these comments.

Sincerely,



Lee Baiza
Superintendent,
Organ Pipe Cactus National Monument

Cc: Robert Frankeberger, State Historic Preservation Officer
Peter L. Steere, Manager, Cultural Affairs Office, Tohono O'Odham Nation

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED INSTALLATION OF 5.2 MILES OF PRIMARY FENCE
NEAR LUKEVILLE, ARIZONA
U.S. BORDER PATROL
TUCSON SECTOR**

Review Comments Matrix

PROJECT: AJO Final EA		DATE: December 19, 2007	
PROJECT MILESTONE:		Final Environmental Assessment for the Proposed Installation of 5.2 Miles of Primary Fence Near Lukeville Arizona	
Response Legend: A - Concur; D = Do Not Concur; E - Exception; X - Delete Comment			
#	Reviewer	Comment	Response
1	L. Baiza	OPCNM can not support the inclusion of the proposed 7 acres over Sonoyta Hill outside of the Roosevelt Reservation for construction of a road to access proposed work. This November EA is inadequate as it lacks appropriate alternatives for construction, design of proposed work and mitigation to list a few of the concerns. It is within our mandate to protect these very important resources to this ecosystem and feel that with additional technology being discussed some fencing such as this proposed undertaking would not be necessary. The use of technology, such as the proposed SBInet (Southern Border Initiative network), should be evaluated with fence placement since they could support each other. The technological solution would cause much less long-term impacts to natural and cultural resources on OPCNM than would the proposed pedestrian fence.	D. While SBInet technology is a critical component of the Secure Border Initiative and an effective force multiplier that allows USBP to monitor large areas and deploy agents to where they would be most effective to apprehend cross-border violators, it does not provide a physical deterrent to illegal crossings. The area covered by this project has been determined (and re-confirmed) by USBP to be a high traffic area that requires the installation of a physical barrier (i.e. fence) to control illegal entry into the U.S. The construction of an access road is needed to build and maintain the fence. .

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED INSTALLATION OF 5.2 MILES OF PRIMARY FENCE
NEAR LUKEVILLE, ARIZONA
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Review Comments Matrix

#	Reviewer	Comment	Response
2	L. Baiza	The November 2007 Final EA states that the pedestrian fence would be ineffectual without SBInet and vice versa. Since SBInet and the pedestrian fence form the basis for the border enforcement strategy in the OPCNM area, these actions should be evaluated in one NEPA document and not evaluated separately. We believe the proposed alternatives will have a significant and long-term impact on resources managed by the NPS.	D. The impacts of other possible border security infrastructure (i.e. SBInet) are considered appropriately in the cumulative impacts analysis. If and when, other infrastructure is proposed for this area, appropriate NEPA analyses will be conducted...
3	L. Baiza	The proposed action in the Executive Summary and the Alternatives does not agree. The alternative mentions the requirement of a construction footprint of 150 which is a major attribute of this project and should be in the summary if that is the intent.	A. The executive summary has been revised to read, "Construction activities would remain within the 60-foot Roosevelt Reservation with the exception of the western most 0.65 miles. The western most 0.65 miles, which would be built over Sonoyta Hill, requires a construction footprint of 150 feet."

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED INSTALLATION OF 5.2 MILES OF PRIMARY FENCE
NEAR LUKEVILLE, ARIZONA
U.S. BORDER PATROL
TUCSON SECTOR**

Review Comments Matrix

#	Reviewer	Comment	Response
4	L. Baiza	In our comments on the October 2007 draft EA, we asked that the design allows for continued maintenance of the existing vehicle barrier. The request does not appear to be addressed in the FEA therefore that responsibility will be shifted to U.S. Department of Homeland Security since there will be no immediate and safe access for our staff. NPS will continue to maintain the permanent vehicle barrier in areas outside of the pedestrian fence.	A. Due to the existing PVBs location relative to the border and its design characteristics, it is not possible to physically retrofit the existing PVBs as originally desired. Therefore, the pedestrian fence will be installed approximately 3 ft north of the existing PVBs. CBP agrees that the original vehicle barrier will become the operation and maintenance responsibility of CBP.
5	L. Baiza	The FEA repeatedly references the 2003 NPS FEA for the vehicle barrier. Although the 2003 EA is a convenient reference, it should not be used to describe the affected environment of the area that will be impacted by the proposed project. The pedestrian fence is proposed for only 5.2 miles, while the 2003 NPS FEA addresses impacts for a barrier more than 20 miles long and the construction differs immensely from a post and rail system to solid 10x15 foot panels.	D. The FEA correctly references the 2003 NPS document and complies with NEPA and CEQ recommendations to use this document for baseline information. The type and nature of construction and the equipment needed to complete the proposed activities are not considerably different from what was proposed to construct vehicle barriers.

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED INSTALLATION OF 5.2 MILES OF PRIMARY FENCE
NEAR LUKEVILLE, ARIZONA
U.S. BORDER PATROL
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Review Comments Matrix

#	Reviewer	Comment	Response
6	L. Baiza	References to resources at Quitobaquito are made throughout the document. Most of these should be removed, as the proposed project would not affect resources there and this site is remotely located from subject work area.	D. U.S. Fish and Wildlife Service specifically requested we discuss Quitobaquito, and how the project could impact the springs and its associated fauna.
7	L. Baiza	Page FONSI-5, Biological Resource: The revegetation plan that is mentioned to be completed after the construction activities should be reviewed and in place prior to the construction work. Additionally many elements missing such as what is being planned for all columnar cacti larger than 6 feet!	A. The revegetation plan will be comprehensive, completed in conjunction with input from the OPCNM and will be completed prior to the start of construction..

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED INSTALLATION OF 5.2 MILES OF PRIMARY FENCE
NEAR LUKEVILLE, ARIZONA
U.S. BORDER PATROL
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Review Comments Matrix

#	Reviewer	Comment	Response
8	L. Baiza	Page FONSI-5, Cultural Resources: We wish to clarify that the professional archeological monitors will be provided by the U.S. Border Patrol (USBP). Also, please identify the three historic objects that lie within the proposed construction corridor that will be monitored.	A. The professional archeologist will be provided by the USBP. The historic objects to be monitored are discussed in the EA and consist of the three International Border Monuments (166, 167, 168) located in the project corridor.
9	L. Baiza	Page FONSI-5, Cultural Resources: Due to the amount of ground-clearing and digging involved with this project, we recommend that a professional archeological monitor be present for the entire extent of the project.	D. The entire project corridor has not only been surveyed by the NPS but also by Northland Research Inc. and GSRC. No cultural sites were identified within the project corridor during the original NPS surveys or the recent surveys completed by CBP's consultants. Therefore, CBP feels that professional archeological monitors are not needed for the entire project. However, in keeping with BMPs used by CBP across all projects, construction workers will be trained to recognize potential archeological resources and instructed to temporarily suspend construction activities until a qualified archeologist can evaluate the situation should a potential resource be encountered.

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED INSTALLATION OF 5.2 MILES OF PRIMARY FENCE
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Review Comments Matrix

#	Reviewer	Comment	Response
10	L. Baiza	Page FONSI-5, Water Resources: If the Storm Water Pollution Protection Plan (SWPPP) requires a restoration plan, we request the opportunity to review and approve it.	D. The NPS will be provided an opportunity to review and comment on the SWPPP. The SWPPP will be completed by the Corps' contractor and will be reviewed/approved by CBP then submitted to the EPA/ADEQ.
11	L. Baiza	Page 1-3, part 1.2.3. Background: Please correct the statement that all of the construction activities for the PVB along OPCNM's southern boundary occurred within OPCNM. Most of the construction activities occurred within the 60-ft Roosevelt Reservation.	A. The EA will be revised to state that the PVB's were constructed in the 60-foot Roosevelt Reservation.

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12	L. Baiza	Page 2-3, part 2.3.1. Technology: The FEA justifies the need for a fence in the Lukeville area by stating that physical barriers are the most effective at preventing illegal border crossings in the more populated areas of the Tucson sector. This rationale is unsupported in the Lukeville/Sonoyta area, where many of the more intensively used illegal border crossing areas along the southern boundary of OPCNM are in the more unpopulated areas.	D. The USBP has determined that the Lukeville/Sonoyta area is an area where fence is necessary to secure the border relative to illegal crossings.
13	L. Baiza	Page 2-4, part 2.5 Summary: Table one states that the technological solution will not deter illegal pedestrian traffic, yet the USBP will be relying on this method to deter pedestrian traffic outside the pedestrian fence. Please explain.	D. Table 2-1 does not mention technology but rather discusses the No Action Alternative and the Proposed Action Alternative. Regardless, due to Federal legislation and through analysis of changing border security environment, the USBP has determined that the proposed project corridor is best suited for physical tactical infrastructure and not technology based infrastructure. Further, the lack of use of technology infrastructure versus physical infrastructure is adequately explained in Section 2.3.1 of the Final EA.

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14	L. Baiza	<p>Pages 2-5 and 2-6, Table 2-2 Summary Matrix: Please see our comments on these items in the Affected Environment Section (Part 3.0). (1) Also in the unique and sensitive areas section; the comment regarding the “7 acres over Sonoyta Hill would change from NPS lands to USBP infrastructure” is incorrect. As was mentioned in the opening comments, the work and results of work will be articulated in a special use permit once all elements of NEPA are satisfied and will remain NPS lands. (2) Noise; the clatter/chafing between double layer panels will become quite pronounced especially with windy and alternatives need to be developed to correct this. (3) Aesthetics; Disagree that no significant impacts would occur and minimizing trash is expected to outweigh adverse impact.</p>	<p>(1) A. NPS would retain ownership of the 7 acres over Sonoyta Hill. CBP would assume responsibility for the maintenance of the access road. The EA will be revised accordingly.</p> <p>(2) D. The fence would be designed so that clattering/chaffing is not an issue. As was previously discussed with the contractor, USACE, CBP, and Mr. Lee Baiza of the OPCNM, the fence would be welded together to prevent and minimize any potential noise impacts due to the two panels clattering or chaffing.</p> <p>(3) D. It is CBP’s determination that no significant impacts to aesthetics would occur. The area is currently heavily degraded as depicted in the Photographs 3-1 and 3-2 of the Final EA. Additionally, the primary pedestrian fence would be built out of non-reflective materials in an effort to minimize aesthetic impacts.</p>
15	L. Baiza	<p>Page 3-2, part 3.2 Soils: We recommend that the engineering plans consider the salinity of the soils in a proportion of the construction zone. Due to the proximity of the area to the Rio Sonoyta, these soils contain a high concentration of sodium, which can corrode concrete. Salinity is indicated by the presence of saltbush species <i>Atriplex polycarpa</i> and <i>A. linearis</i>, both salt-tolerant species.</p>	<p>A. The design of the fence has taken into account what is necessary to ensure that the fence is stable, strong, and built for longevity. Additionally, according to the NRCS’s Web Soil Survey all of the soils in the project have a “low” rating in regards to corrosion of concrete.</p>

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16	L. Baiza	<p>Page 3.3.1. Vegetation Communities: Please correct the FEA statements about vegetation. The vegetation within the project corridor is a subset of the vegetation described in the 2003 NPS final EA for the vehicle barrier. <i>Atriplex polycarpa</i>, <i>A. linearis</i>, <i>Larrea divaricata</i> ssp. <i>tridentata</i> are the dominant species on the bottoms and dissected hills. This vegetation type is uncommon on OPCNM, occurring less than 2-3 miles of the international boundary. This vegetation type is bearing the brunt of environmental impacts due to border-related activities on OPCNM.</p> <p>Dominant species in the xeroriparian corridors in the proposed project area include <i>Prosopis velutina</i>, <i>Olneya tesota</i>, <i>Parkinsonia floridum</i>, <i>Condalia globosa</i>, <i>Ambrosia ambrosioides</i>, and various <i>Lycium</i> species. On Monument Hill (Sonoyta Hill), dominant plant species include <i>Parkinsonia floridum</i>, <i>Olneya tesota</i>, <i>Prosopis velutina</i>, <i>Stenocereus thurberi</i>, <i>Carnegiea gigantea</i>, <i>Fouquieria splendens</i>, <i>Larrea divaricata</i>, <i>Lycium</i> species, and <i>Ambrosia deltoidea</i>.</p>	<p>A. The document was revised to stipulate that saltbush (<i>Atriplex</i> sp.) is common throughout most the project corridor, especially east of the POE. Most of the other species mentioned in the comment were included in Section 3.3.1 of the Final EA and incorporated by reference from the 2003 NPS EA.</p>

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17	L. Baiza	Page 3-2, Part 3.3.2. Wildlife: OPCNM considers the cactus ferruginous pygmy owl (<i>Glaucidium brasilianum cactorum</i>) to be a species of management concern. Suitable habitat occurs in the proposed project area and should be addressed in this final EA.	A. Information regarding the cactus ferruginous-pygmy owl has been incorporated into the document. The document now reads in Section 4.6.2, "Additionally, the cactus ferruginous-pygmy owl has the potential to exist in the project corridor. However, the habitat in the project corridor is extremely limited and classified as ranging from poor to moderate with the exception of the western slope of Sonoyta Hill (NPS 2003). Therefore, due to the previously disturbed nature of some of the project corridor in conjunction with the limited quality habitat available, the Proposed Action Alternative is not expected to create significant impacts to the owl."
18	L. Baiza	Page 3-3, part 3.3.3. Non-native and Invasive Species: Rather than identify the most common species on OPCNM, the FEA should identify the invasive species in the proposed project area. For example, <i>Mesembryanthemum</i> does not occur in the project area, but <i>Cynodon dactylon</i> does.	A. The document has been revised to state, ".....More specifically, the common non-native plant located in the project corridor is Bermuda grass (<i>Cynodon dactylon</i>) (Baiza 2007)."

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19	L. Baiza	<p>Page 3-5, part 3.6 Protected Species: This section does not address sensitive species that require special management attention but are not protected by the Endangered Species Act. A small population of <i>Peniocereus striatus</i>, which is known from a few locations in the U.S., is located in the proposed project corridor. We recommend avoiding the disturbance of any plants in the Roosevelt Reservation. If avoidance is not possible, then salvage should be overseen by OPCNM.</p> <p>The cactus ferruginous pygmy owl (<i>Glaucidium brasilianum cactorum</i>) is another species that is specially managed by OPCNM. Potential habitat occurs in the construction zone, and the breeding period overlaps with the proposed construction period. Surveys should be performed and the impacts to this species should be evaluated.</p>	<p>D. All vegetation will be removed from with the Roosevelt Reservation. However, as part of the revegetation plan, CBP would allow for salvage by NPS of <i>Peniocereus striatus</i> within the project corridor as was done for the implementation of the NPS Vehicle Barrier project.</p> <p>D. See response to comment number 17. In addition, protocol surveys cannot be performed within the timeframe necessary. Furthermore, CFPO have not been reported by USFWS or NPS staff from this area.</p>
20	L. Baiza	<p>Page 3-7, part 3.6.1.2. Lesser long-nosed bat: Sonora barrel cactus and California barrel cactus are not columnar cacti and are not used as a food resource by bats. Do not include them in the count of columnar cacti.</p>	<p>E. Columnar cacti is a term used to describe the shape of the cacti. Regardless, the Sonora barrel cactus and California barrel cactus have been removed from the document.</p>

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21	L. Baiza	Page 3-8, Figure 3-1 Map of Sonoran pronghorn range: Please cite the information source used to prepare this map. OPCNM does not agree with the stated range boundaries.	D. The map is accurately sourced in the Final EA.
22	L. Baiza	Page 3-9, part 3.6.1.3 Acuña Cactus: Seven (not five) populations of acuña cactus are known; the Pima County 2001 reference is outdated. This subspecies is not known to occur on limestone; please remove the reference.	A. The document was revised as suggested.

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23	L. Baiza	<p>Page 3-12, part 3.9 Water Resources: Although they are not perennial streams, it is likely that the larger drainages in the proposed project area are regulated by Section 404 of the Clean Water Act. (1) Please indicate if the drainages in the project area have been evaluated to determine if they are jurisdictional waters. Clarify the criteria used to determine the 16 intermittent streams and also identify locations. (2) There are easily additionally another 24 streams that should also be evaluated. (3) Please clarify where the water for the project (1.7 million gallons-3.7 million gallons /referenced on page 4.1) will come from. There is discussion regarding groundwater recharge rates and mention hauling water from Ajo or Why. If this is not the case and water is purchased locally from the property owner at Lukeville, the drawdown on this well needs to be monitored daily while in production. In addition we are requesting that both domestic wells that serve our infrastructure 4 miles due north near our Visitor Center also be monitored for drawdown. There is immense concern for extensive water and the possibility of effects on our two wells.</p>	<p>(1) A. CBP has assumed that the 16 streams which cross the project corridor are considered jurisdictional although no formal verification has occurred. Additionally, as stated in Section 4.9.2 of the Final EA, "All appropriate CWA Section 404 Permits from the U.S. Army Corps of Engineers (USACE) Los Angeles District Regulatory Branch, as well as Section 401 Water Quality Certifications from the Arizona Department of Environmental Quality, would be obtained prior to any fill material being placed in potential jurisdictional waters of the U.S."</p> <p>(2) D. CBP respectfully disagrees based on biological field surveys.</p> <p>(3) E. The specific source of water is not yet known. However, as indicated in Section 4.9.2 of the Final EA the water will be obtained from municipal sources located in either Why, Ajo, or Gila Bend, Arizona. No monitoring of wells on the OPCNM would occur because no impacts to OPCNM groundwater sources would occur as a result of the Proposed Action.</p>

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24	L. Baiza	Page 3-13, last sentence: The correct spelling of Tibbets is Tibbitts.	A. The document was revised as requested.
25	L. Baiza	Page 4-1, part 4.0 Environmental Consequences: Disagree with the comment that this “EA describes the potential permanent impacts”. How can this be possible when it’s also stated that the design/build process will be utilized? How can the potential for impact are assessed if you don’t know the design not only of the fence but how and where it will be constructed. In most cases from my experience it’s difficult to evaluate impact of a project without final design incorporated in the EA process.	D. The EA does address potential impacts on a worse case scenario. The conceptual design footprint was developed by the design engineers and they believe this will be the maximum footprint needed to accomplish the proposed project. All other impacts would remain within the 60 foot Roosevelt Reservation.

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26	L. Baiza	<p>Page 4-2, part 4.1.2 Alternative 2, second paragraph: (1) It is predictable that the proposed fence will cause indirect impacts. If the fence performs as expected and USBP agents are deployed to areas without the pedestrian fence, then OPCNM predicts that additional enforcement-related off-road driving will occur in those areas. These environmental impacts should be included in this document.</p> <p>(2) The change from NPS lands to USBP infrastructure and enforcement operations was discussed previously. Support the statement that a Special Use permit would need to be obtained from NPS for this action of using the additional 7 acres outside the Roosevelt Reservation prior to construction.</p>	<p>(1) D. CBP disagrees with the assertion that increased off-road activities would occur as a result of agents being able to be deployed to areas without pedestrian fence. In reality, the agents working east and west of the fence boundaries will act as a deterrent and this deployment would be expected to curtail illegal traffic in those areas lacking fence. Also, as stated numerous times throughout the document, the illegal activities of cross-border violators are solely up to them and outside of the control of USBP/CBP.</p> <p>(2) A. CBP would seek a special use permit from NPS to construct the fence and road outside the Roosevelt Reservation..</p>
27	L. Baiza	<p>Page 4-3, part 4.2.2. Alternative 2, first paragraph: OPCNM believes the proposed action would have widespread, long-term and significant impacts on soils, with special emphasis on the Holocene, sandy loam alluviums of the valley bottoms. Ground disturbing activities that cause soil structure loss and deflation (e.g. disturbance, compaction, blading) usually trigger accelerated erosion that can not be treated with infrastructure, including best management practices. Gilman and Antho Series soils are the two soil types most prone to accelerated erosion on OPCNM. A significant portion of the proposed action occurs on these soils. Once</p>	<p>D. CBP will coordinate the SWPPP and the revegetation plan with OPCNM. The contractor would have to consider soil conditions and construct the fence/road accordingly. USBP would be responsible for post-construction maintenance, including erosion control and would work closely with NPS to ensure erosion is controlled.</p>

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		<p>accelerated erosion is triggered, the resulting watershed instability will cause deep gullying on Gilman and Antho soils and will have far-reaching implications in the affected watersheds. These impacts need to be considered in the FEA and in the project design. Fence design will be a critical part of minimizing impacts on soils. Since most of the impacts will occur on OPCNM, the NPS should be closely involved with the SWPPP.</p>	
28	L. Baiza	<p>Page 4-4, part 4.3.1.2 Alternative 2: As previously mentioned, the saltbush vegetation association is uncommon on OPCNM and is regionally threatened. A significant portion of the project is in this vegetation type.</p>	<p>D. Saltbush vegetation associations are common not only on the OPCNM but also the Cabeza Prieta National Wildlife Refuge, Tohono O'odham Nation, and the rest of southern Arizona. No significant impacts would occur to this vegetation association with the implementation of this project.</p>

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29	L. Baiza	Page 4-5, part 4.3.2.2, first paragraph: Here and elsewhere, please correct the statement that most of the project corridor has been previously disturbed. Most of the Roosevelt Reserve over Monument Hill has not been disturbed, and about half of the Roosevelt Reserve in the remaining section has not been disturbed.	A. The document has been revised to read: "Although approximately 45 acres would be permanently impacted from the Proposed Action Alternative, these impacts would be considered negligible, since much of the project corridor (17 acres) has been previously disturbed, and the remainder has limited and somewhat disturbed vegetation."
30	L. Baiza	Page 4-5, part 4.3.2.2, third paragraph: Please provide citations for the sentence beginning, "Habitat fragmentation typically affects....". OPCNM continues to disagree with the statement that the fence will have no significant adverse effects on wildlife.	A. The document has been revised to include the following citation, Gilpin, M.E. and Hanski, I. Metapopulation Dynamics: Empirical and Theoretical Investigations. London: Linnaean Society of London and Academic Press; 1991. Additionally, the development and residences on the Mexico side of the project corridor currently fragment habitat. Therefore, the addition of the proposed fence would not likely create significant impacts.

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31	L. Baiza	Page 4-6, part 4.3.3.2: The project corridor, particularly Monument Hill, will not be regularly patrolled by a person qualified to identify and respond to non-native, invasive species. Will qualified USBP monitors be monitoring the construction zone in perpetuity? Also, please provide citations that document the statement that “many invasive plant propagules are transported into the U.S. on clothing of IAs.” We are aware of no such studies.	D. CBP is willing to hire a qualified person/firm to monitor/survey for invasive species for a period of 3-yrs following completion of the construction activities. A. This citation, “(INS 2002)” has been added to the document. In the references section of the Final EA this reference as been added, “INS, U.S. Border Patrol, U.S. Department of Interior, U.S. Forest Service, U.S. Environmental Protection Agency. 2002. Report to the House of Representatives Committee on Appropriations on Impact Caused by Undocumented Aliens Crossing Federal Lands in Southeast Arizona.”
32	L. Baiza	Page 4.7, part 4.4.2, first paragraph: This paragraph has several conflicting statements regarding access that should be corrected. A special use permit from NPS would not be needed if only the Roosevelt Reservation was used during construction.	A. The document was revised to read, “A special use permit from NPS would be needed to access any areas outside of the Roosevelt Reservation. This would be obtained prior to construction activities.”

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33	L. Baiza	Page 4-7, part 4.4.2, paragraph 2: We disagree with the statement that the impacts of the proposed project are outweighed by the impacts of illegal activity. We believe the permanent direct impacts and the long-lasting indirect impacts of the pedestrian fence will be far greater than the relatively impermanent impact of illegal border activities.	D. See Section 4.4.2 of the Final EA for the full analysis of potential impacts to Unique and Sensitive Areas as a result of the Proposed Action Alternative. In addition, OPCNM has stated (and cited in the Section 4.1.2 of the Final EA) that certain areas of OPCNM have been closed to visitors due to illegal traffic, which affects not only aesthetic qualities and natural resources of the OPCNM, but also the function of the OPCNM.
34	L. Baiza	Page 4-8, part 4.5.2, paragraph 1: We agree that noise due to construction of the fence would be temporary. (1) We are more concerned with constant noise/clatter from the double mesh segments on the panels especially with natural wind action. (2) The EA needs to include an evaluation of how the fence and the access road over Monument Hill will adversely, permanently and significantly affect the viewshed, particularly from the wilderness. Again there is no comparison with the impacts to the view shed between the vehicle barrier and this pedestrian fence especially with size and scale.	(1) A. See response to comment number 14, part 2 (2) A. In Section 4.5.2 of the Final EA it is stated that adverse impacts would occur to Wilderness due to viewshed impacts. However, the Final EA has been revised to provide exhibits that illustrate how the fence will look from the wilderness area.

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35	L. Baiza	Page 4-9, part 4.6.2, paragraph 2: As previously mentioned, please cite the information source used to create the Sonoran pronghorn range map. We do not agree with the boundaries as provided. Section 7 consultation needs to be initiated!	E. See response to comment number 21. Additionally, as can be seen in the Final EA, Appendix C, first page, consultation with the USFWS has been initiated and will continue to occur.
36	L. Baiza	<p>Page 4-11, part 4.7.2, and paragraph 1: We believe the environmental design measures to avoid adverse impacts to these significant historic boundary monuments are not sufficient to ensure that no adverse impacts will occur. The fence will exclude the monuments from NPS protection.</p> <p>Also, please include the letter indicating SHPO concurrence with USBP's determination of "no affect to historic properties". It is not currently included in Appendix C.</p> <p>OPCNM believes that the quality of the viewshed and the context of the historic border monuments will be adversely affected by the fence. An important feature of the historic border monuments is the view of the vast expanse of land on both sides of the border, a view that provides context for the border</p>	<p>D. The monuments will remain accessible via man gates to be installed per the CBP/ USIBWC MOA and RFP.</p> <p>D. See the Final EA, on page 121 and 122 of Appendix C. The letter is dated June 8, 2007.</p> <p>D. The fence would be designed so as not to impede the function, value, or stability of the border monuments. Further, as discussed in the Final EA, the Arizona SHPO has concurred with CBP's determination that no historic properties would be impacted by the proposed action.</p>

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		monuments. The impact of the fence on these values should be evaluated in this FEA.	
37	L. Baiza	Page 4-13, part 4.8.2, first paragraph: Instead of spraying water as a dust palliative, we recommend using a product similar to lignosulfonate. Not only a dust palliative, lignosulfonate will stabilize the road surface and reduce maintenance costs.	A. Water would be used during construction for dust suppression and compaction. Soil stabilizers, such as lignonsulfate, will be applied after construction is complete to provide a more stable driving surface.

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38	L. Baiza	Page 4-15, part 4.10.2: Property value reduction is not of concern to the monument.	A. Noted.
39	L. Baiza	Page 4-16, part 4.12.2: As previously mentioned, we disagree with the conclusion that the aesthetic impacts would be insignificant. The comparison between trash/litter scatter and this proposed fence is not even close to being comparable. We can get the litter picked up and this impact is removed, not the same with the fence especially over monument hill.	D. See response to comment number 14, part 3.

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40	L. Baiza	Page 4-17, part 4.13.2: The construction contractor should be required to rinse concrete truck mixers and other equipment out side of the Roosevelt Reservation and the monument lands.	A. The document was revised in Section 6.5 to read, "Additionally, all concrete trucks will be washed outside of the project corridor as well as OPCNM lands."
41	L. Baiza	Page 5-2, table 5-1: The table and the ensuing evaluation should include all ongoing USBP, National Guard, and other border-related operations, such as checkpoints, observation towers, scouting sites, off-road vehicle travel, helicopter activities and other actions having environmental impacts that have not been included. One example is the re-opening and continued use of formerly closed roads in wilderness areas.	D. The past, present, and reasonably foreseeable USBP actions within the region have been included in Table 5-1 and evaluated in the Final EA.

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42	L. Baiza	<p>Page 5-3, Land use: Disagree with the statement that “alteration of 7 acres of land on the OPCNM would not be considered cumulatively significant as the OPCNM encompasses over 330,000 acres”. OPCNM legislation or General Management Plan does not identify excess lands within the monument boundaries. If we wanted to parallel your statement to this project then the 0.65 miles of fence over Sonoyta Hill encompasses a similarly less percentage of the 225 miles of border fence that DHS is proposing to construct! It’s not about the acreage lost but about the resources impacted on this small area due to this project.</p> <p>Soils: As previously mentioned, two soil types that are prone to accelerated erosion occur in the proposed project area. The writers may be incorrectly interpreting Natural Resource Conservation Service soil descriptions, which indicate a low erosion potential for these soils. When dirt roads are built on these soils, the high and nearly inescapable potential for erosion is widely known. Increasing the width of the road (and de-vegetated area), increased blading and increased vehicle traffic contribute to significant cumulative impacts. Also please address what will be done with spoils from ditches cut for the concrete footer.</p>	<p>D. CBP analysis concludes that the use of less than 0.0001 percent of the OPCNM would not constitute a significant impact. The additional 225 miles of fence are identified and their impacts to various resources described in the cumulative impact section.</p> <p>D. According to NRCS’s Web Soil Survey, the soils in the project corridor, in particular, the Antho and Gilman soils have a slight erosion rating. Included is the NRCS’s explanation of what the ratings mean,</p> <p>“The ratings in this interpretation indicate the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil surface. The ratings are based on slope and soil erosion factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.</p> <p>The ratings are both qualitative and numerical. The hazard is described as "slight," "moderate," "severe," or "very severe." A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions; "moderate" indicates that some erosion is likely and that erosion-control measures may be needed; "severe" indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and "very severe" indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.”</p>

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43	L. Baiza	Page 6-1, part 6.1: Please see previous comments about containing concrete rinsate from trucks/equipment.	A. See response to comment number 40.
44	L. Baiza	Page 6-2, part 6.2: We believe that all of the techniques mentioned in this paragraph will be insufficient to reduce or eliminate the accelerated erosion and watershed instability caused by the fence. The accelerated erosion is likely to increase the frequency of road blading and general maintenance. Please provide a long-term plan for addressing this issue.	D. The design of the fence would be such that it does not accelerate erosion or watershed instability. As discussed in response to comment number 42, the soils in the project corridor are considered to have a slight erosion hazard. CBP will continually monitor road and fence conditions and will continually perform required maintenance to repair and mitigate erosion.

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Review Comments Matrix

#	Reviewer	Comment	Response
45	L. Baiza	<p>Page 6-2, paragraph beginning on page 6-2 and extending onto 6-3: The FEA states that a revegetation plan will be implemented by the USBP upon completion of construction activities. If the restoration plan is 'similar to' the one established for the vehicle barrier, it should include pre-construction activities, such as plant salvage. If the USBP implements a revegetation plan after construction is complete, salvage will no longer be an option. When does the USBP plan to consult with the NPS on a restoration plan? Also, who will be monitoring the construction footprint for 3 years after construction?</p>	<p>A. See response to comment number 7.</p>
46	L. Baiza	<p>Page 6-3, part 6.5 Water Resources: Please see earlier comments on the NPS's contribution to the SWPPP.</p> <p>Please explain how the USBP will remove debris during a flood event without posing a safety hazard to the agent. When in flood stage, many washes can not be crossed safely with a vehicle, so vehicle access to flooding drainages will not be possible. Damage to resources will have occurred before debris will be removed.</p> <p>Please explain where the flood debris will be placed. Normally, the debris would be washed into Mexico, which will no longer be an option.</p>	<p>A. See response to comment number 10.</p> <p>D. CBP is in the process of establishing a long-term maintenance contract that will maintain the roads and fence. Debris that collects on the fence will be removed on a regular basis. For safety reasons, we cannot commit to the removal of debris during a flood event.</p> <p>E. Any organic debris would be placed in areas that are to be revegetated and used as a potential seed source for natural revegetation. All other debris would be removed from the project corridor and disposed of properly.</p>

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED INSTALLATION OF 5.2 MILES OF PRIMARY FENCE
NEAR LUKEVILLE, ARIZONA
U.S. BORDER PATROL
TUCSON SECTOR**

Review Comments Matrix

#	Reviewer	Comment	Response
47	L. Baiza	Page 7-1, Agency Coordination: There is no indication that the Zuni Tribe has been contacted regarding this project. It is a federally recognized tribe having affiliation with OPCNM.	E. Consultation was conducted with all tribes that have historically expressed an interest in USBP projects in southern Arizona. The SHPO did not indicate that a tribe was omitted; however, the Zuni will be consulted with accordingly.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

P.O. Box 1306

Albuquerque, New Mexico 87103

In Reply Refer To:

FWS/R2/NWRS-SUPV/033896

DEC 11 2007

Mr. Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection
Washington, D.C. 20229

Dear Mr. Janson:

Thank you for your letters, dated October 18, 2007, inviting the U.S. Fish and Wildlife Service (Service) to participate as a cooperating agency in development of Supplemental Environmental Assessments (SEA) for proposed construction, maintenance, and operation of tactical infrastructure related to securing various sectors of the U.S./Mexico international border. The Service is committed to continuing a cooperative relationship with U.S. Customs and Border Protection (CBP) to address issues in the vicinity of the border related to security and conservation of natural resources. Towards that goal, we will continue to cooperatively develop best management practices and standard operating procedures with CBP personnel in the various sectors in an effort to minimize environmental impacts associated with border protection.

We appreciate your invitation for the Service to serve as a cooperating agency in completion of National Environmental Policy Act documentation required to assess environmental concerns related to development and operation of border tactical infrastructure. Even though the Service is a Federal agency with land management responsibilities for natural resources that will be affected by the proposed action, we have concluded given the mission of the Service, that it would not be appropriate to assume the role of a cooperating agency in this planning process.

Sincerely,

Regional Director



United States Department of the Interior

U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951

Telephone: (602) 242-0210 Fax: (602) 242-2513



In Reply Refer to:

AESO/SE
22410-2008-F-0011

October 19, 2007

Mr. Eric W. Verwers, Director
Construction and Support Office
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Dear Mr. Verwers:

Thank you for your correspondence (electronic mail) of October 12, 2007, requesting formal consultation pursuant to section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). We received your original letter of August 14, 2007, requesting our concurrence that the Installation of 5.2 Miles of Primary Fence near Lukeville, Border Patrol (BP) Tucson Sector Project, Pima County, Arizona (proposed project), may affect, but is not likely to adversely affect, the federally endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*) and will have no effect on the endangered Sonoran pronghorn (*Antilocapra americana sonoriensis*). On October 9, 2007, we held a conference call with Chris Ingram and Josh McEnany of Gulf South Research Corporation, to discuss the project's effects on the Sonoran pronghorn and lesser long-nosed bat. During the call, you revised your determination and concluded that the project may result in adverse effects to both species and that formal section 7 consultation is warranted. This determination was confirmed in your October 12, 2007, electronic mail.

The consultation concerns the possible effects of your proposed project, as described in the "Draft Environmental Assessment for the Proposed Installation of 5.2 Miles of Primary Fence near Lukeville, Arizona, US. Border Patrol (BP) Tucson Sector" (DEA). You have determined that the project may adversely affect the endangered Sonoran pronghorn and the endangered lesser long-nosed bat.

To complete our Biological Opinion (BO) on project effects to the Sonoran pronghorn and lesser long-nosed bat, we request that you provide us with the following information (we will include your response in the "description of the proposed action" in the BO):

- A complete description of project timing (i.e., when project construction will commence; how long construction will take; how often fence and road maintenance will occur and when; etc.).
- A complete description of the fence design and fence maintenance techniques and schedule. We recommend gaps (maximum width possible) be incorporated into the fence design to allow for passage of small and medium-sized animals. According to the Research and Endangered Species Coordinator at Organ Pipe Cactus National Monument (OPNCNM), after significant rainfall events, debris becomes lodged on the OPNCNM permanent vehicle barriers (PVBs) (six inch-wide posts on five-foot centers), which creates a dam that causes water to pool upstream (up to 100+ feet) and laterally (up to 300+ feet) (electronic mail from Tim Tibbits, October 4, 2007). Therefore, it would be helpful to specifically describe how the pedestrian fence will be designed in wash areas to, as stated in the DEA, ensure proper conveyance of floodwaters and to eliminate the potential to cause backwater flooding on either side of the border. Describe how and how often the fence and adjacent road will be maintained. Describe in detail how and how often the fence will be monitored and maintained during rainfall events to ensure it is not impeding proper water conveyance; additionally include who will be responsible for these activities.
- An analysis of how the project (both the fence and associated vegetation clearing) will affect hydrology and erosion in the area and how potential increases in erosion and changes in hydrology will affect resources, such as columnar cacti.
- A statement clarifying if water will be used for fence construction. If it will be used, please describe from where the water will be taken. As we stated in our July 10, 2007, letter regarding this project, we do not recommend any groundwater be extracted from the area for project purposes, as any groundwater pumping could result in degradation or loss of critical habitat and mortality of Quitobaquito pupfish and other wetland species at the Quitobaquito pond.
- A description of the approximate number of saguaros and organ pipe cactus that will be impacted on Sonoyta Hill and those that will be impacted in the other project areas. Based on our October 9, 2007, conversation with Gulf South Research Corporation, most impacts to columnar cacti will occur on Sonoyta Hill. To greatly reduce project impacts to columnar cacti and consequently to the lesser long-nosed bat, we recommend that the fence not be constructed over Sonoyta Hill. If the fence is built over Sonoyta Hill, we recommend that this proposed project footprint be reduced to the greatest extent possible.
- A complete description of project access roads and use of these roads. Page 2-3 of the DEA states that access would include use of the existing patrol road adjacent to the U.S.-Mexico border as well as South Puerto Blanco and the north-south access roads constructed by the National Park Service (NPS). Please clarify the north-south access roads to which you are referring. The only north-south access road of which we are aware is the one located about 0.75 mile west of Lukeville (to the east of Sonoyta Hill) that passes through the old Dowling Ranch area and connects South Puerto Blanco Drive to the border road. This road, however, is an old recovering ranch road, neither constructed nor used by NPS. Though its

construction and use has never undergone section 7 consultation, it is currently used by the BP. If this is the road to which you are referring, please provide us with a description of the road and adjacent area (size of the road, vegetation community through which the road passes, etc.) and describe the proposed use of the road during project-related activities (i.e., how often it will be used by BP or contractors during project construction, if it will be used as an access road to conduct fence maintenance, if it will be used for patrol purposes associated with the proposed project). Because construction and use of the road by BP has not been previously consulted on, this will be included as part of the description of your proposed action in our BO. Additionally, please describe the proposed use of all other access roads associated with this project. Provide an analysis of the effects to Sonoran pronghorn and lesser long-nosed bat from use of these roads. We recommend including in this proposed action a provision that all project-related personnel observe the NPS posted speed limit of 25 miles per hour in OPCNM during all project construction and maintenance-related activities.

- An analysis of possible indirect effects to Sonoran pronghorn and lesser long-nosed bat from potential shifts in illegal traffic and ensuing law enforcement caused by the installation of the fence. It is likely that shifts will occur to the west of the fence because this area is easier to access from Mexico, due to its close proximity to Highway 2, than the area to the east of the eastern end of fence. To minimize potential impacts to Sonoran pronghorn, we recommend that interdiction efforts be focused along the border road, to the west of the fence, to prevent illegal traffic from entering prime Sonoran pronghorn habitat in western OPCNM and eastern Cabeza Prieta National Wildlife Refuge.
- A detailed cactus salvage plan or written agreement among Army Corps of Engineers (ACOE) or BP, FWS, and NPS that a detailed salvage plan will be developed with and approved by the NPS by a date agreed to by NPS. As stated in the DEA, the revegetation plan established by NPS for the construction of the PVBs on OPCNM will be implemented within the project corridor upon completion of construction activities. We recommend that the NPS plan be used as a template for your plan; however, a detailed salvage plan should immediately be developed with (or by – see below) and approved by OPCNM. The plan should address: 1) how (techniques to be used) the columnar cacti will be salvaged, including whether the cacti will be relocated to a temporary holding facility to be stabilized for a year before being re-planting, as OPCNM did; 2) where the cacti will be placed; 3) what the success criteria will be and what actions will be taken should the criteria not be met; and 4) how and how often monitoring will be done. Furthermore, please explain who will be responsible for developing and implementing the final plan. We recommend funding be provided to OPCNM to develop and implement the plan if they are able to do so. If they are not, we recommend that a qualified consultant develop and implement the plan in accordance with OPCNM's guidance.

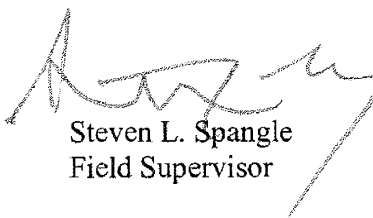
Section 7 allows us up to 90 calendar days to conclude formal consultation with your agency and an additional 45 calendar days to prepare our biological opinion (unless we mutually agree to an extension). The consultation period began on October 12, 2007, the date you requested formal consultation. However, we will not be able to complete our Biological Opinion until we receive the information we requested above. Because you have requested us to expedite this

consultation for the benefit of Homeland Security, we expect to provide you with our draft biological opinion no later than 30 days after receipt of the above-requested information.

We have assigned log number 22410-2008-F-0011 to this consultation. Please refer to that number in future correspondence on this consultation. As a reminder, the Act requires that after initiation of formal consultation, the Federal action agency may not make any irreversible or irretrievable commitment of resources that limits future options. This practice insures agency actions do not preclude the formulation and implementation of reasonable and prudent alternatives that avoid jeopardizing the continued existence of endangered or threatened species or destroying or adversely modifying their critical habitats.

We encourage you to coordinate the review of this project with the Arizona Game and Fish Department and OPCNM. In keeping with our trust responsibilities to Native American Tribes, by this letter we notify the Tohono O'Odham Nation, which will be interested or affected by this proposed action and encourage you to invite the Nation and the Bureau of Indian Affairs to participate in this review process. Thank you for your continued coordination efforts. If you have questions or concerns about this consultation or the consultation process in general, please contact Erin Fernandez at (520/670-6150 x238) or Jim Rorabaugh at (520/670-6150 x230).

Sincerely,



Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
(Attn: Brian Millsap)
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Yuma, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Superintendent, Organ Pipe Cactus National Monument, Ajo, AZ
Refuge Manager, Cabeza Prieta National Wildlife Refuge, Ajo, AZ
Chairperson, Tohono O'Odham Nation, Sells, AZ
Gulf South Research Corporation, Baton Rouge, Louisiana (Attn: Chris Ingram)

TOHONO O'ODHAM NATION
NATURAL RESOURCES DEPARTMENT
WILDLIFE AND VEGETATION MANAGEMENT PROGRAM

PO Box 837, Sells, Arizona 85634 Phone: 520.383.1513 Fax: 520.383.3377 e-mail: karen.howe@tonation-nsn.gov



October 15, 2007

Eric W. Verwers, Director (by regular and e-mail)
Engineering and Construction Support Office
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Re: Draft Environmental Assessment for the Proposed Installation of 5.2 miles of Primary Fence
Near Lukeville, Arizona, U.S. Border Patrol Tucson Section

Dear Mr. Verwers:

The Wildlife and Vegetation Management Program (WVMP) of the Tohono O'odham Nation (Nation) would like to provide to you our comments on the above referenced project (DEA).

The Nation shares its' western boundary with Organ Pipe Cactus National Monument (OPCNM) which encompasses the project area. Due to this proximity impacts from this project may directly, and indirectly, affect the Nation's biological resources.

As a summary to the entire document the draft Finding of No Significant Impact (FONSI) will provide the basis for most of our comments which are as follows:

1. Page FONSI-2, Alternatives. Only two alternatives are presented for this project. We feel this is inadequate for the stated purpose and need of this project especially in regard to mitigation for permanent impacts to wildlife corridors that a fence would present. Other alternatives could take into account different styles of fence as well as placement of gaps to provide for large wildlife movement.
2. Page FONSI-2, Alternative 2. Stated in this paragraph as well as in many places within the DEA is that "the final design would be developed by the design/build contractor." If this is the case, this document is moot because impacts to the environment cannot be thoroughly assessed and addressed until the final design is known.
3. Page FONSI-2 & -3, Environmental Consequences. The impacts to wildlife movement across the international boundary are characterized as minimal. Are there studies that have been documented/written to support this statement? If so, these need to be referenced.

The generalization of the minimization of indirect adverse affects does not take into account that increased USBP action and the affect of additional agents in these areas will most likely add to the impacts, especially IA apprehensions in undisturbed and wilderness areas on the Nation to the east and the OPCNM and Cabeza Prieta National Wildlife Refuge (CPNWR) to the west. The statement that illegal pedestrian traffic impacts are “unknown, if, when, or where this shift in traffic may occur” is undermined by the assertion that “wildlife would also still be able to migrate across. . .the border either to the east or west of the project footprint terminus” (Section 4.4.2.2, page 4-5). If a determination can be made for migratory adaptability for wildlife then that would hold true for pedestrian traffic as well and so can be a “known” quantity where this assertion is made throughout the DEA. Flow of IA foot traffic will find the areas of least resistance in the surrounding lands.

4. Page FONSI-3, Environmental Design Measures. Within the FONSI and text of the DEA (Sec. 6.0 Environmental Design Measures) there is no mention of preventive measures to prevent initial invasive species establishment, such as hosing down equipment, vehicles, etc. that provide opportunities for invasive species to be brought to the construction corridor.
5. Page FONSI-4, Biological Resources. See comment 4 above.
6. Page FONSI-4, Water Resources. We appreciate the acknowledgement that work conducted during times of heavy rains greatly impacts the Sonoran Desert environment and that work will cease during those times.

As discussed in Section 4.9, pages 4-12, -13, the water source for construction purposes is unknown making it problematic to assess what local impacts may occur if groundwater is utilized. Is the estimation of 5.2 ac-feet usage for construction over the entire span of construction? Is this number based on the amounts discussed in 4.0, page 4-1? What is the time-frame? Also, there is no source cited for the groundwater water recharge and withdrawal rates. Are these numbers an average and if so, over what period of time? This discussion needs to be expanded to account for the determination of no significant impact.

7. Page 3-4, The Tohono O’odham Nation. “The largest of the four areas within TON” shares approximately 70 miles with Mexico and contains significant cultural and biological resources.
8. Page 5-1, 5.0. Cumulative Impacts. As stated, this section discusses how the project affects the region. The WVMP and other Nation programs that oversee and assess impacts to the Nations’ biological and other resources were not consulted as to how the pedestrian fence may affect these resources.

Land Use. While it states that “less than 0.002 percent of OPCNM total acreage” would be impacted, the land usage as utilized as a north-south migratory and forage path will have a significant impact to wildlife by impeding their movement.

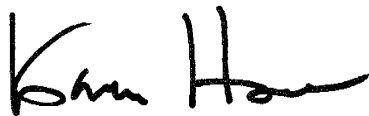
9. Page 5-4, Biological Resources. See Land Use above. Until and when there is discussion about the quality and quantity of resources available to wildlife and plants to provide for their sustainability in the region the contention that over the long-term species and community viability will not be significantly impacted cannot be supported.
10. Page 5-5, Socioeconomics. Possible IA traffic funneled to areas around the pedestrian fence onto the Nation may have some relative, if not significant, cumulative impact to villages on the Nation’s western boundary. If IA foot traffic increases in these areas, there may be a

corresponding increase in public safety issues. The Nation's police and medical services to address these issues would also increase.

11. Page 7-1, Public Involvement. Although a primary stakeholder in the region, the Nation was not consulted and coordinated with in preparation of this document as were other tribes as evidenced in Appendix C. Also noted was the increase of primary fence from 4.2 miles provided to correspondents to 5.2 miles in the current DEA. In order to make accurate assessments for impacts to natural and cultural resources it is important that any changes be provided to interested parties.

Thank you for the opportunity to provide comments to this Draft Environmental Assessment and we look forward to future coordination on this and other projects that may affect the biological resources of the Tohono O'odham Nation. If you have any questions or comments please contact me at 520-383-1513 or karen.howe@tonation-nsn.gov.

Respectfully,



Karen Howe
Ecologist

cc: Ned Norris, Jr., Chairman Tohono O'odham Nation
Isidro Lopez, Vice Chairman, Tohono O'odham Nation
Selso Villegas, Director, Natural Resources Department
Tohono O'odham Legislative Council, Natural Resources Committee
Peter Steere, Manager, Cultural Affairs Program

[electronic signature on file]



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

October 11, 2007

Eric W. Verwers
Director, Engineering and Construction Support Office
Army Corps of Engineers, Fort Worth District
ATTN: CESWF-PM-EC/McGregor
819 Taylor Street, Room 3A28
Fort Worth, TX 76102

Subject: Draft Environmental Assessment for the Proposed Installation of 5.2 miles of Primary Fence near Lukeville, Arizona, United States Border Patrol, Tucson Sector

Dear Mr. Verwers:

The United States Section, International Boundary and Water Commission (USIBWC) would like to thank you for the opportunity to review the subject document. As indicated in previous correspondence related to Border Patrol fence projects, the USIBWC requests that proposed construction activities be accomplished in a manner that does not change historic surface runoff characteristics at the international border. If the project falls within USIBWC jurisdiction or property, the USIBWC will not approve any construction near the international boundary in the United States that increases, concentrates, or relocates overland drainage flows into either country. This requirement is intended to ensure that developments in one country will not cause damage to lands or resources in the other country as required by the 1970 Treaty. We also request that you ensure that structures constructed along the border are maintained in an adequate manner and that liability issues created by these structures are addressed.

As with previous work by Border Patrol along the international boundary, the USIBWC requires that proposed works and related facilities not affect the permanence of existing boundary monuments and not impede access for their maintenance by USIBWC personnel. Any proposed construction must allow for line-of-sight visibility between each of the boundary monuments. The USIBWC requests that engineering drawings be submitted for review and approval before beginning construction on USIBWC jurisdictional property. The drawings must show the location of each component in relationship to the international boundary and nearby monuments.

In order to avoid any confusion and to allow better coordination, the USIBWC requests that a table be added to the Cumulative Effects Section that lists all the border fence projects, by state, that are being programmed for construction. This is due to the overwhelming amount of projects by the Border Patrol along the international border. For your information, the USIBWC has designated Mr. Richard Peace, Division Engineer, Operations and Maintenance Division as the agency single point of contact for border fence and other border security projects. Any future correspondence should be addressed to Mr. Peace at the letterhead address.

If you have any questions regarding these comments, please contact Mr. Richard Peace, at (915) 832-4158.

Sincerely,

A handwritten signature in black ink, appearing to read 'Carlos Peña, Jr.', written in a cursive style.

Carlos Peña, Jr., P.E.
Division Engineer
Environmental Management Division

October 9, 2007

William Fickel, Jr.
Chief, Planning, Environmental and Regulatory Division
U.S. Army Corps of Engineers
Fort Worth District, ATTN: CESWF-PM-EC/McGregor
819 Taylor Street, Room 3A28
Fort Worth, Texas 76102-0300

Dear Mr. Fickel, Jr:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona and adjacent to Organ Pipe Cactus National Monument. Organ Pipe Cactus National Monument staff is submitting the following comments:

Finding of No Significant Impact (FONSI):

There are only two alternatives considered in the draft with one being no action and the other being the proposed or possibly the preferred.

We suggest an additional alternative which would include a combination of pedestrian fencing, remote technology, and law enforcement effort. As an example, the proposed pedestrian fence west of Lukeville would extend to the end for the existing National Park Service vehicle barrier (Normandy Barrier) and a remotely operated video camera placed at the top of Sonoyta/Monument Hill to monitor incursions on either side. This combined with increased law enforcement presence, would likely deter illegal activity from and minimize the impact of the proposed project on resources in this area. It would also minimize the enormous impacts to Sonoyta/Monument Hill resources and possibly keep this work in the realm of an Environment Assessment. With the additional portion of new road especially extending possibly 150 feet from the International Boundary and 90 feet beyond the Roosevelt Reservation the nature of this work will cause irreparable damages to resources now and into the future and will probably require a full Environmental Impact Statement.

Another major concern is the proper conveyance of floodwaters through the pedestrian fence. It should be more clearly defined in the EA and FONSI. Specifically, design drawings should be included as to how floodwaters will be conveyed through the pedestrian fence and debris normally accumulating on existing vehicle barrier dealt with.

Utilizing the design – build concept works in many projects and probably will for this one too. The concern again is that the final EA should include alternative and final drawings of approved designs which will allow for a more consistent review.

FONSI-2, Environmental Consequences: The home range of many species of small mammals and reptiles are localized within, could be contained within the project scope, and cross the international boundary. The presence of a pedestrian fence which could prevent small mammals and reptiles from crossing the international boundary could have more than a minimal impact on individuals as they are denied access to important forage and breeding habitat.

FONSI-3, Environmental Consequences: Based on past security measures near POE's, it is likely that the presence of a pedestrian fence on either side of the Lukeville POE will force IA's into more remote areas of the monument. Trash and debris may be reduced on a local scale in the project corridor; however, the regional deposition of trash from IA's will shift to more remote areas of the monument.

Executive Summary

Page iii: The correct citation year for the Organ Pipe Cactus National Monument vehicle barrier EA and FONSI is 2003.

Proposed Action Alternative:

2.2, Proposed Action Alternative: It is anticipated an area greater than the Roosevelt Reservation (60ft.) will be needed to construct an access road, vehicle turn arounds, and staging area for the pedestrian fence over Sonoyta/Monument Hill. The current grade on Monument Hill is greater than 10%. In order to transport equipment to the work site, switchbacks may be required to traverse either side of Sonoyta/Monument Hill and, consequently, require the access road to be partially located outside of the Roosevelt Reservation. This type of disturbance would not support the current Finding of No Significant Impact and requires additional analysis of effects.

2.2, Proposed Action Alternative: It is difficult to evaluate the effects of the preferred alternative on the surrounding resources because no fence design was included in the document. The final draft document should include the current and alternative designs and analyze the impact of this design on the surrounding resources.

2.2, Proposed Action Alternative: Staging areas and turnarounds could likely be located outside of the Roosevelt Reservation when constructing the new primary fence over Sonoyta/Monument Hill.

Affected Environment

3.3.2, Wildlife: Sonoran toad is widespread throughout the desert and breeds in ephemeral pools and could be found within the project area.

Table 3-1, Federally listed and proposed species: Organ Pipe Cactus National Monument supports one known population of acuña cactus, located approximately 8 miles north of the international boundary.

3.6.1.1, Sonoran Pronghorn: Mexico Highway 2 is not adjacent to the project corridor as it joins the boundary at OPCNM approximately 5 miles west of the POE. Additionally, the existing NPS vehicle barrier was designed to allow for pronghorn passage and is not considered an impediment to Sonoran pronghorn movement (NPS 2003).

3.6.1.3 Acuña cactus: There are 6 known populations of acuña cactus in the United States and Sonora, Mexico (Rutman 2007). One population is located on approximately 1,900 acres in Organ Pipe Cactus National Monument (Rutman 2007).

Figure 3-1, Sonoran Pronghorn Range with Project Corridor: This figure should indicate the location of Mexico Highway 2 as it is referenced in the previous paragraph.

3.4, Unique and Environmentally Sensitive Areas: The document adequately describes the unique habitat and vegetation of Organ Pipe Cactus National Monument and its surrounding lands. However, additional information should be included on any unique and environmentally sensitive areas in the project area. These include the rocky hillside communities on Monument Hill and the many xeroriparian communities which cross through the project area. Xeroriparian communities are a critical component of the Sonoran Desert ecosystem.

3.5, No mention made of consideration for protection of Wilderness Values especially since a major portion of the work will take place adjacent to monument wilderness.

3.7, The Tohono O'odham Nation has direct affiliation with Organ Pipe Cactus National Monument. They should also be contacted to comment on cultural landscapes and traditional properties.

3.12, Aesthetics: Please see comment above for 3.6.1.1 in reference to the proximity of Mexico Highway 2 to the project corridor.

3.12, Aesthetics: The items listed, with the exception of the existing PVB, can not be seen from South Puerto Blanco Drive where the view shed and aesthetics would be impacted from construction of the pedestrian fence. Consider utilizing non reflective non galvanized or coated metals in the design of this fence. Material color should match the natural rust patina on the vehicle barrier in place.

Page 3-16, Photograph 3-2: The photograph is from an area west and outside of the project corridor.

Environmental Consequences

4.0, Environmental Consequences: As stated above, it's difficult to evaluate the effects of the preferred alternative on the surrounding resources because no fence design was included in the document. The next draft document should include the current and alternative designs and analyze the impact of this design on the surrounding resources.

4.1.2, Land Use, Alternative 2: Based on past border security actions, it is likely that IAs will move to more remote areas of the monument as a result of the proposed alternative. This could lead to additional traffic and potential adverse indirect impact in areas away from the pedestrian fence.

4.1.2, Land Use, Alternative 2: The EA indicated that 7 acres outside of the Roosevelt Reserve will be impacted from this access. However, an engineered drawing of the proposed route up and over "Sonoyta Hill" should be completed and included in the EA along with an analysis of the amount of land which will be disturbed from this route.

4.2.2, Soils, Alternative 2: The approximate acreage of soils to be impacted by this alternative should also include soils for the access road over "Sonoyta Hill". In the design water diversion and soil retention structures will need to be considered for the cleared area over Sonoyta/Monument Hill.

4.3.2.2, Wildlife, Alternative 2: Please support the statement "...previously disturbed, and the remainder has limited vegetation, which is now considered poor quality habitat." with a citation supporting this statement and description of what wildlife species this would be considered poor habitat.

4.3.2.2, Wildlife, Alternative 2: The statement "...due to tens of thousands of acres of suitable, similar habitat adjacent to the project corridor." is not accurate. OPCNM contains a mosaic of diverse habitat ranging Sonoran desert scrub to temperate mountain communities. Wildlife in OPCNM is diverse and many are found only in localized areas; such as the Acuña cactus, Senita cactus, Sonoyta mud turtle, and desert tortoise. Desert tortoise is present in several areas within the project scope and the fence design should ensure adequate passage for desert tortoise between the United States and Mexico.

4.3.3.2, Non-native and invasive species, Alternative 2: The document states that "With the exception of Sonoyta Hills, this area has been previously disturbed from the construction of the existing PVBS". This is not an accurate statement as the NPS vehicle barrier project scope was 30 ft. from the international border with the exception of 60 ft for staging areas. The scope for this project is 60 ft from the international border.

4.3.3.2, Non-native and invasive species, Alternative 2: Please support the following statement "Disturbances would occur adjacent to existing roads and would not create new dispersal corridors or result in the expansion of non-native or invasive plant species distributions." with a citation. Once introduced and established, invasive species can spread by human and/or animal vector and wind.

4.4.2, Unique and Environmentally Sensitive Areas, Alternative 2: The following two statements contradict each other:

“The construction crew and equipment would access the project corridor along the border road entirely within the Roosevelt Reservation, limiting visual and noise impacts to the OPCNM”.

“However, the use of South Puerto Blanco Road would be required to access the project corridor on the western face of Sonoyta Hill.”

Please clarify this discrepancy.

Page 4-7, 4.4.2, Unique and Environmentally Sensitive Areas, Alternative 2: The first paragraph address aesthetics in several places, however the subheading indicates the topic is “Unique and Environmentally Sensitive Areas”.

4.4.2, Unique and Environmentally Sensitive Areas, Alternative 2: Due to the open terrain which typifies OPCNM, the proposed action would be visible from areas outside of the disturbed area, including Gachado Line Camp, South Puerto Blanco Road, the El Camino Del Dos Republicos.

4.7.2, Cultural Resources, Alternative 2: Proposed Action Alternative: The NPS monitors the condition of its List of Classified Structures (LCS). International Boundary Monument 166, 167, and 168 are on the NPS LCS. The EA should describe how NPS staff will access the sites post construction.

4.9.2, Water Resources, Alternative 2: The National Park Service is concerned about the potential for water to be restricted through washes which the pedestrian barrier will cross. During high water events, debris can build up against any barrier in washes (Photo 1) and change water flow direction and pattern and channel water along the road to an area of less resistance (Photo 2). Any change to water flow direction and pattern will, in turn, change the hydrology of the area on a local and, if large, enough, general scale on both the United States and Mexico side of the international border. The pedestrian fence design should accommodate water flow through the fence without changing hydrologic function of the area.

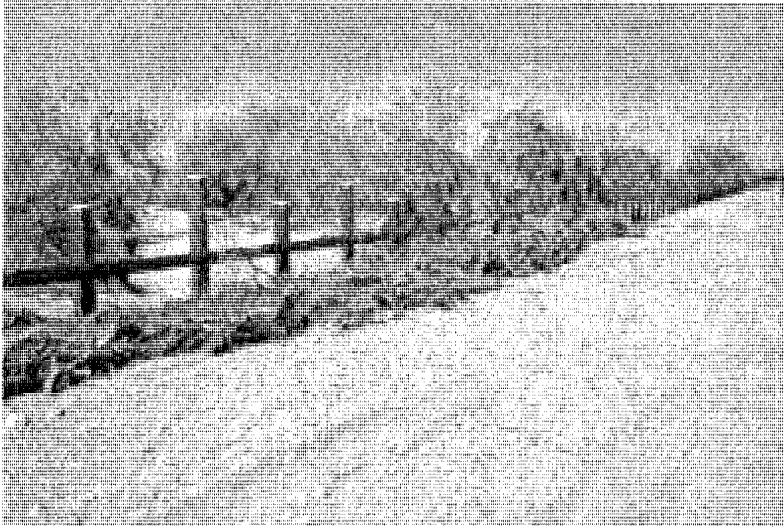


Photo 1: Debris backup against the vehicle barrier during one high water flow event at Vulture Wash, Organ Pipe Cactus National Monument, 2005.



Photo 2: Erosion around a vehicle barrier post during one high water flow event, Organ Pipe Cactus National Monument 2005.

4.12.2, Aesthetics, Alternative 2: The construction of a pedestrian fence over Sonoyta Hill would constitute a long-term adverse impact to the visual quality of this area, which is visible from State Highway 85, Lukeville and South Puerto Blanco Road.

Page 5-2, Table 5-1: There are several discrepancies in the Approximate Distance From Project Corridor (miles) column. Specifically:

- Lease of an existing vehicle maintenance facility in Ajo, Arizona = 40 miles.
- Proposed construction of 36 miles of pedestrian barrier, 35 miles of patrol and drag road, eight water wells, two new temporary staging areas, five existing staging areas, and approximately 7.5 miles of improvements to north-south access roads = 15 miles
- Proposed acquisition of 30 acres adjacent to the USBP Ajo station for horse corral, station expansion, and parking = 30 miles.

Page 5-3, Cumulative Impact: The correct citation is Kralovec 2007.

Page 5-4, Cumulative Impact, Biological Resources: Please define 'suitable habitat' in lack of and vast amounts in terms of species composition the statement "...result in insignificant cumulative impacts to vegetation communities and wildlife populations due to the lack of suitable habitat in the project corridor and vast amounts of suitable habitat surrounding the project corridor." Also, please support this statement with a citation which explains which species the habitat is unsuitable for in the project corridor.

6.3, Environmental Design Measures, Biological Resources:

6.4, Environmental Design Measures, Cultural Resources: The document should describe what type of buffers will be employed to protect International Boundary Monument 166, 167, and 168.

There are several other elements which should be considered and inclusive of the final Environmental Assessment for this project;

- Contractor staging sites and access to specific areas along the fence line
- Designate water source opportunities for the contractors-the monument is prohibited from selling water to outside contractors.
- Define responsible party for continued maintenance of fence and roadway.

Sharing a couple of final recommendations in general; I would once again ask you to fully evaluate the benefits of continuing the pedestrian fence over Sonoyta/Monument Hill verses ending it at the end of our Normandy Barriers. Our preference if asked would be to save this funding and utilize it elsewhere along the border. The other recommendation is to be sure the new design of this pedestrian fence is incorporated into the vehicle barrier in place and allows for continued maintenance of these fences for future out years. We do not want to see a second fence built prohibiting access to the vehicle barrier in place or for that matter placing employees in jeopardy with no immediate retrieval place if the situation requires it.

Thanks again and I look forward to your Final Environmental Assessment.

Sincerely,

Lee Baiza
Superintendent, Organ Pipe Cactus National Monument

Cc:Robert Frankeberger, State Historic Preservation Officer
Peter L. Steere, Manager Cultural Affairs Office, Tohono O'odham
Dion Ethell, Public Lands Liaison, U.S. Department of Homeland Security



THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT

2221 WEST GREENWAY ROAD
PHOENIX, AZ 85023-4399
(602) 942-3000 • AZGFD.GOV

GOVERNOR
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DEPUTY DIRECTOR
STEVE K. FERRELL



October 5, 2007

U.S. Army Corps of Engineers
Fort Worth District
ATTN: CESWF-PM-EC/McGregor
819 Taylor Street, Room 3A28
Fort Worth, TX 76102

Re: Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

To Whom It May Concern:

The Arizona Game and Fish Department (Department) appreciates the opportunity to comment on the Draft Environmental Assessment (DEA) and Finding of No Significant Impact (FONSI) for the proposed project located near the Lukeville Port of Entry. The Department recognizes national security as a top priority for the State of Arizona. That being stated, the Department is concerned that much of the tactical infrastructure (pedestrian fencing, roads, etc.) associated with border protections against increasing numbers of undocumented immigrants is fragmenting and degrading important habitats, impacting genetic viability of species, and leading to further declines of currently imperiled and rare species.

For the proposed project analyzed within the DEA, the Department is concerned about increased activities by Border Agents at the termination points of the fence. The added activities and protection measures, without consideration of "virtual" fencing may further impact and degrades habitat and movement abilities for wildlife. We advocate for mitigating measures to support and conserve wildlife, including opportunities to collect baseline information to better document the impacts of illegal activities and Border Operations on wildlife and wildlife habitat.

The DEA does not address species other than federally listed or candidate species. There are two reptile species of interest that have the potential to be impacted directly by construction of the fence through the Sonoyta Hills; Sonoran desert tortoise and Mexican rosy boas. We recommend that construction activities follow the Department's "Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects" which can be found at <http://www.azgfd.gov/hgis/pdfs/Tortoisehandlingguidelines.pdf>. In this particular case, the Department recommends that any tortoises that are encountered should be kept within the Sonoyta Hills, and not displaced farther away.

October 5, 2007

2

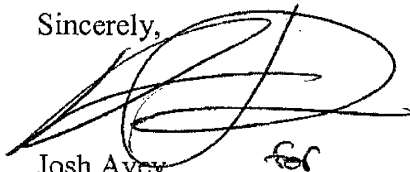
Mexican rosy Boas are considered a Species of Greatest Conservation Need in the Department's State Wildlife Action Plan. The distribution of Mexican rosy boas is not well understood, and local population status is unknown. While the Department does not have specific recommendations dealing with rosy boas, the desert tortoise handling guidelines would also apply to this species with respect to searching the site and moving the animals.

Understanding that for many proposed security infrastructure projects, there can be no reliable conservation measures taken to reduce or mitigate impacts to wildlife, given the federal goal of reducing and managing the flow of undocumented immigrants into the U.S. Therefore, the Department must determine how to meet our agency's Mission, under conditions which are difficult to offset, given the security and protection priorities. In this regard, the Department provides the following recommendations:

- We request increased and upfront coordination between the BP, CBP, DHS, and other border protection agencies, including meeting with staff to discuss plans and infrastructure proposals (such as road construction, construction of fencing and barriers, etc.) and potential impacts on wildlife. Advanced coordination will allow our agencies to identify and resolve potential issues up front.
- Dedicate funding for ecological mitigation and restoration activities, including wildlife enhancement and conservation projects.
- Use low-impact infrastructure, where appropriate, to mitigate the environmental effects of undocumented migration and other illegal activities.
- Emphasize high-tech surveillance alternatives (unmanned aerial surveillance vehicles, motion sensors, laser barriers and infrared cameras) that can improve border security efforts and minimize impacts on wildlife and sensitive habitats.
- Limit the use of pedestrian fences to urban and adjacent areas. Use vehicle barriers (wildlife friendly) in conjunction with virtual fencing in areas where hard infrastructure is necessary and appropriate.

In summary, the Department requests that immediate efforts be made to improve communications between our agencies to improve opportunities to address and mitigate impacts to wildlife and wildlife habitats from border infrastructure projects and activities. Please coordinate with me at 602-789-3605 or javey@azgfd.gov. We appreciate the opportunity to provide these concerns and look forward to speaking with appropriate staff in the near future.

Sincerely,

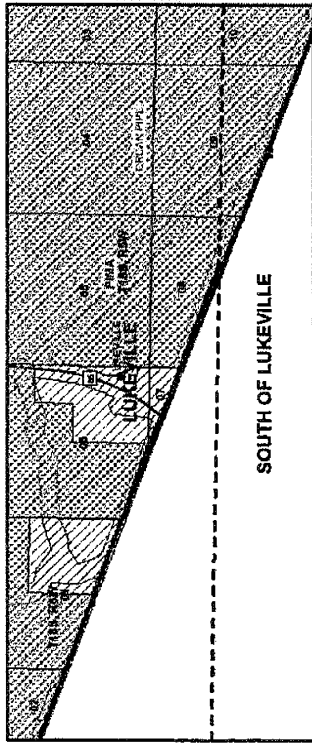


Josh Avey
Habitat Branch Chief

cc: Bill Van Pelt, Nongame Birds and Mammals Manager
Thomas Jones, Amphibians and Reptiles Program Manager
Bill Knowles, Region IV Habitat Program Specialist

Arizona's On-line Environmental Review Tool
 Search ID: 20071005004081
 Project Name: Lukeville POE Pedestrian Fencing
 Date: 10/5/2007 11:23:51 AM

Project Location



Project Name: Lukeville POE Pedestrian Fencing
Submitted By: PEP Project Evaluation Program
On behalf of: USBP
Project Search ID: 20071005004081
Date: 10/5/2007 11:23:44 AM
Project Category: Law Enforcement Activities Associated with the Border, Fencing
Project Coordinates (UTM Zone 12-NAD 83): 330326.507, 3527732.378 meter
Project Length: 6018.992 meter
County: PIMA
USGS 7.5 Minute Quadrangle ID: 1810
Quadrangle Name: LUKEVILLE
Project locality is not anticipated to change

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	ESA	USFS	BLM	State
Anthochaaris cethura	Felder's Orange Tip		S		
Antilocapra americana sonoriensis	Sonoran Pronghorn	LE	S		WSC
Bat Colony					
Gastrophryne olivacea	Great Plains Narrow-mouthed Toad				WSC
Gopherus agassizii (Sonoran Population)	Sonoran Desert Tortoise	SC			WSC
Lophocereus schottii	Senita				SR
Myotis velifer	Cave Myotis	SC		S	
Peniocereus striatus	Dahlia Rooted Cereus				SR
Stenocereus thurberi	Organ Pipe Cactus				SR
Tumamoca mactoudgalii	Tumamoc Globeberry		S	S	SR

Arizona's On-line Environmental Review Tool

Search ID: 20071005004081

Project Name: Lukeville POE Pedestrian Fencing

Date: 10/5/2007 11:23:51 AM

Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: <http://arizonaes.fws.gov/>.

Phoenix Main Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
Phone 602-242-0210
Fax 602-242-2513

Tucson Sub-Office
201 North Bonita, Suite 141
Tucson, AZ 85745
Phone 520-670-6144
Fax 520-670-6154

Flagstaff Sub-Office
323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

Arizona's On-line Environmental Review Tool
Search ID: 20071005004081
Project Name: Lukeville POE Pedestrian Fencing
Date: 10/5/2007 11:23:51 AM

management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Law Enforcement Activities Associated with the Border, Fencing

Project Type Recommendations:

Based on the project type entered; coordination with State Historic Preservation Office may be required
<http://www.pr.state.az.us/partnerships/shpo/shpo.html#anchor561695>

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Recommendations will be dependant upon goals of the fence project and the wildlife species expected to be impacted by the project. Please

contact the Project Evaluation Program for further fencing recommendations and specifications.

Project Location and/or Species recommendations:

HDMS records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:

Ecological Services Office
US Fish and Wildlife Service

2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

HDMS records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area (refer to page 1 of the receipt). Please contact:

Arizona Department of Agriculture

1688 W Adams
Phoenix, AZ 85007
Phone: 602-542-4373

HDMS records indicate that Sonoran desert tortoise have been documented within the vicinity of your project area (refer to the species list on page 1 of the receipt). Please review the Tortoise Handling Guidelines found on the Environmental Review Home Page.

<http://www.azgfd.gov/hgis/guidelines.aspx>

Arizona's On-line Environmental Review Tool
Search ID: 20071005004081
Project Name: Lukeville POE Pedestrian Fencing
Date: 10/5/2007 11:23:51 AM

Phone Number: (602) 789-3600
Fax Number: (602) 789-3928

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1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you will not use this website for any other purpose.
2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.

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The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. **Further coordination requires the submittal of this Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).**
7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
2221 West Greenway Road
Phoenix, Arizona 85023-4312

Arizona's On-line Environmental Review Tool

Search ID: 20071005004081

Project Name: Lukeville POE Pedestrian Fencing

Date: 10/5/2007 11:23:51 AM

this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this system for other than its intended purposes are prohibited.

This website maintains a record of each environmental review search result as well as all contact information. This information is maintained for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

if the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6) months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Further coordination requires the submittal of this Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/organization: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____



TOHONO O'ODHAM NATION
CULTURAL AFFAIRS PROGRAM
P.O. BOX 837 • SELLS, ARIZONA 85634
Telephone (520) 383-3622 • Fax (520) 383-3377



September 20, 2007

Eric W. Verwers
Director, Engineering and Construction Support Office
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas
76102-0300

Dear Mr. Verwers:

Thank you for consulting with the Tohono O'odham Nation on:

The Draft Environment Assessment for the Proposed Installation of 5.2 Miles of Primary Fence Near Lukeville, Arizona, U.S. Border Patrol, Tucson Sector."

The Cultural Affairs Office has the following comments:

- 1. FONSI-page 2 – Only two alternatives considered – 1) the no action alternative and 2) the proposed action alternative**

It appears that the proposed action alternative is the "preferred alternative" although this is not stated.

Other alternatives should have been considered – perhaps one that would involve a natural barrier of vegetation interwoven with the existing vehicle barrier fence.

- 2. FONSI-page 2 – Alternative 2 – 150 ft ROW on Sonoyta Hill is very large and will result in significant impacts to vegetation and wildlife**
- 3. FONSI-page 2 – Alternative 2 – "The Final Design would be developed by design-build contractor." Same mistake made here that was made on the Sasabe Project – you cannot prepare and issue an EA that is supposed to evaluate impacts of 5.2 miles of pedestrian fence and not include a final design. This is unacceptable – final design or at least several option designs need to be presented as part of the EA review – this need to be addressed in a new draft EA that includes more specific designs.**

4. FONSI-page 2 – Environmental Consequences –

“The viewshed of the OPCNM would be impacted by the construction of the pedestrian fence.”

Yes this is true – there is a need to complete a viewshed study and cultural landscape impact study as part of the evaluation process. This has not been done yet.

5. FONSI – page 3 – “the potential exists for shifts in illegal pedestrian traffic to adversely impact resources outside of the project corridor.”

This statement is obvious – illegal pedestrian traffic will go around the east and west side of the pedestrian fence – concentrating impacts on other parts of OPCNM and of course concentrating increased illegal traffic onto the Tohono O’odham Nation east of the Ajo Mountains. The redirection of illegal pedestrian traffic onto the Tohono O’odham Nation was not addressed in the Sasabe EA nor is it addressed in this EA.

The appropriateness of this type of pedestrian fence design in a remote rural wilderness area without 24/7 ground patrol is questionable, just as it was for the Sasabe fence project.

6. FONSI – page 3 – Environmental Design Measures – for these measures to work – there will need to be monitors on site throughout the construction process – past experience strongly suggests that construction contractors will not do an adequate job of self-monitoring.

How will a contractor recognize a previously unknown cultural resource such a buried archaeological site, a burial or a shrine ?

You need to have and fund archaeological monitors and cultural monitors from the Tohono O’odham Nation on site throughout the construction project.

7. FONSI-page 5 – FINDING – “Proposed Action Alternative will not have a significant effect on the environment – Therefore no further environmental impact analysis is warranted.”

Disagree – this conclusion is not supported by EA is present form.

8. page 1-5 – “In some locations, a fence is a critical element of border security”

if a pedestrian fence is built in a remote rural area – unless there is adequate 24/7 ground patrol – the fence is easily breached by going around it, over it, under it or through it

9. **page 2.1 Section 2.0 – as stated before an adequate range of alternatives was not addressed**

Other alternatives should have been considered – perhaps one that would involve a natural barrier of vegetation interwoven with the existing vehicle barrier fence.

10. **page 3.1 – Land Use- March 2006 MOU between DHS, USDI and USDA stating that “all parties recognize that CBP operation and construction within the Roosevelt Reservation is the intended land use of the reservation”**

This MOU is flawed – the Tohono O’odham Nation and other border tribes were not consulted nor invited to participate in the MOU – All of these lands is OPCNM are the traditional-use lands of the Tohono O’odham Nation

This MOU may be in violation of the provisions of the Gadsden Purchase with Mexico in 1854 and hereto in reference to provisions of the Treaty of Guadalupe Hidalgo that ended the United States War with Mexico in 1848, regarding the rights of indigenous peoples in the border area.

11. **page 3.1-3.2 – “It should be noted that the area outside of the 60 ft Roosevelt Reservation that would be used in order to build the fence over Sonoyta Hill would require use of OPCNM lands, Coordination with the OPCNM has occurred and the OPCNM has indicated their support for the fence construction” (Harper 2007).**

the Tohono O’odham Nation was not consulted on this July 2007 agreement that approved a 150 ft ROW corridor on Sonoyta Hill. The archaeological survey reports received for review by the Tohono O’odham Nation did not include a 150 survey corridor on Sonoyta Hill – no Traditional Cultural Place consultation has been completed for this increased ROW on Sonoyta Hill. A consultation and field trip with Hia Ced O’odham elders from the needs to be arranged and completed as part of Traditional Cultural Landscape study.

12. **page 3-4 – Cabeza Prieta National Wildlife Refuge, The Tohono O’odham,**

no mention made of direct and indirect impacts on the Cabeza Prieta National Wildlife Refuge by diverting more illegal pedestrian traffic onto the refuge.

no mention made of direct and indirect impacts on the Tohono O’odham Nation by diverting more illegal pedestrian traffic onto the lands of the Tohono O’odham Nation

13. page 3.5 – Wilderness – no mentioned made of direct and indirect impacts on OPCNM wilderness areas by diverting and concentrating illegal pedestrian traffic

14. page 3-10 Section 3.7 – Cultural Resources

review of federal cultural resource laws should include the Archaeological Resources Protection Act (ARPA) and the Native American Graves Protection and Repatriation Act (NAGPRA)

page 3-11 table showing cultural periods is oversimplified-should be more detailed

3.7.2 - Previous Investigations - please send copy of 2002 cultural resource report to Cultural Affairs office for review

3.7.3 – Current Investigation – please send copy of this recent cultural resources survey referenced, Tohono O’odham Nation has not received this.

For this type of intrusive tall fence a cultural landscape/viewshed study should be completed in order to evaluate impacts – please send copy of study report when it is completed – this should have been done as part of the cultural resources survey work before the draft EA was issued.

15. page 3-13 – Section 3.10.1 – Environmental Justice

E.O. 12898 – Environmental Justice was designed to identify and evaluate effects of Federal programs and projects on minority and low-income populations in the U.S.

This project has not addressed the fact that this fence will likely divert illegal pedestrian traffic onto the Tohono O’odham Nation to the east.

This impact needs to be evaluated.

16. page 3-15 – Section 3.12 Aesthetics

This section of the EA misses the point completely. The EA is supposed to address the impacts of the proposed pedestrian fence project on the landscape of the project area – building a tall intrusive pedestrian fence will have impacts on the cultural and physical landscape.

As mentioned earlier, a cultural landscape/viewshed study needs to be completed for this proposed project – this type of study would evaluate

the impacts of the proposed fence design on the cultural and physical landscape. This type of study should have been done before the draft EA was done.

Since the project does not have a fence design yet – this problem needs to be solved before a cultural landscape/viewshed study can be done

17. Section 4.0 Environmental Consequences

page 4.1 – paragraph 3 – “At this time the design of the border fence is not known”

An EA cannot adequately analyze and evaluate impacts of a construction project if the project design is “not known”

The EA needs to be rewritten to address the design problem.

All of the impacts discussed in this section are difficult to evaluate when you don’t know what the construction design is going to be.

The 150 ft ROW corridor proposed on Sonoyta Hill raises concerns about impacts on vegetation, wildlife and cultural sites

Sonoyta Hill needs to be evaluated as a possible Traditional Cultural Place – a trip of tribal elders to visit this sites Sonoyta Hill needs to be arranged to evaluate its significance if any as a Traditional Cultural Place – the National Historic Preservation Act of 1966 requires this.

18. page 4-10 – Section 4.7 Cultural Resources

Copies of the 2002 and 2007 cultural resources report have not been provided to the Tohono O’odham Nation for review.

This section of the report cannot be adequately evaluated until these reports have been reviewed – please send them as soon as possible

As stated earlier – a Cultural Landscape/Viewshed study needs to be completed so impacts of this project with a “unknown design” can be evaluated – this type of study involves input from archaeologists, historians, landscape specialists with the NPS and members of the Tohono O’odham Nation.

Any type of construction project such as a tall fence or a power line has the potential to create impacts on the visual manifestation of the cultural landscape and aesthetic view shed – this EA does not address this issue.

Since previously unknown cultural resources may be encountered during construction such as a buried archaeological site, a burial or a shrine may be encountered – archaeological monitors and cultural monitors from the Tohono O’odham Nation need to be present throughout this construction project.

As stated earlier the selected construction contractor does not have the expertise to identify cultural resources that may be encountered during construction – so DHS/BP needs to provide adequate funding to cover the costs of archaeological monitors and cultural monitors from the Tohono O’odham Nation for the entire length of the proposed construction project.

The monitors should be identified as part of the cultural resources treatment plan for this project.

19. page 4-15 – Section 4.12 Aesthetics

Please refer to Nos. 4, 14, 17, and 18 that discuss the need to complete a cultural landscape/viewshed study.

20. page 5-1 – Section 5.0 – Cumulative Impacts

In the discussion of cumulative impacts – Table 5-1 is shown to illustrate examples of recently completed or other possible future projects that may involve impacts to the border region by actions of DHS/BP.

The proposed construction of 36 miles of pedestrian barrier, 35 miles of patrol and drag roads, eight water wells, two new staging areas, five existing staging areas and 7.5 miles of improvements to north-south access roads all involve considerable possible impacts to the border lands that will require new EA’s to be done for each projects. The Tohono O’odham Nation needs to be kept informed of all of these projects and copies of draft EA’s, cultural resources reports and biological reports need to be sent for review prior to the draft EA’s being sent out for review.

Where are these proposed projects located – more specific information is needed.

These proposed projects cannot be piggy-backed onto this EA.

page 5-4 Cultural Resources

cannot be adequately evaluated until copies of 2002 and 2007 cultural resource reports sent to Tohono O’odham Nation for review.

full impacts cannot be addressed until a cultural landscape/viewshed study is completed that provides an analysis of the impacts of a tall intrusive fence on the cultural landscape and aesthetic viewshed.

21. page 6.1 – Section 6.0 Environmental Design Measures

please refer to comments No. 6 and 18 for discussion of need to have archaeological and cultural monitors on site during construction

page 6.2 and 6.3 – Cultural Resources

EA states “ if any cultural material is discovered during the construction efforts, then all activities will halt until a qualified archaeologist can be brought in to assess the cultural remains.”

The selected contractor whoever that may be is not qualified to do this.

Archaeological monitors and cultural monitors from the Tohono O’odham Nation who are trained to identify and deal with cultural discoveries whether they are cultural artifacts, buried features, burial or shrines.

DHS/BP must provide adequate funding for these archaeological monitors and cultural monitors from the Tohono O’odham Nation

Burial discovery plan needs to be prepared and included with cultural resources treatment plan.

21. page 7-1 – Section 7.0 Public Involvement

List presented includes other government agencies consulted as part of preparation of the EA

List includes “Federally Recognized Tribes.”

This statement is not true- Tohono O’odham Nation not consulted during preparation of this EA.

Tohono O’odham Nation first consulted when the Draft EA received in the mail.

What other tribes have received the EA ? What other tribes were consulted during EA preparations ?

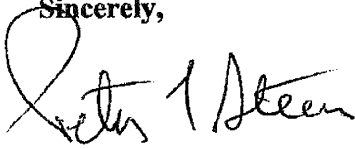
Again DHS/BP has not involved the Tohono O’odham Nation as part of

the consultation and coordination that occurred during the preparation of this EA.

The lands included within the Organ Pipe Cactus National Monument are the "traditional-use lands " of the Tohono O'odham and the Hia Ced Oodham as recognized by the Federal Land Claims Court and Native American Graves Repatriation and Protection Act procedures in Arizona.

We look forward to reviewing a new draft of this EA.

Sincerely,

A handwritten signature in black ink that reads "Peter L. Steere". The signature is written in a cursive style with a large initial "P" and "S".

**Peter L. Steere, Manager
Cultural Affairs Office, Tohono O'odham Nation**

**cc: Lee Baiza, Superintendent, Organ Pipe Cactus National Monument
Joseph Tuomey, Archaeologist, Organ Pipe Cactus National Monument
Nancy Parrish, USACE, Fort Worth**

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED INSTALLATION OF 5.2 MILES OF PRIMARY FENCE
NEAR LUKEVILLE, ARIZONA
U.S. BORDER PATROL
TUCSON SECTOR**

Review Comments Matrix

PROJECT:	AJO DRAFT EA	DATE:	October 17, 2007
PROJECT MILESTONE:	Draft Environmental Assessment for the Proposed Installation of 5.2 Miles of Primary Fence Near Lukeville Arizona		
Response Legend: A - Concur; D = Do Not Concur; E - Exception; X - Delete Comment			
#	Reviewer	Comment	Response
1	P. Steere	FONSI-page 2 Only two alternatives considered – 1) the no action alternative and 2). It appears that the proposed action alternative is the “preferred alternative” although this is not stated. Other alternatives should have been considered – perhaps one that would involve a natural barrier of vegetation interwoven with the existing vehicle barrier fence.	D. A natural barrier of vegetation does not meet the purpose and need of the Proposed Action because it is easily defeatable. E. One other alternative was considered but eliminated from further review. This alternative was to use technology in lieu of infrastructure. Because the use of technology alone would not provide a practical solution to achieving effective control of the border in USBP Tucson Sector. Therefore, this alternative would not meet the purpose and need. See Section 2.3.1 of the Final EA.
2	P. Steere	FONSI-page 2-Alternative 2 150 ft ROW on Sonoyta Hill is very large and will result in significant impacts to vegetation and wildlife	D. The impact over Sonoyta Hill outside of the 60-foot Roosevelt Reservation is limited to only 7 acres. The Organ Pipe Cactus National Monument (OPCNM) is over 330,000 acres; therefore, the Proposed Action Alternative would impact less than 0.002 percent of the OPCNM not within the Roosevelt Reservation and is not considered significant.
3	P. Steere	FONSI-page 2-Alternative 2 “The Final Design would be developed by design-build contractor.” Same mistake made here that was made on the Sasabe Project – you cannot prepare and issue an EA that is supposed to evaluate impacts 5.2 miles of pedestrian fence and not include a final design. This is unacceptable – final design or at least several option designs need to be presented as part	D. The EA does address potential impacts on a worse case scenario, regardless of design. The conceptual design footprint was developed by the design engineers and they believe this will be the maximum footprint needed to accomplish the proposed project.

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4	P. Steere	<p>of the EA review – this need to be addressed in a new draft EA that includes more specific design.</p> <p>FONSI-page 2-Environmental Consequences</p> <p>“The viewshed of the OPCNM would be impacted by the construction of the pedestrian fence.”</p> <p>Yes this is true – there is a need to complete a viewshed study and cultural landscape impact study as part of the evaluation process. This has not been done yet.</p>	<p>D. The TON along with other federally recognized tribes that claim a cultural affinity to the area were contacted in June 2007 and were requested to identify any traditional cultural properties (TCPs) that may potentially be impacted by the proposed fence construction. No response identifying any TCPs near the proposed project corridor was received from the TON or other Federally recognized tribes. No archaeological sites were identified within the project corridor during the archaeological surveys of the project corridor. The 2002 survey conducted by the National Park Service identified two cultural landscapes, Dos Lomitas Ranch/Blankenship Well and Quitobaquito Well. Neither of these cultural landscapes would be impacted by the proposed fence construction. At this time a comprehensive TCP survey of the border area involving the TON and other Federally recognized tribes is in the planning and development stages for future projects along the border.</p>

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5	P. Steere	<p>FONSI-page 3-"the potential exists for shift in illegal pedestrian traffic to adversely impact resources outside of the project corridor." This statement is obvious – illegal pedestrian traffic will go around the east and west side of the pedestrian fence – concentrating impacts on other parts of OPCNM and of course concentrating increased illegal traffic onto the Tohono O’odham Nation east of the Ajo Mountains. The redirection of illegal pedestrian traffic onto the Tohono O’odham Nation was not addressed in the Sasabe EA nor is it addressed in this EA. The appropriateness of this type of pedestrian fence design in a remote rural wilderness area without 24/7 ground patrol is questionable, just as it was for the Sasabe fence project.</p>	<p>D. As indicated in the throughout Section 4 of the Draft EA the impacts of illegal pedestrian traffic are difficult if not impossible to determine due to the shifting of illegal traffic. The project corridor and areas to the west and east is currently patrolled by the USBP 24/7. Additionally, the proposed pedestrian fence would act as a force multiplier and allow the USBP to deploy additional agents to those areas lacking pedestrian fence (i.e., Cabeza Prieta National Wildlife Refuge and the Tohono O’odham Nation).</p>
6	P. Steere	<p>FONSI -page 3 -Environmental Design Measures - for these measures to work - there will need to be monitors on site throughout the construction process - past experience strongly suggests that construction contractors will not do an adequate job of self-monitoring. How will a contractor recognize a previously unknown cultural resource such as a buried archaeological site, a burial or a shrine? You need to have and fund archeological monitors and cultural monitors from the Tohono O’odham Nation on site throughout the construction project.</p>	<p>A. The document now reads, "Construction near the Gachado Line Camp will be monitored by professional archeological monitors." D. No Tohono O’odham Nation monitors are expected to be required.</p>
7	P. Steere	<p>FONSI-page 5 - FINDING - "Proposed Action Alternative will not have a significant effect on the environment - Therefore no further environmental impact analysis is warranted." Disagree – this conclusion is not supported by EA is present form.</p>	<p>D. CBP believes the current EA analyzes all of the potential impacts based on a worse case scenario, and that these impacts are less than significant.</p>
8	P. Steere	<p>page 1-5 - "In some locations, a fence is a critical element of border security" if a pedestrian fence is built in a remote rural area - unless there is adequate 24/7 ground patrol - the fence is easily breached by going around it, over it, under it or through it</p>	<p>A. See response to number 5.</p>

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9	P. Steere	Page 2.1 Section 2.0 - as stated before an adequate range of alternatives was not addressed Other alternatives should have been considered - perhaps one that would involve a natural barrier of vegetation interwoven with the existing vehicle barrier fence.	D. See response to number 1.
10	P. Steere	Page 3-1 – Land Use – March 2006 MOU between DHS, USDI and USDA stating that "all parties recognize that CBP operation and construction within the Roosevelt Reservation is the intended land use of the reservation" This MOU is flawed -the Tohono O'odham Nation and other border tribes were not consulted nor invited to participate in the MOU -All of these lands is OPCNM are the traditional-use lands of the Tohono O'odham Nation This MOU may be in violation of the provisions of the Gadsden Purchase with Mexico in 1854 and hereto in reference to provisions of the Treaty of Guadalupe Hidalgo that ended the United States War with Mexico in 1848, regarding the rights of indigenous peoples in the border area.	D. The legality of the MOU is beyond the scope of this EA.
11	P. Steere	page 3.1-3.2 -"It should be noted that the area outside of the 60 ft Roosevelt Reservation that would be used in order to build the fence over Sonoyta Hill would require use of OPCNM lands, Coordination with the OPCNM has occurred and the OPCNM has indicated their support for the fence construction" (Harper 2007). The Tohono O'odham Nation was not consulted on this July 2007 agreement that approved a 150 ft ROW corridor on Sonoyta Hill The archaeological survey reports received for review by the Tohono O'odham Nation did not include a 150 survey corridor on Sonoyta Hill -no Traditional Cultural Place consultation has been completed for this increased ROW on Sonoyta Hill. A consultation and field trip with Hia Ced O'odham elders from the needs to be arranged and completed as part of Traditional Cultural Landscape study.	E. No agreement has been made between NPS and CBP. The statement, ".....OPCNM has indicated their support for the fence construction (Harper 2007) has been removed from the document." E. See response to number 4.

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12	P. Steere	<p>page 3-4 - Cabeza Prieta National Wildlife Refuge, The Tohono O'odham, no mention made of direct and indirect impacts on the Cabeza Prieta National Wildlife Refuge by diverting more illegal pedestrian traffic onto the refuge.</p> <p>No mention made of direct and indirect impacts on the Tohono O'odham Nation by diverting more illegal pedestrian traffic onto the lands of the Tohono O'odham Nation</p>	D. See Section 4.4.2 of the Draft EA.
13	P. Steere	page 3.5 -Wilderness - no mentioned made of direct and indirect impacts on OPCNM wilderness areas by diverting and concentrating illegal pedestrian traffic	D. See Section 4.5.2 of the Draft EA.

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14	P. Steere	<p>page 3-10 Section 3.7 -Cultural Resources review of federal cultural resource laws should include the Archaeological Resources Protection Act (ARPA) and the Native American Graves Protection and Repatriation Act (NAGPRA)</p> <p>Page 3-11 table showing cultural periods is oversimplified-should be more detailed</p> <p>3.7.2 - Previous Investigations - please send copy of 2002 cultural resource report to Cultural Affairs office for review</p> <p>3.73 - Current Investigation - please send copy of this recent cultural resources survey referenced, Tohono O'odham Nation has not received this.</p> <p>For this type of intrusive tall fence a cultural landscape/viewshed study should be completed in order to evaluate impacts - please send copy of study report when it is completed - this should have been done as part of the cultural resources survey work before the draft EA was issued.</p>	<p>A. Information regarding ARPA and NAGPRA has been included in the Final EA. The document now reads, "Several other important pieces of legislation include the Native American Graves Protection and Repatriation Act (NAGPRA), along with EO 13007 and EO 13175. ARPA strengthened the permitting procedures required for conducting archeological fieldwork on federal lands, originally mandated by the Antiquities Act. It also establishes more rigorous fines and penalties for unauthorized excavation on federal land. NAGPRA mandates the OBP to summarize, inventory, and repatriate cultural items in the possession of or control of the Federal agency to lineal descendants or to culturally affiliated Federally recognized Indian tribes. NAGPRA also requires that certain procedures be followed when there is an intentional excavation of or an inadvertent discovery of human remains. EO 13007 was issued on May 24, 1996 in order to facilitate the implementation of the American Indian Religious Freedom Act of 1978. It specifically charges Federal agencies to: (1) accommodate, to the extent practical, American Indian access to and use of sacred sites by religious practitioners; (2) avoid adversely affecting the physical integrity of sacred sites; and (3) to maintain the confidentiality of these sites. EO 13175 outlines the official U.S. government policy on consultation and coordination with American tribal governments.</p>

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		14 continued.	<p>The order emphasizes formal recognition of the American Indian Tribes' status as... "domestic independent nations" that have entered into treaties with the U.S. guaranteeing their right to self-government. It stipulates that this consultation would be done on a "government to government basis."</p> <p>D. Thank you for the comment but CBP respectfully disagrees.</p> <p>D. The 2002 Cultural Resources report was written and developed by the National Park Service. A copy of the report can be obtained from them.</p>
15	P. Steere	<p>page 3-13 - Section 3.10.1 -Environmental Justice E.O. 12898 -Environmental Justice was designed to identify and evaluate effects of Federal programs and projects on minority and low-income populations in the U.S. This project has not addressed the fact that this fence will likely divert illegal pedestrian traffic onto the Tohono O'odham Nation to the east. This impact needs to be evaluated.</p>	<p>A. A copy of the 2007 Cultural Report will be submitted by USACE to the Tohono O'odham Nation for review.</p> <p>D. See response to number 4.</p> <p>D. The document was revised in Section 4.10.2 to include this paragraph, "indirect impacts could occur to areas outside of the project corridor if illegal pedestrian traffic shifts to other areas of the U.S.-Mexico border (i.e., TON). However, it is impossible to determine what those impacts would be, if any, as the direction of travel is solely at the discretion of the IAs. As mentioned previously, the pedestrian fence would allow the USBP to deploy additional agents to those areas lacking infrastructure to minimize impacts from any potential shift in IA traffic."</p>

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16	P. Steere	<p>page 3-15 -Section 3.12 Aesthetics This section of the EA misses the point completely. The EA is supposed to address the impacts of the proposed pedestrian fence project on the landscape of the project area - building a tall intrusive pedestrian fence will have impacts on the cultural and physical landscape. As mentioned earlier, a cultural landscape/viewshed study needs to be completed for this proposed project - this type of study would evaluate the impacts of the proposed fence design on the cultural and physical landscape. This type of study should have been done before the draft EA was done. Since the project does not have a fence design yet - this problem needs to be solved before a cultural landscape/viewshed study can be done</p>	<p>D. See response to number 4. Aesthetic impacts discussed in Section 4.12 of the Draft EA.</p>
17	P. Steere	<p>Section 4.0 Environmental Consequences page 4.1 -paragraph 3 - At this time the design of the border fence is not known" An EA cannot adequately analyze and evaluate impacts of a construction project if the project design is "not known" The EA needs to be rewritten to address the design problem. All of the impacts discussed in this section are difficult to evaluate when you don't know what the construction design is going to be. The 150 ft ROW corridor proposed on Sonoyta Hill raises concerns about impacts on vegetation, wildlife and cultural sites Sonoyta needs to be evaluated as a possible Traditional Cultural Place – a trip of tribal elders to visit this sites Sonoyta Hill needs to be arranged to evaluate its significance if any as a Traditional Cultural Place – the National Historic Preservation Act of 1966 requires this.</p>	<p>D. See response to numbers 2 and 4.</p>

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18	P. Steere	<p>page 4-10 - Section 4.7 Cultural Resources Copies of the 2002 and 2007 cultural resources report have not been provided to the Tohono O'odham Nation for review. This section of the report cannot be adequately evaluated until these reports have been reviewed - please send them as soon as possible As stated earlier - a Cultural Landscape/Viewshed study needs to be completed so impacts of this project with a "unknown design" can be evaluated -this type of study involves input from archaeologists, historians, landscape specialists with the NPS and members of the Tohono O'odham Nation. Any type of construction project such as a tall fence or a power line has the potential to create impacts on the visual manifestation of the cultural landscape and aesthetic view shed -this EA does not address this issue. Since previously unknown cultural resources may be encountered during construction such as a buried archaeological site, a burial or a shrine may be encountered - archaeological monitors and cultural monitors from the Tohono O'odham Nation need to be present throughout this construction project. As stated earlier the selected construction contractor does not have the expertise to identify cultural resources that may be encountered during construction - so DHSBP needs to provide adequate funding to cover the costs of archaeological monitors and cultural monitors from the Tohono O'odham Nation for the entire length of the proposed construction project. The monitors should be identified as part of the cultural resources treatment plan for this project.</p>	<p>D. See response to numbers 4 and 6.</p>
19	P. Steere	<p>page 4-15 -Section 4.12 Aesthetics Please refer to Nos. 4, 14, 17 and 18 that discuss the need to complete a cultural landscape/viewshed study.</p>	<p>D. See response to number 4.</p>

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20	P. Steere	<p>page 5-1 - Section 5.0 - Cumulative Impacts In the discussion of cumulative impacts -Table 5-1 is shown to illustrate examples of recently completed or other possible future projects that may involve impacts to the border region by actions of DHS/BP.</p> <p>The proposed construction of 36 miles of pedestrian barrier, 35 miles of patrol and drag roads, eight water wells, two new staging areas, five existing staging areas and 7.5 miles of improvements to north-south access roads all involve considerable possible impacts to the border lands that will require new EA's to be done for each projects. The Tohono O'odham Nation needs to be kept informed of all of these projects and copies of draft EA's, cultural resources reports and biological reports need to be sent for review prior to the draft EA's being sent out for review.</p> <p>Where are these proposed projects located - more specific information is needed?</p> <p>These proposed projects cannot be piggy-backed onto this EA.</p> <p>page 5-4 Cultural Resources cannot be adequately evaluated until copies of 2002 and 2007 cultural resource reports sent to Tohono O'odham Nation for review. Full impacts cannot be addressed until a cultural landscape/viewshed study is completed that provides an analysis of the impacts of a tall intrusive fence on the cultural landscape and aesthetic viewshed.</p>	<p>A. An EA was completed for 36 miles of PVB, 35 miles of patrol and drag roads, eight water wells, two new staging area, five existing staging area, and 7.5 miles of north-south access roads on BMGR west. However, on January 12, 2007 DHS Secretary Chertoff signed a waiver authorizing CBP to build the project you describe in your comment. This waiver relinquished CBP's responsibility to complete any further environmental documentation.</p> <p>D. All projects have undergone NEPA analysis and appropriate public review.</p> <p>D. See response to number 4.</p>

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21	P. Steere	<p>page 6.1 - Section 6.0 Environmental Design Measures please refer to comments No. 6 and 18 for discussion of need to have archaeological and cultural monitors on site during construction page 6.2 and 6.3 - Cultural Resources</p> <p>EA states "if any cultural material is discovered during the construction efforts, then all activities will halt until a qualified archaeologist can be brought in to assess the cultural remains."</p> <p>The selected contractor whoever that may be is not qualified to do this.</p> <p>Archaeological monitors and cultural monitors from the Tohono O'odham Nation who are trained to identify and deal with cultural discoveries whether they are cultural artifacts, buried features, burial or shrines.</p> <p>DHSBP must provide adequate funding for these archaeological monitors and cultural monitors from the Tohono O'odham Nation Burial discovery plan needs to be prepared and included with cultural resources treatment plan.</p>	<p>E. See response to number 6.</p>
22	P. Steere	<p>page 7-1 -Section 7.0 Public Involvement</p> <p>List presented includes other government agencies consulted as part of preparation of the EA</p> <p>List includes "Federally Recognized Tribes."</p> <p>This statement is not true- Tohono O'odham Nation not consulted during preparation of this EA.</p> <p>Tohono O'odham Nation first consulted when the Draft EA received in the mail.</p> <p>What other tribes have received the EA? What other tribes were consulted during EA preparations?</p> <p>Again DHS/BP has not involved the Tohono O'odham Nation as part of the consultation and coordination that occurred during the preparation of this EA.</p> <p>The lands included within the Organ Pipe Cactus National Monument are the "traditional-use lands" of the Tohono O'odham and the Hia Ced Oodham as recognized by the Federal Land Claims Court and Native American Graves Repatriation and Protection Act procedures in Arizona.</p>	<p>D. A letter dated June 8, 2007 was submitted to the TON as part of the early coordination process. See Appendix C of the Final EA. See also response to number 4.</p>

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23	J. Avey	<p>General Comment</p> <p>The Department is concerned that much of the tactical infrastructure (pedestrian fencing, roads, etc.) associated with border protections against increasing numbers of undocumented immigrants is fragmenting and degrading important habitats, impacting genetic viability of species, and leading to further declines of currently imperiled and rare species.</p>	<p>E. Fragmentation is discussed in Section 4.3.2.2 of the Draft EA.</p>
24	J. Avey	<p>General Comment</p> <p>The Department is concerned about increased activities by Border Agents at the termination points of the fence. The added activities and protection measures, without consideration of "virtual" fencing may further impact and degrade habitat and movement abilities for wildlife. We advocate for mitigating measures to support and conserve wildlife, including opportunities to collect baseline information to better document the impacts of illegal activities and Border Operations on wildlife and wildlife habitat.</p>	<p>E. This idea is currently in the preplanning phase of technology based infrastructure to assist in the detection of IAs. However, technology alone cannot create deterrence to illegal traffic. Absolute certainty of apprehension is the best method to achieve deterrence and infrastructure is required to make these apprehensions. See response to number 1.</p>
25	J. Avey	<p>General Comment</p> <p>There are two reptile species of interest that have the potential to be impacted directly by construction of the fence through the Sonoyta Hills; Sonoran desert tortoise and Mexican rosy boas. We recommend that construction activities follow the Department's "Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects" which can be found at http://www.azgfd.gov/hnis/pdfs/Tortoisehandlingguidelines.pdf</p> <p>Department recommends that any tortoises that are encountered should be kept within the Sonoyta Hills, and not displaced farther away.</p>	<p>A. Mitigation measures are included in the Final EA, which state that any tortoise found during construction would be placed outside of the construction footprint but within a limited distance from the area it was discovered (i.e., if the tortoise was found on Sonoyta Hill it would be placed outside of the 150-foot construction footprint but still on Sonoyta Hill).</p>

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26	J. Avey	<p>General Comment We request increased and upfront coordination between the BP, CBP, DHS, and other border protection agencies, including meeting with staff to discuss plans and infrastructure proposals (such as road construction, construction of fencing and barriers, etc.) and potential impacts on wildlife. Advanced coordination will allow our agencies to identify and resolve potential issues up front.</p> <p>Dedicate funding for ecological mitigation and restoration activities, including wildlife enhancement and conservation projects.</p> <p>Use low-impact infrastructure, where appropriate, to mitigate the environmental effects of undocumented migration and other illegal activities.</p> <p>Emphasize high-tech surveillance alternatives (unmanned aerial surveillance vehicles, motion sensors, laser barriers and infrared cameras) that can improve border security efforts and minimize impacts on wildlife and sensitive habitats.</p> <p>Limit the use of pedestrian fences to urban and adjacent areas. Use vehicle barriers (wildlife friendly) in conjunction with virtual fencing in areas where hard infrastructure is necessary and appropriate.</p>	<p>A. CBP submitted an early coordination letter to AZDGF on June 8, 2007, AZDGF was also supplied a copy of the Draft EA for review. Additionally, CBP has dedicated monies to wildlife conservation, uses low impact infrastructure when possible (e.g., bollard style fence in washes), and currently in the preplanning phase of implementing technology based infrastructure to facilitate enforcement activities.</p>
27	L. Baiza	<p>FONSI There are only two alternatives considered in the draft with one being no action and the other being the proposed or possibly the preferred.</p>	<p>A. Thank you for the comment. CBP decided that for this project there are no other viable alternatives that satisfy the purpose and need of the proposed project. See response to number 1.</p>

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28	L. Baiza	We suggest an additional alternative which would include a combination of pedestrian fencing, remote technology, and law enforcement effort. As an example, the proposed pedestrian fence west of Lukeville would extend to the end for the existing National Park Service vehicle barrier (Normandy Barrier) and a remotely operated video camera placed at the top of Sonoyta/Monument Hill to monitor incursions on either side. This combined with increased law enforcement presence, would likely deter illegal activity from and minimize the impact of the proposed project on resources in this area. It would also minimize the enormous impacts to Sonoyta/Monument Hill resources and possibly keep this work in the realm of an Environment Assessment. With the additional portion of new road especially extending possibly 150 feet from the International Boundary and 90 feet beyond the Roosevelt Reservation the nature of this work will cause irreparable damages to resources now and into the future and will probably require a full Environmental Impact Statement.	E. See response to number 1.
29	L. Baiza	Another major concern is the proper conveyance of floodwaters through the pedestrian fence. It should be more clearly defined in the EA and FONSI. Specifically, design drawings should be included as to how floodwaters will be conveyed through the pedestrian fence and debris normally accumulating on existing vehicle barrier dealt with.	E. The design build concept will include drawings of how the fence would be built. The design will have to take into consideration the conveyance of floodwaters as is stated in the Draft EA. Further, the USBP would be responsible for maintenance of the fence, which includes debris removal.
30	L. Baiza	Utilizing the design – build concept works in many projects and probably will for this one too. The concern again is that the final EA should include alternative and final drawings of approved designs which will allow for a more consistent review.	A. See response to number 3.
31	L. Baiza	FONSI-2, Environmental Consequences: The home range of many species of small mammals and reptiles are localized within, could be contained within the project scope, and cross the international boundary. The presence of a pedestrian fence which could prevent small mammals and reptiles from crossing the international boundary could have more than a minimal impact on individuals as they are denied access to important forage and breeding habitat.	D. The habitat within the project corridor is highly disturbed from past and present human presence. The design of the fence will also include measures to ensure minimization of impacts to small mammals and reptiles, as noted in Section 2.1 of the Final EA.

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32	L. Baiza	<p>FONSI-3, Environmental Consequences: Based on past security measures near POE's, it is likely that the presence of a pedestrian fence on either side of the Lukeville POE will force IA's into more remote areas of the monument. Trash and debris may be reduced on a local scale in the project corridor; however, the regional deposition of trash from IA's will shift to more remote areas of the monument.</p>	<p>A/E. We concur that the Proposed Action will minimize and potentially eliminate debris on a localized level. However, CBP can not accurately state that the trash previously deposited by IAs entering near the POE will be deposited anywhere else on the OPCNM. The movements of IAs are totally at their discretion. Additionally, as stated throughout the Draft EA, the fence will act as a force multiplier allowing agents to be deployed to areas lacking fence.</p>
33	L. Baiza	<p><u>Executive Summary</u> Page iii: The correct citation year for the Organ Pipe Cactus National Monument vehicle barrier EA and FONSI is 2003.</p>	<p>A. The correction has been made in the Final EA.</p>
34	L. Baiza	<p><u>Proposed Action Alternative:</u> 2.2, Proposed Action Alternative: It is anticipated an area greater than the Roosevelt Reservation (60ft.) will be needed to construct an access road, vehicle turn arounds, and staging area for the pedestrian fence over Sonoyta/Monument Hill. The current grade on Monument Hill is greater than 10%. In order to transport equipment to the work site, switchbacks may be required to traverse either side of Sonoyta/Monument Hill and, consequently, require the access road to be partially located outside of the Roosevelt Reservation. This type of disturbance would not support the current Finding of No Significant Impact and requires additional analysis of effects.</p>	<p>A. We concur that the area over Sonoyta Hill will require more than the 60-foot Roosevelt Reservation. The Proposed Action states that over Sonoyta Hill the construction footprint will extend 90-feet outside of the Roosevelt Reservation for approximately 0.65 miles. D. CBP does not believe that extending 90-feet outside of the Roosevelt Reservation for approximately 0.65 miles over Sonoyta Hill will create significant impacts. The total acreage to be impacted outside of the Roosevelt Reservation is 7 acres which represents less than 0.0002 percent of the lands on the OPCNM.</p>

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35	L. Baiza	Proposed Action Alternative: 2.2, Proposed Action Alternative: It is difficult to evaluate the effects of the preferred alternative on the surrounding resources because no fence design was included in the document. The final draft document should include the current and alternative designs and analyze the impact of this design on the surrounding resources.	D. The Final EA will include the best information possible regarding certain requirements the fence must meet but the actual design will be established once the design build contract has been awarded. The EA uses worse case scenario when analyzing potential impacts in lieu of final fence designs. See response to number 3.
36	L. Baiza	Proposed Action Alternative: 2.2, Proposed Action Alternative: Staging areas and turnarounds could likely be located outside of the Roosevelt Reservation when constructing the new primary fence over Sonoyta/Monument Hill.	A. As stated in the EA, the construction footprint traversing Sonoyta Hill will exceed the 60-foot Roosevelt Reservation.
37	L. Baiza	<u>Affected Environment</u> 3.3.2, Wildlife: Sonoran toad is widespread throughout the desert and breeds in ephemeral pools and could be found within the project area.	E. No ephemeral pools were observed in the construction footprint.
38	L. Baiza	Table 3-1, Federally listed and proposed species: Organ Pipe Cactus National Monument supports one known population of Acuña cactus, located approximately 8 miles north of the international boundary.	A. Thank you for your comment. Table 3-1 has been revised to stipulate that Acuña cactus are located approximately 8 miles north of the U.S.-Mexico border on the OPCNM.
39	L. Baiza	3.6.1.1, Sonoran Pronghorn: Mexico Highway 2 is not adjacent to the project corridor as it joins the boundary at OPCNM approximately 5 miles west of the POE. Additionally, the existing NPS vehicle barrier was designed to allow for pronghorn passage and is not considered an impediment to Sonoran pronghorn movement (NPS 2003).	A/D. Mexico Highway 2 is not adjacent but rather "near" the project corridor. The highway is no farther than 0.6 miles from the project corridor. Additionally, the document has been revised to stipulate that the existing PVBs do not act as an impediment to pronghorn movement.
40	L. Baiza	3.6.1.3 Acuña cactus: There are 6 known populations of Acuña cactus in the United States and Sonora, Mexico (Rutman 2007). One population is located on approximately 1,900 acres in Organ Pipe Cactus National Monument (Rutman 2007).	A. See response to number 38.
41	L. Baiza	Figure 3-1, Sonoran Pronghorn Range with Project Corridor: This figure should indicate the location of Mexico Highway 2 as it is referenced in the previous paragraph.	A. Figure 3-1 has been revised to show Mexico Highway 2.

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42	L. Baiza	3.4, Unique and Environmentally Sensitive Areas: The document adequately describes the unique habitat and vegetation of Organ Pipe Cactus National Monument and its surrounding lands. However, additional information should be included on any unique and environmentally sensitive areas in the project area. These include the rocky hillside communities on Monument Hill and the many xeroriparian communities which cross through the project area. Xeroriparian communities are a critical component of the Sonoran Desert ecosystem.	E. The document has been revised to read, "Within the project corridor lies components (i.e., xeroriparian areas and rocky hillsides) that make up the Sonoran Desert ecosystem for which the OPCNM was set aside to preserve. These components are common throughout the Sonoran Desert."
43	L. Baiza	3.5, No mention made of consideration for protection of Wilderness Values especially since a major portion of the work will take place adjacent to monument wilderness.	D. See Section 4.5 of the Draft EA.
44	L. Baiza	3.7, The Tohono O'odham Nation has direct affiliation with Organ Pipe Cactus National Monument. They should also be contacted to comment on cultural landscapes and traditional properties.	A. The Tohono O'odham Nation was sent early coordination via a letter dated June 8, 2007. No response was received from the Tohono O'odham Nation at that time. However, the Tohono O'odham Nation did comment on the Draft EA.
45	L. Baiza	3.12, Aesthetics: Please see comment above for 3.6.1.1 in reference to the proximity of Mexico Highway 2 to the project corridor.	E. See response to number 39.
46	L. Baiza	3.12, Aesthetics: The items listed, with the exception of the existing PVB, can not be seen from South Puerto Blanco Drive where the view shed and aesthetics would be impacted from construction of the pedestrian fence. Consider utilizing non reflective non galvanized or coated metals in the design of this fence. Material color should match the natural rust patina on the vehicle barrier in place.	D. South Puerto Blanco Drive is not the only location for view shed and aesthetics of the area to be observed. The towns of Lukeville, Az and Sonoyta, Mexico as well as the Lukeville POE can be observed from South Puerto Blanco Drive. Environmental design measures will be incorporated into the Final EA stating that a non-reflective material would be used to reduce potential impacts to aesthetics.

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47	L. Baiza	Page 3-16, Photograph 3-2: The photograph is from an area west and outside of the project corridor.	A. The photo is used to depict to the reader how close Mexico Highway 2 is located to the U.S.-Mexico border. The photograph was taken approximately 0.7 miles down slope and west of the project corridor.
48	L. Baiza	<u>Environmental Consequences</u> 4.0, Environmental Consequences: As stated above, it's difficult to evaluate the effects of the preferred alternative on the surrounding resources because no fence design was included in the document. The next draft document should include the current and alternative designs and analyze the impact of this design on the surrounding resources.	See response to number 3.
49	L. Baiza	4.1.2, Land Use, Alternative 2: Based on past border security actions, it is likely that IAs will move to more remote areas of the monument as a result of the proposed alternative. This could lead to additional traffic and potential adverse indirect impact in areas away from the pedestrian fence.	See response to number 5.
50	L. Baiza	4.1.2, Land Use, Alternative 2: The EA indicated that 7 acres outside of the Roosevelt Reservation will be impacted from this access. However, an engineered drawing of the proposed route up and over "Sonoyta Hill" should be completed and included in the EA along with an analysis of the amount of land which will be disturbed from this route.	See response to number 2.
51	L. Baiza	4.2.2, Soils, Alternative 2: The approximate acreage of soils to be impacted by this alternative should also include soils for the access road over "Sonoyta Hill". In the design water diversion and soil retention structures will need to be considered for the cleared area over Sonoyta/Monument Hill.	E. The approximate acreage needed for the construction footprint of the project is presented and analyzed as part of the Draft EA (45 total acres to be impacted of which approximately 17 acres have been previously impacted). The design for the completion of this project will account for water diversion and soil retention.

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52	L. Baiza	4.3.2.2, Wildlife, Alternative 2: Please support the statement "...previously disturbed, and the remainder has limited vegetation, which is now considered poor quality habitat." with a citation supporting this statement and description of what wildlife species this would be considered poor habitat.	E. The assessment of poor quality habitat is professional judgment based upon the amount of past and on-going human disturbance within the project corridor. As an example, the project corridor would be considered poor quality habitat for mule deer (<i>Odocoileus hemionus</i>) due to the lack of vegetation and development on the south side of the border.
53	L. Baiza	4.3.2.2, Wildlife, Alternative 2: The statement "...due to tens of thousands of acres of suitable, similar habitat adjacent to the project corridor." is not accurate. OPCNM contains a mosaic of diverse habitat ranging Sonoran desert scrub to temperate mountain communities. Wildlife in OPCNM is diverse and many are found only in localized areas; such as the Acuña cactus, Senita cactus, Sonoyta mud turtle, and desert tortoise. Desert tortoise is present in several areas within the project scope and the fence design should ensure adequate passage for desert tortoise between the United States and Mexico.	D. The vegetation communities found in the project corridor are common throughout the OPCNM and surrounding region. E. The fence will be designed to allow for small mammal and reptile passage.
54	L. Baiza	4.3.3.2, Non-native and invasive species, Alternative 2: The document states that "With the exception of Sonoyta Hills, this area has been previously disturbed from the construction of the existing PVBS". This is not an accurate statement as the NPS vehicle barrier project scope was 30 ft. from the international border with the exception of 60 ft for staging areas. The scope for this project is 60 ft from the international border.	D. The document has been revised to state, "With the exception of the Sonoyta Hill, almost half of the project corridor has been previously disturbed from the construction of the existing PVBs and ongoing park management and USBP enforcement activities."
55	L. Baiza	4.3.3.2, Non-native and invasive species, Alternative 2: Please support the following statement "Disturbances would occur adjacent to existing roads and would not create new dispersal corridors or result in the expansion of non-native or invasive plant species distributions." with a citation. Once introduced and established, invasive species can spread by human and/or animal vector and wind.	A. The document was revised to read, "Disturbances would occur in vegetated areas that would create dispersal corridors for invasive species. However, because the project corridor would be patrolled by NPS and USBP (limiting potential for growth) and would be monitored for the spread of invasive species potential impacts would not be considered significant". See Section 6.0 of the Final EA.

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56	L. Baiza	<p>4.4.2, Unique and Environmentally Sensitive Areas, Alternative 2: The following two statements contradict each other:</p> <p>“The construction crew and equipment would access the project corridor along the border road entirely within the Roosevelt Reservation, limiting visual and noise impacts to the OPCNM”.</p> <p>“However, the use of South Puerto Blanco Road would be required to access the project corridor on the western face of Sonoyta Hill.”</p> <p>Please clarify this discrepancy.</p>	<p>E. The document as been revised to state, “...noise impacts to the OPCNM with the exception of the 150-foot construction footprint needed to traverse Sonoyta Hill. The use of South Puerto Blanco Road....”</p>
57	L. Baiza	<p>Page 4-7, 4.4.2, Unique and Environmentally Sensitive Areas, Alternative 2: The first paragraph address aesthetics in several places, however the subheading indicates the topic is “Unique and Environmentally Sensitive Areas”.</p>	<p>E. The document as been revised to read, “Unique and Sensitive Areas.”</p>
58	L. Baiza	<p>4.4.2, Unique and Environmentally Sensitive Areas, Alternative 2: Due to the open terrain which typifies OPCNM, the proposed action would be visible from areas outside of the disturbed area, including Gachado Line Camp, South Puerto Blanco Road, the El Camino Del Dos Republicos.</p>	<p>A. The impacts to aesthetics are discussed in Section 4.4.2 of the Draft EA.</p>
59	L. Baiza	<p>4.7.2, Cultural Resources, Alternative 2: Proposed Action Alternative: The NPS monitors the condition of its List of Classified Structures (LCS). International Boundary Monument 166, 167, and 168 are on the NPS LCS. The EA should describe how NPS staff will access the sites post construction.</p>	<p>E. The International Boundary Monuments will be accessible for maintenance purposes, as required by IBWC and NPS; however, at this time the final design of the fence and roads has not been selected. The design will take monument access into consideration.</p>

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60	L. Baiza	4.9.2, Water Resources, Alternative 2: The National Park Service is concerned about the potential for water to be restricted through washes which the pedestrian barrier will cross. During high water events, debris can build up against any barrier in washes (Photo 1) and change water flow direction and pattern and channel water along the road to an area of less resistance (Photo 2). Any change to water flow direction and pattern will, in turn, change the hydrology of the area on a local and, if large, enough, general scale on both the United States and Mexico side of the international border. The pedestrian fence design should accommodate water flow through the fence without changing hydrologic function of the area.	A. The design of the fence will allow for the conveyance of water and will not impact the hydrologic function of the area. This is one of the design performance mandates established for the design of the fence. See Section 2.2 of the Final EA.
61	L. Baiza	Photo 1: Debris backup against the vehicle barrier during one high water flow event at Vulture Wash, Organ Pipe Cactus National Monument, 2005.	E. Thank you for the photo.
62	L. Baiza	Photo 2: Erosion around a vehicle barrier post during one high water flow event, Organ Pipe Cactus National Monument 2005.	E. Thank you for the photo.
63	L. Baiza	4.12.2, Aesthetics, Alternative 2: The construction of a pedestrian fence over Sonoyta Hill would constitute a long-term adverse impact to the visual quality of this area, which is visible from State Highway 85, Lukeville and South Puerto Blanco Road.	D. Although an adverse impact would occur to the aesthetics as indicated in the EA, the beneficial gain from the reduction of IA traffic and associated disturbances would reduce this impact to less than significant. Additionally, the USBP would use non-reflective materials.

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64	L. Baiza	<p>Page 5-2, Table 5-1: There are several discrepancies in the Approximate Distance From Project Corridor (miles) column. Specifically:</p> <ul style="list-style-type: none"> • Lease of an existing vehicle maintenance facility in Ajo, Arizona = 40 miles. • Proposed construction of 36 miles of pedestrian barrier, 35 miles of patrol and drag road, eight water wells, two new temporary staging areas, five existing staging areas, and approximately 7.5 miles of improvements to north-south access roads = 15 miles • Proposed acquisition of 30 acres adjacent to the USBP Ajo station for horse corral, station expansion, and parking = 30 miles. 	<p>A. Document has been revised as recommended.</p>
65	L. Baiza	<p>Page 5-3, Cumulative Impact: The correct citation is Kralovec 2007.</p>	<p>A. The citation has been corrected.</p>
66	L. Baiza	<p>Page 5-4, Cumulative Impact, Biological Resources: Please define 'suitable habitat' in lack of and vast amounts in terms of species composition the statement "...result in insignificant cumulative impacts to vegetation communities and wildlife populations due to the lack of suitable habitat in the project corridor and vast amounts of suitable habitat surrounding the project corridor." Also, please support this statement with a citation which explains which species the habitat is unsuitable for in the project corridor.</p>	<p>E. The document has been revised to say, "no cumulative impact is expected since habitat in the project corridor is considered common and the abundance of similar habitat both locally and regionally."</p>
67	L. Baiza	<p>6.3, Environmental Design Measures, Biological Resources:</p>	<p>No comment provided</p>
68	L. Baiza	<p>6.4, Environmental Design Measures, Cultural Resources: The document should describe what type of buffers will be employed to protect International Boundary Monument 166, 167, and 168.</p>	<p>See response to number 59.</p>

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69	L. Baiza	<p>There are several other elements which should be considered and inclusive of the final Environmental Assessment for this project;</p> <ul style="list-style-type: none"> -Contractor staging sites and access to specific areas along the fence line -Designate water source opportunities for the contractors-the monument is prohibited from selling water to outside contractors. -Define responsible party for continued maintenance of fence and roadway. 	<p>E. All construction will occur within the footprint depicted in the EA. With the exception of the 150-foot footprint traversing Sonoyta Hill all construction will occur within the 60-foot Roosevelt Reservation.</p> <p>Groundwater will be obtained north of the OPCNM from municipal water supplies in Why, Ajo, or Gila Bend.</p>
70	L. Baiza	<p>Sharing a couple of final recommendations in general; I would once again ask you to fully evaluate the benefits of continuing the pedestrian fence over Sonoyta/Monument Hill verses ending it at the end of our Normandy Barriers. Our preference if asked would be to save this funding and utilize it elsewhere along the border. The other recommendation is to be sure the new design of this pedestrian fence is incorporated into the vehicle barrier in place and allows for continued maintenance of these fences for future out years. We do not want to see a second fence built prohibiting access to the vehicle barrier in place or for that matter placing employees in jeopardy with no immediate retrieval place if the situation requires it.</p>	<p>A. The document was revised in Section 2.2 to state that the USBP will be responsible for maintaining the fence.</p> <p>The USBP understands and appreciates the sensitivity of this area. In accordance with Federal mandates, the USBP has been directed to secure the border. The USBP has determined that pedestrian fence is critical to securing the border in the project corridor.</p>
71	K. Howe	<p>1. Page FONSI-2, Alternatives. Only two alternatives are presented for this project. We feel this is inadequate for the stated purpose and need of this project especially in regard to mitigation for permanent impacts to wildlife corridors that a fence would present. Other alternatives could take into account different styles of fence as well as placement of gaps to provide for large wildlife movement.</p>	<p>D. See response to number 1. The design of the fence it not known at this time; however, designs must accommodate the passage of small mammals and reptiles. Additionally, due to the developed nature of the project corridor, large mammals most likely do not utilize this area and therefore the fence would not adversely impact large mammal movement.</p>

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72	K. Howe	2. Page FONSI-2, Alternative 2. Stated in this paragraph as well as in many places within the DEA is that "the final design would be developed by the design/build contractor." If this is the case, this document is moot because impacts to the environment cannot be thoroughly assessed and addressed until the final design is known.	D. See response to number 3.
73	K. Howe	3. Page FONSI-2 & -3, Environmental Consequences. The impacts to wildlife movement across the international boundary are characterized as minimal. Are there studies that have been documented/written to support this statement? If so, these need to be referenced. The generalization of the minimization of indirect adverse affects does not take into account that increased USBP action and the affect of additional agents in these areas will most likely add to the impacts, especially IA apprehensions in undisturbed and wilderness areas on the Nation to the east and the OPCNM and Cabeza Prieta National Wildlife Refuge (CPNWR) to the west. The statement that illegal pedestrian traffic impacts are "unknown, if, when, or where this shift in traffic may occur" is undermined by the assertion that "wildlife would also still be able to migrate across . . .the border either to the east or west of the project footprint terminus" (Section 4.4.2.2, page 4-5). If a determination can be made for migratory adaptability for wildlife then that would hold true for pedestrian traffic as well and so can be a "known" quantity where this assertion is made throughout the DEA. Flow of IA foot traffic will find the areas of least resistance in the surrounding lands.	E. Within the project corridor the impacts to wildlife movement across the U.S.-Mexico border are considered minimal. This professional judgment is based upon the disturbed nature of the habitat, wildlife abundance, and location of the project corridor within developed areas. D. Thank you for your comment but CBP respectfully disagrees. As stated, large animals will be able to move across the U.S.-Mexico border. Whether they choose to or not is up to the individuals just as it is with IAs. Although IAs may enter at the point of least resistance, USBP can not predict where that point may be, it could be anywhere along the southwest border where infrastructure does not exist.
74	K. Howe	4. Page FONSI-3, Environmental Design Measures. Within the FONSI and text of the DEA (Sec. 6.0 Environmental Design Measures) there is no mention of preventive measures to prevent initial invasive species establishment, such as hosing down equipment, vehicles, etc. that provide opportunities for invasive species to be brought to the construction corridor.	E. The document was revised to read, "Construction equipment will be cleaned using BMPs prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species."
75	K. Howe	5. Page FONSI-4, Biological Resources. See comment 4 above.	See response to number 74.

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76	K. Howe	<p>6. Page FONSI-4, Water Resources. We appreciate the acknowledgement that work conducted during times of heavy rains greatly impacts the Sonoran Desert environment and that work will cease during those times.</p> <p>As discussed in Section 4.9, pages 4-12, -13, the water source for construction purposes is unknown making it problematic to assess what local impacts may occur if groundwater is utilized. Is the estimation of 5.2 ac-feet usage for construction over the entire span of construction? Is this number based on the amounts discussed in 4.0, page 4-1? What is the time-frame? Also, there is no source cited for the groundwater water recharge and withdrawal rates. Are these numbers an average and if so, over what period of time? This discussion needs to be expanded to account for the determination of no significant impact.</p>	<p>E. The document was revised to reads "a range of 5.2 to 11.4 acre-feet would be used." This amount is over the entire span of construction.</p> <p>E. The explanation of volume of water potentially used is provided in Section 4.0, page 4-1. The construction process is slated to be completed by end of December 2008. See Section 3.9 for groundwater withdrawal and recharge rate citations. The numbers presented is the best data available are based on yearly totals.</p> <p>D. CBP feels that the information provided and analyzed is sufficient in determining no significant impacts would occur based on the proposed project.</p>
77	K. Howe	<p>7. Page 3-4, The Tohono O'odham Nation. "The largest of the four areas within TON" shares approximately 70 miles with Mexico and contains significant cultural and biological resources.</p>	<p>A. The document was revised to stipulate that the "TON extends 70 miles across the U.S.-Mexico border."</p>
78	K. Howe	<p>8. Page 5-1, 5.0. Cumulative Impacts. As stated, this section discusses how the project affects the region. The WVMP and other Nation programs that oversee and assess impacts to the Nations' biological and other resources were not consulted as to how the pedestrian fence may affect these resources.</p> <p>Land Use. While it states that "less than 0.002 percent of OPCNM total acreage" would be impacted, the land usage as utilized as a north-south migratory and forage path will have a significant impact to wildlife by impeding their movement.</p>	<p>D. The TON was sent early coordination in the form of a letter dated June 8, 2007, see Appendix C. Additionally, as evidenced by your comments on the Draft EA the TON were given the opportunity to comment on the proposed project.</p> <p>D. See response to number 73.</p>

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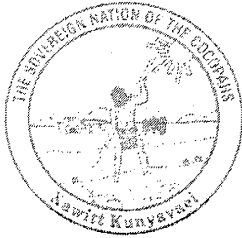
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79	K. Howe	9. Page 5-4, Biological Resources. See Land Use above. Until and when there is discussion about the quality and quantity of resources available to wildlife and plants to provide for their sustainability in the region the contention that over the long-term species and community viability will not be significantly impacted cannot be supported.	D. CBP respectfully disagrees with your assertion that significant impacts will occur to wildlife in the region due to the proposed project. Additionally, the loss of less than 0.0002 percent of the lands within the OPCNM combined with the fact that some of this land is currently disturbed or void of vegetation supports the determination of no significant impacts. E. See response to number 15.
80	K. Howe	10. Page 5-5, Socioeconomics. Possible IA traffic funneled to areas around the pedestrian fence onto the Nation may have some relative, if not significant, cumulative impact to villages on the Nation's western boundary. If IA foot traffic increases in these areas, there may be a corresponding increase in public safety issues. The Nation's police and medical services to address these issues would also increase.	
81	K. Howe	11. Page 7-1, Public Involvement. Although a primary stakeholder in the region, the Nation was not consulted and coordinated with in preparation of this document as were other tribes as evidenced in Appendix C. Also noted was the increase of primary fence from 4.2 miles provided to correspondents to 5.2 miles in the current DEA. In order to make accurate assessments for impacts to natural and cultural resources it is important that any changes be provided to interested parties.	D. See response to number 22. The draft EA was provided to interested parties for review and comments. The current mileage for the project is depicted in the Draft EA.
82	C. Peña	The United States Section, International Boundary and Water Commission (USIBWC) would like to thank you for the opportunity to review the subject document. As indicated in previous correspondence related to Border Patrol fence projects, the USIBWC requests that proposed construction activities be accomplished in a manner that does not change historic surface runoff characteristics at the international border. If the project falls within USIBWC jurisdiction or property, the USIBWC will not approve any construction near the international boundary in the United States that increases, concentrates, or relocates overland drainage flows into either country. This requirement is intended to ensure that developments in one country will not cause damage to lands or resources in the other country as required by the 1970 Treaty.	E. The fence will be designed in a manner to not impede, increase, concentrate, or relocate any overland flow into either country.

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Review Comments Matrix

#	Reviewer	Comment	Response
83	C. Peña	We also request that you ensure that structures constructed along the border are maintained in an adequate manner and that liability issues created by these structures are addressed.	E. The fence will be maintained by the USBP and will have to meet minimum requirements of stopping a vehicle at 40 miles per hour (i.e., the fence will be structurally sound).
84	C. Peña	As with previous work by Border Patrol along the international boundary, the USIBWC requires that proposed works and related facilities not affect the permanence of existing boundary monuments and not impede access for their maintenance by USIBWC personnel. Any proposed construction must allow for line-of-sight visibility between each of the boundary monuments. The USIBWC requests that engineering drawings be submitted for review and approval before beginning construction on USIBWC jurisdictional property. The drawings must show the location of each component in relationship to the international boundary and nearby monuments.	A. CBP recognizes the importance of line-of-sight between monuments and will ensure that designs are distributed to the USIBWC. Additionally, the fence will not preclude either USIBWC or NPS staff from being able to access or perform maintenance on the International Boundary Monuments.
85	C. Peña	In order to avoid any confusion and to allow better coordination, the USIBWC requests that a table be added to the Cumulative Effects Section that lists all the border fence projects, by state, that are being programmed for construction.	D. CBP feels that the table provided is adequate. The cumulative impact section looks at the ROI only. Fences in other states would not have affected the cumulative impact within the ROI for this document.



THE COCOPAH INDIAN TRIBE

Cultural Resource Department
County 15th & Avenue G
Somerton, Arizona 85350
Telephone (928) 627-2102
Fax (928) 627-2280

CCR-040-07-005

September 26, 2007

H. Jill McCormick
Cocopah Tribe
County 15 & Avenue G
Somerton, AZ 85350
928-503-2291

William Fickel, Jr.
Chief Planning, Environmental & Regulatory Division
P.O. Box 17300 – 819 Taylor Street
Fort Worth, Texas
76102-0300

RE: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence
along the International Border near Lukeville, Arizona

Dear Mr. Fickel:

The Cultural Resources Department of the Cocopah Indian Tribe appreciates your consultation efforts on this project. We are pleased that you contacted our department on this issue for the purpose of solicitation of our input and to address our concerns on this matter. At this time, we wish to make no comment on the development of the project. We defer the decision making process regarding the sensitive cultural resources of the area to the most local tribe(s) and support their determinations on these issues. However, we would like to continue to be kept informed on the situation and be a part of the consultation process in the future.

If you have any questions or need additional information please feel free to contact the cultural resource department. We will be happy to assist you with any and all future concerns or questions. Again, thank you for your efforts in this matter and we look forward to working with you on future projects.

Sincerely,

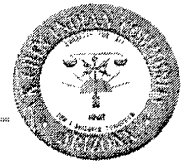

H. Jill McCormick
Cultural Resource Manager



AK-CHIN INDIAN COMMUNITY

Cultural Resources Office

42507 W Peters & Nall Road • Maricopa, Arizona 85259 • Telephone: (520) 568-1369 • Fax: (520) 568-1366



September 21, 2007

Nancy Parish
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
819 Taylor Street
Fort Worth, Texas 76102-0300

Re: Draft EA for the Installation of 5.2 miles of Primary Fence along the International Border near Lukesville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Dear Ms. Parish:

The Ak-Chin Cultural Resources Office did receive a copy of the Draft Environmental Assessment (EA) for the above-referenced undertaking.

At this time, our office has no questions and will defer comments to the Tohono O'odham Nation.

If you have any questions, please contact me at (520) 568-1369.

Sincerely,

A handwritten signature in cursive script, appearing to read "Gary Gilbert".

Gary Gilbert
Cultural Resources Technician II
Cultural Resources Office
Ak-Chin Indian Community



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Delia Carlisle, Chairperson
ATTN: Ms. Nancy Nelson, Cultural Resources Manager (Acting)
Ak Chin Indian Community
47685 N Eco Museum Rd
Maricopa, AZ 85239


Dear Chairperson Carlisle:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

The proposed border fence would begin 2.1 miles west of the Lukeville, AZ Port of Entry (POE) and extend eastward along the U.S.-Mexico international border for 5.2 miles. The potential project would retrofit vehicle barriers with border fence and also include the construction of new fence in the Sonoyta Hills area. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north) except around the Sonoyta Hills where 150-foot wide corridor would be used.

Enclosed please find a copy of the draft EA for your review and comment. We ask that you submit any comments on the draft EA by October 17, 2007 as that is when the 30-day draft review comment period ends. We look forward to hearing any concerns you may have. If you have any questions pertaining to this project, please do not hesitate to contact Nancy Parish at (817) 886-1725.

Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Sherry Cordova, Chairperson
ATTN: Ms. Jill McCormick
Cocopah Tribe
County 15th & Avenue G
Somerton, AZ 85350

Dear Chairperson Cordova:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

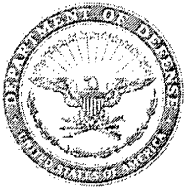
The proposed border fence would begin 2.1 miles west of the Lukeville, AZ Port of Entry (POE) and extend eastward along the U.S.-Mexico international border for 5.2 miles. The potential project would retrofit vehicle barriers with border fence and also include the construction of new fence in the Sonoyta Hills area. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north) except around the Sonoyta Hills where 150-foot wide corridor would be used.

Enclosed please find a copy of the draft EA for your review and comment. We ask that you submit any comments on the draft EA by October 17, 2007 as that is when the 30-day draft review comment period ends. We look forward to hearing any concerns you may have. If you have any questions pertaining to this project, please do not hesitate to contact Nancy Parish at (817) 886-1725.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Daniel Eddy, Jr., Chairman
ATTN: Mr. E. George Ray, Director Museum
Colorado River Indian Tribes
Route 1, Box 23-B
Parker, AZ 85344


Dear Chairperson Eddy:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

The proposed border fence would begin 2.1 miles west of the Lukeville, AZ Port of Entry (POE) and extend eastward along the U.S.-Mexico international border for 5.2 miles. The potential project would retrofit vehicle barriers with border fence and also include the construction of new fence in the Sonoita Hills area. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north) except around the Sonoita Hills where 150-foot wide corridor would be used.

Enclosed please find a copy of the draft EA for your review and comment. We ask that you submit any comments on the draft EA by October 17, 2007 as that is when the 30-day draft review comment period ends. We look forward to hearing any concerns you may have. If you have any questions pertaining to this project, please do not hesitate to contact Nancy Parish at (817) 886-1725.

Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable William Rhodes, Governor
ATTN: Mr. Barnaby Lewis
Gila River Indian Community
Cultural Resources Management Program
P.O. Box 2140
Sacaton, AZ 85247

Dear Governor Rhodes:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

The proposed border fence would begin 2.1 miles west of the Lukeville, AZ Port of Entry (POE) and extend eastward along the U.S.-Mexico international border for 5.2 miles. The potential project would retrofit vehicle barriers with border fence and also include the construction of new fence in the Sonoyta Hills area. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north) except around the Sonoyta Hills where 150-foot wide corridor would be used.

Enclosed please find a copy of the draft EA for your review and comment. We ask that you submit any comments on the draft EA by October 17, 2007 as that is when the 30-day draft review comment period ends. We look forward to hearing any concerns you may have. If you have any questions pertaining to this project, please do not hesitate to contact Nancy Parish at (817) 886-1725.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Benjamin H. Nuvamsa, Chairman
ATTN: Leigh Kuwanwisiwma
The Hopi Tribe
Main Street
Kykotsmovi, AZ 86039

Dear Chairperson Nuvamsa:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

The proposed border fence would begin 2.1 miles west of the Lukeville, AZ Port of Entry (POE) and extend eastward along the U.S.-Mexico international border for 5.2 miles. The potential project would retrofit vehicle barriers with border fence and also include the construction of new fence in the Sonoita Hills area. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north) except around the Sonoita Hills where 150-foot wide corridor would be used.

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Hermnia Frias, Chairperson
ATTN: Ms. Amalia A.M. Reyes, Cultural Resources
Pascua Yaqui Tribe
7474 S Camino de Oeste
Tucson, AZ 85746

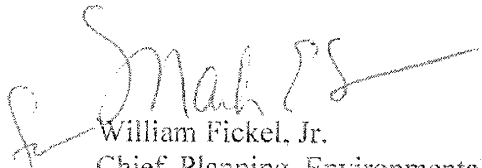
Dear Chairperson Frias:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

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Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Mike Jackson, Jr., President
Quechan Tribe
ATTN: Ms. Pauline Jose
Fort Yuma-Quechan Tribal Museum
350 Pichcho Rd
Winterhaven, CA

Dear President Jackson:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

The proposed border fence would begin 2.1 miles west of the Lukeville, AZ Port of Entry (POE) and extend eastward along the U.S.-Mexico international border for 5.2 miles. The potential project would retrofit vehicle barriers with border fence and also include the construction of new fence in the Sonoyta Hills area. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north) except around the Sonoyta Hills where 150-foot wide corridor would be used.

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Joni Ramos, President
ATTN: Ms. Dezbah Hatathli, Cultural Programs Supervisor
Salt River Pima-Maricopa Indian Community
Cultural and Environmental Services Department
10005 E. Osborn
Scottsdale, AZ 85256

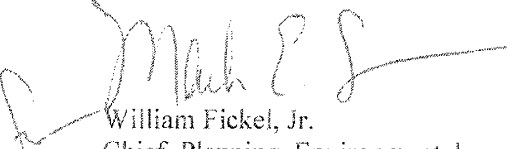
Dear President Ramos:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

The proposed border fence would begin 2.1 miles west of the Lukeville, AZ Port of Entry (POE) and extend eastward along the U.S.-Mexico international border for 5.2 miles. The potential project would retrofit vehicle barriers with border fence and also include the construction of new fence in the Sonoyta Hills area. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north) except around the Sonoyta Hills where 150-foot wide corridor would be used.

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Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Wendsler Nosie, Sr., Chairperson
ATTN: Ms. Verneida Grant, THPO
San Carlos Apache Tribe
P.O. Box 0
San Carlos, AZ 85550

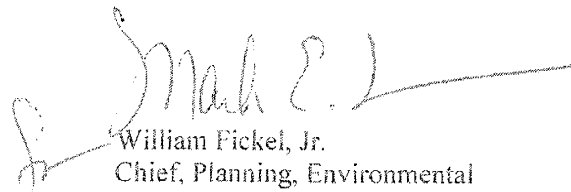
Dear Chairperson Nosie:

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Sincerely,


William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Ned Norris, Jr., Chairman
ATTN: Mr. Peter Steere, Cultural Resources Manager
Tohono O'odham Nation
Cultural Affairs Department
Main Street
Sells, AZ 85634

Dear Chairman Norris:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

The proposed border fence would begin 2.1 miles west of the Lukeville, AZ Port of Entry (POE) and extend eastward along the U.S.-Mexico international border for 5.2 miles. The potential project would retrofit vehicle barriers with border fence and also include the construction of new fence in the Sonoyta Hills area. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north) except around the Sonoyta Hills where 150-foot wide corridor would be used.

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

September 17, 2007

Planning, Environmental and
Regulatory Division

SUBJECT: Draft Environmental Assessment for the Installation of 5.2 miles of Primary Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Ajo Station, Arizona

Honorable Ronnie Lupe, Chairman
ATTN: Mr. Mark Atalha, THPO
White Mountain Apache Tribe
P.O. Box 507
Fort Apache, AZ 85926

Dear Chairman Lupe:

In a letter dated June 8, 2007, we wrote to you regarding our intentions to assist the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Office of Border Patrol (OBP) in preparing an Environmental Assessment (EA) for the construction of primary fence near Lukeville, AZ.

The proposed border fence would begin 2.1 miles west of the Lukeville, AZ Port of Entry (POE) and extend eastward along the U.S.-Mexico international border for 5.2 miles. The potential project would retrofit vehicle barriers with border fence and also include the construction of new fence in the Sonoyta Hills area. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north) except around the Sonoyta Hills where 150-foot wide corridor would be used.

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Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosures



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Tucson-Pima County Community Library
ATTN: Librarian
33 Plaza
Ajo, AZ 85321

Dear Librarian:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The draft EA addresses potential impacts of the proposed construction and maintenance of 5.8 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona. The fence would extend approximately 2.1 miles to the west and 3.1 miles to the east of the Lukeville POE along the U.S. / Mexico border. The purpose of the proposed action is to comply with Federal mandates to gain and maintain effective operational control of the border. Enclosed is a copy of the draft EA and draft FONSI for your review.

The USBP is soliciting comments on the draft EA and draft FONSI from Federal and state agencies, non-governmental organizations and the general public. Please make this document available to the public. The document can also be viewed via the internet at the following url address: <http://ecso.swf.usace.army.mil>.

Written comments in regards to this document can be submitted to the U.S. Army Corps of Engineers, Fort Worth District, ATTN: CESWF-PM-ECSO/McGregor, 819 Taylor Street, Room 3A28, Fort Worth, TX 76102. The deadline for receipt of comments is 30 days after the Notice of Availability has been published. The Notice of Availability is expected to be published on or before September 17, 2007.

Sincerely,

Eric W. Verwers
Director, Engineering and
Construction Support Office



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Organ Pipe Cactus National Monument
ATTN: Ms. Kathy Billings
10 Organ Pipe Drive
Ajo, AZ 85321

Dear Ms. Billings:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

While no final decisions regarding the location of additional fencing along the Southwest Border have been made, the USBP is accessing the operational requirements and land issues along the entire Southwest border. The preparation of this EA does not necessarily mean the proposed pedestrian fence will be constructed. This effort is a prudent part of the planning process needed to access any environmental concerns.

The proposed project is located within the USBP Tucson Sector, Ajo Station's Area of Operation (AOR) located near the Lukeville Port of Entry (POE). The fence would extend approximately 2.1 miles to the west and 3.1 miles to the east of the POE along the U.S. / Mexico border. The purpose of the proposed action is to comply with Federal mandates to gain and maintain effective operational control of the border.

USBP is soliciting comments on the draft EA and draft FONSI from Federal and state agencies, non-governmental organizations and the general public. The draft EA and draft FONSI will be available for review at the Tucson-Pima County Community Library in Ajo, Arizona. The document can also be viewed via the internet at the following url address: <http://ecso.swf.usace.army.mil>. Written comments in regards to this document can be submitted to the U.S. Army Corps of Engineers, Fort Worth District, ATTN: CESWF-PM-EC/McGregor, 819 Taylor Street, Room 3A28, Fort Worth,

TX 76102. The deadline for receipt of comments is 30 days after the Notice of Availability has been published. The Notice of Availability is expected to be published on or before September 17, 2007.

Sincerely,

A handwritten signature in cursive script, appearing to read "Eric W. Verwers".

Eric W. Verwers
Director, Engineering and
Construction Support Office



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Cultural Resources Manager
Tohono O'odham Nation
ATTN: Mr. Peter Steere
Building 49, Main Street
Sells, AZ 85634

Dear Mr. Steere:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

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TX 76102. The deadline for receipt of comments is 30 days after the Notice of Availability has been published. The Notice of Availability is expected to be published on or before September 17, 2007.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric W. Verwers".

Eric W. Verwers
Director, Engineering and
Construction Support Office



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Arizona Game and Fish Department
Habitat Branch
ATTN: Mr. Robert Magill
2221 West Greenway Road
Phoenix, AZ 85023

Dear Mr. Magill:

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Director, Engineering and
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REPLY TO
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September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Wildlife and Vegetation Management Program
Tohono O'odham Nation
ATTN: Ms. Karen Howe
Building 49, Main Street
Sells, AZ 85634

Dear Ms. Howe:

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Eric W. Verwers
Director, Engineering and
Construction Support Office



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DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Bureau of Indian Affairs
Phoenix Area Office
ATTN: Mr. Bryan Bowker
400 North 5th Street
2 Arizona Center, 12th Floor
Phoenix, AZ 85004

Dear Mr. Bowker:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

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Director, Engineering and
Construction Support Office



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FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

U.S. Fish and Wildlife Service
ATTN: Mr. Steve Spangle
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021-4951

Dear Mr. Spangle:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

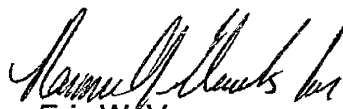
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REPLY TO
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September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Arizona Game and Fish Department
Project Evaluation Program Supervisor
Habitat Branch – Project Evaluation Program
ATTN: Ms. Rebecca Davidson
2221 W. Greenway Road WM-HB
Phoenix, AZ 85023-4312

Dear Ms. Davidson:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

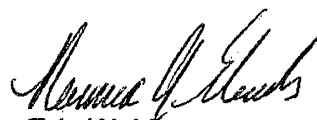
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September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Defenders of Wildlife Diversity
ATTN: Mr. Brian Segee
1130 Seventeenth Street, N.W.
Washington, D.C. 20036-4604

Dear Mr. Segee:

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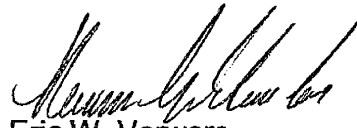
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P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

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Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Border Action Network
ATTN: Mr. Bryn Jones
P.O. Box 384
Tucson, AZ 85702

Dear Mr. Jones:

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Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Sky Island Alliance
ATTN: Mr. Matt Skroch
P.O. Box 41165
Tucson, AZ 85717-1165

Dear Mr. Skroch:

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Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Center for Biological Diversity
ATTN: Mr. Daniel Patterson
P.O. Box 710
Tucson, AZ 85702

Dear Mr. Patterson:

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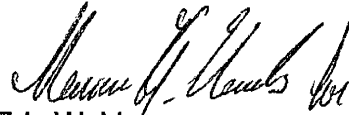
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Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Defenders of Wildlife
ATTN: Ms. Jenny Neely
110 S. Church
Suite 4292
Tucson, AZ 8570

Dear Ms. Neely:

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FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
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September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Defenders of Wildlife
ATTN: Ms. Kara Gillon
824 Gold SW
Albuquerque, NM 87102

Dear Ms. Gillon:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

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The proposed project is located within the USBP Tucson Sector, Ajo Station's Area of Operation (AOR) located near the Lukeville Port of Entry (POE). The fence would extend approximately 2.1 miles to the west and 3.1 miles to the east of the POE along the U.S. / Mexico border. The purpose of the proposed action is to comply with Federal mandates to gain and maintain effective operational control of the border.

USBP is soliciting comments on the draft EA and draft FONSI from Federal and state agencies, non-governmental organizations and the general public. The draft EA and draft FONSI will be available for review at the Tucson-Pima County Community Library in Ajo, Arizona. The document can also be viewed via the internet at the following url address: <http://ecso.swf.usace.army.mil>. Written comments in regards to this document can be submitted to the U.S. Army Corps of Engineers, Fort Worth District, ATTN: CESWF-PM-EC/McGregor, 819 Taylor Street, Room 3A28, Fort Worth,

TX 76102. The deadline for receipt of comments is 30 days after the Notice of Availability has been published. The Notice of Availability is expected to be published on or before September 17, 2007.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric W. Verwers". The signature is written in a cursive style with a large initial "E".

Eric W. Verwers
Director, Engineering and
Construction Support Office



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

Derechos Humanos
ATTN: Ms. Kat Rodriguez
P.O. Box 1286
Tucson, AZ 85702

Dear Ms. Rodriguez:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

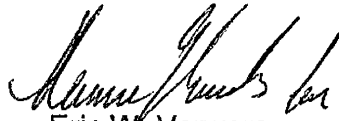
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Sincerely,

A handwritten signature in black ink, appearing to read "Eric W. Verwers".

Eric W. Verwers
Director, Engineering and
Construction Support Office



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 11, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

U.S. Bureau of Land Management
Tucson Office
ATTN: Ms. Shela McFarland
300 W. Congress
Federal Building CNF-6V3
Tucson, AZ 85701

Dear Ms. McFarland:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

While no final decisions regarding the location of additional fencing along the Southwest Border have been made, the USBP is accessing the operational requirements and land issues along the entire Southwest border. The preparation of this EA does not necessarily mean the proposed pedestrian fence will be constructed. This effort is a prudent part of the planning process needed to address any environmental concerns.

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USBP is soliciting comments on the draft EA and draft FONSI from Federal and state agencies, non-governmental organizations and the general public. The draft EA and draft FONSI will be available for review at the Tucson-Pima County Community Library in Ajo, Arizona. The document can also be viewed via the internet at the following url address: <http://ecso.swf.usace.army.mil>. Written comments in regards to this document can be submitted to the U.S. Army Corps of Engineers, Fort Worth District, ATTN: CESWF-PM-EC/McGregor, 819 Taylor Street, Room 3A28, Fort Worth,

TX 76102. The deadline for receipt of comments is 30 days after the Notice of Availability has been published. The Notice of Availability is expected to be published on or before September 17, 2007.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric W. Verwers", written in a cursive style.

Eric W. Verwers
Director, Engineering and
Construction Support Office



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

September 13, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

U.S. Environmental Protection Agency
Region 9
Federal Activities Office "CMD-2"
ATTN: Ms. Lisa Hanf
75 Hawthorne Street
San Francisco, CA 94105

Dear Ms. Hanf:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

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TX 76102. The deadline for receipt of comments is 30 days after the Notice of Availability has been published. The Notice of Availability is expected to be published on or before September 17, 2007.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Todd Smith". The signature is written in a cursive style with a large initial "M".

for Eric W. Verwers
Director, Engineering and
Construction Support Office



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

September 13, 2007

Engineering and Construction Support Office

Subject: Transmittal Letter for Draft Environmental Assessment and Draft Finding of No Significant Impact for the Proposed Installation of 5.2 Miles of Pedestrian Fence, United States Border Patrol, Tucson Sector, Arizona

International Boundary and Water Commission
United States Section
ATTN: Mr. Gilbert Anaya
4171 North Mesa, Suite C-100
El Paso, TX 79902-1441

Dear Mr. Anaya:

The United States (U.S.) Army Corps of Engineers, Fort Worth District has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) on behalf of U.S. Customs and Border Protection (CBP) and the U.S. Border Patrol (USBP). The enclosed draft EA addresses potential impacts of the proposed construction and maintenance of 5.2 miles of pedestrian fence along the U.S. / Mexico International border near Lukeville, Arizona.

While no final decisions regarding the location of additional fencing along the Southwest Border have been made, the USBP is accessing the operational requirements and land issues along the entire Southwest border. The preparation of this EA does not necessarily mean the proposed pedestrian fence will be constructed. This effort is a prudent part of the planning process needed to address any environmental concerns.

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TX 76102. The deadline for receipt of comments is 30 days after the Notice of Availability has been published. The Notice of Availability is expected to be published on or before September 17, 2007.

Sincerely,

A handwritten signature in black ink that reads "M. Todd Smith". The signature is written in a cursive style with a large, prominent "M" and "S".

for Eric W. Verwers
Director, Engineering and
Construction Support Office



United States Department of the Interior

U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951



Telephone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer to:

AESO/SE
22410-2007-SL-0337

July 10, 2007

Mr. Eric W. Verwers, Director
Engineering and Construction Support Office
Department of the Army
Fort Worth District, Corps of Engineers
Fort Worth, Texas 76102-0300

RE: Environmental Assessment for Installation of 4.2 miles of Pedestrian Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Arizona

Dear Mr. Verwers:

Thank you for your correspondence of June 4, 2007, received on June 11, 2007, requesting information on threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may occur in your proposed project area. The endangered Sonoran pronghorn (*Antilocapra americana sonoriensis*), the endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), and the endangered Quitobaquito pupfish (*Cyprinodon eremus*) and its critical habitat, occur within the vicinity of the proposed Installation of 4.2 miles of Pedestrian Fence along the International Border near the Lukeville Project. Additionally, the Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*) – a candidate for Federal listing, and the Quitobaquito springsnail (*Tryonia quitobaquitae*) – a sensitive species endemic to Quitobaquito, occur in the area. Quitobaquito is a unique desert oasis that is important for these species as well as a suite of migratory and resident birds.

When preparing your Environmental Assessment, we recommend you provide an analysis of the effects (both direct and indirect, as well as effects of any interrelated or interdependent actions) to all listed species and critical habitat from all components of the proposed project (i.e., installation and maintenance of the fence, roads [if proposed], and lights [if proposed]; patrol associated with the pedestrian fence and roads; etc.). We request you quantify the amount of listed species habitat that will be impacted. For example for the lesser long-nosed bat, quantify the number of forage plants that will be destroyed and salvaged. We do not recommend any groundwater be extracted from the area for project purposes; however, if it is, please quantify the amount that will be used and describe potential effects to the Quitobaquito pupfish from this groundwater use. Water levels at Quitobaquito pond are currently very low, and any

groundwater pumping could result in degradation or loss of critical habitat and mortality of Quitobaquito pupfish and other wetland species. Additionally, please provide an analysis of effects to listed species from potential shifts in illegal traffic and pursuant law enforcement that may occur as a result of the proposed project.

We are concerned about impacts of the proposed project on the aforementioned species, as well as on all native flora and fauna, and we recommend they be avoided and minimized to the greatest extent possible. Where this is not possible, we recommend impacts be offset through implementation of conservation measures to recover listed species. To avoid and minimize species impacts, we generally recommend: 1) the project footprint be minimized; 2) disturbance to all columnar cacti and agave be avoided and where this is not possible, they should be salvaged (or replaced with nursery stock) and placed near or within the project area; 3) any vegetation clearing should occur from September 2 - January 31, to avoid impacts to breeding birds protected by the Migratory Bird Treaty Act (these dates also coincide with the time period when Sonoran pronghorn are less physiologically stressed); 4) night-lighting be avoided; 5) groundwater not be extracted from the project vicinity and no water be drafted or diverted from the pond at Quitobaquito; 6) the fence be designed to allow for natural hydrological processes to occur to the greatest extent possible; 7) biological monitors be on-site during all clearing/construction-related activities of the project to ensure compliance and to ensure project activities are stopped if pronghorn are detected within one mile, and only allowed to resume after pronghorn have moved more than one mile away. We are available to assist you in developing specific measures to avoid, minimize, and offset project impacts.

Additionally, for further information the Arizona Ecological Service Field Office has posted lists of the endangered, threatened, proposed, and candidate species occurring in each of Arizona's 15 counties on the Internet. Please refer to the following web page for species information in the county where your project occurs: <http://www.fws.gov/southwest/es/arizona/>. If you do not have access to the Internet or have difficulty obtaining a list, please contact our office and we will mail or fax you a list as soon as possible.

After opening the web page, find County Species Lists on the main page. Then click on the county of interest. The arrows on the left will guide you through information on species that are listed, proposed, candidates, or have conservation agreements. Here you will find information on the species' status, a physical description, all counties where the species occurs, habitat, elevation, and some general comments. Additional information can be obtained by going back to the main page. On the left side of the screen, click on Document Library, then click on Documents by Species, then click on the name of the species of interest to obtain General Species Information, or other documents that may be available. Click on the "Cactus" icon to view the desired document.

Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency will

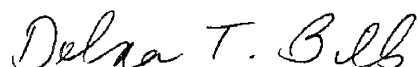
need to request formal consultation with us. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency will need to enter into a section 7 conference. The county list may also contain candidate or conservation agreement species. As mentioned, the Sonoyta mud turtle, a candidate species, occurs within the vicinity of your proposed project. Candidate species are those for which there is sufficient information to support a proposal for listing; conservation agreement species are those for which we have entered into an agreement to protect the species and its habitat. Although candidate and conservation agreement species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat (i.e., at Quitobaquito pond), we recommend the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways, we recommend you contact the Army Corps of Engineers, which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona and some of the Native American Tribes protect some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species, or contact the appropriate Native American Tribe to determine if sensitive species are protected by Tribal governments in your project area. We further recommend that you invite the Arizona Game and Fish Department, any Native American Tribes in or near your project area, and the Organ Pipe Cactus National Monument to participate in your informal or formal Section 7 Consultation process. We are providing this letter to the Arizona Game and Fish Department, the Tohono O'odham Tribe, and the Organ Pipe Cactus National Monument for their information.

For additional communications regarding this project, please refer to consultation number 22410-2007-SL-0337. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact Erin Fernandez (x238) or Jim Rorabaugh (x230) at (520) 670-6150.

Sincerely,



SLR Steven L. Spangle
Field Supervisor

Mr. Eric W. Verwers

4

cc: Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Yuma, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Superintendent, Organ Pipe Cactus National Monument, Ajo, AZ
George Hutchinson, Customs and Border Protection, Washington, DC
Sector Chief, Border Patrol, Tucson, AZ
Chairperson, Tohono O'Odham Nation, Sells, AZ
Manager, Cabeza Prieta National Wildlife Refuge, Ajo, AZ

W:\Erin Fernandez\Lukeville Fence SL July 07.doc: jkey



THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT

2221 WEST GREENWAY ROAD
PHOENIX, AZ 85023-4399
(602) 942-3000 • AZGFD.GOV

REGION IV, 9140 E. 28TH ST., YUMA, AZ 85365

GOVERNOR
JANET NAPOLITANO
COMMISSIONERS
CHAIRMAN, MICHAEL M. GOLIGHTLY, FLAGSTAFF
WILLIAM H. MCLEAN, GOLD CANYON
BOB HERNBRODE, TUCSON
JENNIFER L. MARTIN, PHOENIX
ROBERT R. WOODHOUSE, ROLL
DIRECTOR
DUANE L. SHROUFE
DEPUTY DIRECTOR
STEVE K. FERRELL



July 5, 2007

Eric W. Verwers
Director, Engineering and Construction Support Office
Department of the Army
Corps of Engineers, Forth Worth District Office
P.O. Box 17300
Fort Worth, TX 76102-0300

Re: Scoping Comments Draft Environmental Assessment for Installation of 4.2 Miles of Pedestrian Fence along the International Border near Lukeville, Pima County:

The Arizona Game and Fish Department (Department) has reviewed the request for scoping information for the above-referenced Draft Environmental Assessment (DEA) for the installation of 4.2 miles of pedestrian fence along the International Border near Lukeville, AZ in a letter dated June 4, 2007. The following comments are provided for your consideration.

The Department's online toll has been accessed and the attached document includes a list of special status species recorded in the vicinity of the project area. The document includes the Department's recommendations for minimizing impacts to and fulfilling regulatory compliance for the listed special status species

The Department notes that this fence is a potential barrier to north-south movement by reptiles, amphibians and small mammals in the project area. We recommend considering fence designs that would allow movement through the fence by these species. If this is not possible, we recommend analyzing the impacts to these species and proposing appropriate mitigation.

Thank you for the opportunity to provide these preliminary comments. The Department appreciates the opportunity to participate in this process. If you have any questions, please contact me at 928-341-4047.

Sincerely,

William C. Knowles
Habitat Specialist
Region IV, Yuma

Eric W. Verwers

July 5, 2007

2

cc: Russell Engel, Habitat Program Manager, Region IV
Rebecca Davidson, Proj. Eval. Prog. Supervisor, Habitat Branch

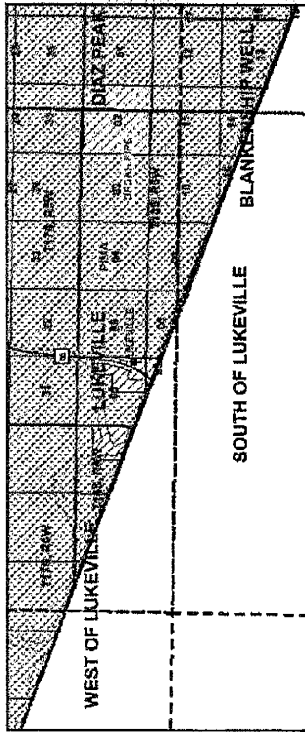
Attachment

AGFD # M07-06145520

Arizona's On-line Environmental Review Tool

Search ID: 20070705003240
 Project Name: Lukeville Border Fence
 Date: 7/5/2007 10:58:02 AM

Project Location



Project Name: Lukeville Border Fence
Submitted By: Troy Smith
On behalf of: AZGFD
Project Search ID: 20070705003240
Date: 7/5/2007 10:57:53 AM
Project Category: Law Enforcement Activities Associated with the Border, Fencing
Project Coordinates (UTM Zone 12-NAD 83): 328239.389, 3528543.522 meter

Project Length: 7090.034 meter
County: PIMA
USGS 7.5 Minute Quadrangle ID: 1810
Quadrangle Name: LUKEVILLE
Project locality is currently being scoped

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	ESA	USFS	BLM	State
<i>Anthochaeris celhura</i>	Felder's Orange Tip		S		
<i>Antilocapra americana sonoriensis</i>	Sonoran Pronghorn	LE	S		WSC
Bat Colony					
<i>Charina trivirgata trivirgata</i>	Mexican Rosy Boa	SC		S	
<i>Ferocactus emoryi</i>	Emory's Barrel-cactus				SR
<i>Gastrophysone olivacea</i>	Great Plains Narrow-mouthed Toad				WSC
<i>Gopherus agassizii</i> (Sonoran Population)	Sonoran Desert Tortoise	SC			WSC
<i>Lophocereus schottii</i>	Senita				SR
<i>Myotis velifer</i>	Cave Myotis	SC		S	
<i>Pericocereus striatus</i>	Dahilia Rooted Cereus				SR
<i>Selenicereus thurberi</i>	Organ Pipe Cactus				SR
<i>Tumanioca macdougalii</i>	Tumamoc Globeberry		S	S	SR

Page 1 of 5 APPLICATION INITIALS: _____

Arizona's On-line Environmental Review Tool

Search ID: 20070705003240

Project Name: Lukeville Border Fence

Date: 7/5/2007 10:58:02 AM

Please review the entire receipt for project type recommendations and/or species or location information and retain a copy for future reference. If any of the information you provided did not accurately reflect this project, or if project plans change, another review should be conducted, as this determination may not be valid.

Arizona's On-line Environmental Review Tool:

1. This On-line Environmental Review Tool inquiry has generated recommendations regarding the potential impacts of your project on Special Status Species (SSS) and other wildlife of Arizona. SSS include all U.S. Fish and Wildlife Service federally listed, U.S. Bureau of Land Management sensitive, U.S. Forest Service sensitive, and Arizona Game and Fish Department (Department) recognized species of concern.
2. These recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation). These recommendations are preliminary in scope, designed to provide early considerations for all species of wildlife, pertinent to the project type you entered.
3. This receipt, generated by the automated On-line Environmental Review Tool does not constitute an official project review by Department biologists and planners. Further coordination may be necessary as appropriate under the National Environmental Policy Act (NEPA) and/or the Endangered Species Act (ESA).

The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over all federally listed species under the ESA. Contact USFWS Ecological Services Offices: <http://arizonaes.fws.gov/>.

Phoenix Main Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
Phone 602-242-0210
Fax 602-242-2513

Tucson Sub-Office
201 North Bonita, Suite 141
Tucson, AZ 85745
Phone 520-670-6144
Fax 520-670-6154

Flagstaff Sub-Office
323 N. Leroux Street, Suite 101
Flagstaff, AZ 86001
Phone 928-226-0614
Fax 928-226-1099

Disclaimer:

1. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area.
2. The Department's Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there.
3. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HDMS data contains information about species occurrences that have actually been reported to the Department.

Arizona Game and Fish Department Mission

To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and

Arizona's On-line Environmental Review Tool

Search ID: 20070705003240

Project Name: Lukeville Border Fence

Date: 7/5/2007 10:58:02 AM

management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

Project Category: Law Enforcement Activities Associated with the Border, Fencing

Project Type Recommendations:

Based on the project type entered; coordination with State Historic Preservation Office may be required
<http://www.pr.state.az.us/partnerships/shpo/shpo.html#anchor561695>

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Recommendations will be dependant upon goals of the fence project and the wildlife species expected to be impacted by the project. Please

contact the Project Evaluation Program for further fencing recommendations and specifications.

Project Location and/or Species recommendations:

HDMS records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project (refer to page 1 of the receipt). Please contact:

Ecological Services Office
US Fish and Wildlife Service

2321 W. Royal Palm Rd.
Phoenix, AZ 85021-4951
Phone: 602-242-0210
Fax: 602-242-2513

HDMS records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area (refer to page 1 of the receipt). Please contact:

Arizona Department of Agriculture

1688 W Adams
Phoenix, AZ 85007
Phone: 602-542-4373

HDMS records indicate that Sonoran desert tortoise have been documented within the vicinity of your project area (refer to the species list on page 1 of the receipt). Please review the Tortoise Handling Guidelines found on the Environmental Review Home Page.

<http://www.azgfd.gov/hgis/guidelines.aspx>

Arizona's On-line Environmental Review Tool

Search ID: 20070705003240

Project Name: Lukeville Border Fence

Date: 7/5/2007 10:58:02 AM

Phone Number: (602) 789-3600
Fax Number: (602) 789-3928

Terms of Use

By using this site, you acknowledge that you have read and understand the terms of use. Department staff may revise these terms periodically. If you continue to use our website after we post changes to these terms, it will mean that you accept such changes. If at any time you do not wish to accept the Terms, you may choose not to use the website.

1. This Environmental Review and project planning website was developed and intended for the purpose of screening projects for potential impacts on resources of special concern. By indicating your agreement to the terms of use for this website, you warrant that you will not use this website for any other purpose.
2. Unauthorized attempts to upload information or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.
3. The Department reserves the right at any time, without notice, to enhance, modify, alter, or suspend the website and to terminate or restrict your access to the website.
4. This Environmental Review is based on the project study area that was entered. The review must be redone if the project study area, location, or the type of project changes. If additional information becomes available, this review may need to be reconsidered.

Security:

The Environmental Review and project planning web application operates on a complex State computer system. This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using

Recommendations Disclaimer:

1. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project.
2. These recommendations are proposed actions or guidelines to be considered during **preliminary project development**.
3. Additional site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. The Department is interested in the conservation of all fish and wildlife resources, including those Special Status Species listed on this receipt, and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
6. **Further coordination requires the submittal of this Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).**
7. Upon receiving information by AZGFD, please allow 30 days for completion of project reviews. Mail requests to:

**Project Evaluation Program, Habitat Branch
Arizona Game and Fish Department
2221 West Greenway Road
Phoenix, Arizona 85023-4312**

Arizona's On-line Environmental Review Tool

Search ID: 20070705003240

Project Name: Lukeville Border Fence

Date: 7/5/2007 10:58:02 AM

This system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials. Unauthorized attempts to upload or change information; to defeat or circumvent security measures; or to utilize this system for other than its intended purposes are prohibited.

This website maintains a record of each environmental review search result as well as all contact information. This information is maintained for internal tracking purposes. Information collected in this application will not be shared outside of the purposes of the Department.

If the Environmental Review Receipt and supporting material are not mailed to the Department or other appropriate agencies within six (6) months of the Project Review Receipt date, the receipt is considered to be null and void, and a new review must be initiated.

Print this Environmental Review Receipt using your Internet browser's print function and keep it for your records. Further coordination requires the submittal of this Environmental Review Receipt with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map).

Please provide point of contact information regarding this Environmental Review.

Application or organization responsible for project implementation

Agency/Organization: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

E-mail: _____



Benjamin H. Nuvamsa
CHAIRMAN

Todd Honyaoma, Sr.
VICE-CHAIRMAN

Hopi Cultural Preservation Office
P.O. Box 123
Kykotsmovi, AZ 86039
(928) 734-3612

July 2, 2007

Eric W. Verwers, Director, Engineering and Construction Support Office
Attention: Patience Patterson
Department of the Army, Fort Worth District, Corps of Engineers
P.O. Box 17300, 819 Taylor Street
Fort Worth, Texas 76102-0300

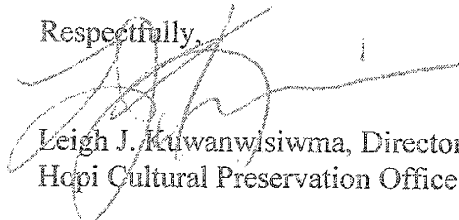
Dear Mr. Verwers,

Thank you for your letter on behalf of Customs and Border Protection dated June 8, 2007, regarding the installation of 4.2 miles of pedestrian fence along the international border near Lukeville, Arizona. The Hopi Cultural Preservation Office understands this proposal constitutes a federal undertaking and the Corps of Engineers will be preparing an environmental analysis.

The Hopi Tribe claims cultural affiliation to prehistoric cultural groups in Arizona, and supports the identification and avoidance of archaeological sites and Traditional Cultural Properties. We understand previous cultural resources survey of the area of potential effect for this proposal identified no prehistoric cultural resources. We are not aware of any Hopi Traditional Cultural Properties in this project area. Therefore, we have determined that this proposal is unlikely to effect cultural resources significant to the Hopi Tribe.

We appreciate your continuing solicitation of our input and your efforts to address our concerns. Should you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office. Thank you again for your consideration.

Respectfully,



Leigh J. Kuwanwisiwma, Director
Hopi Cultural Preservation Office



QUECHAN INDIAN TRIBE
Ft. Yuma Indian Reservation

P.O. Box 1899
Yuma, Arizona 85366-1899
Phone (760) 572-0213
Fax (760) 572-2102

June 25, 2007

Department of the Army
Mr. Eric Verwers
PO Box 17300
Fort Worth, TX 76102-0300

Dear Mr. Verwers,

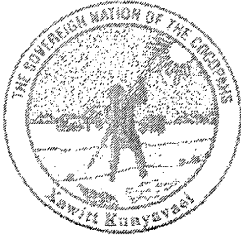
Thank you for updating us on the proposed installation of 4.2 miles of border barrier fence near the Lukeville Port of Entry.

We have reviewed the area in which the proposal takes place and have determined that there is no potential for impact on cultural resources affiliated with the Quechan Tribe. However, given the area of the project, there may be a potential impact on cultural resources affiliated with the Tohono O'odham. We support any decisions made by the tribe.

Again, thank you for your continued updates on this project. If you need any further information or have any questions, please contact me at (760) 572-2423.

Sincerely,

Bridget R. Nash-Chrabasz
Historic Preservation Officer



THE COCOPAH INDIAN TRIBE

Cultural Resource Department
County 15th & Avenue G
Somerton, Arizona 85350
Telephone (928) 627-2102
Fax (928) 627-3173

June 19, 2007

H. Jill McCormick
Cocopah Tribe
County 15 & Avenue G
Somerton, AZ 85350
928-503-2291

Eric W. Verwers
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300, 819 Taylor Street
Fort Worth, Texas 76102-0300

RE: Environmental Assessment for the installation of 4.2 miles of Pedestrian Fence along the International Border near Lukeville, Arizona

The Cultural Resources Department of the Cocopah Indian Tribe appreciates your consultation efforts on this project. We are pleased that you contacted the Cocopah Tribe on this cultural resource issue for the purpose of solicitation of our input and to address our concerns on this matter. However, at this time we wish to make no comments on the development of the project, although we would like to continue to be a part of any consultation process in the future.

If you have any questions or need additional information please feel free to contact the cultural resource department. We will be happy to assist you with any and all future concerns or questions.

Sincerely,

H. Jill McCormick

Cultural Resource Manager



REPLY TO
ATTENTION OF

SHPO-2007-1173 (33482)
DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

JUN 19 2007
6:25/07

June 8, 2007

Engineering and Construction Support Office

SUBJECT: Environmental Assessment for the Installation of 4.2 miles of Pedestrian Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Arizona

Mr. James Garrison, State Historic Preservation Officer
ATTN: Ms. JoAnne Medley
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Dear Mr. Garrison:

While no final decisions on the fence locations have been made, the U.S. Army Corps of Engineers, Fort Worth District (USACE) on behalf of Customs and Border Protection (CBP) intends to prepare an Environmental Assessment (EA) to address the feasibility of installing and maintaining approximately 4.2 miles of border barrier fence.

Based on congressional and executive mandates, CBP is assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 4.2 miles of barrier fence will be installed. This effort is a prudent part of the planning process needed to assess any environmental concerns.

The potential project would consist of replacing 4.2 miles of vehicle barriers with border fence. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north). The proposed border fence would begin 2.1 miles west of the Lukeville Port of Entry (POE) and extend eastward along the U.S.-Mexico border for 4.2 miles. Attached is a portion of the Lukeville 7.5 minute USGS quadrangle, which identifies the possible project site.

Previous cultural resource investigations and their Section 106 compliance have been accomplished by the Organ Pipe Cactus National Monument for their permanent vehicle barrier project. Therefore, no cultural resources surveys will be conducted, as the potential areas of impact are replacement and will be situated in the cleared area.

If you have any questions, please feel free to contact Ms. Patience Patterson, RPA (817) 886-1723 or Assistant Chief Patrol Agent Craig Weinbrenner at the Office of Border Patrol, Tucson Sector (520) 748-3000.

Sincerely,




Eric W. Verwers
Director, Engineering and Construction
Support Office

Enclosures

for

No Historic Properties Affected


Arizona State Historic Preservation Officer
Arizona State Parks Board

July 5, 2007



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300, 819 TAYLOR STREET
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

June 8, 2007

Engineering and Construction Support Office

SUBJECT: Environmental Assessment for the Installation of 4.2 miles of Pedestrian Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Arizona

Honorable Delia Carlisle, Chairperson
ATTN: Ms. Nancy Nelson, Cultural Resources Manager
Ak Chin Indian Community
47685 N Eco Museum Rd
Maricopa, AZ 85239

Dear Chairperson Carlisle:

While no final decisions on the fence locations have been made, the U.S. Army Corps of Engineers, Fort Worth District (USACE) on behalf of Customs and Border Protection (CBP) intends to prepare an Environmental Assessment (EA) to address the feasibility of installing and maintaining approximately 4.2 miles of border barrier fence.

Based on congressional and executive mandates, CBP is assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 4.2 miles of barrier fence will be installed. This effort is a prudent part of the planning process needed to assess any environmental concerns.

The potential project would consist of replacing 4.2 miles of vehicle barriers with border fence. The construction foot print for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north). The proposed border fence would begin 2.1 miles west of the Lukeville Port of Entry (POE) and extend eastward along the U.S.-Mexico border for 4.2 miles. Attached is a portion of the Lukeville 7.5 minute USGS quadrangle, which identifies the possible project site.

Previous cultural resource investigations and their Section 106 compliance have been accomplished by the Organ Pipe Cactus National Monument for their permanent vehicle barrier project. Therefore, no cultural resources surveys will be conducted, as the potential areas of impact are replacement and will be situated in the cleared area.

If you have any questions or comments regarding Traditional Cultural Places or Sacred Sites in or very near the project area, please call Ms. Patience Patterson, RPA at 817-886-1723 or Assistant Chief Patrol Agent Craig Weinbrenner at the Office of Border Patrol, Tucson Sector (520) 748-3000.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric W. Verwers". The signature is fluid and cursive, with a long horizontal stroke at the end.

Eric W. Verwers
Director, Engineering and Construction
Support Office

Enclosures

Copy Furnished w/ enclosure

Mr. James Garrison, State Historic Preservation Officer
ATTN: Ms. JoAnne Medley
Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

Distribution List for Tribal Consultation on the Lukeville fence Project

Honorable Delia Carlisle, Chairperson

ATTN: Ms. Nancy Nelson, Cultural Resources Manager (Acting)

Ak Chin Indian Community

47685 N Eco Museum Rd

Maricopa, AZ 85239

520-568-1369

Honorable Sherry Cordova, Chairperson

ATTN: Ms Jill McCormick

Cocopah Tribe

County 15th & Avenue G

Somerton, AZ 85350

Honorable Daniel Eddy, Jr., Chairman

ATTN: Mr. E. George Ray, Director Museum

Colorado River Indian Tribes

Route 1, Box 23-B

Parker, AZ 85344

Honorable William Rhodes, Governor

ATTN: Mr. Barnaby Lewis

Gila River Indian Community

Cultural Resources Management Program

P.O. Box 2140

Sacaton, AZ 85247

Honorable Benjamin H. Nuvamsa, Chairman

ATTN: Leigh Kuwanwisiwma

The Hopi Tribe

Main Street

Kykotsmovi, AZ 86039

(928) 734-3612

Honorable Hermnia Frias, Chairperson

ATTN: Ms. Amalia A.M. Reyes, Cultural Resources

Pascua Yaqui Tribe

7474 S Camino de Oeste

Tucson, AZ 85746

Honorable Mike Jackson, Jr., President

Quechan Tribe

ATTN: Ms. Pauline Jose

Fort Yuma-Quechan Tribal Museum

350 Pichcho Rd

Winterhaven, CA

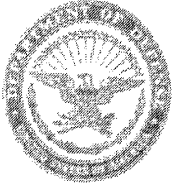
Distribution List for Tribal Consultation on the Lukeville-Ajo Fence Project

Honorable Joni Ramos, President
ATTN: Ms. Dezbah Hatathli, Cultural Programs Supervisor
Salt River Pima-Maricopa Indian Community
Cultural and Environmental Services Department
10005 E. Osborn
Scottsdale, AZ 85256

Honorable Wendsler Nosie, Sr., Chairperson
ATTN: Ms. Vernelda Grant, THPO
San Carlos Apache Tribe
P.O. Box 0
San Carlos, AZ 85550

Honorable Ned Norris, Jr., Chairman
ATTN: Mr. Peter Steere, Cultural Resources Manager
Tohono O'odham Nation
Cultural Affairs Department
Main Street
Sells, AZ 85634

Honorable Ronnie Lupe, Chairman
ATTN: Mr. Mark Atalha, THPO
White Mountain Apache Tribe
P.O. Box 507
Fort Apache, AZ 85926



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF: June 4, 2007

Engineering and Construction Support Office

Environmental Assessment for the installation of 4.2 miles of Pedestrian Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Arizona

Arizona Game and Fish
Habitat Branch-Project Evaluation Program
Attn: Mr. Bob Broscheid, Project Evaluation Program Supervisor
2221 West Greenway Road
Phoenix, Arizona 85023

Dear Mr. Broscheid:

While no final decisions on the fence locations have been made, the U.S. Army Corps of Engineers, Fort Worth District (USACE) on behalf of Customs and Border Protection (CBP) intends to prepare an Environmental Assessment (EA) to address the feasibility of installing and maintaining 4.2 miles of border barrier fence.

Based on congressional and executive mandates, CBP is assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 4.2 miles of barrier fence will be installed. This effort is a prudent part of the planning process needed to assess any environmental concerns.

This potential project would consist of replacing 4.2 miles of vehicle barriers with border fence. The construction footprint for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north). The proposed border fence would begin 2.1 miles west of the Lukeville Port of Entry and extend eastward along the U.S. - Mexico border for 4.2 miles. Attached is a portion of the Lukeville 7.5 minute U.S.G.S. quadrangle, which identifies the possible project site.

We are currently in the process of gathering the most current information available regarding Federally and state listed species, cultural resources, and sensitive and unique areas occurring within the potential project area. We respectfully request that your agency provide any information regarding those resources and/or issues that you believe may be affected.

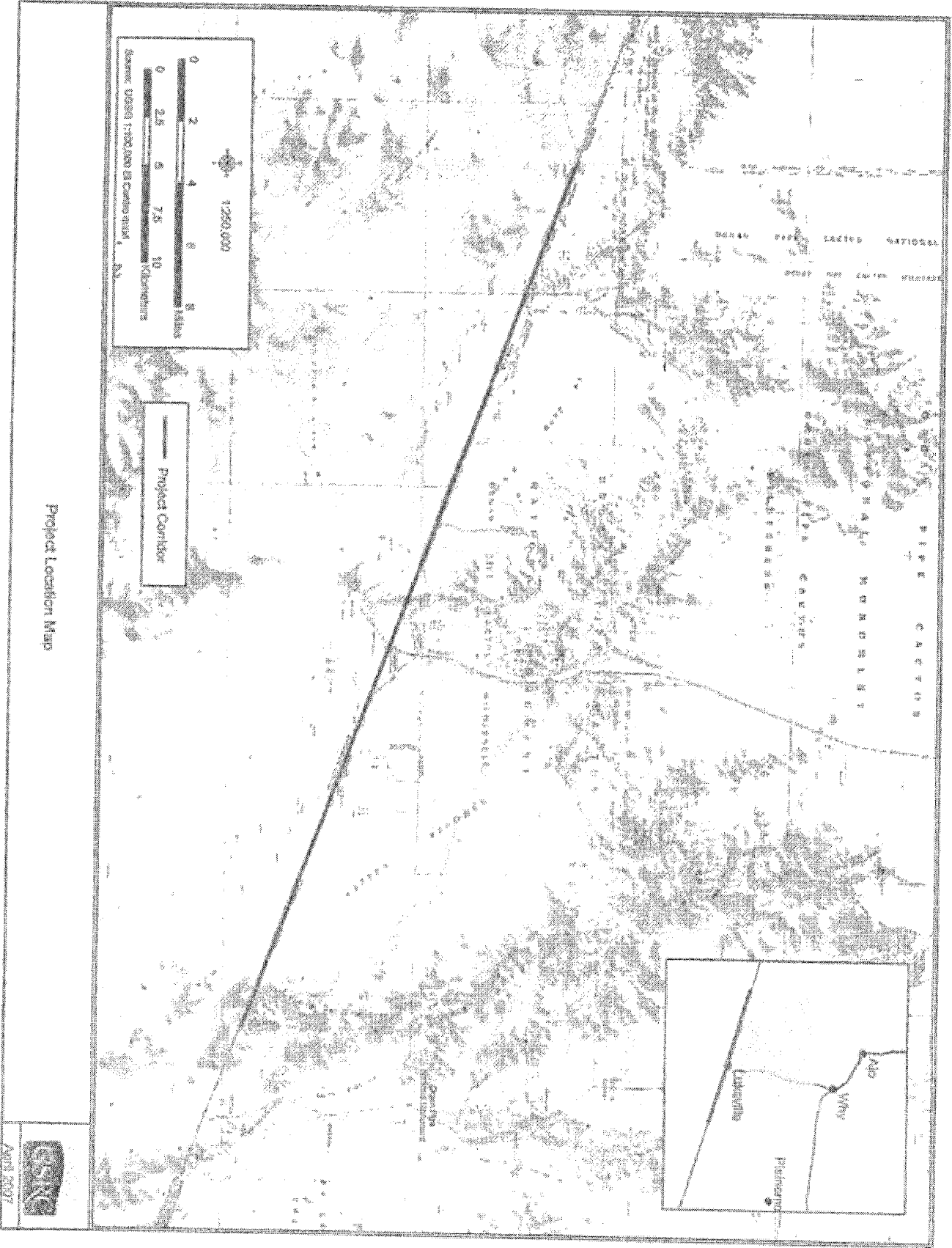
Your prompt attention to this request would be greatly appreciated. If you have any

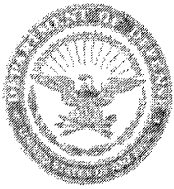
questions, please call Mr. Charles McGregor of my staff at (817) 886-1585 or Assistant Chief Patrol Agent Craig L. Weinbrenner at the Office of Border Patrol Tucson Sector at (520) 748-3000

Sincerely,



Eric W. Verwers
Director, Engineering and
Construction Support Office





DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

June 4, 2007

Engineering and Construction Support Office

Environmental Assessment for the Installation of 4.2 miles of Pedestrian Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Arizona

National Park Service
ATTN: Ms. Kathy Billings
Organ Pipe Cactus National Monument
10 Organ Pipe Drive
Ajo, AZ 85321

Dear Ms. Billings:

While no final decisions on the fence locations have been made, the U.S. Army Corps of Engineers, Fort Worth District (USACE) on behalf of Customs and Border Protection (CBP) intends to prepare an Environmental Assessment (EA) to address the feasibility of installing and maintaining 4.2 miles of border barrier fence.

Based on congressional and executive mandates, CBP is assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 4.2 miles of barrier fence will be installed. This effort is a prudent part of the planning process needed to assess any environmental concerns.

This potential project would consist of replacing 4.2 miles of vehicle barriers with border fence. The construction footprint for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north). The proposed border fence would begin 2.1 miles west of the Lukeville Port of Entry and extend eastward along the U.S. - Mexico border for 4.2 miles. Attached is a portion of the Lukeville 7.5 minute U.S.G.S. quadrangle, which identifies the possible project site.

We are currently in the process of gathering the most current information available regarding Federally and state listed species, cultural resources, and sensitive and unique areas occurring within the potential project area. We respectfully request that your agency provide any information regarding those resources and/or issues that you believe may be affected.

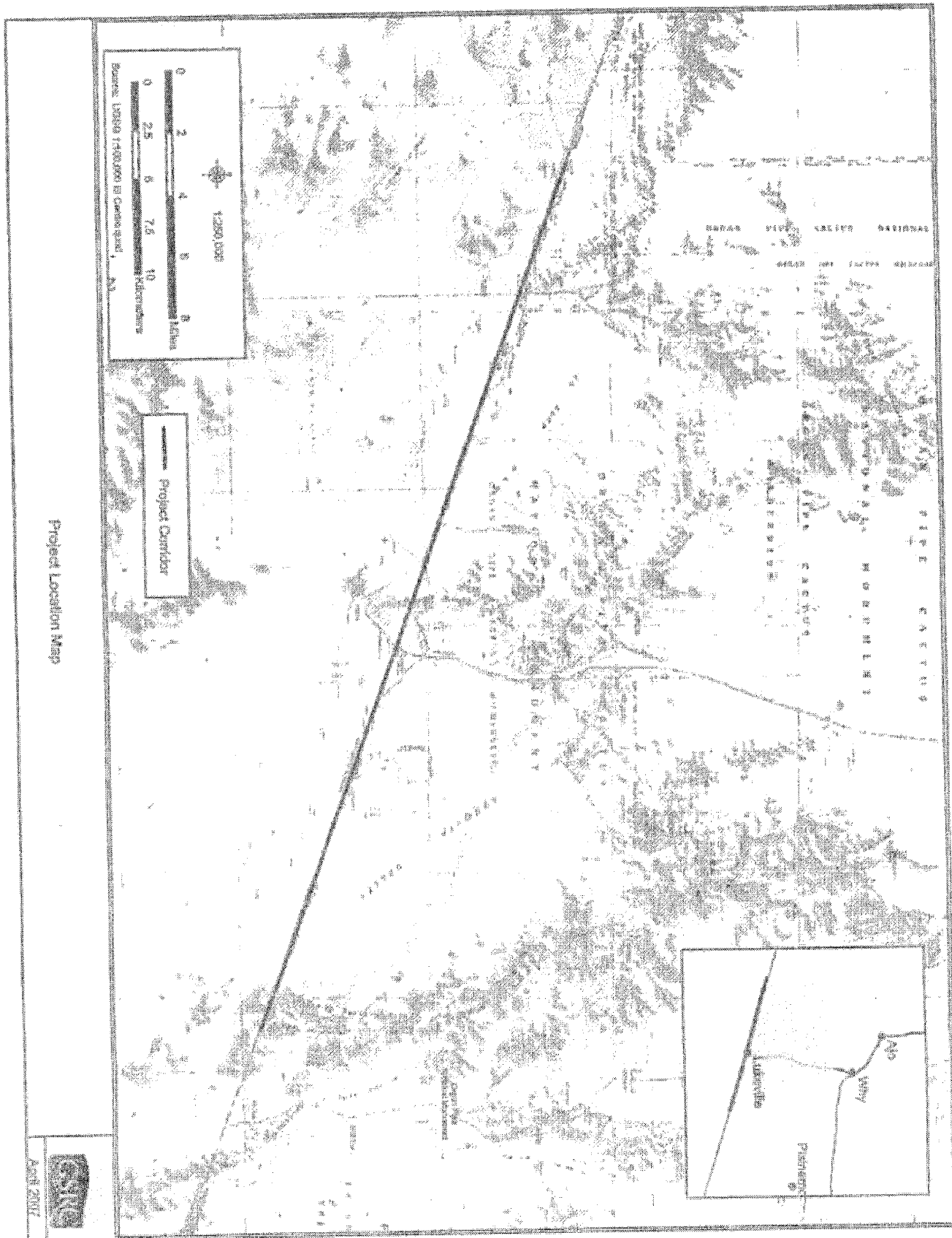
Your prompt attention to this request would be greatly appreciated. If you have any

questions, please call Mr. Charles McGregor of my staff at (817) 886-1585 or Assistant Chief Patrol Agent Craig L. Weinbrenner at the Office of Border Patrol Tucson Sector at (520) 748-3000

Sincerely,

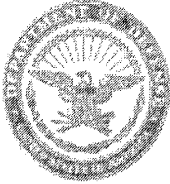
A handwritten signature in black ink, appearing to read "Eric W. Verwers". The signature is fluid and cursive, with a prominent initial "E".

Eric W. Verwers
Director, Engineering and
Construction Support Office



Project Location Map

SRRG
April 2007



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF: June 4, 2007

Engineering and Construction Support Office

Environmental Assessment for the Installation of 4.2 miles of Pedestrian Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Arizona

Cabeza Prieta National Wildlife Refuge
ATTN: Mr. Roger DiRosa, Refuge Manager
1611 N. Second Ave
Ajo, AZ 85321

Dear Mr. DiRosa:

While no final decisions on the fence locations have been made, the U.S. Army Corps of Engineers, Fort Worth District (USACE) on behalf of Customs and Border Protection (CBP) intends to prepare an Environmental Assessment (EA) to address the feasibility of installing and maintaining 4.2 miles of border barrier fence.

Based on congressional and executive mandates, CBP is assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 4.2 miles of barrier fence will be installed. This effort is a prudent part of the planning process needed to assess any environmental concerns.

This potential project would consist of replacing 4.2 miles of vehicle barriers with border fence. The construction footprint for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north). The proposed border fence would begin 2.1 miles west of the Lukeville Port of Entry and extend eastward along the U.S. - Mexico border for 4.2 miles. Attached is a portion of the Lukeville 7.5 minute U.S.G.S. quadrangle, which identifies the possible project site.

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Your prompt attention to this request would be greatly appreciated. If you have any

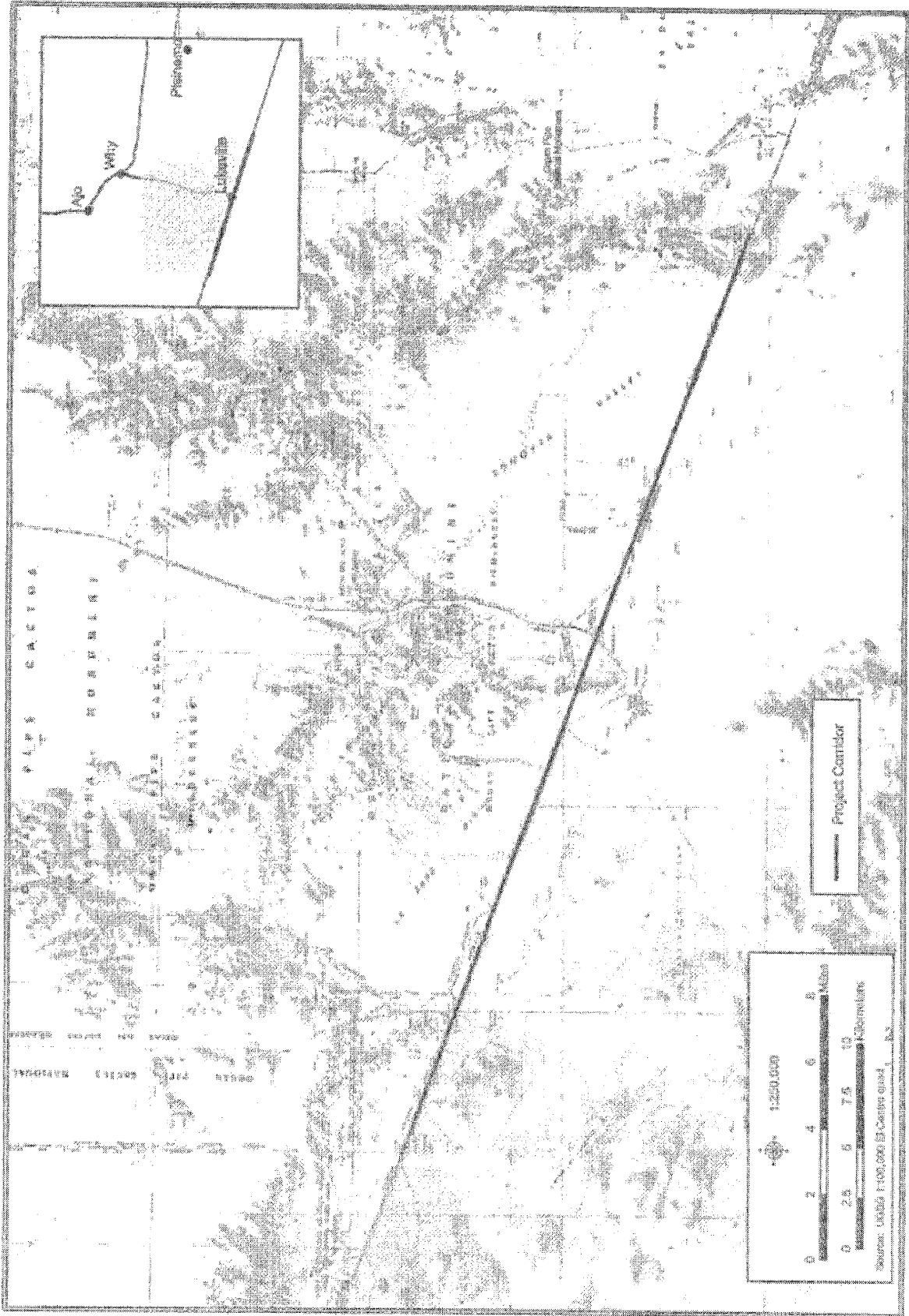
-2-

questions, please call Mr. Charles McGregor of my staff at (817) 886-1585 or Assistant Chief Patrol Agent Craig L. Weinbrenner at the Office of Border Patrol Tucson Sector at (520) 748-3000

Sincerely,



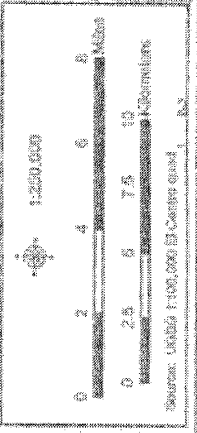
Eric W. Verwers
Director, Engineering and
Construction Support Office

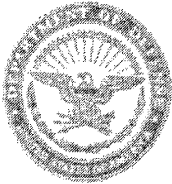


April 2007

Project Location Map

Project Corridor





DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

June 4, 2007

Engineering and Construction Support Office

Environmental Assessment for the Installation of 4.2 miles of Pedestrian Fence along the International Border near Lukeville, Arizona, Office of Border Patrol Tucson Sector, Arizona

U.S. Fish and Wildlife Service
ATTN: Mr. Steve Spangle
Arizona Ecological Services
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021

Dear Mr. Spangle:

While no final decisions on the fence locations have been made, the U.S. Army Corps of Engineers, Fort Worth District (USACE) on behalf of Customs and Border Protection (CBP) intends to prepare an Environmental Assessment (EA) to address the feasibility of installing and maintaining 4.2 miles of border barrier fence.

Based on congressional and executive mandates, CBP is assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 4.2 miles of barrier fence will be installed. This effort is a prudent part of the planning process needed to assess any environmental concerns.

This potential project would consist of replacing 4.2 miles of vehicle barriers with border fence. The construction footprint for this potential project would encompass the entire Roosevelt Reservation (60 feet from the U.S.-Mexico border north). The proposed border fence would begin 2.1 miles west of the Lukeville Port of Entry and extend eastward along the U.S. - Mexico border for 4.2 miles. Attached is a portion of the Lukeville 7.5 minute U.S.G.S. quadrangle, which identifies the possible project site.

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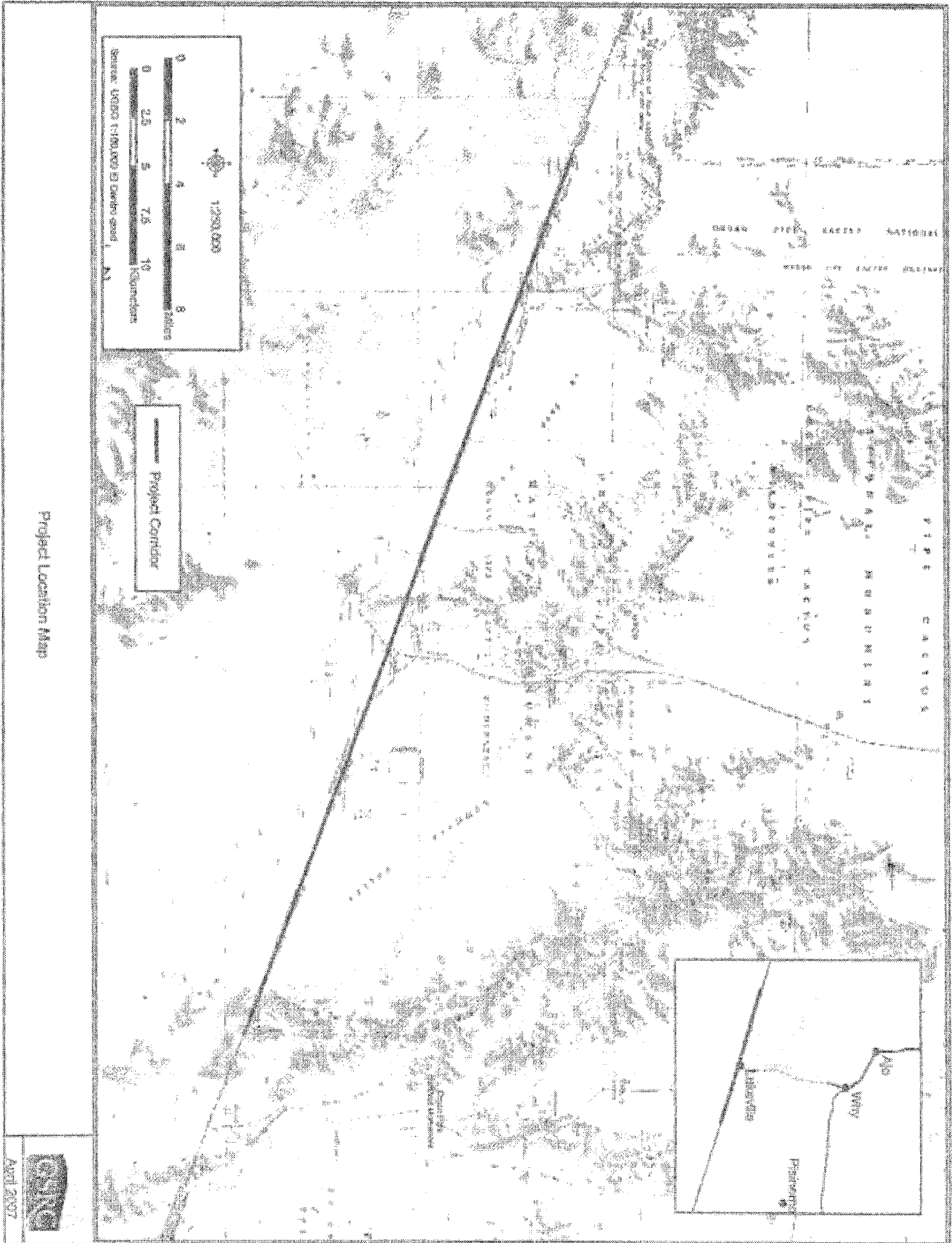
Your prompt attention to this request would be greatly appreciated. If you have any

questions, please call Mr. Charles McGregor of my staff at (817) 888-1585 or Assistant Chief Patrol Agent Craig L. Weinbrenner at the Office of Border Patrol Tucson Sector at (520) 748-3000

Sincerely,



Eric W. Verwers
Director, Engineering and
Construction Support Office



APPENDIX D
Air Quality Calculations

CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION

Assumptions for Cumbustable Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	2	300	12	120	864000
Diesel Road Compactors	0	100	12	120	0
Diesel Dump Truck	0	300	12	120	0
Diesel Excavator	0	300	12	120	0
Diesel Hole Cleaners/Trenchers	2	175	12	120	504000
Diesel Bore/Drill Rigs	2	300	12	120	864000
Diesel Cement & Mortar Mixers	2	300	12	120	864000
Diesel Cranes	2	175	12	120	504000
Diesel Graders	0	300	12	120	0
Diesel Tractors/Loaders/Backhoes	2	100	12	120	288000
Diesel Bull Dozers	2	300	12	120	864000
Diesel Front End Loaders	2	300	12	120	864000
Diesel Fork Lifts	3	100	12	120	432000
Diesel Generator Set	6	40	12	120	345600

Emission Factors							
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr	CO2 g/hp-hr
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740	536.200
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740	536.300
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740	535.800
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730	529.700
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730	529.700
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730	530.200
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740	536.300
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950	691.100
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740	536.300
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740	536.200
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950	690.800
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION

Emission factors (EF) were generated from the NONROAD2005 model for the 2006 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2005 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2005 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.419	1.971	5.227	0.390	0.381	0.705	510.341
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Excavator	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Hole Cleaners\Trenchers	0.283	1.355	3.227	0.255	0.244	0.411	297.588
Diesel Bore/Drill Rigs	0.571	2.180	6.808	0.476	0.467	0.695	504.342
Diesel Cement & Mortar Mixers	0.581	2.209	6.931	0.457	0.448	0.695	504.342
Diesel Cranes	0.244	0.722	3.177	0.189	0.183	0.405	294.477
Diesel Graders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Tractors/Loaders/Backhoes	0.587	2.606	2.291	0.435	0.422	0.302	219.339
Diesel Bull Dozers	0.343	1.314	4.532	0.314	0.305	0.705	510.626
Diesel Front End Loaders	0.362	1.476	4.761	0.333	0.324	0.705	510.531
Diesel Aerial Lifts	0.943	3.694	4.075	0.662	0.643	0.452	328.865
Diesel Generator Set	0.461	1.432	2.274	0.278	0.270	0.308	223.674
Total Emissions	4.794	18.959	43.303	3.790	3.686	5.383	3904.125

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)						
Emission source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂
Combustable Emissions	4.79	18.96	43.30	3.79	3.69	5.38
Construction Site-fugitive PM-10	NA	NA	NA	29.12	5.82	NA
Construction Workers Commuter & Trucking	0.48	4.53	0.62	0.01	0.01	NA
Total emissions	5.28	23.49	43.93	32.92	9.52	5.38
De minimis threshold	NA	NA	NA	NA	NA	NA

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-PROPOSED ACTION

Construction Worker Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	120	120	10	10	0.22	0.26	0.47
CO	12.4	15.7	120	120	10	10	1.97	2.49	4.46
NOx	0.95	1.22	120	120	10	10	0.15	0.19	0.34
PM-10	0.0052	0.0065	120	120	10	10	0.00	0.00	0.00
PM 2.5	0.0049	0.006	120	120	10	10	0.00	0.00	0.00

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Heavy Duty Trucks Delivery Supply Trucks to Construction Sight									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55	60	120	2	2	0.00	0.01	0.01
CO	1.32	3.21	60	120	2	2	0.02	0.05	0.07
NOx	4.97	12.6	60	120	2	2	0.08	0.20	0.28
PM-10	0.12	0.33	60	120	2	2	0.00	0.01	0.01
PM 2.5	0.13	0.36	60	120	2	2	0.00	0.01	0.01

OBP Commute to New Site									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	0	0	0	-	0.00	-
CO	12.4	15.7	60	0	0	0	-	0.00	-
NOx	0.95	1.22	60	0	0	0	-	0.00	-
PM-10	0.0052	0.0065	60	0	0	0	-	0.00	-
PM 2.5	0.0049	0.006	60	0	0	0	-	0.00	-

POV Source: USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway vehicle emission factor model.

Fleet Characterization: 20 POVs commuting to work were 50% are pick up trucks and 50% passenger cars

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-PROPOSED ACTION

Conversion factor:	gms to tons
	0.000001102

CALCULATION SHEET-FUGITIVE DUST-PROPOSED ACTION

Fugitive Dust Emissions at New Construction Site.					
Construction Site	Emission Factor tons/acre/month (1)	Total Area- Construction Site/month	Months/yr	Total PM-10 Emissions tns/yr	Total PM-2.5 (2)
Fugitive Dust Emissions	0.11	37.82	7	29.12	5.82

1. Mid-Atlantic Regional Air Management Association (MARAMA). Fugitive Dust-Construction Calculation Sheet can be found online at: http://www.marama.org/visibility/Calculation_Sheets/. MRI= Midwest Research Institute, Inventory of Agricultural Tiling, Unpaved Roads, Airstrips and construction Sites., prepared for the U.S. EPA, PB 238-929, Contract 68-02-1437 (November 1977)

2. 20% of the total PM-10 emissions are PM-2.5 (EPA 2006).

Costruction Site Area	Demension (ft)			
Proposed Prioject	Length	Width	Units	Total Acres
New Construction Area	5,280	60	5.2	37.82
New Construction Area	5,280	60	0	0.00
Total				37.82

Conversion Factors	Feet to Miles	Acres to sq ft	Sq ft to acres	Sq ft in 0.5 acres
	5280	0.000022957	43560	21780

Assumptions	Sections/day	Length of Section (ft)	Length/day (ft)	Days/yr	Length/yr (ft)	Miles/yr
Fencing installed per day (ft)	22	10	220	290	63800	5.20

Assumptions	Sections/day	Length of Section (ft)	Length/day (ft)	Days/Month	Length/Month (ft)	Miles/Month
Fencing installed per day (ft)	22	10	220	24	5280	1.00
Length of fence/yr (miles)	5.20					

Final

**PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
FOR PROPOSED TACTICAL INFRASTRUCTURE
OFFICE OF BORDER PATROL
EL PASO SECTOR
NEW MEXICO STATIONS**



**Department of Homeland Security
U.S. Customs & Border Protection
Office of Border Patrol
Washington, D.C.**

October 2006

FINDING OF NO SIGNIFICANT IMPACT
For Proposed Tactical Infrastructure
Office of Border Patrol, El Paso Sector, New Mexico Stations

PROJECT HISTORY: The Office of Border Patrol (OBP) is a law enforcement entity of the United States (U.S.) Customs and Border Protection (CBP) within the U.S. Department of Homeland Security (DHS). The OBP's priority mission is to prevent the entry of terrorists and their weapons of terrorism and to enforce the laws that protect the U.S. homeland by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S.

During recent years, illegal aliens (IA) have cost U.S. taxpayers billions of dollars annually due directly to criminal activities, as well as the cost of apprehension, detention, and incarceration of criminals; and, indirectly in loss of property, illegal participation in government programs, and increased insurance costs. Consequently, the OBP has significantly increased its emphasis on deterrence. Deterrence is achieved only when the OBP has the ability to create and convey the immediate, credible, and absolute certainty of detection and apprehension. As such, tactical infrastructure components, such as roads and vehicle barriers, are a critical element in the current enforcement strategy. Developing trends such as the recognition of environmental preservation concerns and the increase of criminal trans-boundary activities (including trafficking in people, drugs, and terrorism efforts) continue to pose a border enforcement challenge and compound the need for tactical infrastructure along the international border.

PROJECT LOCATION: The study corridor for the Programmatic Environmental Assessment (PEA) is located within the New Mexico portion of the OBP's El Paso Sector Area of Operations (AO). The southern boundary of the study corridor is defined by the U.S.-Mexico border throughout the state of New Mexico. The study corridor extends north to cover New Mexico Highway 9 (NM 9) or no less than 3 miles north of the international border where NM 9 is closer than 3 miles. The study corridor considers the area of potential, direct and indirect impacts resulting from the proposed alternatives by including the immediate border area and lands northward up to NM 9 where illegal activity typically flows east or west. Three OBP stations (Santa Teresa, Deming and Lordsburg) within the El Paso Sector have jurisdiction in the study corridor. The existing and proposed tactical infrastructure (TI) within these three stations shall be the focus of this PEA. No existing or proposed TI occurs outside of this study corridor.

PURPOSE AND NEED: The purpose of the Proposed Action Alternative is to facilitate the OBP's mission to gain, maintain and extend control of the U.S.-Mexico border. The need for improving the OBP's enforcement effectiveness is based upon increased border activity and its associated costs, the limited workforce available to secure the borders, the continued increase of IAs in remote areas, and the inadequacy of the existing TI system in the study corridor.

The need for the Proposed Action Alternative is also to increase deterrence and apprehension of IAs; reduce crime along the border areas by enhancing the effectiveness of OBP agents in their daily operations; provide 24-hour operations through the use of technology as force multipliers; improve access to remote areas along the international border; secure the safety of OBP agents and U.S. residents; and improve the ability of OBP agents to rescue IAs in distress.

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ALTERNATIVES: Three alternatives, the No Action Alternative, the Proposed Action Alternative, and the TI with Cattle Fence Permanent Vehicle Barriers (PVBs) Alternative were analyzed in the PEA.

No Action Alternative: The No Action Alternative would preclude the installation of any additional TI within the Santa Teresa, Deming and Lordsburg stations' AOs. This alternative would allow the routine maintenance and operation associated with existing infrastructure to continue. Existing infrastructure to be maintained includes intermittent dirt and gravel access and patrol roads along the U.S.-Mexico border, an intermittent 6-strand barbed wire fence on the border, a 6-foot chain link fence near the Columbus port of entry (POE), 13 miles of PVBs (10 miles near the Columbus POE and 3 miles west of Santa Teresa POE), seven Remote Video Surveillance Systems (RVSS) near the Columbus POE, and approximately 1 mile of permanent lighting near the border at Sunland Park. Even though this alternative would reduce unavoidable impacts associated with the construction of TI and irretrievable losses of resources related to construction activities, it would greatly limit the OBP's capability to prevent and deter illegal activity along the U.S.-Mexico border.

The No Action Alternative does not meet the purpose and need for the proposed project, but will be carried forward for analysis, as required by the President's Council on Environmental Quality regulations. The No Action Alternative describes the status quo in the absence of any action alternative.

Proposed Action Alternative: The Proposed Action Alternative involves improvements to or construction of 316 miles of border access roads or all-weather patrol roads, 78 miles of drag roads, establishment of 160 miles of PVBs, 7 miles of permanent pedestrian barriers, installation of 30 miles of permanent lights and approximately five RVSS, and construction of ancillary structures (*i.e.*, low water crossings and culverts). It is anticipated that the Proposed Action Alternative would be implemented over the next 10 years.

TI with Cattle Fence PVBs Alternative: This alternative is the only other alternative that meets the purpose and need of this PEA. TI would be deployed exactly as described in the Proposed Action Alternative; however, the PVBs would be constructed to serve as both a barrier to illegal vehicles trying to enter the U.S. and as a cattle fence. During the scoping process, landowners and ranchers with borderland property voiced concerns about the use of PVBs along the boundary of their property and the U.S.-Mexico border without providing a barrier for cattle. PVBs would be installed 2 to 5 feet north of any existing fence on the border and existing barbed wire fence would be left in place. Future maintenance of barbed wire fence would thereby be limited by its position behind the PVB. The modifications of PVBs into cattle fence PVBs would include the installation of four to six strands of barbed wire (or similar device) spanning the distance between the vertical steel pipes.

ENVIRONMENTAL CONSEQUENCES: The total footprint of the Proposed Action Alternative is approximately 1,262 acres, if all infrastructure projects are completed. Of this, approximately 373 acres is currently used to support the existing TI in the study corridor. The previously disturbed area consists of the existing border road, access roads, patrol roads, RVSS

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towers, fencing, lighting structures, and ancillary structures. Approximately 889 acres of soils, vegetation, wildlife habitat, and potential habitat for protected species would be permanently altered. Through the use of environmental design measures and due to the vast amounts of similar habitat surrounding the project corridor these impacts would be insignificant. The Proposed Action Alternative would provide protection for unique and sensitive areas (*i.e.*, recreational opportunities, historical structures) by improving safety and reducing vandalism. Although the infrastructure could be visible from NM 9, the resulting reduction of IA related aesthetic degradation would substantially benefit the study corridor. Air emissions from construction activities would result in temporary adverse air quality impacts in the study corridor. The overall air quality would be improved as all-weather road surfaces would reduce the amount of wind blown dust generated by OBP vehicle traffic. Under the Proposed Action Alternative, increased erosion during construction is possible; however, increased sediment and turbidity would have minimal impacts on water quality. The Proposed Action Alternative would potentially impact previously unrecorded cultural resources, particularly archaeological sites which may not be readily evident. To reduce the level of potential impacts on cultural resources, consultation with the New Mexico State Historic Preservation Officer (NMSHPO) and/or the appropriate Tribal Historic Preservation Officer (THPO) for project-specific areas would be required before construction to identify any known cultural resources that may have been recorded in the area. In addition, if the area has not undergone a previous archaeological survey, an investigation would be conducted in order to locate any cultural resources within the area. If there are cultural resources, particularly historic structures, districts, or sacred sites near the proposed infrastructure the potential exists for a visual impact to those resources. In these instances, a viewshed analysis may be appropriate to determine the extent of that impact. As this is a programmatic document, the impact estimates are based on generic planning level assumptions. Future site-specific documents would more accurately assess specific impacts.

Also, the potential exists for indirect adverse impacts to resources outside of the project corridor resulting from shifts in IA activity. However, these impacts are considered insignificant when compared to the No Action Alternative. Indirect beneficial impacts to land use, unique and sensitive areas, soils, air quality, cultural resources, protected species and their associated habitat, as well as vegetation would result from the implementation of the Proposed Action Alternative.

ENVIRONMENTAL DESIGN MEASURES: Environmental design measures to be implemented by the OBP for the Preferred Action Alternative include:

Soils: Before project specific construction activities can occur that may affect prime farmlands, a Natural Resources Conservation Service (NRCS) Form AD 1006 will be submitted to the NRCS for a farmland conversion rating. Soil erosion control can be greatly enhanced with the use of Best Management Practices (BMP). BMPs are designed to reduce the impacts of non-point source pollution during forestry, construction, agriculture and cultivation activities. BMPs include such things as buffers around water bodies to reduce the risk of siltation, installation of water bars to slow the flow of water down hill, and placement of culverts, low water crossings or bridges where streams need to be traversed. These BMPs would greatly reduce the amount of soil lost to runoff during heavy rain events and ensure the integrity of the construction site. In arid areas, BMPs can

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also reduce impacts to air quality by reducing the amount of airborne soil, sand, and particulate matter.

Vehicular traffic associated with engineering, construction, and patrol activities should remain on established roads to the maximum extent practicable. Previously disturbed routes and locations would be utilized to the maximum extent practicable to reduce soil disturbances. Areas with highly erodible soils would be given special consideration to ensure incorporation of various compaction techniques, aggregate materials, wetting compounds, and revegetation to ameliorate the subsequent soil erosion. Erosion control measures such as waterbars, gabions, hay bales, and reseeded would be implemented during and after construction activities. Revegetation efforts will be needed to ensure long-term recovery of the area and to prevent significant soil erosion problems. Native seeds and plants will be used to assist in the conservation and enhancement of protected species as required by Section 7(a)(1) of the Endangered Species Act (ESA).

Biological Resources: Construction equipment would be cleaned following BMPs described in the Stormwater Pollution Prevention Plan (SWPPP) for each project prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species. Soil disturbances in temporary impact areas would be rehabilitated. Rehabilitation would include re-vegetating or the distribution of organic and geological materials over the disturbed area to reduce erosion while allowing the area to naturally vegetate. Additionally, the disturbed and restored areas will be monitored for the spread and eventual eradication of non-native invasive plant species as part of periodic maintenance activities.

To minimize vegetation impacts, designated travel corridors would be marked with easily observed removable or biodegradable markers, and travel would be restricted to the project corridor and staging areas. Native seeds or plants, which are compatible with the enhancement of protected species, will be used to the extent practicable, as required under Section 7(a)(1) of the ESA.

Environmental design measures which should be considered, especially in areas that support protected species, include the development of vegetation corridors to avoid habitat fragmentation and the proper placement and size of culverts to adequately convey stormwater and allow wildlife to safely cross roads. The primary option for mitigation of loss of habitat (*e.g.*, potential bat habitat near the International Mines area) or individuals of a protected species is avoidance. Site-specific projects would be planned in such a way as to avoid areas where known protected species occur to the greatest extent practicable. For construction projects where avoidance is impractical, Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) would be conducted to identify conservation measures and reasonable and prudent measures such as, using biologists to monitor construction progress and conduct post-project, long-term monitoring, as deemed necessary.

The Migratory Bird Treaty Act requires that Federal agencies coordinate with the USFWS if a construction activity would result in the take of a migratory bird. If construction or clearing activities are scheduled during the nesting season (March through September) surveys would be performed to identify active nests in the project vicinity including burrows suitable for nesting burrowing owls. If construction activities would result in the take of a migratory bird, then

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coordination with the USFWS, New Mexico Department of Game and Fish and applicable permits would be obtained prior to construction or clearing activities.

Another environmental design measure that would be considered is to schedule all construction activities outside the nesting season negating the requirement for nesting bird surveys. The proposed RVSS and other communication towers would also comply with USFWS guidelines for reducing fatal bird strikes. These guidelines recommend co-locating new antennae arrays on existing towers whenever possible and to build towers as short as possible without guy wires or lighting. White strobe lights should also be used whenever lights are necessary for aviation safety.

Local threatened and endangered species lists and critical habitat information are included in Section 3 of the PEA. Species and habitat surveys would be performed in the proposed study corridors to determine whether any species or habitat may be detrimentally affected prior to the construction of these projects. If so, then Section 7 consultation with the USFWS would be conducted to identify conservation measures.

Proposed construction activities that take place in northern aplomado falcon habitat should be planned to avoid the falcon's breeding season (March through September). In situations where the breeding season cannot be avoided, pre-construction surveys should be conducted to search the area for nests or breeding pairs. If either are found, consultation with USFWS must be immediate and construction must halt.

The range of the New Mexico ridge-nosed rattlesnake is primarily restricted to Indian, Bear, and Spring Canyons in the Animas Mountains of New Mexico. If avoidance is not practicable, vegetation must be maintained or reseeded to serve as ground cover for the snake. A biological monitor may be necessary during construction to ensure the safety of individual snakes.

In the project area, the Chiricahua leopard frog occurs primarily in or near intermittent creeks and stock tanks of the Animas and Peloncillo Mountains of Hildago County. For projects in the Animas and Peloncillo mountains, all necessary water should be hauled in from off-site, as any available water on-site is essential to the frog's survival. A SWPPP must be followed to reduce impacts from altering surface water flows and pollution.

To avoid possible indirect impacts to the lesser long-nosed bat, vegetation, especially ocotillo, paloverde, prickly pears, and agave must be protected, maintained, or re-established in project areas to the greatest extent practicable. The bat is easily disturbed while roosting, so known roosting sites must be avoided.

Hazardous Materials: To minimize potential impacts from solid and hazardous materials, all fuels, waste oils, and solvents will continue to be collected and stored in tanks or drums within secondary containment system that consist of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery will be allowed only at the existing fuel pump island and all vehicles will have drip pans during storage to contain minor spills and drips. Although it will be unlikely for a major spill to occur, any spill of 5 gallons or more will be contained immediately with the application of an absorbent material (*e.g.*,

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granular, pillow, sock, etc.). Any major spill of 5 gallons or more of a hazardous or regulated substance will be reported immediately to the on-site environmental personnel who will notify appropriate Federal and state agencies. A designated environmental advisor will be on-site during construction activities in case of such accidents.

All used oil and solvents will continue to be recycled if possible. All non-recyclable hazardous and regulated wastes will continue to be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures.

Water Resources: The installation of infrastructure projects would likely require a SWPPP as part of the National Pollution Discharge Elimination System permit process because the area of disturbance would likely exceed 1 acre.

If jurisdictional waters of the U.S., including wetlands, are located within the study corridor and are unavoidable, early coordination with the regulatory section of the local U.S. Army Corps of Engineers District, Environmental Protection Agency, the county NRCS, and other appropriate agencies would be completed prior to the initiation of the construction activities. Applicable Clean Water Act Section 404/401 permit procedures would be completed prior to any work in these areas and compensatory mitigation implemented, as appropriate. When identified, wetlands would be flagged, and silt fences and hay bales placed around the wetland to eliminate and impede any unnecessary impacts to the wetland areas.

Cultural Resources: Prior to any ground disturbing activities, consultation will be initiated with NMSHPO and the appropriate THPO. Site records checks and archaeological surveys will be conducted at each specific project location in order to determine if there are any cultural resources that will be impacted during construction. If significant cultural resources are discovered within the area to be impacted, the appropriate mitigation measures would be implemented to minimize the impacts to those resources. These mitigation measures would be developed in consultation with NMSHPO and the appropriate THPO along with other interested parties. The preferred mitigation measure would be avoidance if possible.

In areas where RVSS and communication towers would be constructed, sites would be assessed for visual impacts to any cultural resources within eyesight of the new equipment. If there is a potential for significant visual impacts to cultural resources, particularly structures and/or historic districts, then a viewshed analysis would be appropriate in order to determine the extent of the visual impacts.

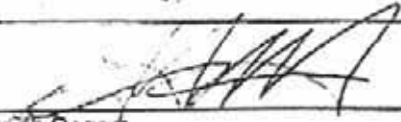

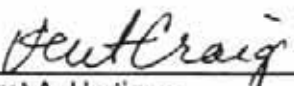
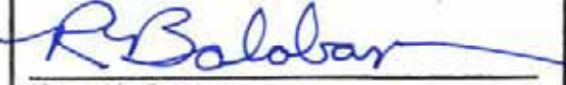
Through all levels of the Section 106 and National Environmental Policy Act (NEPA) process, consultation would be conducted with the appropriate Federally recognized tribes that claim a cultural affinity to the impacted area. These consultations could take the form of formal consultation letters, reviews of the NEPA documents, and reviews of the cultural resources survey reports for the appropriate projects. The construction of RVSS and communication poles and towers can be further expedited through the establishment of Programmatic Agreements (PAs) with the appropriate Native American tribes outlining the types of projects and conditions in which

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direct consultation would be appropriate. These PEAs would be developed in accordance with appropriate Federal laws regarding Native American consultation between the Federal entity and the Native American Tribes.

Aesthetics: Some environmental design measures to minimize potential impacts resulting from RVSS and utility-associated towers would include, but not be limited to, painting the RVSS and utility-associated towers to blend into their background and the use of decorative fencing in urban areas where there is a high aesthetic value. Lighting would be shielded and wattage would be limited to 5 to 6 lumens in order to minimize the extent of impacted areas.

FINDING: Based upon the results of the PEA and the environmental design measures to be implemented, the Proposed Action Alternative would not have a significant adverse effect on the environment. As project-specific plans and funding are identified and committed, site-specific NEPA documents will be prepared and tiered from this document to more accurately assess impacts.

 Garth Rogers Project Proponent El Paso Sector T.I. Coordinator	<u>07/21/06</u> Date
 Mark A. Gable LC-Dallas T.I. Program Manager Environmental Program Manager	<u>21 July 2006</u> Date
for  Margaret A. Hartigan Director Logistics Center-Dallas	<u>8/11/06</u> Date
 Richard L. Balaban Assistant Commissioner Office of Finance	<u>9/25/06</u> Date

Final

**PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
FOR PROPOSED TACTICAL INFRASTRUCTURE
OFFICE OF BORDER PATROL
EL PASO SECTOR
NEW MEXICO STATIONS**

October 2006

Lead Agency: U.S. Customs & Border Protection
Asset Management Division
Portfolio Management Branch
Room 3.4-D
1300 Pennsylvania Avenue, N.W.
Washington, D.C. 20229

Point of Contact: Mr. Charles McGregor
U.S. Army Corps of Engineers
Fort Worth District
819 Taylor Street
Room 3A14
Fort Worth, Texas 76102
Fax: (817) 886-6499

EXECUTIVE SUMMARY

BACKGROUND: The Office of Border Patrol (OBP) is a law enforcement entity of the United States (U.S.) Customs and Border Protection (CBP) within the U.S. Department of Homeland Security (DHS). The OBP's priority mission is to prevent the entry of terrorists and their weapons of terrorism and to enforce the laws that protect the U.S. homeland by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S. During recent years, illegal aliens (IA) have cost U.S. taxpayers billions of dollars annually due directly to criminal activities, as well as the cost of apprehension, detention, and incarceration of criminals; and, indirectly in loss of property, illegal participation in government programs, and increased insurance costs. This Programmatic Environmental Assessment (PEA) was prepared in accordance with the National Environmental Policy Act (NEPA) and will analyze the project alternatives and potential impacts to the human and natural environment from these alternatives.

PURPOSE AND NEED FOR THE PROPOSED ACTION: The purpose of the Proposed Action Alternative is to facilitate the OBP's mission to gain, maintain and extend control of the U.S.-Mexico border. The need for improving the OBP's enforcement effectiveness is based upon increased border activity and its associated costs, the limited workforce available to secure the borders, the continued increase of IAs in remote areas, and the inadequacy of the existing tactical infrastructure (TI) system in the study corridor.

The need for the Proposed Action Alternative is also to increase deterrence and apprehension of IAs; reduce crime along the border areas by enhancing the effectiveness of OBP agents in their daily operations; provide 24-hour operations through the use of technology as force multipliers; improve access to remote areas along the international border; secure the safety of OBP agents and U.S. residents; and improve the ability of OBP agents to rescue IAs in distress.

PROPOSED ACTION: The Proposed Action Alternative involves improvements or construction of 316 miles of border access roads and patrol roads, 78 miles of drag roads, establishment of 160 miles of permanent vehicle barriers (PVB), 7 miles of permanent pedestrian barriers, installation of 30 miles of permanent lights and approximately 5 Remote Video Surveillance Systems (RVSS), and construction of ancillary structures (*i.e.*, low water crossings and culverts). It is anticipated that the Proposed Action Alternative would be implemented over the next 5 to 10 years.

ALTERNATIVES
CONSIDERED:

Three alternatives were considered: The No Action Alternative (Alternative 1), the Proposed Action Alternative (Alternative 2), and the TI as in the Proposed Action with Cattle Fence PVBs Alternative (Alternative 3). Alternative 3 is the same as the Proposed Action Alternative except a barbed wire (or similar) cattle fence would be included in the design of the PVBs installed. Alternative 3 was developed to address concerns identified by landowners and ranchers with property adjacent to the study corridor. The No Action Alternative would preclude any construction activities; thus, illegal vehicle and pedestrian traffic would continue, if not increase, within the study corridor.

ENVIRONMENTAL
IMPACTS OF THE
PROPOSED ACTION
ALTERNATIVE:

The total footprint of the Proposed Action Alternative is approximately 1,262 acres. Of this, approximately 373 acres is currently used to support the existing TI in the study corridor. The previously disturbed area consists of the existing border road, access roads, patrol roads, RVSS towers, fencing, lighting structures, and ancillary structures. Approximately 889 acres of soils, vegetation, wildlife habitat, and potential habitat for protected species would be permanently altered. Through the use of environmental design measures and due to the vast amounts of similar habitat surrounding the project corridor these impacts would be insignificant. As this is a programmatic document, the impact estimates are based on generic planning level assumptions. Future site-specific documents would more accurately assess specific impacts.

Also, the potential exists for indirect adverse impacts to resources outside of the project corridor resulting from shifts in IA activity. However, these impacts are considered insignificant when compared to the No Action Alternative. Indirect beneficial impacts to land use, unique and sensitive areas, soils, air quality, cultural resources, protected species and their associated habitat, as well as vegetation would result from the implementation of the Proposed Action Alternative.

CONCLUSIONS:

Based upon the results of the PEA and the environmental design measures to be implemented, the Proposed Action Alternative would not have a significant adverse effect on the environment. As project-specific plans and funding are identified and committed, site-specific NEPA documents will be prepared and tiered from this document to more accurately assess impacts.

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SECTION 1.0
INTRODUCTION



1.0 INTRODUCTION

The United States (U.S.) Customs and Border Protection (CBP) and Office of Border Patrol (OBP) are preparing two Programmatic Environmental Assessments (PEA). The PEAs address the potential effects, beneficial and adverse, of the proposed installation, operation and maintenance of various existing and proposed tactical infrastructure (TI) in the El Paso Sector (Figure 1-1). This PEA will address proposed TI within the El Paso Sector's area of operation (AO) along the entire New Mexico-Mexico border. The other PEA will address proposed TI along the Texas-Mexico border. The installation of various infrastructure elements is being proposed by the CBP in an effort to enhance the OBP's capability to gain, maintain and extend control of the border in areas between ports of entry (POE). This document describes potential impacts on a programmatic level, which should be used only at the planning level. Site-specific surveys, evaluations, and tiered project-specific National Environmental Policy Act (NEPA) documents would be completed once project-specific designs are identified and funding is available.

This PEA is tiered from the Immigration and Naturalization Service's (INS) Supplemental Programmatic Environmental Impact Statement (PEIS) for INS and Joint Task Force 6 (JTF-6) Activities along the U.S.-Mexico Border (INS 2001). The Supplemental PEIS addressed past and proposed infrastructure for the OBP along the entire southwestern border. Joint Task Force North (JTF-N, formerly JTF-6) was a cooperating agency on the Supplemental PEIS because they provided the labor force and partial funding for many of the border infrastructure projects for the OBP. Future infrastructure projects, such as those described herein, were identified and analyzed in the Supplemental PEIS. A commitment was made in the Supplemental PEIS to prepare subsequent NEPA documents, such as this one, as the need for future projects was identified. This document addresses the possibility of using private contractors, or OBP staff, as well as military units for construction of various TI in the El Paso Sector's New Mexico AO. JTF-N is also a cooperating agency on this PEA. This PEA was prepared in accordance with NEPA and the President's Council on Environmental Quality (CEQ) Regulations for the Implementation of NEPA and Department of Homeland Security (DHS) Management Directive 5100.1, Environmental Planning Program Directive (April 19, 2006) for NEPA compliance and implementation.

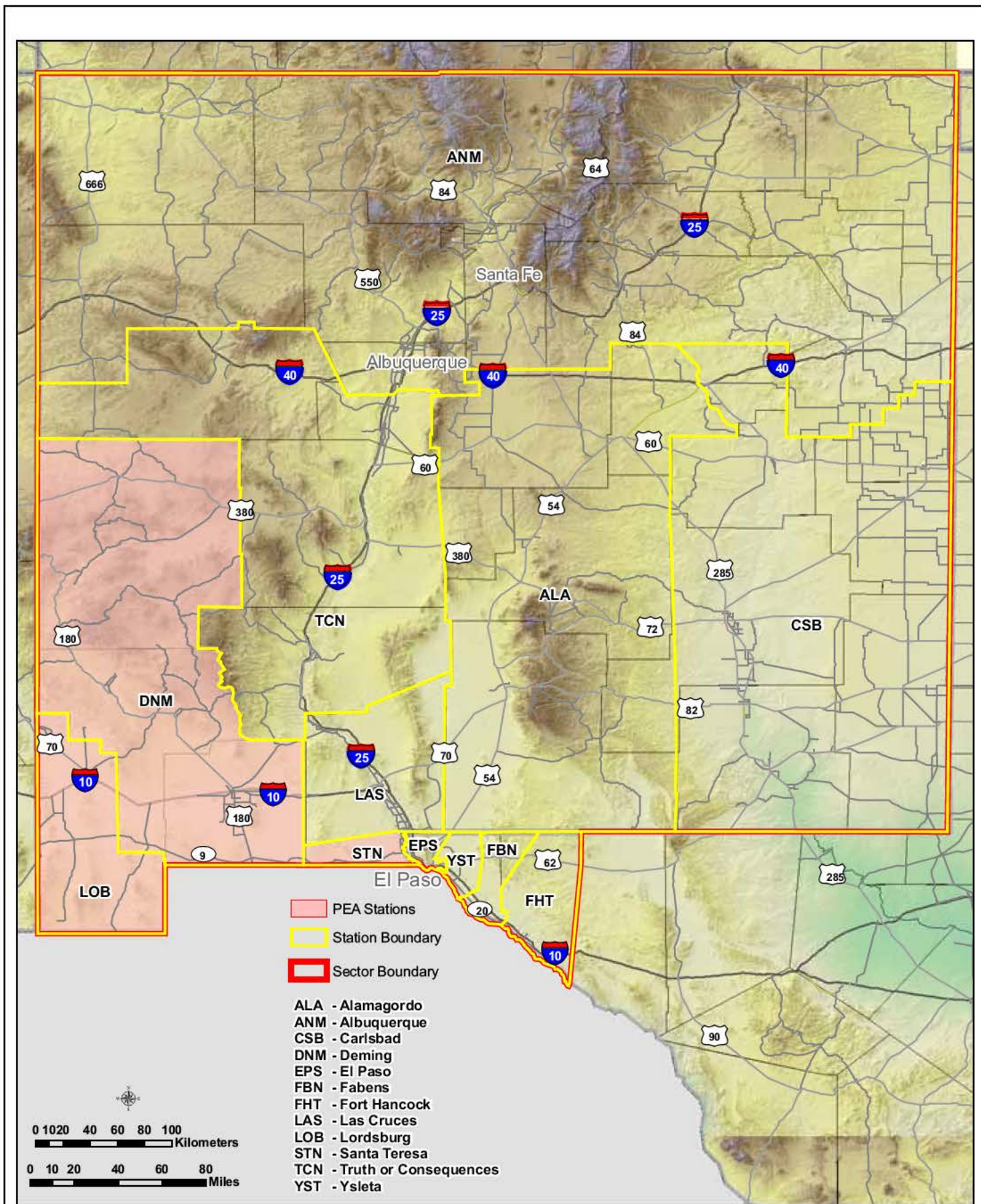


Figure 1-1: El Paso Sector Vicinity Map



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1.1 STUDY CORRIDOR LOCATION

The study corridor for this PEA is located within the New Mexico portion of the OBP's El Paso Sector AO. The southern boundary of the study corridor is defined by the U.S.–Mexico border throughout the state of New Mexico (Figure 1-2). The study corridor extends north to cover New Mexico Highway 9 (NM 9) or no less than 3 miles north of the international border where NM 9 is closer than 3 miles. The study corridor considers the area of potential, direct and indirect impacts resulting from the proposed alternatives by including the immediate border area and lands northward up to NM 9 where illegal activity typically flows east or west. Three OBP stations (Santa Teresa, Deming and Lordsburg) within the El Paso Sector have jurisdiction in the study corridor. The existing and proposed TI within these three stations shall be the focus of this PEA (see Figure 1-2). No existing or proposed TI occurs outside of this study corridor.

1.2 CBP HISTORY

In 1924, Congress created the U.S. Border Patrol to serve as the law enforcement entity of the INS, and it did so until November 25, 2002, when Congress transferred all INS responsibilities to the newly created DHS with the passage of the Homeland Security Act of 2002 (Public Law 107-296). The U.S. Border Patrol was officially transferred into the OBP, under the DHS and CBP, on March 1, 2003.

1.3 CBP STRATEGIC INTENT AND STRATEGIES

The priority mission of CBP is to prevent terrorists and terrorist weapons from entering the U.S. This mission involves maintaining a diverse, multi-layered approach, aimed at improving security at the international borders and POEs, and extending the physical zone of security beyond the Nation's physical borders. As part of this mission, CBP has implemented its *National Border Patrol Strategy* (CBP 2004) to identify and seize terrorists' assets and funding sources and enhance support infrastructure.

In addition to carrying out this mission, the CBP must fulfill its traditional missions that include: controlling the sovereign borders of the U.S. by apprehending individuals attempting to enter the U.S. illegally; stemming the flow of illegal drugs and other contraband; protecting the Nation's agriculture and economic interest from harmful pest and diseases; facilitating international trade; collecting import duties; and enforcing U.S. trade, immigration and other laws of the U.S.

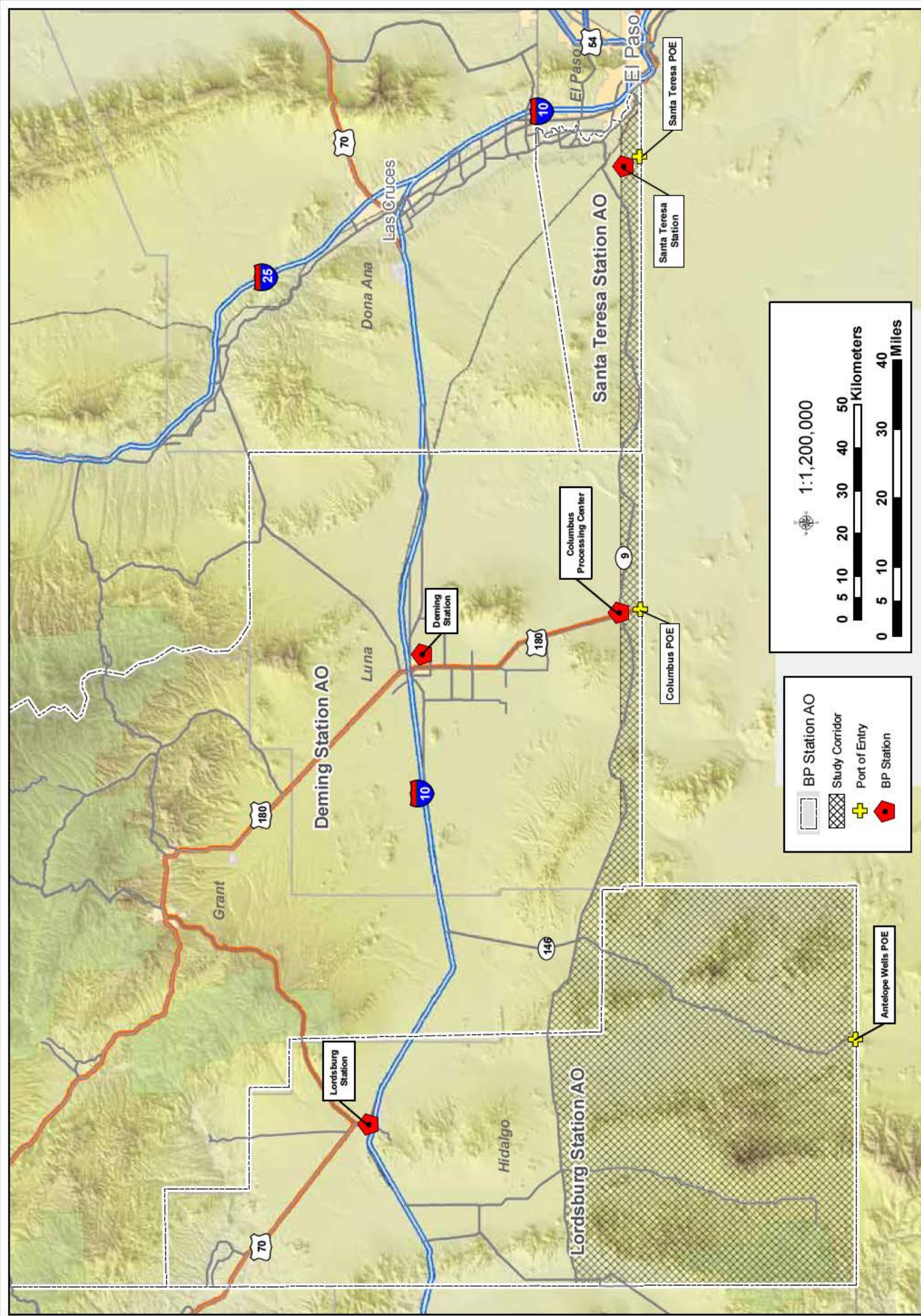


Figure 1-2: El Paso Sector
New Mexico Stations Study Corridor

at and beyond the Nation's borders. Hereinafter, any individual, including terrorists and smugglers, who attempt to illegally enter the U.S. is referred to as an illegal alien (IA).

In the aftermath of the September 11, 2001 terrorist attacks on the U.S. and the subsequent formation of DHS, the OBP has assumed a new priority anti-terrorism mission into its operational environment. The priority mission is to prevent the entry of terrorists and terrorist weapons while fulfilling the OBP's traditional and still very important mission of detecting, interdicting, and apprehending those who attempt to illegally enter or smuggle any person or contraband across sovereign borders of the U.S.

The priority goal of the OBP is to strengthen the U.S. borders to prevent the entry of IAs, terrorist weapons, narcotics and other contraband. The principle objective of the OBP is to apply appropriate levels of OBP personnel, intelligence, technology, and infrastructure resources to increase the level of operational effectiveness until the likelihood of apprehension is sufficient to be an effective deterrent in creating acceptable border-wide control. The intent is to produce a level of deterrence that conveys an absolute certainty of detection and apprehension.

During recent years, the OBP has significantly increased its emphasis on deterrence. Deterrence is achieved only when the OBP has the ability to create and convey the immediate, credible, and absolute certainty of detection and apprehension. As such, TI components, including vehicle barriers and access roads, are a critical element in the current enforcement strategy. Developing trends such as the continued urbanization and industrialization of the immediate border, the recognition of environmental preservation concerns, and the increase of criminal trans-boundary activities (including trafficking in people, drugs, and terrorism efforts) continue to pose a border enforcement challenge and compound the need for TI along the U.S.-Mexico border.

1.4 JOINT TASK FORCE – NORTH MISSION

Military engineer units provided by JTF-N would likely complete all or portions of actions proposed under the Proposed Action Alternative. JTF-N was activated in November 1989, by the Secretary of Defense to support Federal, state and local law enforcement agencies to counter the flow of illegal drugs into the U.S. (JTF-N 2004). JTF-N's mission statement articulates this counterdrug effort:

“JTF-North synchronizes and integrates Department of Defense operational, training and intelligence support to domestic law enforcement agency counterdrug efforts in the continental U.S. to reduce the availability of illegal drugs in the United States; and when directed, provides operational, training and intelligence support to domestic agencies’ efforts in combating terrorism.”

1.5 REGULATORY AUTHORITY

The primary sources of authority granted to OBP agents are the Immigration and Nationality Act (INA), found in Title 8 of the U.S. Code (USC), and other statutes relating to the immigration and naturalization of aliens. The secondary sources of authority are administrative regulations implementing those statutes, primarily those found in Title 8 of the Code of Federal Regulations (8 CFR Section 287), judicial decisions, and administrative decisions of the Board of Immigration Appeals. In addition, the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) and subsequently the Homeland Security Act of 2002, mandates DHS to acquire and improve equipment and technology along the border, hire and train new agents for the border region, and develop effective border enforcement strategies.

Subject to constitutional limitations, OBP agents may exercise the authority granted to them in the INA. The statutory provisions related to enforcement authority are found in Sections 287(a), 287(b), 287(c), and 287(e) [8 USC § 1357(a,b,c,e)]; Section 235(a) [8 USC § 1225]; Sections 274(b) and 274(c) [8 USC § 1324(b,c)]; Section 274(a) [8 USC § 1324(a)]; and Section 274(c) [8 USC § 1324(c)] of the INA. Other statutory sources of authority are Title 18 of the USC (18 USC), which has several provisions that specifically relate to enforcement of the immigration and nationality laws; Title 19 [19 USC § 1401(i)], relating to U.S. Customs Service cross-designation of immigration officers; and Title 21 [21 USC § 878], relating to Drug Enforcement Agency cross-designation of immigration officers.

1.6 PURPOSE AND NEED

The U.S. experiences a substantial influx of IAs and illegal drugs each year. Both of these illegal activities cost U.S. taxpayers billions of dollars annually due directly to criminal activities, as well as the cost of apprehension, detention, incarceration of criminals, and indirectly in loss of property, illegal participation in government programs, and increased insurance costs. In response to these increases in illegal activities, the U.S. Congress passed the IIRIRA in 1996.

Title I, Subtitle A, Section 102 of the IIRIRA states that the Attorney General, in consultation with the Commissioner of INS (now CBP), shall take such actions as may be necessary to install additional physical barriers and roads in the vicinity of the U.S. border to deter illegal crossings in areas of high illegal entry into the U.S. The combination of TI (e.g., physical barriers, remote video surveillance systems [RVSS], and roads), in conjunction with adequate resources (e.g., vehicles, field agents, support personnel), is essential for the safety of the OBP agents and the effective enforcement of the border strategy, and integral to the success of the OBP to gain, maintain, and extend control of the U.S. border. IAs and smugglers have shifted their activities as OBP enforcement operations along other portions of the U.S.-Mexico international border have resulted in greater apprehensions and detections, resulting in IAs taking greater risk to cross the border in areas where the terrain is extremely hard to traverse and has led to the death of a number of IAs.

The purpose of the proposed TI is to improve the OBP's efficiency and probability of IA apprehension to the extent that the TI and OBP's presence serve as deterrence to IAs, terrorists, and other contraband (e.g., drugs, vehicles, weapons) from entering or being brought into the U.S. These improvements would also result in a reduction of associated crimes along the international border and improved safety and welfare of OBP agents. In addition, the proposed TI would reduce impacts to natural and cultural resources and agricultural activities damaged as IAs attempt to enter the U.S. Typical damage to natural resources and infrastructure is shown in Photographs 1-1 and 1-2. The proposed TI components would greatly enhance the operational effectiveness of the OBP by providing quick access to and along the U.S.-Mexico border in areas that have limited access.



Photograph 1-1. Illegal Vehicular Traffic Damage



Photograph 1-2. IA Damage to TI

The need for improving the OBP's enforcement effectiveness is based upon increased border activity and its associated costs, the limited workforce available to secure the borders, the continued increase of IAs in remote areas, and the inadequacy of the existing TI system in the study corridor. The following is a summary of existing TI.

The Santa Teresa Station covers 47 border miles with the following TI:

- 3.1 miles of pedestrian barrier
- 0.7 miles of permanent lighting
- 2.7 miles of permanent vehicle barriers (PVBs)
- Intermittent barbed wire and chain link fence along U.S.-Mexico border

The Deming Station covers 54 border miles with the following TI:

- Dirt and gravel unimproved patrol roads
- 10 miles of intermittent PVBs
- 6-foot chain link fence near Columbus POE
- Seven RVSS
- Intermittent barbed wire fence along U.S.-Mexico border

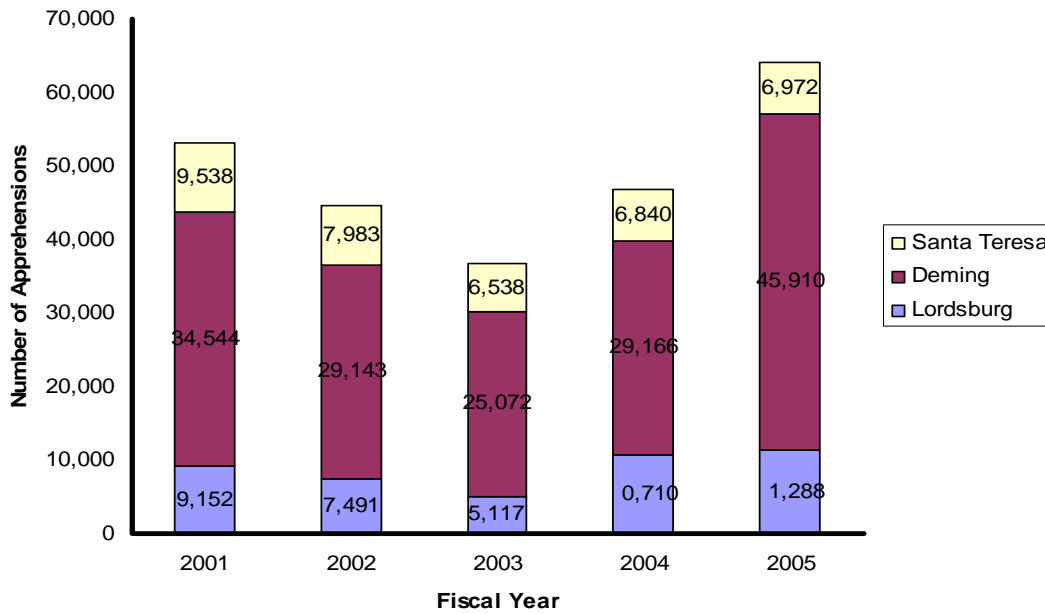
The Lordsburg Station covers 77 miles of border with the following TI:

- Approximately 140 miles of dirt surfaced border access and unimproved patrol roads
- Intermittent barbed wire fence along U.S.-Mexico border

The U.S., and especially the El Paso Sector, experiences a substantial influx of IAs and contraband each year. The OBP has a need to improve response time and secure the safety of IAs attempting to enter the U.S. and the safety of the OBP agents who attempt to apprehend them through a more efficient use of existing man power.

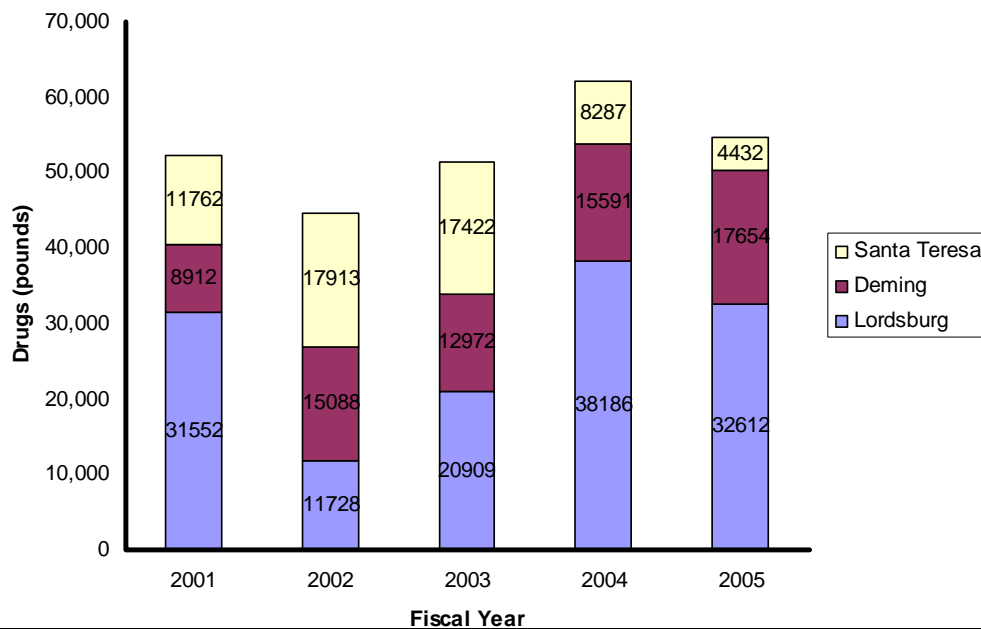
The remoteness of the OBP stations in New Mexico, the harsh desert environment, and the lack of a natural or man-made barrier along the border, have made this portion of the border very active in terms of smuggling and potential health hazards to IAs. During Fiscal Year (FY) 2005 (October 2004 – September 2005) there was a total of 64,170 IA apprehensions in the Santa Teresa, Deming and Lordsburg stations (Figure 1-3). The total number of apprehensions in these stations has increased each year since FY 2003 and has increased approximately 21 percent since FY 2001.

Figure 1-3. Apprehensions from FY 2001 – 2005, For Santa Teresa, Deming, and Lordsburg Stations



Drug seizures are another criteria used to assess the need for increased concentration of infrastructure. Drug seizures for the Santa Teresa, Deming and Lordsburg stations for FY 2001-2005 are shown in Figure 1-4. Since 2001, drug seizures have also increased in the New Mexico stations of the El Paso Sector.

Figure 1-4. Drug Seizures from FY 2001 – 2005 for Santa Teresa, Deming, and Lordsburg Stations



These stations experience high levels of illegal traffic due to the poor quality or absence of TI that typically serve as a deterrent to illegal crossings and enhance the OBP's ability to apprehend IAs. While the number of apprehensions and amount of drug seizures may not be increasing exponentially, these are still substantial numbers that need to be curbed. Without the increase or improvement of TI as proposed, the increasing trend of apprehensions and illegal activities incurred within the New Mexico stations of the El Paso Sector will continue. Given that some stations within the El Paso Sector report well over 100,000 illegal crossings each year, it is highly likely that many of these IAs are ultimately successful in their attempt to enter the U.S. Increasing TI and other resources would result in an increase in apprehension rates and, thus, enhance deterrence.

To summarize, the purpose and need for the proposed program are:

- Increase apprehension of IAs and thus enhance deterrence;
- Reduce crime along the border areas by enhancing the effectiveness of OBP agents in their daily operations;
- Provide 24-hour operations through the use of technology as force multipliers;
- Improve access to remote areas along the international border;
- Secure the safety of OBP agents and U.S. residents; and
- Improve the ability of OBP agents to rescue IAs in distress.

1.8 SCOPE OF THE ANALYSIS

The exact locations, designs, and extent of infrastructure that may be required within the study corridor have not yet been determined. This PEA will analyze the potential impacts associated with installation, construction and maintenance of the proposed infrastructure throughout the study corridor. As this is a programmatic document, the impact estimates are based on generic planning level assumptions. Future site-specific documents would more accurately assess specific impacts. As specific projects are identified, site-specific environmental assessments will be tiered from this PEA, as well as from other related documents. In addition to the analysis of proposed infrastructure and the No Action Alternative, this document will analyze the past, ongoing, and future projects in the area to gain a better understanding of the potential cumulative impacts in the study corridor.

1.9 APPLICABLE ENVIRONMENTAL GUIDANCE, STATUTES, AND REGULATIONS

This PEA was prepared in accordance with, but not limited to the NEPA of 1969; ESA of 1973, as amended; the National Historic Preservation Act (NHPA) of 1966, as amended; and the Archeological and Historical Preservation Act (AHPA) of 1974, as amended. Table 1-1 summarizes the pertinent environmental statutes and regulations and the resource regulated, as well as compliance requirements.

1.10 REPORT ORGANIZATION

This report is organized into nine major sections including this introduction, the description of the purpose and need, and location of the proposed project. Section 2.0 describes all alternatives considered for the project. Section 3.0 discusses the environmental resources potentially affected by the project, while Section 4.0 discusses the environmental consequences for each of the viable alternatives. Environmental design measures are discussed in Section 5.0, and the public involvement discussion is presented in Section 6.0. Sections 7.0, 8.0, and 9.0 present a list of the references cited in the document, a list of the persons involved in the preparation of this document, and a list of acronyms and abbreviations, respectively.

A list of soil types and Prime Farmlands occurring within the study corridor is provided in Appendix A. Appendix B contains the New Mexico Species of Concern Lists for Doña Ana, Luna and Hidalgo counties, which includes a listing of Federally protected plant and wildlife species, the state listed protected species, and Bureau of Land Management (BLM) sensitive species, and the New Mexico Non-native Plants and Noxious Weeds lists. Appendix C contains a list of previously surveyed archaeological sites in the study corridor. Appendix D contains public meeting attendance and comments from both the public meetings and the public comment period. Appendix E contains the correspondence generated during the preparation of this PEA.

Table 1-1. Summary of Relevant Guidance, Statutes, and Regulations Including Compliance Requirements *

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status
Soils	Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6901 <i>et seq.</i> , as amended	U.S. Environmental Protection Agency (EPA)	Proper management, and in some cases, permit for remediation
	Comprehensive, Environmental Response, Compensation, Liability Act of 1980, 42 U.S.C. § 9601 <i>et seq.</i> , as amended	EPA	Development of emergency response plans, notification, and cleanup
Natural Resources	Farmland Protection Policy Act of 1981, 7 U.S.C. § 4201 <i>et seq.</i>	Natural Resource Conservation Service (NRCS)	NRCS determination via Form AD-1006
	7 CFR 657-658 Prime and unique farmlands	USFWS	Compliance by lead agency and/or consultation to assess impacts and, if necessary, develop mitigation measures
	Endangered Species Act of 1973, 16 U.S.C. § 1531 <i>et seq.</i> , as amended	USFWS	Compliance by lead agency and consultation to assess impacts and, if necessary, develop mitigation measures
Cultural/ Archaeological	Migratory Bird Treaty Act of 1918, 16 U.S.C. § 703 <i>et seq.</i>	USFWS	Compliance by lead agency and consultation to assess impacts and, if necessary, develop mitigation measures
	National Historic Preservation Act of 1966, 16 U.S.C. § 470a <i>et seq.</i>	Advisory Council on Historic Preservation through State Historic Preservation Officer	Section 106 Consultation
Air	Archaeological Resources Protection Act of 1979, 16 U.S.C. § 470aa <i>et seq.</i>	Affected land-managing agency	Permits to survey and excavate/ remove archeological resources on Federal lands; Native American tribes with interests in resources must be consulted prior to issue of permits
	Clean Air Act, and amendments of 1990 (42 U.S.C. § 7401 <i>et seq.</i>)	EPA and New Mexico Environmental Department	Compliance with National Ambient Air Quality Standards (NAAQS) and emission limits and/or reduction measures; Conformity to <i>de minimus</i> thresholds; Preparation of a Record of Non-Applicability (RONA)
Water	Federal Water Pollution Control Act of 1977 (also known as the Clean Water Act) (33 U.S.C. § 1251 <i>et seq.</i>)	EPA	Section 402(b) National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges for Construction Activities-Storm Water Pollution Prevention Plan (SWPPP)

Table 1-1, continued

Issue	Action Requiring Permit, Approval, or Review	Agency	Permit, License, Compliance, or Review/Status
Water	Executive Order 11988 (Floodplain Management), 42 Federal Register (FR) 26,951 (May 24, 1997), as amended.	Water Resources Council, Federal Emergency Management Agency (FEMA), CEG	Compliance
	Executive Order 11990 (Protection of Wetlands), 42 FR 26,691 (May 24, 1977), as amended	USACE and U.S. Fish and Wildlife Service (USFWS)	Compliance
	Clean Water Act of 1977 (33 U.S.C. § 1341 <i>et seq.</i>)	USACE and New Mexico Environmental Department	Section 404/401 Permit
Social/ Economic	Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) of 1994, 59 FR 7629 (February 11, 1994)	EPA	Compliance
	Executive Order 13045, Protection of Children	EPA	Compliance
Sound/ Noise	Noise Control Act of 1972, 42 U.S.C. § 4901 <i>et seq.</i> , as amended	EPA	Compliance with surface carrier noise emissions
Health and Safety	Occupational Health and Safety Act of 1970, 29 U.S.C. §651 <i>et seq.</i>	Occupational Safety and Health Administration (OSHA)	Compliance with guidelines including Material Safety Data Sheets
Solid/ Hazardous Waste	Resource Conservation and Recovery Act of 1976. 42 U.S.C. § 6991 <i>et seq.</i> ,	New Mexico Hazardous Waste Bureau	Compliance

* Not All Inclusive

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SECTION 2.0
ALTERNATIVES



2.0 ALTERNATIVES

Several alternatives were considered during the formulation of the Proposed Action Alternative. Any alternative selected as being viable for analysis in the PEA had to satisfy the purpose and need. Therefore, some alternatives considered will not be carried forward in the PEA because they do not satisfy the purpose and need.

2.1 ALTERNATIVE 1: NO ACTION ALTERNATIVE

The No Action Alternative would preclude the installation of any additional TI within the Santa Teresa, Deming and Lordsburg stations' AOs. This alternative would allow the routine maintenance and operation associated with existing infrastructure to continue. Existing infrastructure to be maintained (Figure 2-1) includes intermittent dirt and gravel access and patrol roads along the U.S.-Mexico border, an intermittent 6-strand barbed wire fence on the border, a 6-foot chain link fence near the Columbus POE, 13 miles of PVBs (10 miles near the Columbus POE and 3 miles west of Santa Teresa POE), seven RVSS near the Columbus POE, and approximately 1 mile of permanent lighting near the border at Sunland Park. Even though this alternative would reduce unavoidable impacts associated with the construction of TI and irretrievable losses of resources related to construction activities, it would greatly limit the OBP's capability to prevent and deter illegal activity along the U.S.-Mexico border.

The No Action Alternative does not meet the purpose and need for the proposed project, but will be carried forward for analysis, as required by the CEQ regulations. The No Action Alternative describes the status quo in the absence of any action alternative.

2.2 ALTERNATIVE 2: PROPOSED ACTION ALTERNATIVE

The Proposed Action Alternative involves improvements to or construction of 316 miles of border access roads or all-weather patrol roads, 78 miles of drag roads, establishment of 160 miles of PVBs, 7 miles of permanent pedestrian barriers, installation of 30 miles of permanent lights and approximately five RVSS, and construction of ancillary structures (*i.e.*, low water crossings and culverts) (Figures 2-2a through 2-2c). It is anticipated that the Proposed Action Alternative would be implemented over the next 10 years.

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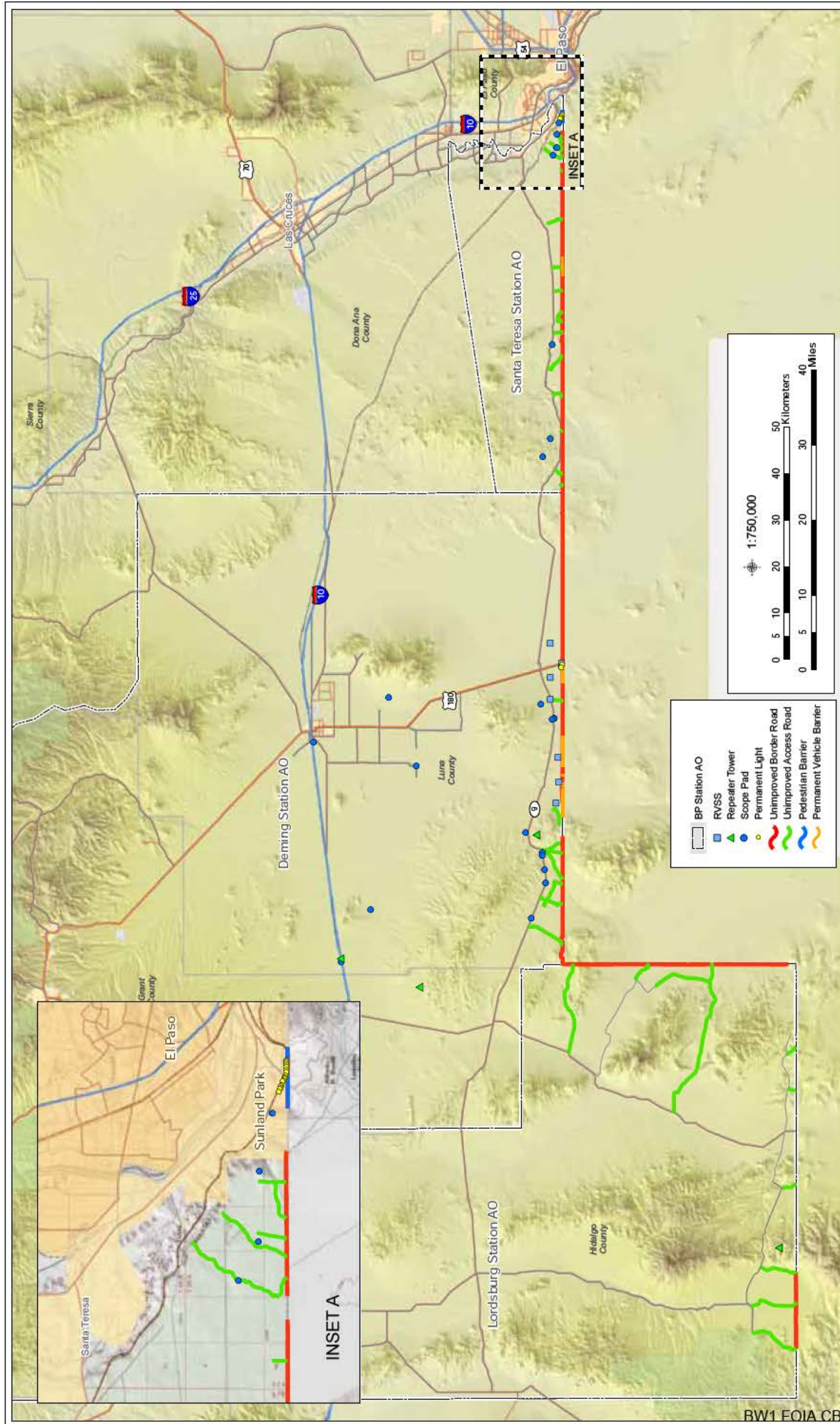


Figure 2-1: El Paso Sector
 New Mexico Stations: Existing Tactical Infrastructure

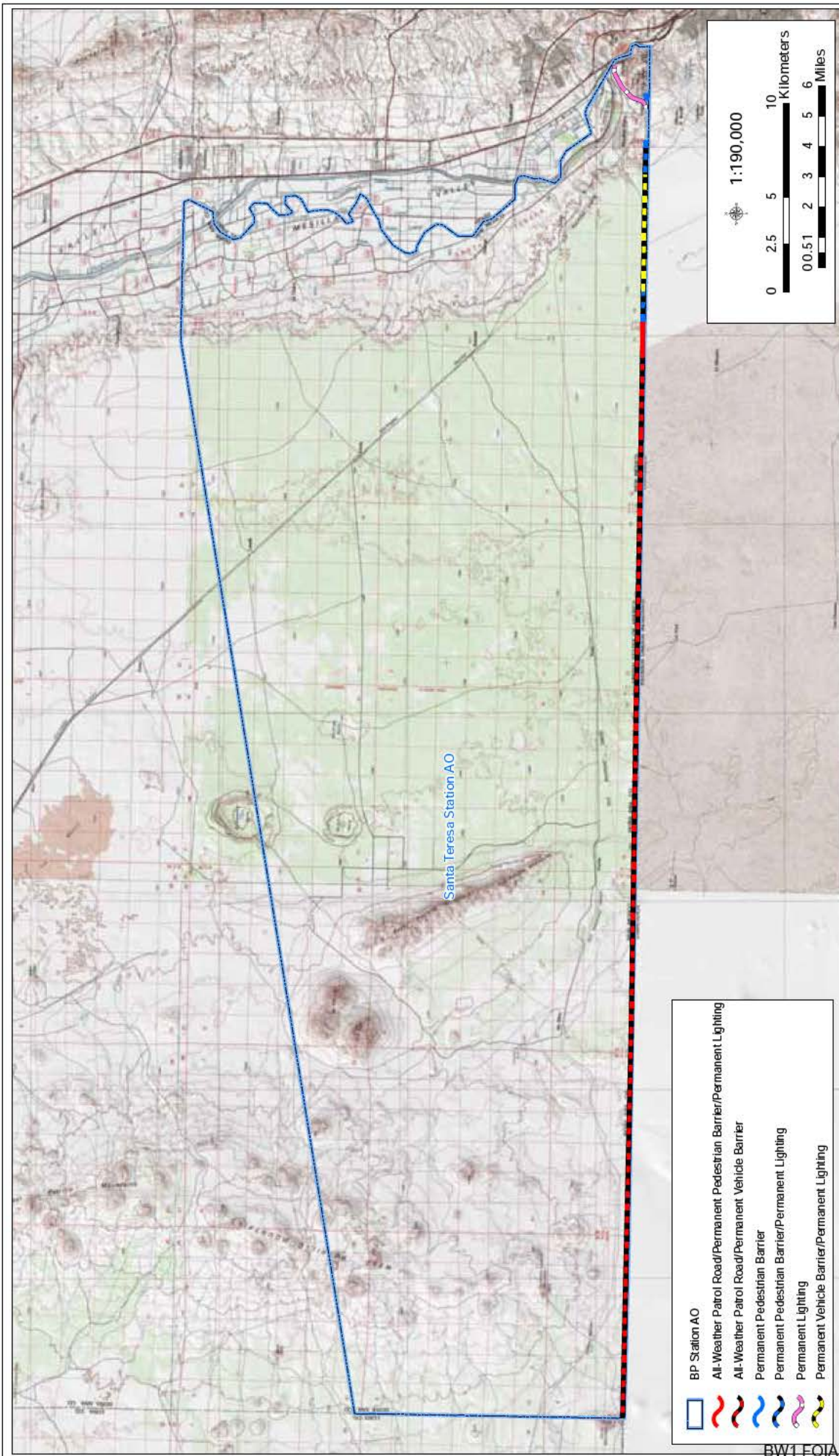


Figure 2-2a: El Paso Sector
 Santa Teresa Station: Proposed Tactical Infrastructure

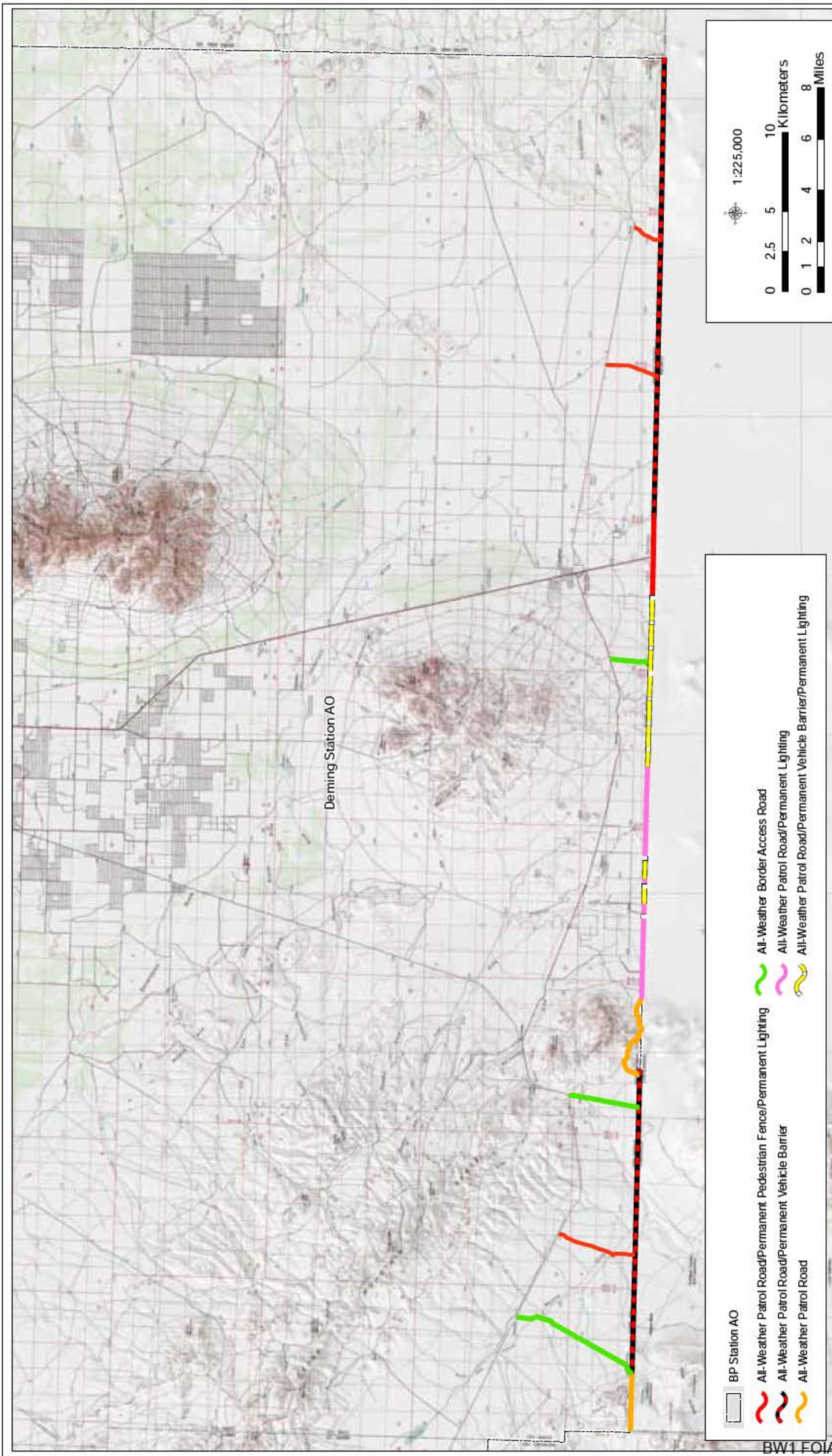


Figure 2-2b: El Paso Sector
Deming Station Proposed Tactical Infrastructure

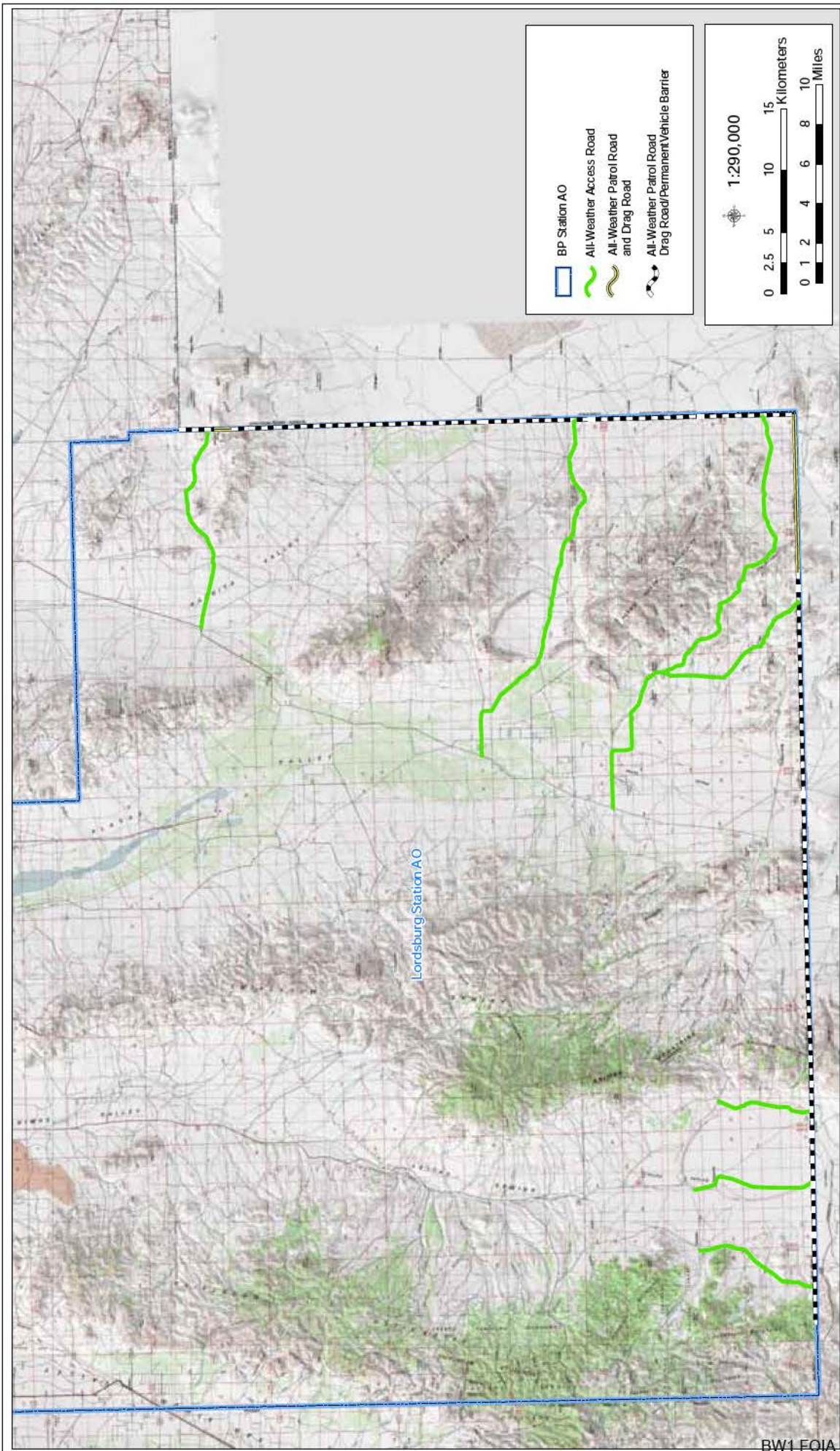


Figure 2-2c: El Paso Sector
Lordsburg Station: Proposed Tactical Infrastructure

The OBP has currently identified one site-specific project. The project was initially identified in 1998, but it was not completed. The project has been reactivated with some modifications to the existing plans due to changes in needs. This project entails the installation of approximately 35 miles of PVBs, 20 miles of permanent pole-mounted lights, 3 miles of permanent pedestrian barrier near the Columbus POE, 58 miles of all-weather patrol roads and drag roads, and 16 miles of border access roads (see Figure 2-2b).

The future locations of the potential TI components would be selected based upon the known high illegal traffic areas and the juxtaposition with existing infrastructure to ensure that the optimum benefits to the OBP's mission would be provided. Locations would be selected based upon the proximity to existing roads, tactical relevance, power sources, condition of current infrastructure, ability to obtain a lease, easement or right-of-way (ROW), and topography. Multiple TI components may be planned for the same sites, for example, over one border mile, it may be necessary to install permanent pedestrian barriers, a patrol road, a drag road and permanent lighting structures. The TI components would work together to enhance the OBP's ability to secure the border. Military engineer units provided by the National Guard and JTF-N, OBP, private contractors, or a combination thereof would complete the actions proposed under this alternative. Typical infrastructure equipment and construction activities that will be analyzed are described below.

2.2.1 Lights

Permanent pole-mounted lights (Photograph 2-1) have been used along the border areas and have aided in the detection of illegal activities, enhanced the missions of the OBP, provided some level of deterrence, and reduced hazardous risks to IAs and OBP agents. The lights would be used both in highly populated areas and in areas where dense vegetation makes spotting IAs difficult. The lights would range from typical streetlights to stadium style lights. The lights would operate from dusk to dawn year-round, typically emitting approximately 5 to 6 foot-candles per square foot of illumination. Lights are typically spaced 100 to 300 feet apart, but light placement depends upon topography, area to be illuminated, and IA routes. Stadium



Photograph 2-1. Typical Permanent Lighting Structure

style lights typically consist of four 1,000-watt metal halide light bulbs; however, the design of these permanent light systems may change in the future. The impact footprint for operation and maintenance of permanent lighting structures would potentially be as wide as 20 feet. The description for permanent lighting systems is only used for planning purposes at a programmatic level; the actual lighting systems, wattage, light shielding, and potential power sources would be disclosed in project-specific NEPA documents tiered from this PEA.

The use of permanent lighting is proposed along approximately 30 miles of the U.S.-Mexico border, 20 miles in the Deming Station AO and 10 miles in the Santa Teresa Station. Lights in Deming would begin 2 miles east of the Columbus POE and extend westward past the POE 18 miles. In the Santa Teresa Station, lighting would be deployed near the Santa Teresa POE and in the Cristo Rey Mountain-Anapra area.

2.2.2 Permanent Pedestrian Barriers

Permanent pedestrian barriers would likely be constructed similar to those in other OBP sectors (e.g., landing mat panel, Photograph 2-2); however, alternative designs such as decorative, or bollard barriers (Photograph 2-3 and 2-4) could be used. Typically in the process of constructing pedestrian barriers, a concrete footing approximately 2 to 4 feet wide and 3 feet deep would be constructed to support the fence posts.



Photograph 2-2. Landing Mat Panel-style Pedestrian Barrier



Photograph 2-3. Typical Bollard-style Pedestrian Barrier



Photograph 2-4. Typical Decorative-style Pedestrian Barrier

In many of the areas where these barriers would be deployed a maintenance road would be necessary to install and later maintain the barriers. The footprint for installation and maintenance of permanent pedestrian barriers would be as much as 20 feet wide.

The Deming Station proposes to install approximately 3 miles of permanent pedestrian barriers near the Columbus POE. The Santa Teresa Station proposes to construct permanent pedestrian barriers to replace the fencing near the Santa Teresa POE and in the Cristo Rey Mountain-Anapra area. The permanent pedestrian barriers would be more difficult to cut, destroy, or vandalize than the type of fencing currently used in these areas. No other pedestrian barriers are proposed in the study corridor at this time. The description of the pedestrian barriers are only used for planning purposes and the actual design and location of pedestrian barriers installed will be described in future project-specific NEPA documents tiered from this PEA.

2.2.3 Permanent Vehicle Barriers (PVB)

PVBs are permanent structures designed to prevent illegal entry of vehicles across the U.S.-Mexico border. As the name implies, PVBs are designed to impede illegal vehicle entry; they do not necessarily preclude pedestrian or wildlife movement. PVBs are typically placed on the north side of the U.S.-Mexico border, as close to the border as physically possible. The design for typical PVBs is to place a steel pipe (approximately 6 to 8 inches in diameter) into the ground approximately 3 feet, fill the pipe with concrete, and weld railroad rails along the tops of the pipes in a horizontal manner. The pipes are placed in the ground on approximately 4-foot centers (Photograph 2-5). Typical construction equipment necessary to complete the installation of the barriers would include: welding machines, diesel generators, auger truck, concrete truck, water truck, crane, road grader, and flatbed truck. Typically, an 8-foot wide impact footprint is necessary for the installation and maintenance of permanent vehicle barriers.



Photograph 2-5. Military-style PVB

Currently, there is a pilot program being tested in the Deming Station AO using the push system for the installation of PVBs. The steel pipes are placed along the border on 4-foot centers, creating bollard-style PVBs. The holes for the pipes are drilled vertically by a directional drilling rig. Sand, soil and rock fragments are pumped out of the hole. The steel pipes are put into the holes and anchored using the removed sand or soil material along with a pre-formed cement core in the hollow of the pipe (Photograph 2-6).



Photograph 2-6. Bollard-style PVB

The method of installation for site-specific projects would be determined during the planning stages for each project. PVBs are proposed for installation along the border in all three New Mexico stations AOs: 6 miles in Santa Teresa AO, 43 miles in Deming AO, and 111 miles in Lordsburg AO.

Permanent physical barriers in remote locations are preferred because of their durability and low maintenance requirements. This is important due to the high levels of illegal vehicle crossings and the remoteness of the study corridor. The distance and time required to travel to remote areas does not allow OBP agents to be present at all times to defend the proposed physical barriers; therefore, the proposed PVB must be able to withstand vandalism and attempts at defeating the barrier. Normandy style barriers may be used in areas of steep terrain where access by heavy equipment is limited. However, temporary vehicle barriers, in lieu of permanent ones, would be difficult to defend, are easily vandalized or removed, and would require constant maintenance.

2.2.4 Roads

Vehicular travel corridors established by local, state, and federal agencies within the study area consist of two-track trails which have not been graded or surfaced, and roads which have been graded or graded and surfaced. Travel corridors which parallel the border and are utilized primarily for patrol activities are termed patrol roads, while travel corridors which trend north to south and are utilized primarily for access to the border are termed access roads. While some patrol and access roads can be dragged, roads which parallel patrol or access roads and are utilized primarily for dragging are termed drag roads. Repair and maintenance of roads includes

grading or resurfacing of existing roads that would not result in a change in functional use or impact a historically significant element or setting. Construction of roads would include the grading or surfacing of two-track trails; creation of new roads through widening or straightening and grading in previously undisturbed areas; or the creation of new alignments in order to provide a strategic advantage, improved line of sight, or decreased distance between roads and the border. Improvement of roads could include the grading, resurfacing, filling with on-site soil or engineered fill (e.g., soil from offsite source that is free of vegetation, rock and lumps larger than 3 inches), lifting and bedding, and installation of proper drainage structures within the existing footprint of the road. The proposed construction and improvements would likely increase the number of motor vehicles in the study area by making the border area more accessible; however, the increase in vehicle traffic would not substantially impact the remote nature of the area.

The construction of new road segments and improvement to existing roads would give OBP agents the ability to patrol the border in a more efficient and effective manner, thus enhancing their capabilities to react to an illegal incursion and provide deterrence to entry attempts. Road construction and improvements would reduce risks to the OBP agents during patrols and reduce vehicle maintenance and downtime associated with poor road conditions. In addition to potential new road segments, three types of road construction or road improvements are proposed herein: grading or surfacing of two-track trails used as patrol or access roads, all-weather surfacing of existing patrol and access roads, and creation of drag roads.

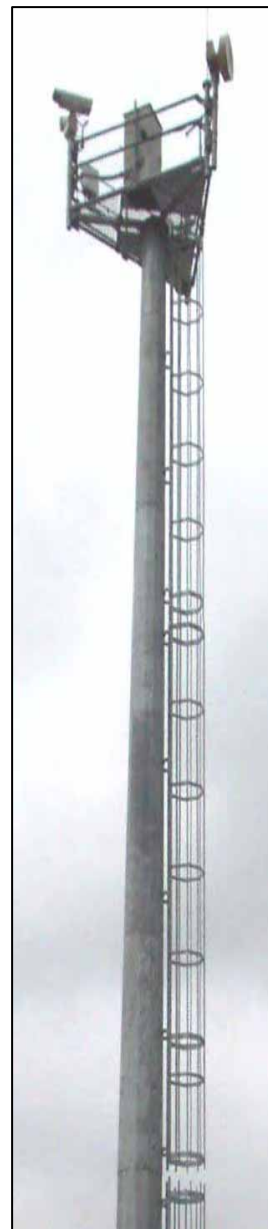
The Proposed Action Alternative involves the construction or improvements of up to 316 miles of all-weather patrol roads and border access roads, construction of 78 miles of drag roads, and the placement of associated drainage structures. While exact designs would differ according to location and specific need, the proposed footprint of the roads is typically 24 feet wide, which includes a 20-foot all-weather driving surface and two 2-foot shoulders. Where planned, a 10-foot wide drag road would parallel the patrol road. Additionally, drainage structures would be added to areas that have periodic surface water flow to prevent roads from washing out and limiting patrol activities during rain events. Site-specific NEPA documents would assess impacts in areas where terrain or other limitations require roads to be constructed beyond the planned footprint.

2.2.5 Remote Video Surveillance Systems (RVSS)

RVSS are one of the most effective detection technologies in the OBP arsenal because of their capability to continuously monitor large areas during the day and night with limited use of personnel. RVSS allow the OBP to more effectively observe a larger area (*i.e.*, a force multiplier), improve response time, and increase the safety of OBP agents and IAs. The RVSS would facilitate the OBP's effort to apprehend IAs in proximity to the border, thereby resulting in a more compact enforcement area to patrol and allow for a greater agent presence.

DHS (2004) estimated that a total of 12 RVSS would be installed within the New Mexico Stations of the El Paso Sector. There are currently seven RVSS in operation in Luna County. It is estimated that approximately five additional RVSS would be constructed over the next 10 years. It should be noted that this number is for planning level analysis only and the actual number of RVSS required will vary depending upon enforcement strategies, topography, and the influx of IAs. The function and deterrence level of RVSS will be evaluated continually on a site-specific basis.

Typical designs for pole mounted RVSS (Photograph 2-7) consist of multiple cameras (low-light and infrared) and transmitters to send the signals to the OBP RVSS operations and control room. Equipment is commonly mounted on 60-foot monopoles or 250-foot towers, depending on the local terrain. The RVSS equipment is mounted on a rectangular or triangular platform that holds the microwave and antennae systems, cameras mounted on pan-and-tilt pedestals, and control equipment. The exact number and type of equipment would depend on the number and types of cameras used, area to be monitored, and other design variables. In addition, one or more solid parabolic antenna is mounted on the platform railings or on a separate antenna mount. The platform would be mounted on steel or concrete poles that are approximately 3 feet in diameter. Typical pole placement is on a foundation that requires a 4-foot diameter by 12-foot deep hole drilled by an auger, but the design is dependent upon subterranean characteristics determined by subsurface investigations. Concrete is placed in the hole and around the pole forming a foundation to anchor the pole in the ground. The area of



**Photograph 2-7.
RVSS Monopole**

potential effect (APE) is between 900 square feet (30 feet x 30 feet) and 2,500 square feet at each site, depending on the power source and height for the RVSS. RVSS that utilize solar power require a larger area for installation of the solar panels and associated equipment (2,500 square feet).

In some instances, towers may be needed to provide line-of-sight to ensure clear transmission signals (Photograph 2-8). The typical design for towers would be a steel three-legged tower ranging in height from 180 feet to 250 feet. The cameras would be installed at a height that would ensure a satisfactory view and provide a clear pathway for transmission of information to relay stations and/or the OBP station. Three circular concrete pilings approximately 3 feet in diameter would be placed at each site to anchor the tower legs in the ground. The tower and associated facilities would disturb an area up to 10,000 square feet (100 feet x 100 feet). Crushed stone would be placed where there is no concrete and an 8-foot chain-link fence would be used to enclose the area.



**Photograph 2-8.
RVSS Tower**

Power to RVSS is generally supplied by aerial lines from adjacent power grids, but solar panels may also be used. As required by the local utility, power would be extended from the service or secondary pole to the RVSS tower utilizing underground conduit. Small propane powered generators with a panel of batteries are used to backup the solar powered systems. Access roads may be required for some RVSS locations. Each RVSS would be evaluated when designs and locations are determined to ensure that adequate access is provided for construction and maintenance. Project-specific NEPA evaluation would occur for all RVSS in accordance with the PEA prepared for RVSS in this region (DHS 2004) or DHS MD 5100.1.

2.3 ALTERNATIVE 3: TI AS IN PROPOSED ACTION WITH CATTLE FENCE PVBs

This alternative is the only other alternative that meets the purpose and need of this PEA. TI would be deployed exactly as described in the Proposed Action Alternative; however, the PVBs would be constructed to serve as both a barrier to illegal vehicles trying to enter the U.S. and as a cattle fence. During the scoping process, landowners and ranchers with borderland property voiced concerns about the use of PVBs along the boundary of their property and the U.S.-

Mexico border. PVBs would be installed 2 to 5 feet north of the existing border. PVBs are designed to exclude vehicular traffic from crossing into the U.S., but they do not inhibit the passage of IA foot traffic or animals. Cattle would be free to roam, causing problems including loss of cattle to open rangeland in Mexico, open pathways for potentially diseased Mexican cattle, and easy access for cattle theft. The modifications of PVBs into cattle fence PVBs would include the installation of four to six strands of barbed wire (or similar device) spanning the distance between the vertical steel pipes. The New Mexico Department of Game and Fish (NMDGF) expressed concerns regarding the design of the cattle fence. The fence design features as suggested by NMDGF include the bottom strand no lower than 16 inches from ground level. Also, the top and bottom wires should be flat, not barbed.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED

Two alternatives were considered but eliminated from further consideration. These alternatives were the Increased Aerial Reconnaissance/Operations Alternative and the Increased Workforce Alternative

Under the Increased Aerial Reconnaissance/Operation Alternative, the use of helicopters, fixed-wing aircraft, and remotely piloted aerial vehicles would be used for surveillance to support the El Paso Sector. This alternative was eliminated from further consideration because it does not fully satisfy the purpose and need of the project in terms of providing an increase to the deterrence, detection, and apprehension. Aerial reconnaissance/operations require highly skilled pilots and can only operate under favorable weather conditions. Aerial reconnaissance/operations also have limited detection capabilities at night and in areas with steep topography or thick vegetation.

This alternative was also eliminated because it does not meet all of the operational criteria. However, aerial reconnaissance/operations are an effective operational strategy for the El Paso Sector when used in combination with various infrastructures. For example, aerial operations have proven highly effective for performing search and rescue missions and during vehicle pursuits. Due to their effectiveness in given situations and specific areas of the El Paso Sector, increasing aerial reconnaissance/operations may be a helpful solution to meet the purpose and need of other OBP activities. Also, unmanned air vehicles are presently being tested for use as high altitude surveillance platforms to provide day-night search and rescue and apprehension

assistance for OBP. This technology is still in its test phase and will be addressed in the cumulative effects section as a foreseeable future project.

Another alternative considered during the preparation of this EA was to increase the workforce at the stations. The Strategic Border Initiative authorized additional agents for the El Paso Sector; however, there is no guarantee that the maximum number of agents would be hired, trained or deployed. Additional OBP agents would be stationed in areas 24 hours per day, 7 days a week. In some areas of the El Paso Sector, road improvements would be imperative, as agents are currently unable to access the border. Without additional infrastructure such as improved roads, vehicle barriers, lighting, and RVSS, this alternative would not provide the same level of deterrence as the Proposed Action Alternative. In addition, the purchase of large amounts of equipment would be necessary to equip OBP agents and their vehicles with infrared cameras or spotting scopes to allow night observations.

Under this increased workforce alternative, patrol roads would not be constructed and remain in the same unimproved condition as they are now. However, due to an increase in workforce, more vehicles would use patrol roads, possibly degrading their current condition and increasing safety risks to OBP agents. Drainage structures and bridges would also be absent from this alternative, limiting accessibility if IAs were detected. Permanent lighting would not be utilized under this alternative; which would also increase the safety risk to OBP agents, due to lack of lighting in remote areas. In addition, the effectiveness of the OBP would not be improved under this alternative since IAs and drug smugglers would continue to travel across the U.S.-Mexico border unrestricted without the assurance of certain apprehension.

2.5 SUMMARY

Only two of the five action alternatives and the No Action Alternative were carried forward for detailed analysis. The other alternatives did not meet the stated purpose and need. The Proposed Action Alternative and Alternative 3 provide several means of enhancing the OBP's capabilities along the border, fully meeting the purpose and need.

Table 2-1 presents a summary matrix of the alternatives compared to the purpose and need. Table 2-1 demonstrates how the Proposed Action Alternative and Alternative 3 fully meet the purpose and need of this PEA. Table 2-2 presents a summary of impacts anticipated to occur

with implementation of the No Action Alternative, Proposed Action Alternative, and TI as in the Proposed Action Alternative with Cattle Fence PVBs alternatives. The definitions for significance and thresholds of significance for the impacts are presented in Section 4.0 of this PEA.

Table 2-1. Alternative Matrix

Purpose and Need	No Action Alternative	Proposed Action Alternative	Cattle Fence/ PVBs	Increased Aerial Reconnaissance/ Operations	Increased Workforce Alternative
Improve the OBP's efficiency and probability of IA apprehension	No	Yes	Yes	Partial	Partial
Reduce illegal crossings and associated crime within the U.S.	No	Yes	Yes	No	Partial
Compensate for limited manpower	No	Yes	Yes	Partial	Yes
Reduce the potential of terrorists and smugglers crossing the U.S.-Mexico border	No	Yes	Yes	Partial	Partial
Meet the requirements of IIRIRA	No	Yes	Yes	No	No
Reduce safety risks to OBP agents	No	Yes	Yes	No	Partial
Provide for 24 hour surveillance and protection support along the U.S.-Mexico border	No	Yes	Yes	No	Partial

Table 2-2. Summary Matrix of Potential Impacts

Affected Environment	No Action Alternative	Proposed Action Alternative	Cattle Fence PVB Alternative
Land Use	<p>The No Action Alternative would not directly affect land use. However, crimes attributable to IA activity would continue to affect urbanized areas. Croplands and pasturelands would continue to be degraded by illegal traffic</p>	<p>The Proposed Action Alternative would substantially reduce illegal traffic and associated impacts. Approximately 762 acres of shrub and brush rangeland, 316 acres of mixed rangeland, 3 acres of nonforested wetland, 5 acres of transitional areas, and 16 acres of evergreen forestland would be impacted by the Proposed Action Alternative.</p> <p>Some sections of the border would remain porous to cattle, which could impact ranching operations by loss of cattle to open rangeland in Mexico, open pathways for potentially diseased Mexican cattle, and easy access for cattle theft.</p>	<p>The effects of reduced illegal traffic and the effects of lost productivity resulting from this alternative would be equal to those described for the Proposed Action Alternative. However, this alternative would greatly reduce the potential for contamination of U.S. cattle by migrating Mexican cattle.</p>
Soils and Prime Farmlands	<p>The No Action Alternative would not result in direct impacts to previously undisturbed soils; however, the OBP would not be as effective in detecting or apprehending IAs. The continuation of illegal traffic and OBP enforcement activities has the potential of impacting soils (<i>i.e.</i>, erosion, compaction) in the study corridor.</p>	<p>The Proposed Action Alternative would directly impact approximately 73 acres of Hondale-Playas, 204 acres of Mohave-Stellar-Forest, 237 acres of Nickel-Upton-Tres Hermanos, 50 acres of Hondale-Mimbres-Bluepoint, 92 acres of Eba-Cloverdale-Eicks, 146 acres of Pintura-Wink and 2 acres of Glendale-Harkey soils. Long-term impacts would result from the loss of biologically productive soils. Temporary impacts would consist of possible soil erosion during construction activities; however, these impacts would be insignificant through the use of erosion control measures. Indirect beneficial impacts would also be realized from possible reduction in disturbance from illegal traffic.</p> <p>As prime farmlands or farmland of statewide importance are impacted, the Natural Resources Conservation Service would determine if mitigation measures would be necessary to offset the impacts of the proposed infrastructure.</p>	<p>Impacts from this alternative would be the same in nature and extent as the Proposed Action Alternative. While minor, some additional benefits could be realized by reducing or eliminating the potential for uncontrolled grazing and ground disturbance by Mexican cattle.</p>

Table 2-2, continued

Affected Environment	No Action Alternative	Proposed Action Alternative	Cattle Fence PVB Alternative
<p>Vegetation Communities</p>	<p>Under this alternative, native vegetation communities would continue to be degraded by illegal vehicle and foot traffic. Erosion and fugitive dust have a minimal effect on vegetation by damaging roots and reducing plant respiration and photosynthesis.</p>	<p>Equipment used during the resurfacing of roads could cause temporary degradation of up to 899 acres of natural vegetation. The infrastructure construction would permanently replace up to 658 acres of Chihuahuan Desertscrub, 307 acres of grasslands and prairies, and 82 acres of woodland communities with man-made surfaces.</p> <p>The impacts of increased fugitive dust (<i>i.e.</i>, reducing respiration and photosynthesis) and potential for erosion would be reduced by environmental design measures. Overgrazing by cattle from Mexico can result in the loss of palatable and native grasses, increased erosion, and irreversible changes to the native ecosystems.</p> <p>The reduction of illegal traffic in the study corridor would benefit natural vegetation communities.</p>	<p>Effects of this alternative on natural vegetation would be the same as those resulting from the Proposed Action Alternative. However, some further minor benefits would be realized by the exclusion of Mexican cattle.</p>
<p>Wildlife Resources</p>	<p>Indirect effects would continue due to IA activities. The intensity of these indirect effects would increase as road conditions deteriorate and OBP efforts to patrol remote areas are increasingly hampered. IA traffic could result in loss and degradation of habitat and could cause incidental take of certain species.</p>	<p>Wildlife species which would potentially be impacted include small mammals, reptiles, and bird species. The impacts to foraging grass habitat and ground nesting habitat would be insignificant due to the actual area disturbed by the Proposed Action Alternative.</p> <p>The long-term effects of an increased photoperiod from lights at night on mobile wildlife species are expected to be insignificant. Short-term impacts of noise from construction may include an increase in heart rate to more damaging effects on metabolism and hormone balance. Long-term exposure to noise can cause excessive stimulation of the nervous system and chronic stress.</p> <p>The reduction of IA activity in the study corridor would indirectly benefit wildlife habitat.</p>	<p>This alternative would have the same impact on all wildlife species as the Proposed Action Alternative with the exception of impact on large mammal species. Vehicle barriers with barbed wire strands could impede movement of deer, pronghorn, or other large wildlife species unable to go under or over the barbed wire strands.</p>

Table 2-2, continued

Affected Environment	No Action Alternative	Proposed Action Alternative	Cattle Fence PVB Alternative
<p>Protected Species and Critical Habitat</p>	<p>Indirect effects would continue due to IA activities. IA traffic could result in loss and degradation of habitat and could cause incidental take of certain species. No new information regarding threatened or endangered species and their habitats would be collected because surveys would not be conducted as part of OBP projects.</p>	<p>Some Federally protected fauna species may potentially be impacted directly or indirectly during the proposed activities. However, through the use of environmental design measures these impacts would be avoided. Therefore, the Proposed Action Alternative would not substantially affect Federally-listed species. Additionally, there would be no impacts to sensitive vegetation.</p> <p>Beneficial impacts to Federal and state listed species and their habitat could occur in the areas surrounding the study corridor by the reduction or possibly elimination of illegal traffic, brush clearing, and fires caused by IAs. However, beneficial impacts would be minimal.</p>	<p>This alternative would likely have no additional impacts on protected species than that of the Proposed Action Alternative. The protected study corridor would not be restricted by barbed wire. An indirect benefit resulting from the fencing of the PVBs would be the prevention of trampling of small species by large ungulate species unable to cross the fence.</p>
<p>Non-Native and Invasive Plants</p>	<p>Illegal vehicular and foot traffic would continue to cross into the study corridor potentially carrying non-native and invasive plant species propagules. Illegal vehicles would continue to disturb soils providing opportunities for non-native and invasive plant species to become established and potentially introducing additional non-native species to the region.</p>	<p>Construction activities would result in up to 1,278 acres of disturbed soils providing opportunities for the establishment of non-native and invasive plant species. OBP vehicles and agents could carry propagules from existing non-native or invasive plants into previously inaccessible areas, due to improved roads and increased patrols. The Proposed Action Alternative would facilitate the spread of these pest plants substantially less than under the No Action Alternative. Measures to prevent the spread of non-native and invasive plant species would be implemented to minimize these impacts.</p>	<p>This alternative would reduce non-native and invasive plant propagules pressure through the exclusion of Mexican cattle. However, similar to the Proposed Action Alternative, OBP vehicles and agents could potentially act as dispersal vectors of non-native propagules.</p>

Table 2-2, continued

Affected Environment	No Action Alternative	Proposed Action Alternative	Cattle Fence PVB Alternative
<p>Unique or Sensitive Areas</p>	<p>The Douglas Ranger District of the Coronado National Forest, Pancho Villa State Park, and Mount Cristo Rey would remain vulnerable to impacts from illegal traffic. IAs can damage natural habitats and detract from the overall recreational and scenic value of these unique areas by creating trails and discarding trash. Furthermore, the general safety of these unique areas would remain questionable at best.</p>	<p>The Coronado National Forest and Pancho Villa State Park would not be directly affected by the Proposed Action Alternative. The construction of permanent pedestrian barriers and installation of permanent lighting would moderately detract from the aesthetic resources of Mount Cristo Rey. Ultimately, the Proposed Action Alternative would provide protection for those resources (recreational opportunity, historical structures) by improving safety and reducing vandalism. The Proposed Action Alternative would result in a substantial reduction of IA degradation of, and presence within, these unique areas.</p>	<p>This alternative would result in the same effects to unique and sensitive areas as those described for the Proposed Action Alternative.</p>
<p>Aesthetics</p>	<p>Under the No Action Alternative illegal vehicle and foot traffic would continue to impact aesthetics within the study corridor. Trash, graffiti, and general vandalism associated with IA traffic would continue to detract from the visual quality of urbanized areas. The trash and trails created by IAs in more remote areas is often not seen by the general public, but detracts from the sense of isolation characteristic of vast, open scrublands and grasslands.</p>	<p>Infrastructure could impact the aesthetic resources where sensitive receptors are present. Permanent vehicle barriers could create a visual break in the continuous expanse of generally undisturbed vegetation. However, permanent vehicle barriers would not be visible from distances greater than 1.5 miles, having a minimal effect on aesthetic resources. Although the infrastructure could be visible from New Mexico Highway 9, the resulting reduction of IA related aesthetic degradation would substantially benefit the study corridor. This alternative would result in an indirect reduction of IA degradation of the aesthetic environment. Impacts related to lighting would be minimized by the use of directional shielding and by limiting wattage.</p>	<p>The effects of this alternative on aesthetic resources would be the same as those described for the Proposed Action Alternative.</p>

Table 2-2, continued

Affected Environment	No Action Alternative	Proposed Action Alternative	Cattle Fence PVB Alternative
<p>Air Quality</p>	<p>Without the proposed infrastructure, increased IA activity and subsequent OBP enforcement actions would exacerbate PM₁₀ within the study corridor. The continued use of dirt patrol roads without roadway improvements or routine maintenance would result in continued degraded conditions and do little to reduce sources of wind blown dust within the region.</p>	<p>Air emissions from construction activities would result in temporary adverse air quality impacts in the study corridor. Routine patrol and maintenance efforts by the OBP would be the only CO and PM₁₀ emissions produced. The overall air quality would be improved as all-weather road surfaces would reduce the amount and magnitude of wind blown dust relative to the No Action Alternative.</p>	<p>Construction activities would be the same in footprint and duration to that of the Proposed Action Alternative. Incorporation of barbed wire on permanent vehicle barriers would result in only minimal construction time or effort and would be accomplished during the construction period.</p>
<p>Water Resources</p>	<p>This alternative would not directly impact water availability or cause contamination of aquifers resultant of overdraft or water level declines. However, without improved efficiency and effectiveness of apprehension, an increase in IA traffic and OBP activities would occur. Contaminants in recharge waters would potentially impact groundwater in the Mesilla basin; however, the Cloverdale, Playas Lake, Animas, and Mimbres basins would not be impacted.</p>	<p>Under the Proposed Action Alternative, increased temporary erosion during construction is possible; however, increased sediment and turbidity would have minimal impacts on water quality. Limited and short-term withdrawal from western basins (Cloverdale, Playas Lake, Animas, Mimbres) would not affect long-term water supplies or groundwater quality. The volume of water withdrawn would not affect the public drinking water supplies, but could indirectly contribute to aquifer contamination from surface runoff. The indirect effects of altered surface drainage and potential consequent erosion would have minimal beneficial and adverse impacts to surface water quality.</p>	<p>The impacts to water resources would be the same for this alternative as those discussed for the Proposed Action Alternative.</p>

Table 2-2, continued

Affected Environment	No Action Alternative	Proposed Action Alternative	Cattle Fence PVB Alternative
<p>Hazardous Wastes</p>	<p>Under the No Action Alternative, solid or hazardous waste would potentially be abandoned without notification by IAs. In this case, a potentially adverse impact would occur because proper disposal/clean up procedures would not be followed.</p>	<p>Site-specific Environmental Baseline Studies or Environmental Site Assessments would be conducted for each project. These studies would identify any environmental liabilities and outline appropriate remediation. Construction personnel would be informed about the potential to encounter hazardous wastes that may be present on the site from illegal dumping and the appropriate procedures to use if suspected hazardous contamination is encountered.</p>	<p>By implementing this alternative, the potential for major spills or coming into contact with hazardous waste is the same as the Proposed Action Alternative.</p>
<p>Noise</p>	<p>No direct impacts, beneficial or adverse, would occur to ambient noise levels as a result of the No Action Alternative because no new construction activities would take place. Noise generated by OBP activities and routine maintenance would remain at the same levels within the study corridor.</p>	<p>This alternative would result in temporary increases in ambient noise levels during construction; however, a noise of 80 dBA would be attenuated to 50 dBA (quiet) at a distance of 1,067 feet (325 meters). Construction activities would also increase ambient noise levels in rural and undeveloped areas, but the absence of human noise receptors in the majority of the study corridor would negate the issue of noise.</p>	<p>Temporary and permanent adverse impacts under this alternative would be the same as in the Proposed Action Alternative. Increased construction noise from the installation of barbed wire would be minimal yet slightly greater than in the Proposed Action Alternative.</p>

Table 2-2, continued

Affected Environment	No Action Alternative	Proposed Action Alternative	Cattle Fence PVB Alternative
<p>Cultural Resources</p>	<p>The No Action Alternative would not result in any direct effects to cultural resources. However, as illegal traffic and the consequent enforcement actions continue, indirect effects to known and undiscovered sites could be incurred.</p>	<p>The Proposed Action Alternative would potentially impact previously unrecorded cultural resources, particularly archaeological sites which may not be readily evident. To reduce the level of potential impacts on cultural resources, consultation with the appropriate SHPO and/or THPO for the area would be required before construction to identify any known cultural resources, including historic structures, archaeological sites, or sacred sites that may have been recorded in the area. In addition, if the area has not undergone a previous archaeological survey, an investigation would be conducted in the APE of the construction in order to locate any unknown cultural resources within the area. If there are cultural resources, particularly historic structures, districts, or sacred sites near the proposed infrastructure the potential exists for a visual impact to those resources. In these instances, a viewshed analysis may be appropriate to determine the extent of that impact.</p>	<p>The effects of Alternative 3 on cultural resources would be the same as those resulting from the Proposed Action Alternative.</p>
<p>Socioeconomics</p>	<p>The No Action Alternative would not result in increases to population in the project vicinity. IA activities and their associated costs would continue. Illegal activities cost U.S. taxpayers billions of dollars annually due directly to criminal activities, as well as the cost of apprehension, detention, incarceration of criminals, and indirectly in loss of property, illegal participation in government programs, and increased insurance costs.</p>	<p>The proposed activities would not have impacts on the local employment or income. Proposed construction would not induce a permanent in-migration of people nor would there be additional permanent employees; therefore, there would be no increase in demand for housing. TI would benefit socioeconomics of the area by reducing the costs associated with illegal activity through the OBP's increased deterrence and apprehension capabilities.</p> <p>Indirect impacts to ranchers would potentially occur with the construction of PVBs along the border. In the past, it has been noted that where PVBs are installed, the barbed wire fencing systematically disappears. With no barbed wire fence to contain the cattle, American ranchers could potentially lose many head of cattle to Mexico. Cattle from Mexico could potentially enter American ranches and cause overgrazing or spread unknown diseases.</p>	<p>The effects of Alternative 3 on socioeconomics would be similar to those resulting from the Proposed Action Alternative. However, with the inclusion of barbed wire on the PVBs, the impacts to ranchers would be greatly reduced relative to the Proposed Action Alternative.</p>

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SECTION 3.0
AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

This section of the PEA describes the natural and human environment that exists within the study corridor and Region of Influence (ROI). Only those parameters that have the potential to be affected by the Proposed Action Alternative are described, as per CEQ guidance (40 CFR 1501.7 [3]). Some topics are limited in scope due to the lack of direct effect from the proposed project on the resource, or because that particular resource is not located within the study corridor. Therefore, resources such as utilities, communications, climate, and scenic rivers are not addressed. These resources are not addressed for the following reasons:

- Communications: The Proposed Action Alternative would not affect communications systems in the area.
- Geology: The Proposed Action Alternative involves only disturbances to the topsoil layers. Therefore, geologic resources will not be discussed further
- Climate: The Proposed Action Alternative would not affect nor be affected by the climate.
- Wild and Scenic Rivers: The Proposed Action Alternative would not affect any designated Wild and Scenic Rivers because no rivers designated as such are located within, or near the study corridor.

3.1 LAND USE

Land use was assessed using the U.S. Geological Survey (USGS) land cover/land use map (USGS 1986). Each land use type was categorized as developed, agriculture, or natural. The total area within each station and within the boundaries of the study corridor is summarized in Table 3-1. The vast majority of the land within Lordsburg, Deming, and Santa Teresa stations remains natural and over 81 percent of the study corridor includes barren, undeveloped geographic features (e.g., bare exposed rock, dry salt flats) or natural vegetation. Development is sparse within these stations and accounts for less than 1 percent of the study corridor. Development includes residential, industrial, and commercial areas, as well as transportation and communication infrastructure. The remaining 18 percent of lands are used for agriculture which is primarily pasture lands, but include confined feeding operations and a variety of crop lands.

Table 3-1. Summary of Corridor Land Use within the El Paso Sector

Land Use	Deming (acres)	Santa Teresa (acres)	Lordsburg (acres)	Total
Developed	765	1,966	1,682	4,413
Agriculture	80	44	589	761,380
Natural	166,718	81,646	1,287,064	774,760
Total	167,563	83,656	1,289,334	1,540,553

3.1.1 Santa Teresa Station

Natural area is the predominant land use within the Santa Teresa Station AO, where shrub and brush rangeland and mixed rangeland uses account for nearly 98 percent of the land area (Figure 3-1a). Lands developed for residential, commercial, industrial, and mining purposes account for 2 percent of station lands, while agricultural lands occupy less than 1 percent of the remaining lands.

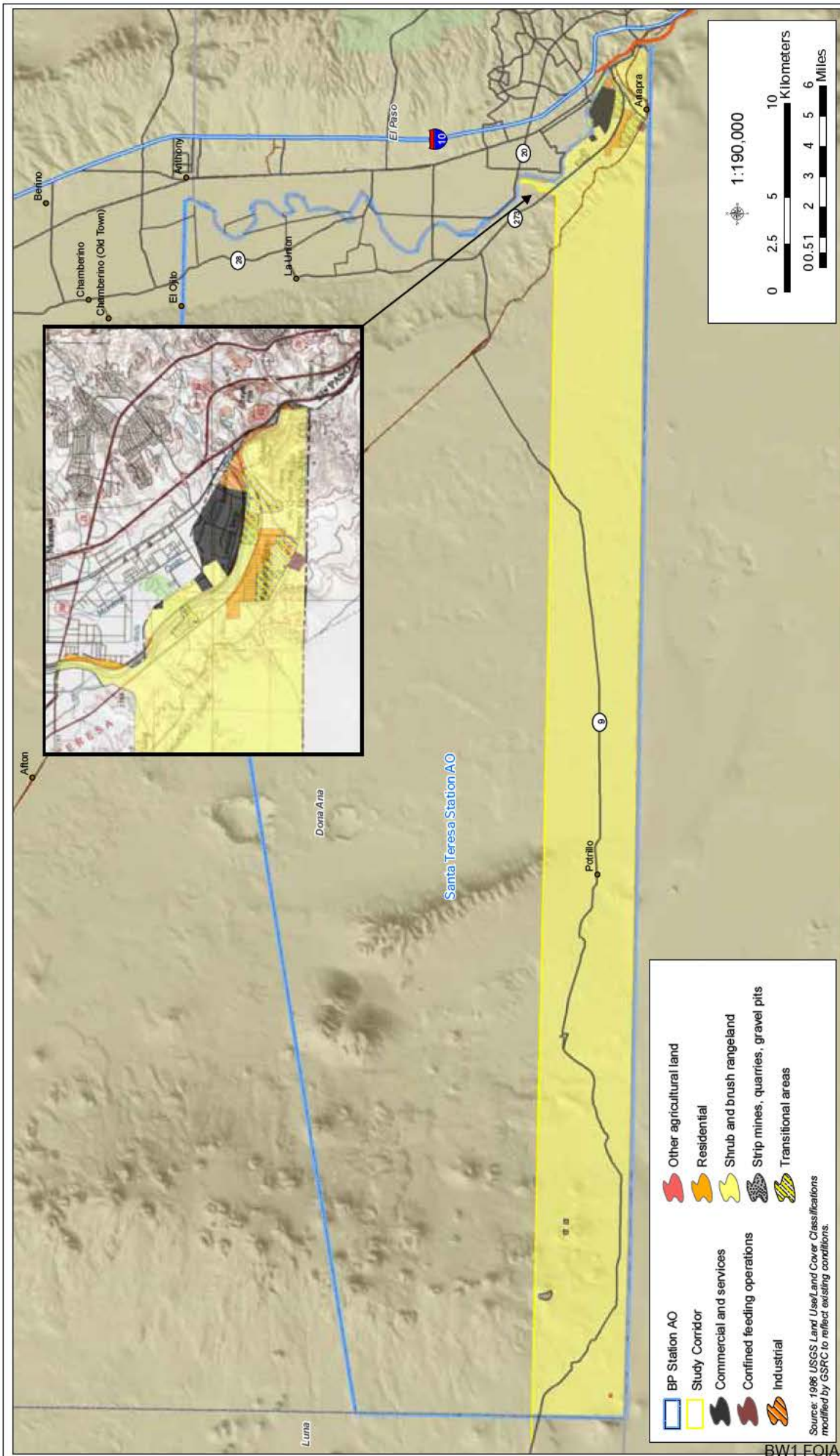
3.1.2 Deming Station

The majority (99 percent) of lands within the Deming Station study corridor are natural areas, most of which is shrub and brush rangeland (Figure 3-1b). The Deming Station has the lowest percentage of developed lands within the study corridor (much less than 1 percent); however, the Deming Station's AO also contains a substantial area of developed lands outside of the study corridor.

3.1.3 Lordsburg Station

More than 99 percent of the study corridor within the Lordsburg Station remains in a natural condition (Figure 3-1c). These natural lands include 6,700 acres of geologic features (the Chiricahua, Animas, Big Hatchet, and Alamo Hueco Mountains are all found within the study corridor); 8,800 acres of riparian areas; and 1,271,343 acres of forests and rangelands.

Less than 1 percent of lands have been developed for residential, commercial, industrial, transportation, mining and agricultural purposes.



April 2006

Figure 3-1a: El Paso Sector Land Use/Land Cover Classifications
 Santa Teresa Station

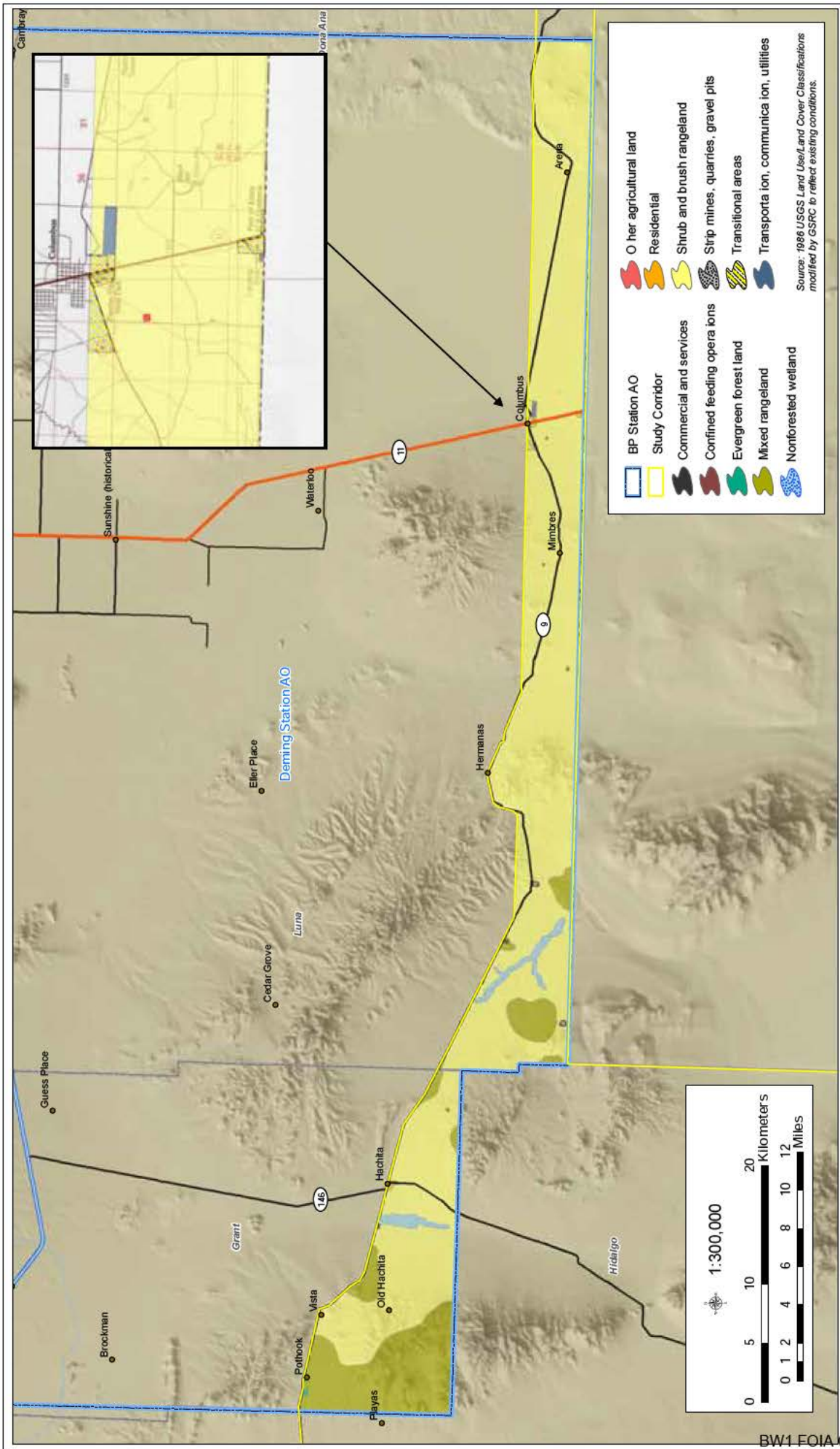


Figure 3-1b: El Paso Sector Land Use/Land Cover Classifications
 Deming Station

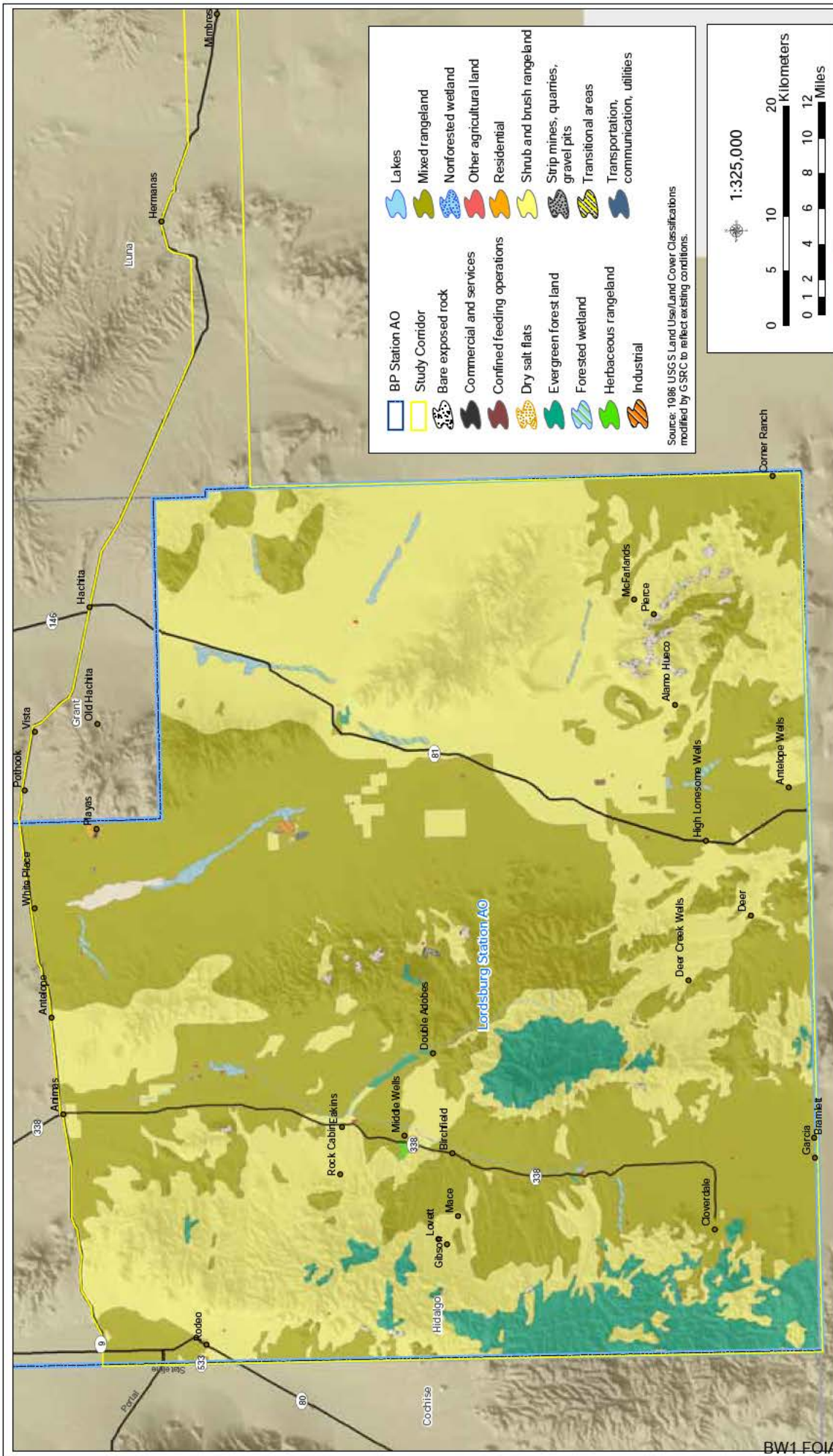


Figure 3-1c: El Paso Sector Land Use/Land Cover Classifications
 Lordsburg Station

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3.2 SOILS AND PRIME FARMLAND

The Natural Resource Conservation Service (NRCS) Soil Surveys for Doña Ana, Luna and Hidalgo counties, New Mexico were reviewed to determine general soil types present within the proposed study corridor. A general soil map was used to obtain an overview of the major soil associations. A soil association is defined as a landscape that has a distinctive proportional pattern of soils and is made up of adjacent soils that occur as areas large enough to be shown individually on the soil map, but are shown as one unit (U.S. Department of Agriculture [USDA] 1980a). More detailed maps were used to identify the individual soil types within the study corridor. Soil Survey Geographic (SSURGO) data were used to determine their suitability for pertinent infrastructure. The level of mapping is designed for broad planning and management uses covering state, regional, and multi-state areas. Due to the broad nature of these soil associations, a more detailed discussion would be required for site-specific projects.

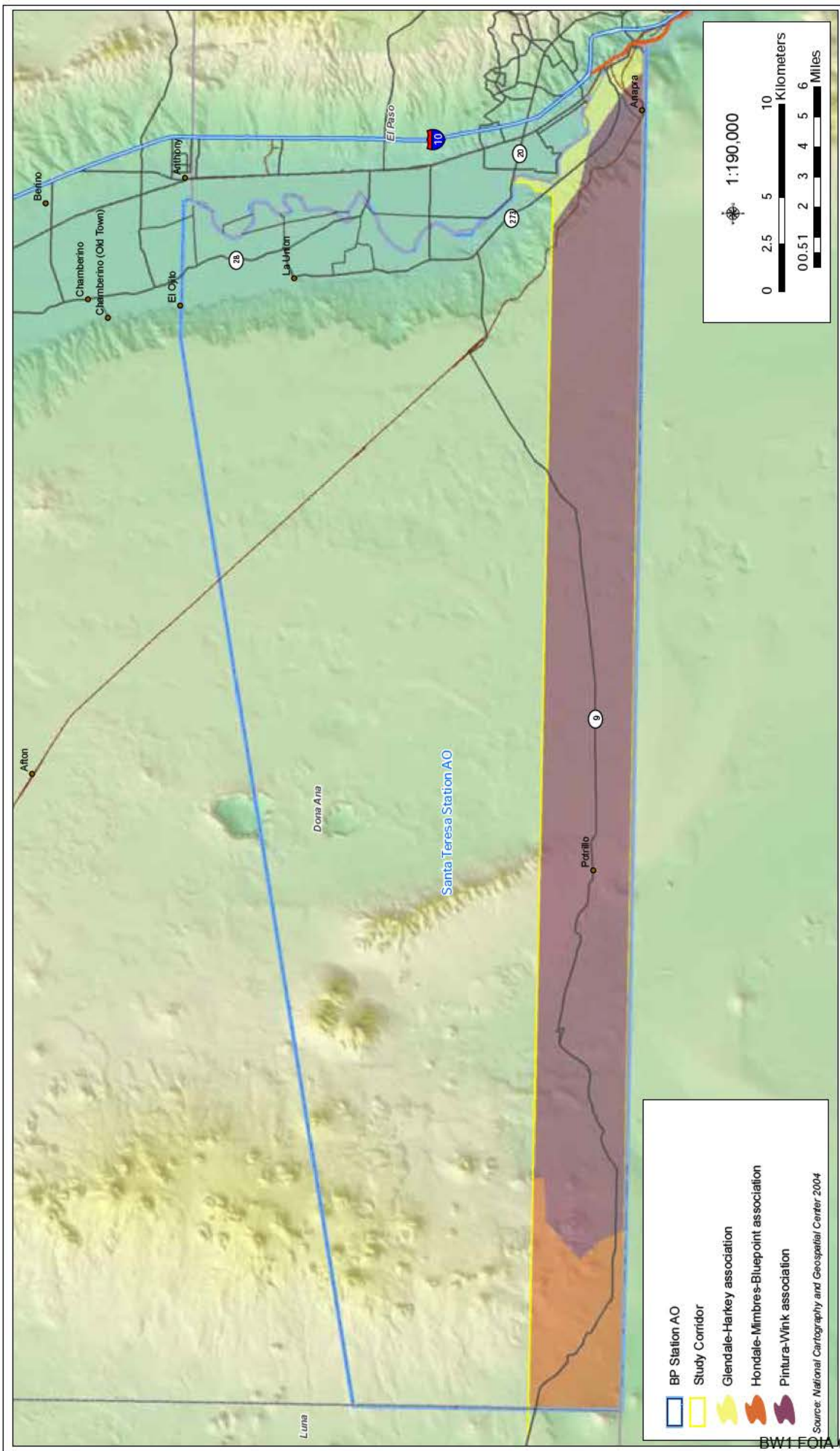
3.2.1 Santa Teresa Station

The land surface of Doña Ana County is generally characterized by gently sloping plains areas separated by north-south trending mountain ranges, as well as the Rio Grande Valley to the east (USDA 1980a). The study corridor encompasses three general soil associations, including Glendale-Harkey, Hondale-Mimbres-Bluepoint, and Pintura-Wink associations (USDA 1980a). These soils have developed in a number of combinations of topographic situations: floodplains, basin floors, fans, terraces, valleys, mesas, ridges, and mountains. These three soil associations are briefly described below and the extent to which they occur in the study corridor is provided in Table 3-2 and Figure 3-2a. Specific soil types which occur within these associations in the study corridor are listed in Appendix A.

Table 3-2. Soil Associations in Study Corridor for Santa Teresa Station

Soil Association	Acres in Study Corridor	Acres in Station
Glendale-Harkey association	3,172	26,876
Hondale-Mimbres-Bluepoint association	11,428	57,538
Pintura-Wink association	69,359	216,027
Total	83,958	300,441

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- BP Station AO
 - Study Corridor
 - Glendale-Harkey association
 - Hondale-Mimbres-Bluepoint association
 - Pintura-Wink association
- Source: National Cartography and Geospatial Center 2004

Figure 3-2a: El Paso Sector Soil Classifications
Santa Teresa Station

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Glendale-Harkey is characterized as deep, nearly level soils located on floodplains and tributary terraces of the Rio Grande (USDA 1980a). These soils occur across the eastern portion of the study corridor extending northwest along the Rio Grande floodplain. These soils are generally well suited for irrigated crops, as well as habitat for openland wildlife. Due to the complex pattern and variability of these soils, onsite testing would be needed prior to plans for engineered infrastructure.

Hondale-Mimbres-Bluepoint are deep moderately fine to coarse textured soils that have formed on basin floors and alkali flats (USDA 1980b). These soils can be utilized for irrigated crops and livestock grazing.

Pintura-Wink is the most dominant grouping of soils and is characterized as deep, nearly level undulating soils that are either well drained or excessively drained (USDA 1980a). They are typically located on fans where the landscape gradually flows from high elevations to relatively level valleys. Within the study corridor, these soils occur between the Rio Grande floodplain and the East and West Potrillo Mountains. These soils are typically utilized for rangeland and wildlife habitat.

3.2.2 Deming Station

The land surface of Luna County is generally characterized largely by the basin floor of the Mimbres River system that traverses the county, with north-south trending mountain ranges. The dominant ranges are Cookes Range, Florida Mountains, Tres Hermanas Mountains, Cedar Mountains and Good Sight Mountain (USDA 1980b).

Major soils located within the study corridor in Luna County include Rough broken land-Rock Land-Lehmans, Nickel-Upton-Tres Hermanos, Mohave-Stellar, Hondale-Playas, and Hondale-Mimbres-Bluepoint associations (USDA 1980b). The Hondale-Mimbres-Bluepoint association was discussed in Section 3.2.1. The remaining four soil associations are briefly described below and the extent to which they occur in the study corridor is provided in Table 3-3 and Figure 3-2b. Specific soil types which occur within these associations in the study corridor are listed in Appendix A.

Hondale-Playas associations are deep, moderately fine textured soils on nearly level alkali flats and formed from stream and lake sediments. They consist of well-drained soils or periodically

Table 3-3. Soil Associations in Study Corridor for Deming Station

Soil Association	Acres in Study Corridor	Acres in Station
Hondale-Mimbres-Bluepoint association	12,659	227,210
Hondale-Playas association	24,950	279,618
Mohave-Stellar association	31,136	1,269,478
Rough broken land-Rock Land-Lehmans association	40,319	422,868
Nickel-Upton-Tres Hermanos association	62,117	355,102
Total	171,181	2,554,276

wet playas. These wet playas typically lack vegetation or exhibit very sparse vegetation due to high salinity (USDA 1980b). Only a small portion is utilized as irrigated cropland.

Mohave-Stellar are deep moderately fine textured soils typically located in alluvial fans. They are well drained soils in mountain valleys. These soils formed in alluvial valley fill from a mix of parent material sources (USDA1980b).

Rough broken land-Rock Land-Lehmans are shallow to very shallow and medium to very stony textured soils. These soils exist in very thin layers on bedrock and are located primarily on hills and mountains. The underlying bedrock is primarily igneous rock with some limestone and basalt (USDA1980b).

Nickel-Upton-Tres Hermanos soils are very shallow to deep limy caliche soils located on uplands. They consist of well drained soils forming in valley fills and are primarily located near the bases of hills and mountains (USDA 1980b).

3.2.3 Lordsburg Station

The land surface of Hidalgo County is generally characterized by broad upland plains separated by north-south trending mountain ranges, some of which are within the Gila National Forest and parts of the Coronado National Forest (USDA 1973). The study corridor encompasses five general soil associations including, Eba-Cloverdale-Eicks, Hondale-Playas associations, Mohave-Stellar-Forest, Nickel-Upton-Tres Hermanos, and Rough broken land-Rock Land-Lehmans (USDA 1973). The Nickel-Upton-Tres Hermanos, Hondale-Playas, and Rough broken land-Rock Land-Lehmans associations were discussed in Section 3.2.2. The remaining three

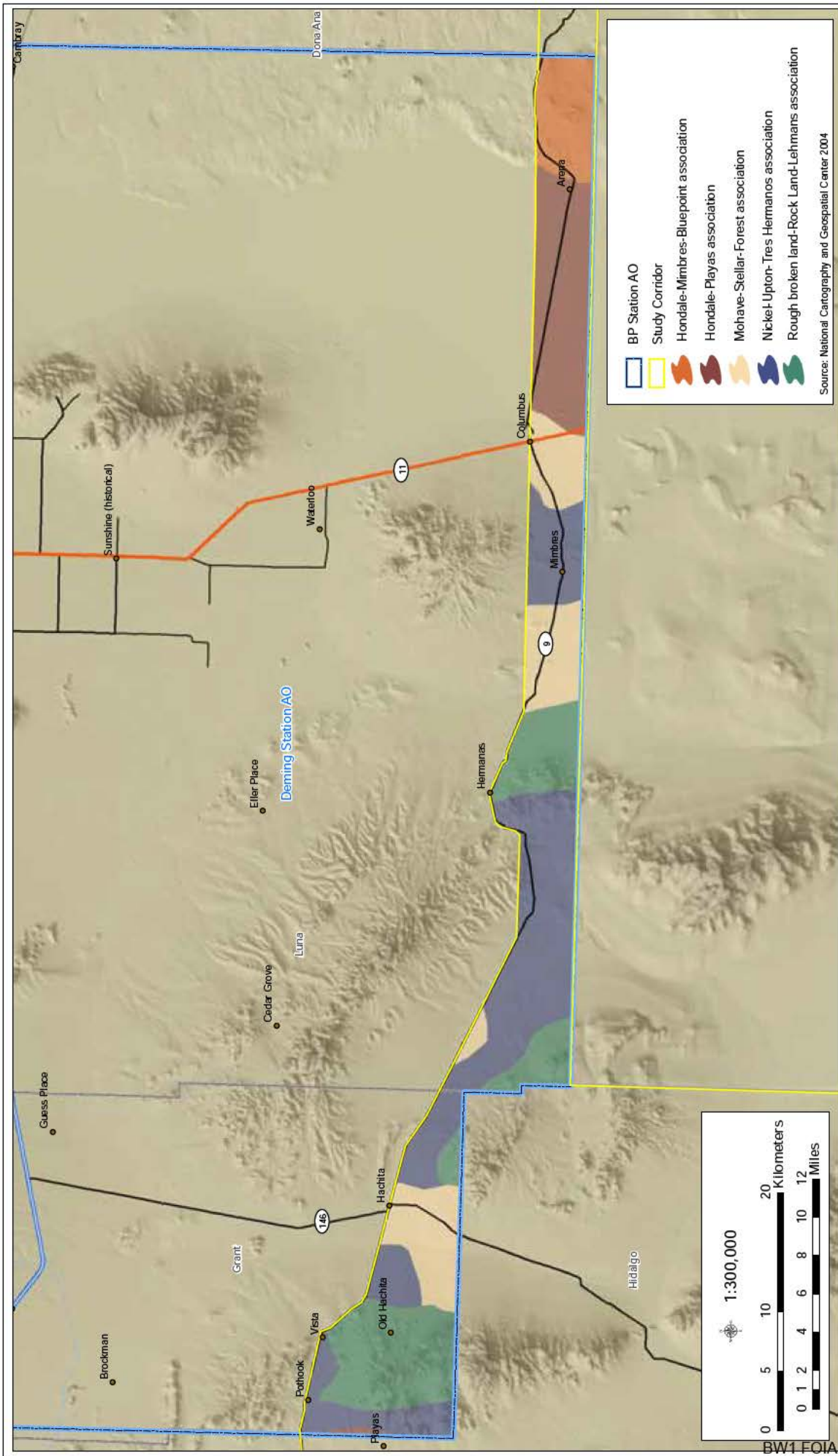


Figure 3-2b: El Paso Sector Soil Classifications
 Deming Station

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soil associations are briefly described below and the extent to which they occur in the study corridor is provided in Table 3-4 and Figure 3-2c. Specific soil types occurring within these associations are listed in Appendix A.

Table 3-4. Soil Associations in Study Corridor for Lordsburg Station

Soil Association	Acres in Study Corridor	Acres in Station
Eba-Cloverdale-Eicks association	126,178	126,916
Hondale-Playas association	84,022	224,289
Mohave-Stellar-Forest association	371,933	669,528
Nickel-Upton-Tres Hermanos association	178,638	481,624
Rough Broken Land-Rock Land-Lehmans association	520,520	723,231
Total	1,284,766	1,281,291

Eba-Cloverdale-Eicks are deep, fine textured soils located in alluvial fans primarily found only in the in the Upper Animas valley (USDA 1973). This valley fill is typically composed of a short to mid mixed grasses and mesquite. Due to its localization in the Animas Valley it is unique to the area.

Hondale-Playas associations are deep, moderately fine textured soils on nearly level alkali flats and formed from stream and lake sediments. They consist of well-drained soils or periodically wet playas. These wet playas typically lack vegetation or exhibit very sparse vegetation due to high salinity (USDA 1973). Only a small portion is utilized as irrigated cropland.

Mohave-Stellar-Forest are deep, moderate to fine textured soils located on nearly level alluvial fans. They consist of well-drained soils that formed in major valleys (USDA 1973). These soils can be utilized for irrigated cropland although only a small percentage is actually used.

3.2.4 Prime Farmland

Prime farmlands are protected under the Farmland Protection Policy Act (FPPA) of 1980 and 1995. The FPPA's purpose is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. As required by Section 1541(b) of the Act [7 U.S.C. 4202(b)] Federal agencies are (1) to use the criteria to identify and take into account the adverse effects of their programs on the preservation of farmland, (2) to consider alternative actions, as appropriate, that could lessen adverse effects,

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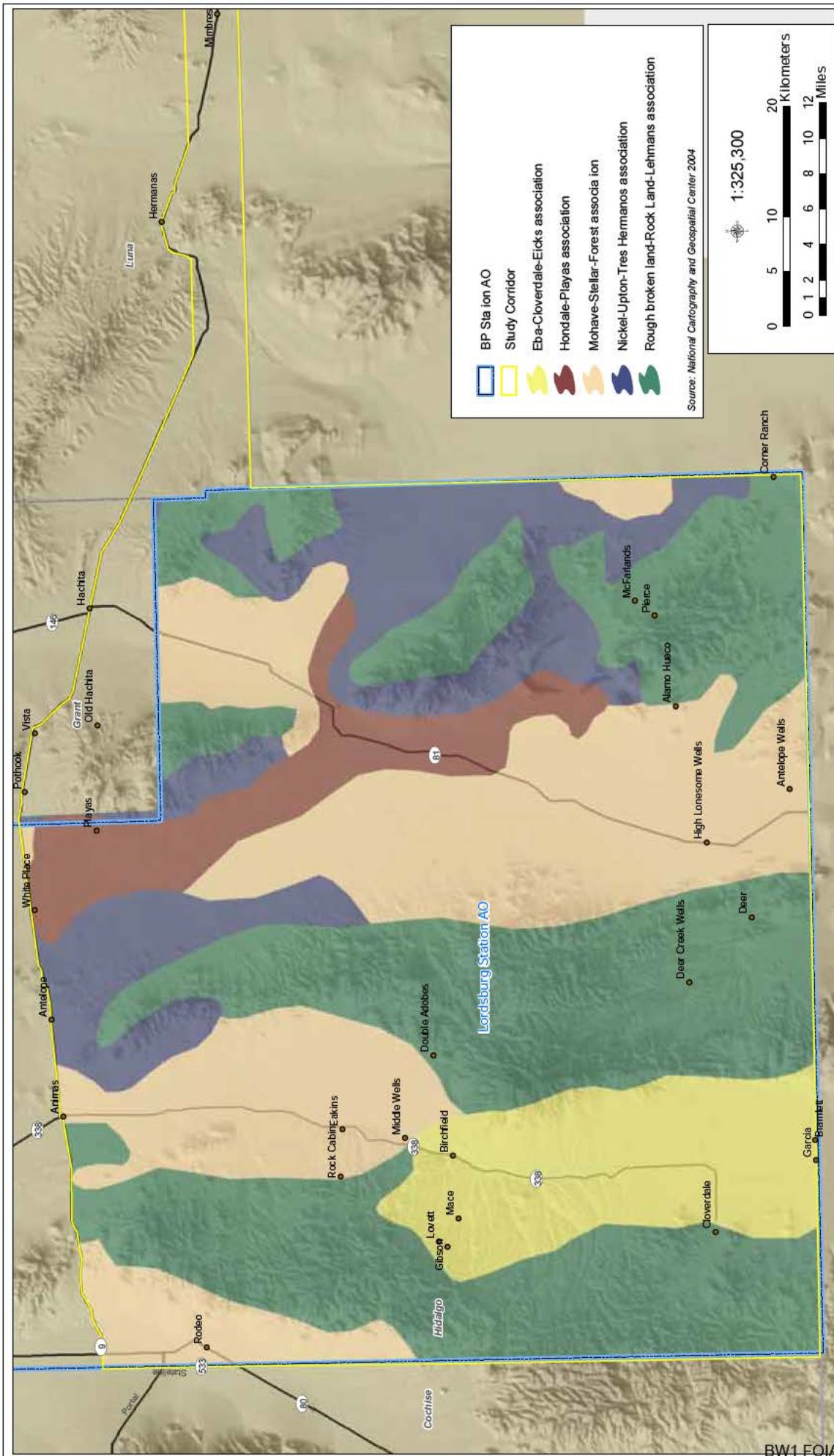


Figure 3-2c: El Paso Sector Soil Classifications
Lordsburg Station

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and (3) to ensure that their programs, to the extent practicable, are compatible with state and units of local government and private programs and policies to protect farmland.

According to 7 U.S.C. 4201(c)(1)(A), prime farmland is defined as “land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, labor, and without intolerable soil erosion.” Unique farmland is defined as “land, other than prime farmland, that is used for the production of specific high-value food and fiber crops, such as, citrus, nuts, olives, cranberries, fruits, and vegetables” [(7 U.S.C. 4201(c)(1)(B)].

Farmlands of statewide importance (also protected under the FPPA) are areas of irrigated farmlands in New Mexico which do not meet the criteria of prime farmland but have an irrigated capability. These lands must also have a dependable water supply for irrigation to meet crop needs. Areas under this designation are limited to farmlands currently in production.

Areas with the potential to be prime farmland are present along the U.S.-Mexico border and have recently been mapped by NRCS within the study corridor (Figures 3-3a-c). Approximately 56,004 acres within the study corridor have the potential to be considered prime farmland, if irrigated. An additional 189,065 acres of farmland of statewide importance also exist. The potential prime farmlands and farmland of statewide importance for the study corridor are shown in Figures 3-3a through 3-3c and are listed in Appendix A. The protected soils types shown in these figures are not necessarily in agricultural production; therefore, all of the soils shown would not be protected as a soil of statewide importance.

3.3 BIOLOGICAL RESOURCES

3.3.1 Vegetation Communities

The study corridor lies entirely within the physiographic region known as the Basin and Range Province (USGS 2004a), which is centered on the state of Nevada and extends from southern Oregon to western Texas and south into Mexico. Physiographic provinces are geographic regions with similar geologic and topographic features. The Basin and Range Province is an immense region characterized by north-south-trending, faulted mountains. The mountains are primarily of volcanic origin, or are the result of uplifted granitic material, and their continued

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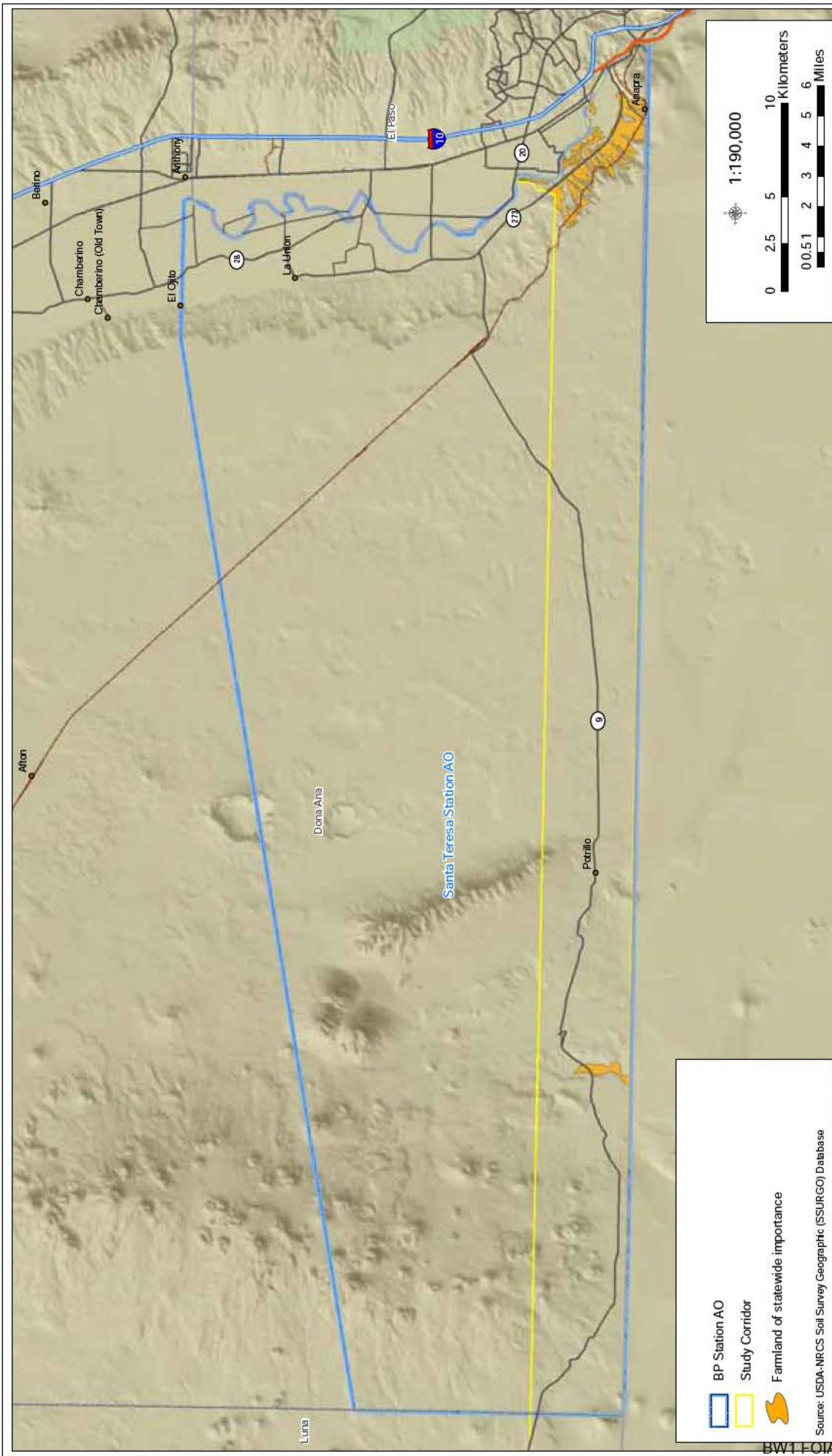


Figure 3-3a: El Paso Sector Prime Farmland Classification
Santa Teresa Station

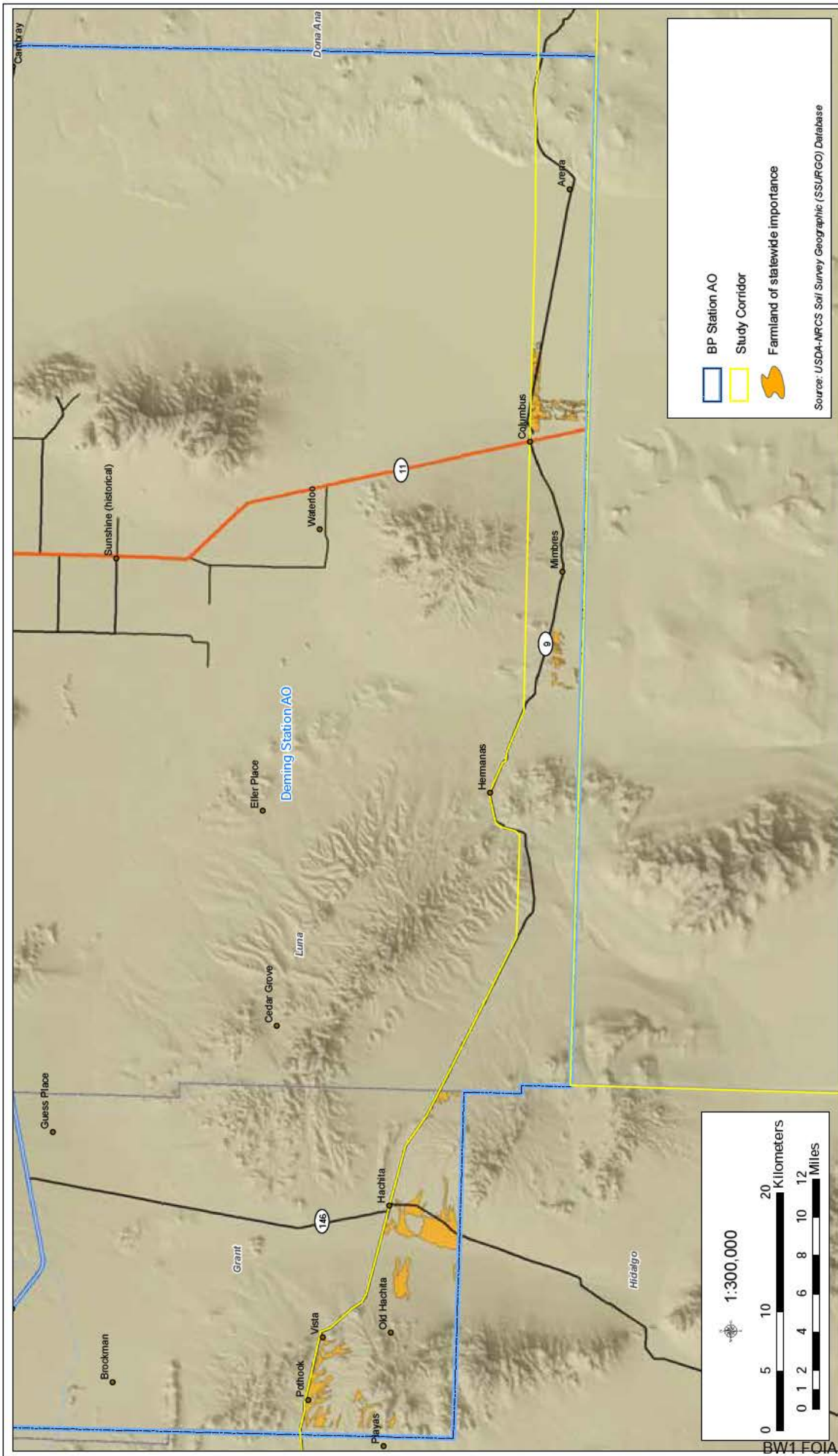
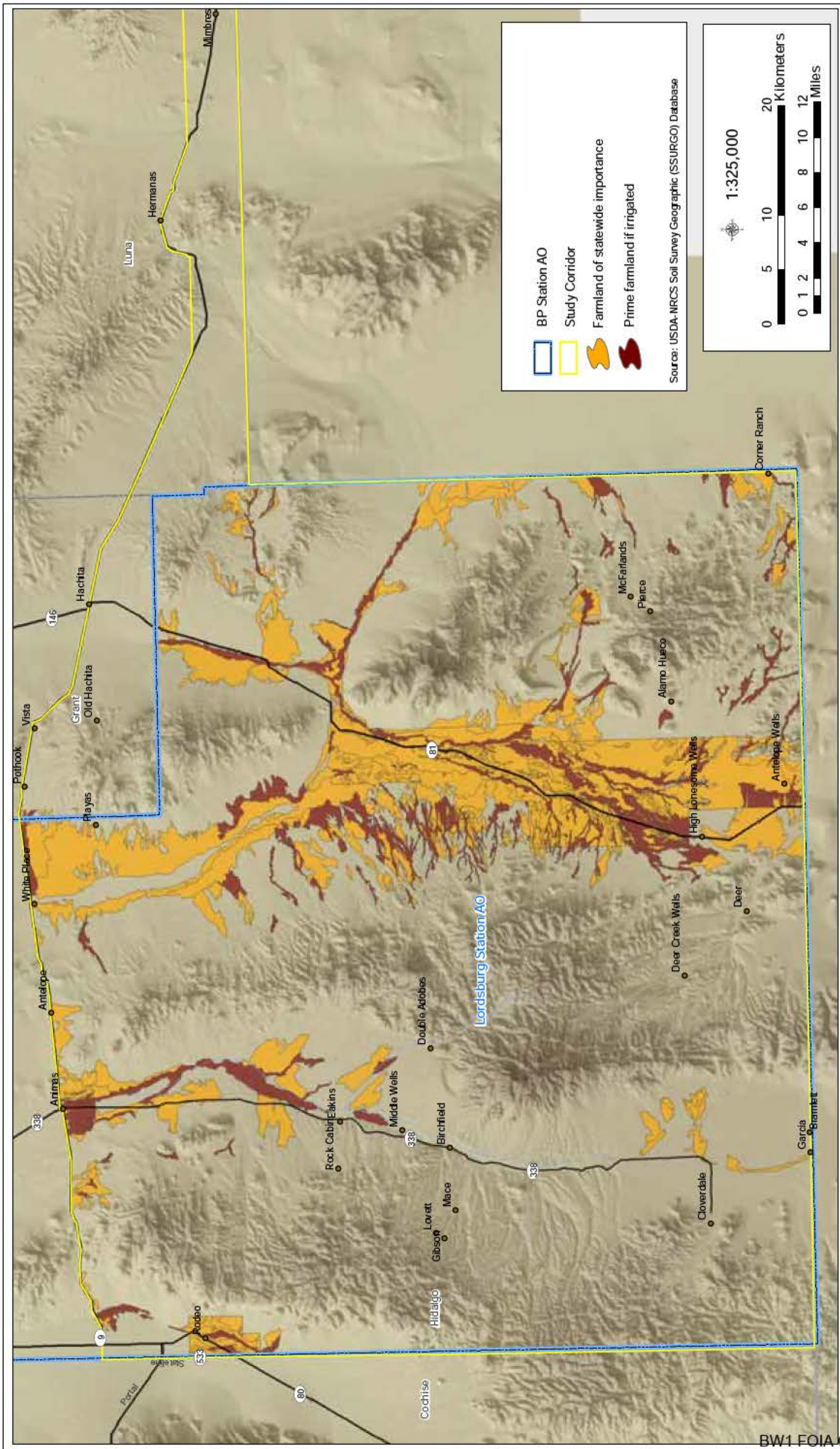


Figure 3-3b: El Paso Sector Prime Farmland Classification
Deming Station



BP Station AO
 Study Corridor
 Farmland of statewide importance
 Prime farmland if irrigated

Source: USDA-NRCS Soil Survey Geographic (SSURGO) Database

1:325,000

0 5 10 20 Kilometers
 0 1 2 4 6 8 10 12 Miles

Figure 3-3c: El Paso Sector Prime Farmland Classifications
 Lordsburg Station

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erosion has created vast depositional basins. The Basin and Range Province is bordered to the west by the Pacific mountain system, which is the primary factor contributing to the areas arid climate. Prevailing winds carry warm, moist air eastward into the Cascade and Sierra Mountains causing the air to rise, cool, and drop precipitation before moving further inland.

Due to the arid climate, the Basin and Range Province is occupied by desert biomes (Brown 1994a). The composition and structure of desert biomes is characteristically simple. Desertscrub communities consist of one or a few evenly spaced shrubs with little or no vegetation interspersed among them, and occupy millions of acres throughout the desert biomes of the Basin and Range Province. These long-lived communities are closely associated with edaphic and other environmental conditions resulting in a predictable and relatively static distribution. A significant portion of the desert flora consists of ephemerals, or short-lived species that germinate, flower, and produce seed typically within a single winter or summer rain season. These ephemeral species are typically present in the seed bank and germinate in response to heavy localized rains resulting in less predictable and dynamic distribution.

Vegetation communities can be classified over a broad range of scales by assessing differences in physiognomy, floristic composition, or both. Physiognomic classifications rely upon differences in general appearance of vegetation (*i.e.*, desertscrub, grassland, chapparal) and are often suited to classification at a regional scale. Floristic classifications utilize local floras, or vegetation species lists, to identify regions with a greater commonality of species than adjacent areas (*i.e.*, Sonoran Desert, Chihuahuan Desert). The interaction of physiognomy, composition, and environmental conditions results in areas of associated vegetation that can be readily identified as a community (*i.e.*, Chihuahuan Semi-desert Grassland).

The distribution of vegetation communities in these desert biomes is primarily influenced by patterns of temperature and available moisture created by variation in local and regional environmental gradients. Moisture availability, percent of summer rains, elevation, relief, and winter temperature extremes all increase along a geographic gradient beginning at the mouth of the Colorado River and moving north or east and along a topographic gradient moving from the lower plains upwards in elevation towards mountain peaks. These gradients are reflected in the distribution of vegetation communities, with plant density, plant height, and the number of tree and cacti species present increasing locally from plain to mountain and regionally from west to east. Within the study corridor, the boundary between vegetation communities, or ecotone, is

typically broad with the change in physiognomy, composition, and environmental conditions being gradual.

The study corridor is found within the Chihuahuan Desert biome. The Chihuahuan Desert is the easternmost and largest of seven desert biomes in North America. Unlike the other deserts, the Chihuahuan Desert has only one rainy season. The rainy season occurs from July through October and although annual rainfall is relatively high (51 – 76 inches), most of this moisture is lost to evaporation (Brown 1994a). The study corridor lies within the northernmost extent of the Chihuahuan Desert and nighttime temperatures drop below freezing 100 times per year (Brown 1994a). The region was once submerged beneath the sea and thus, nearly 80 percent of the soils are derived from limestone beds (Brown 1994a). In many parts of the Chihuahuan Desert, the thin soils overlie a layer of compacted lime, called caliche. The vegetation of the Chihuahuan Desert is shrub-dominated with stem and leaf succulents being common associates. Cacti are only locally dominant and not often as conspicuous as the larger cacti characteristic of its neighbor to the west, the Sonoran Desert.

3.3.1.1 Chihuahuan Desertscrub

The Chihuahuan Desertscrub (Brown 1994b) community occupies the large expanses of outwash plains, low hills, and valleys in the Chihuahuan Desert. At lower elevations, this community is characterized by its low diversity and open stands of small to medium shrubs. The majority of Chihuahuan Desertscrub is dominated by creosote (*Larrea tridentata*), which is often joined or replaced by tarbush (*Flourensia ternua*) or whitethorn acacia (*Acacia neovernicensis*). These shrubs and the occasional ocotillo (*Fouquieria splendens*), allthorn (*Koeberlinia spinosa*), or clump of western honey mesquite (*Prosopis glandulosa* var. *torreyana*) are often the only shrub species found for hundreds of miles within Chihuahuan Desertscrub communities. At its lowest elevations, this community may include saltbushes (*Atriplex* spp.) on fine grained soils or it may include open stands of mesquite on wind blown hummocks or dunes.

At higher elevations, this community is joined by stem and leaf succulents, small cacti, and the occasional bunchgrass. One of the most common leaf succulents is lechuguilla (*Agave lechuguilla*) which can be common over large expanses. Other stem and leaf succulents include the yuccas (*Yucca elata*, *Y. rostrata*, *Y. thompsoniana*, *Y. filifera*, *Y. carnerosana*, *Y. torreyi*, *Y. baccata*, *Y. macrocarpa*, and others), sotols (*Dasyllirion leiophyllum*, *D. wheeleri*),

agaves (*Agave scabra*, *A. falcata*, *A. neomexicana*, *A. parryi*, *A. striata*, and others), and beargrasses (*Nolina microcarpa*, *N. erumpens*, *N. texana*).

The largest of the Chihuahuan Desertscrub cacti are found in the western extremities of its distribution and include local populations of cane cholla (*Opuntia imbricata*) and prickly pears (*O. violacea* var. *macocentra*, *O. phaeacantha* var. *major*, and *O. p.* var. *discata*). Common, low growing and clumped or prostrate cacti of the Chihuahuan Desertscrub include widespread and endemic forms of echinocactus (*Echinocactus horizonthalonius* and *E. texensis*), fishhook cacti (*Sclerocactus uncinatus* and *S. scheeri*), Turk's head (*Ferocactus hamatacanthus*) and other barrel cacti, hedgehog cacti (*Echinocereus triglochidiatus*, *E. pectinatus* var. *rigidissimus*, *E. p.* var. *neomexicanus*, *E. chloranthus*, and *E. enneacanthus* var. *stramineus*), beehive cacti (*Coryphantha strobiliformis*, *C. Sheeri* var. *valida*, *C. echinus*, *C. macromeris*, *C. pottsii*, *C. vivipara*, and *C. ramulosa*), globe cacti (*Mammillaria gummifera* var. *meiacantha*, *M. pottsii*, and *M. gummifera* var. *applanata*), Texas cactus (*Neolohydia intertexta*), button cactus (*Epithelantha micromeris*), Texas pride (*Thelocactus bicolor*), and several low stature or prostrate chollas (*O. leptocaulis*, *O. kleiniae*, *O. schottii*, and *O. tunicate*). Other notable cacti, while widespread, are only locally abundant such as the night blooming cereus (*Peniocereus greggii*), peyote (*Lophophora williamsii*), and living rock cactus (*Ariocarpus fissuratus*).

Larger shrubs of the Chihuahuan Desertscrub include ocotillo, plumed crinklemat (*Tiquila greggii*), catclaw acacia (*Acacia greggii*), barometer bushes (*Leucophyllum minus* and *L. frutescens*), snakewoods (*Condalia* spp.), lotebush (*Ziziphus obtusifolia*), beebrush (*Aloysia wrightii*), and little leaf sumac (*Rhus microphylla*). Some herbaceous species which are more common within the Chihuahuan Semidesert Grassland described below (especially the grama grasses [*Bouteloua* spp.]) can also be found at the upper limits of Chihuahuan Desertscrub communities.

3.3.1.2 Semidesert Grassland

The Chihuahuan Semidesert Grassland (Brown 1994c) community offers a grassy landscape broken up by a diverse assemblage of large, well-spaced scrub. This community is situated above Chihuahuan Desertscrub and below Coahuila Chaparral or Madrean Evergreen Woodland. As such, this community shares many of the same species found in Chihuahuan Desertscrub. Grasses characteristic of the Chihuahuan semidesert grassland are tobosa (*Hilaria mutica*), usually found on lower sites with heavy soils subject to flooding, and black

grama (*Bouteloua eriopoda*), on gravely upland sites. Red three-awn (*Aristida longistea*) and burrograss (*Scleropogon brevifolius*) can be common to abundant. Other common grasses include slender grama (*B. filiformis*), chino grama (*B. brevista*), spruce top grama (*B. chondrosioides*), bush muhly (*Muhlenbergia porteri*), three-awns (*Aristida divaricata*, *A. wrightii*, *A. purpurea*, and others), Arizona cottontop (*Trichachne californica*), curly-mesquite (*Hilaria belangeri*), slim tridens (*Tridens muticus*), pappua grass (*Pappophorum vaginatum*), tanglehead grass (*Heteropogon contortus*), and vine mesquite grass (*Panicum obtusum*). Hairy tridens (*Tridens pilosus*) and fluffgrass (*T. pulchellus*) can be common to abundant in heavily grazed areas.

Many of the stem and leaf succulents found in the lower, Chihuahuan Desertscrub are characteristic of the Chihuahuan Semidesert Grassland including the sotols, beargrasses, agaves, and yuccas, especially soaptree yucca (*Yucca elata*). Shrubs are more common in higher elevation communities, but species often present within the Semidesert Grassland include mesquite (*Prosopis juliflora*), one-seed juniper (*Juniperus monosperma*), lotebush, knifeleaf condalia (*Condalia spathula*), allthorn, Mormon tea (*Ephedra trifurca*, *E. antisiphilitica*), mimosas (*Mimosa aculeaticarpa* var. *biuncifera*, *M. dysocarpa*), false mesquite (*Calliandra eriophylla*), Wright's lippia (*Aloysia wrightii*), catclaw acacia, littleleaf sumac, desert hackberry (*Celtis pallida*), javelina-bush (*Condalia ericoides*), barberry (*Berberis trifoliata*), and ocotillo.

3.3.1.3 Coahuila Chaparral

The disjunct Coahuila Chaparral (Pase and Brown 1994) communities of southern New Mexico occupy elevations between 1,065 and 1,535 feet of the Burro, Florida, and Organ Mountains. This community is composed of shrubs with dense, compact crowns and small evergreen sclerophyllous leaves. Most members of this community are deeply rooted, sprout readily from root crowns, quickly regenerate after fire, or produce prolific seed banks which germinate only after a fire. In the absence of fire, woody species can grow together and form a canopy resulting in the exclusion of herbaceous species and the further establishment of woody species. Coahuila scrub oak (*Quercus intricata*) is frequently a dominant species and is often joined by numerous other scrub oaks, evergreen and sugar sumac (*Rhus choriophylla*, *R. ovata*), eggleaf and ashy silktassel (*Garrya ovata*, *G. flavescens*), Mexican cliffrose (*Pershia mexicana*), barberry (*B. trifoliata* and *B. fremontii*), Gregg's ash (*Fraxinus greggii*), and stiff fendlerbush (*Fendlera rigida*). Species endemic to this community include two madrones (*Arbutus xalapensis* and *A. arizonica*) and several salvias (*Salvia ramosissima*, *S. roemeriana*,

S. regia). Other shrubs include Wright's silktassel (*G. wrightii*), hairy mountain mahogany (*Cercocarpus breviflorus*), desert ceanothus (*Ceanothus greggii*), apache plume (*Fallugia paradoxa*), skunkbush sumac (*Rhus trilobata*), and pointleaf manzanita (*Arctostaphylos pungens*). Non-chaparral associates include catclaw mimosa (*Mimosa aculeaticarpa* var. *biuncifera*), catclaw acacia, common hoptree (*Ptelea trifoliata*), foothill beargrass (*Nolina erumpens*), and Arizona cypress (*Cupressus arizonica*).

3.3.1.4 Madrean Evergreen Woodland

The Madrean Evergreen Woodland (Brown 1994d) community is found along drainages, rocky slopes and other thin-soiled habitats and generally above the Coahuila Chaparral. At lower elevations, this community is an Encinal Oak Woodland composed of evergreen oaks, oaks, alligator juniper (*Juniperus deppeana*) and one-seed juniper, Mexican pinyon (*Pinus cembroides*), and madrones in unequal proportions. Many of the widely distributed grasses, cacti, and leaf succulents of the grasslands as well as many of the shrubs of the Coahuila Chaparral can also be scattered or dominant within the Encinal Oak Woodland.

At higher elevations, this community is a Mexican oak (*Quercus carmensis*)-Pine (*Pinus* spp.) Woodland composed of Madrean oaks with or without the evergreen oaks and a variety of pines. Emory oak (*Quercus emoryi*) and gray oak (*Q. grisea*) are joined by pines commonly found within the Madrean biome, including Apache pine (*Pinus engelmannii*), Chihuahua pine (*P. leiophylla*), Arizona pine (*P. ponderosa* var. *arizonica*), and Durango pine (*P. drangensis*). In extreme southwestern New Mexico, this community is joined by silverleaf oak (*Q. hypoleucoides*) and netleaf oak (*Q. rugosa*). The madrones, Mexican pinyon, and alligator juniper can also be found in this community. Herbaceous components include bunchgrasses such as the muhlys (*Muhlenbergia emersleyi*, *M. torreyi*, and *M. porteri*), woolspike (*Elyonurus barbiculmis*), cane bluestem (*Bothriochloa barbinodis*), and small ballmoss (*Tillandsia recurvata*).

3.3.1.5 Project Vegetation

The New Mexico Cooperative Fish and Wildlife Research Unit of the Department of Interior (DOI) has completed a Gap Analysis Program (GAP) analysis of biological diversity in New Mexico (Thompson *et al.* 1996). The GAP analysis identified 42 land cover classes describing natural terrestrial vegetation in New Mexico. This delineation was used to identify communities present within the study corridor. The area of each Chihuahuan Desert community as described

in Brown (1994a) and the area of each GAP cover type group within these communities is presented by station in Tables 3-5 through 3-7. The area of GAP cover type groups could differ from the area of land-use types due to missing data within both GIS data sets. The distribution of GAP cover type group within each station is presented in Figures 3-4a through 3-4c.

Table 3-5. Chihuahuan Desert Community and GAP Cover Type Group within Santa Teresa Station

GAP Cover Type Group	Area (acres)	Chihuahuan Desert Community	Area (acres)
Rocky Mountain Montane Scrub & Interior Chaparral	1,207	Coahuila Chaparral	1,207
Chihuahuan Broadleaf Evergreen Desert Scrub	1,253	Chihuahuan Desertscrub	67,367
Chihuahuan Broadleaf Deciduous Desert Scrub	66,114		
Short Grass Steppe	342	Chihuahuan Semidesert	12,481
Chihuahuan Foothill-Piedmont Desert Grassland	7,085		
Chihuahuan Lowland/Swale Desert Grassland	5,055		
Southwest & Plains Forested/Shrub Wetland	104	Riparian Woodland	104
Irrigated Agriculture	467	Other	2,823
Rock Outcrop	1,379		
Riverine/Lacustrine	977		
Total	83,982		83,982

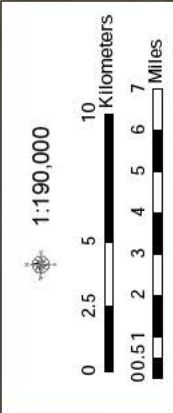
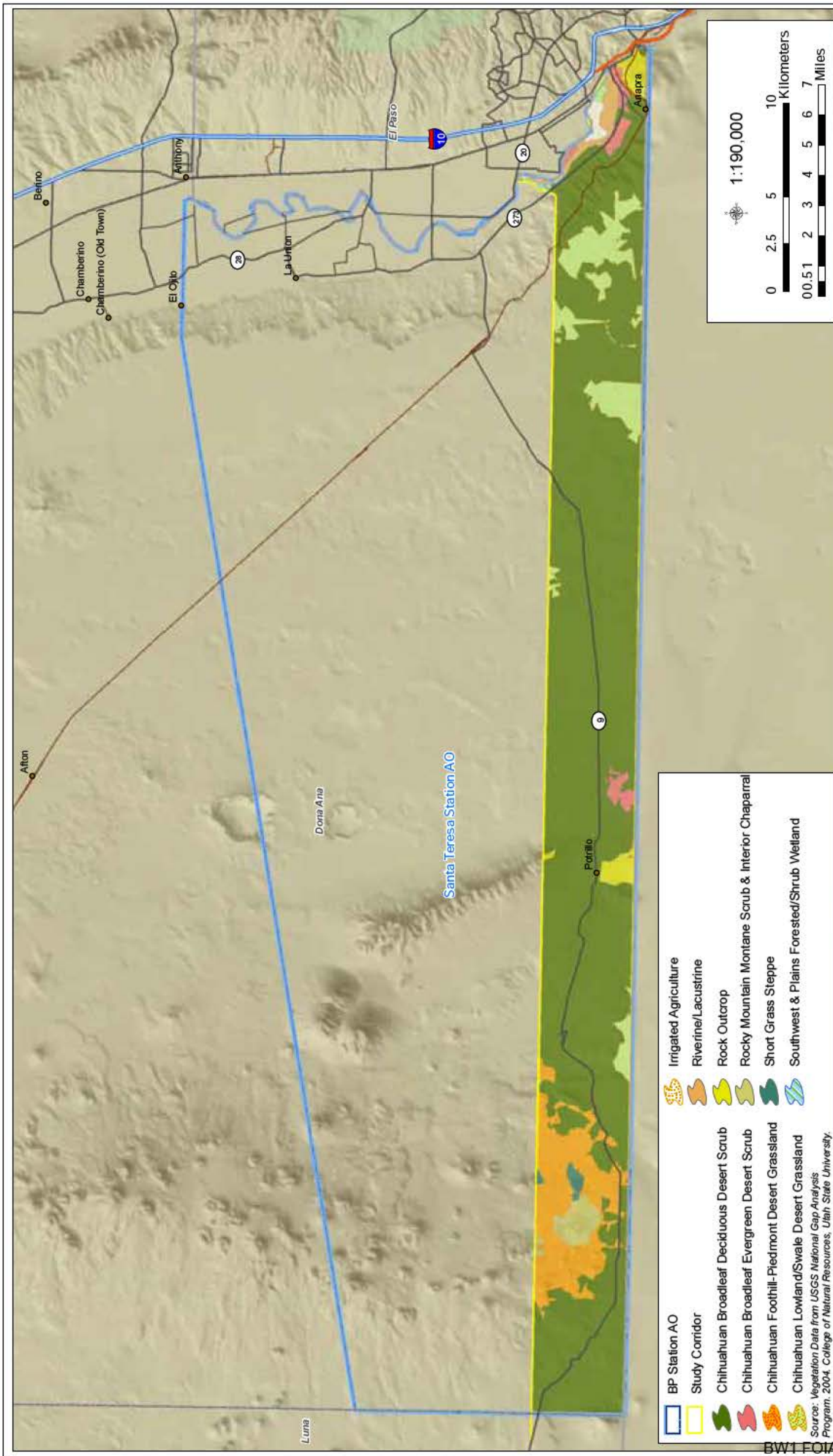
Table 3-6. Chihuahuan Desert Community and GAP Cover Type Group within Deming Station

GAP Cover Type Group	Area (acres)	Chihuahuan Desert Community	Area (acres)
Madrean Closed Conifer Woodland	90	Madrean Evergreen Woodland	2,375
Madrean Open Oak Woodland (Encinal)	2,285		
Rocky Mountain Montane Scrub & Interior Chaparral	9,077	Coahuila Chaparral	9,077
Chihuahuan Broadleaf Evergreen Desert Scrub	7,595	Chihuahuan Desertscrub	98,394
Chihuahuan Broadleaf Deciduous Desert Scrub	90,798		
Rocky Mountain Subalpine and Montane Grassland	107	Chihuahuan Semidesert Grassland	57,244
Short Grass Steppe	1,612		
Mid-Grass Prairie	940		
Chihuahuan Foothill-Piedmont Desert Grassland	50,650		
Chihuahuan Lowland/Swale Desert Grassland	3,936		
Irrigated Agriculture	388	Other	4,162
Barrens	36		
Rock Outcrop	3,739		
Total	171,252		171,252

Table 3-7. Chihuahuan Desert Community and GAP Cover Type Group within Lordsburg Station

GAP Cover Type Group	Area (acres)	Chihuahuan Desert Community	Area (acres)
Madrean Lower Montane Conifer Forest	991	Madrean Evergreen Woodland	263,727
Madrean Closed Conifer Woodland	59,411		
Madrean Open Oak Woodland (Encinal)	203,325		
Rocky Mountain Montane Scrub & Interior Chaparral	53,862	Coahuila Chaparral	53,900
Rocky Mountain Montane Deciduous Scrub	39		
Chihuahuan Broadleaf Evergreen Desert Scrub	176,556	Chihuahuan Desertscrub	503,252
Chihuahuan Broadleaf Deciduous Desert Scrub	326,697		
Short Grass Steppe	192,826	Chihuahuan Semidesert Grassland	450,895
Mid-Grass Prairie	66,144		
Chihuahuan Foothill-Piedmont Desert Grassland	176,009		
Chihuahuan Lowland/Swale Desert Grassland	15,916		
Irrigated Agriculture	760	Other	12,707
Barrens	2,414		
Rock Outcrop	9,276		
Riverine/Lacustrine	256		
Total	1,284,481		1,284,481

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- BP Station AO
- Study Corridor
- Chihuahuan Broadleaf Deciduous Desert Scrub
- Chihuahuan Broadleaf Evergreen Desert Scrub
- Chihuahuan Foothill-Piedmont Desert Grassland
- Chihuahuan Lowland/Swale Desert Grassland
- Irrigated Agriculture
- Riverine/Lacustrine
- Rock Outcrop
- Rocky Mountain Montane Scrub & Interior Chaparral
- Short Grass Steppe
- Southwest & Plains Forested/Shrub Wetland

Source: Vegetation Data from USGS National Gap Analysis Program, 2004; College of Natural Resources, Utah State University.

Figure 3-4a: El Paso Sector Vegetation Classifications
Santa Teresa Station

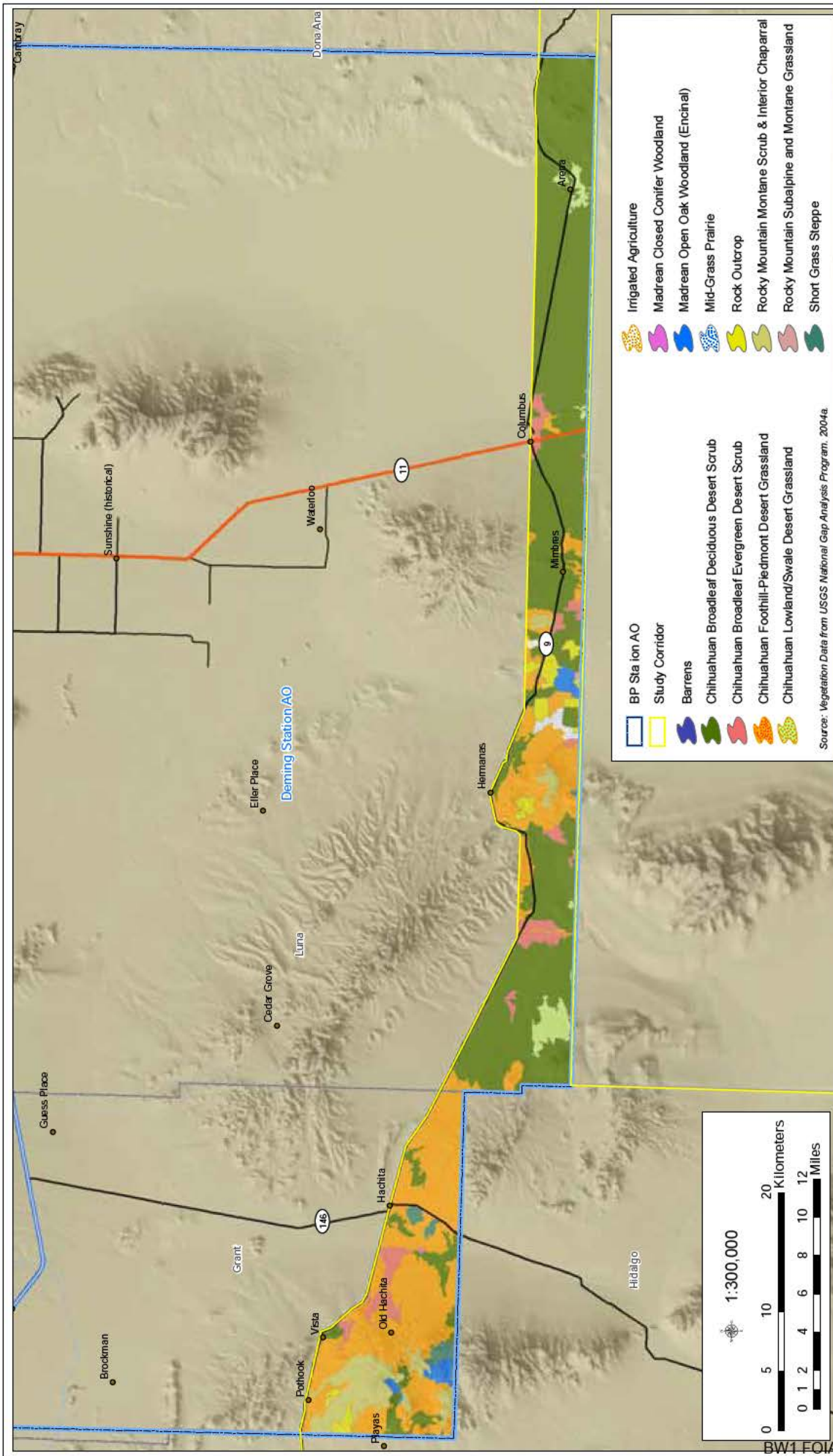


Figure 3-4b: El Paso Sector Vegetation Classifications
Deming Station

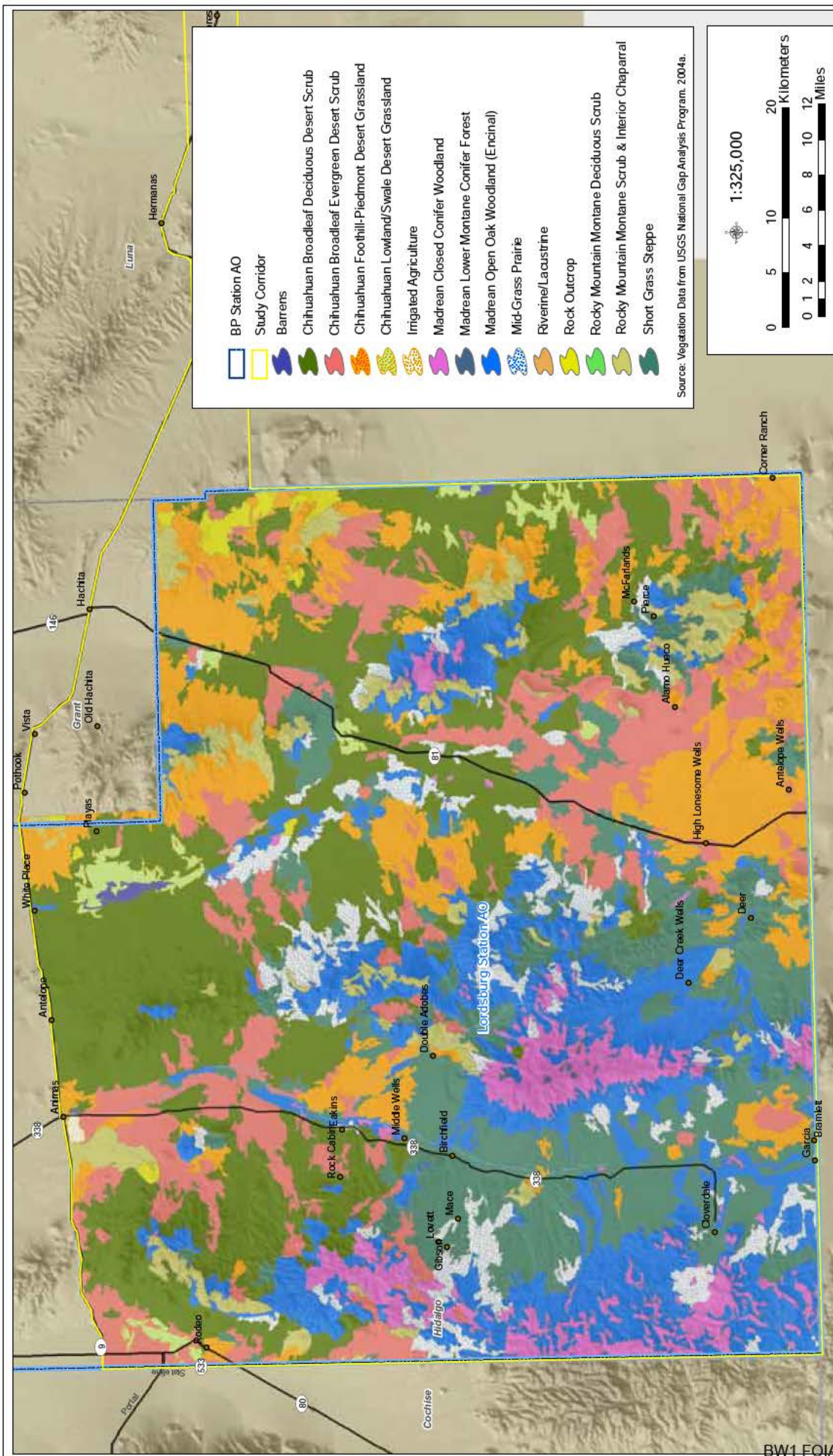


Figure 3-4c: El Paso Sector Vegetation Classifications
 Lordsburg Station

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3.3.2 Wildlife Resources

As described in Section 3.3.1, the study corridor is found within the Chihuahuan Desert biome. The Chihuahuan Desertscrub (Brown 1994b) community occupies the majority of the study corridor. Mammals typically associated with Chihuahuan Desertscrub include large hooved mammals such as mule deer (*Odocoileus hemionus*), collared peccary (*Tayassu tajacu*) and pronghorn (*Antilocapra americana*) (Brown 1994b). Carnivore species likely to occur within the study corridor include coyote (*Canis latrans*), bobcat (*Lynx rufus*), kit fox (*Vulpes velox*), grey fox (*Urocyon cinereoargenteus*), ringtail (*Bassariscus astutus*), badger (*Taxidea taxus*), and racoon (*Procyon lotor*) (Burt and Grossenheider 1976). Rodents make up the largest order of mammals that occur in the area including Mexican ground squirrel (*Spermophilus mexicanus*), Botta's pocket gopher (*Thomomys bottae*), desert pocket gopher (*Geomys arenarius*), kangaroo rat (*Dipodomys* sp.) and approximately 17 species of murid rodents (mice and rats) (Findley *et al.* 1975). Hares and rabbits commonly seen in the study corridor include black-tailed jackrabbit (*Lepus californicus*) and desert cottontail (*Sylvilagus auduboni*) (Findley *et al.* 1975).

Birds typically associated with Chihuahuan Desertscrub that are expected to occur in the study corridor include red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), American kestrel (*Falco sparverius*), Gambel's quail (*Callipepla gambelii*), scaled quail (*Callipepla squamata*), western burrowing owl (*Athene cunicularia*), Chihuahuan raven (*Corvus cryptoleucus*), loggerhead shrike (*Lanius ludovicianus*), greater roadrunner (*Geococcyx californianus*), cactus wren (*Campylorhynchus brunneicapillus*), great-tailed grackle (*Quiscalus mexicanus*), and numerous passerine species (Peterson and Zimmer 1998). In addition, there are playas in this region that are dry for much of the year, usually containing water only after late summer and fall rains. The playas are an important stopover for shorebirds, sandhill cranes (*Grus canadensis*), and several species of ducks (New Mexico Wilderness Alliance [NMWA] 2006).

A wide variety of herpetofauna can be found associated with Chihuahuan Desertscrub. Many common species of amphibians can be found in the study corridor including spadefoot toads (*Scaphiopus* spp.) and the western spadefoot toad (*Spea multiplicata*). Bullfrogs (*Rana catesbiana*) and Rio Grande leopard frogs (*Rana berlandieri*) are common near the rivers, streams, and irrigation ditches. Several species of true toads (*Bufo* spp.) can also be found near arroyos, stream or ditches. Common reptiles include many lizard species such as whiptail lizards (*Aspidoscelis* spp.), side-blotched lizards (*Uta stansburiana*), greater earless lizard

(*Cophosaurus texanus*), round tailed horned lizards (*Phrynosoma modestum*), ornate tree lizards (*Urosaurus ornata*) and several species of spiny lizards (*Sceloporus* spp.). Approximately 36 species of snakes inhabit the study corridor. Snakes commonly found in the study corridor include western diamondback rattlesnakes (*Crotalus atrox*), prairie rattlesnakes (*Crotalus viridis*), glossy snake (*Arizona elegans*), Sonoran gopher snake (*Pituophis melanoleucus*), Trans-Pecos ratsnake (*Bogertophis subocularis*), western ground snake (*Sonora semiannulata*) and night snake (*Hypsiglena torquata*). The most common turtle, the desert box turtle, (*Terrepenne ornate luteola*) is found in the Chihuahuan Desertscrub and Chihuahuan Semi-desert Grassland (Stebbins 2003).

The Lordsburg AO includes New Mexico's "Bootheel" region, in the extreme southwestern corner of the state. This region has many animals that are also found in Mexico and much farther south, including large carnivores like the jaguar (*Panthera onca*) (NMDGF 2001). Here the Peloncillo Mountains stretch approximately 70 miles along the Arizona-New Mexico border. The Peloncillo Mountains encompass the northernmost edge of the Sierra Madre Occidental creating an ecotone straddling the Sonoran and Chihuahuan Deserts. Many Sonoran and Sierra Madrean species reach their eastern limits here, Chihuahuan and Great Plains species their western limits, and Mexican species their northern limits. This complex also serves as a wildlife corridor for the movement of far-ranging species (NMWA 2006).

In this area wildlife diversity is high. Mammals found in the Peloncillo Mountains Complex not common elsewhere in New Mexico's desert scrubland include desert bighorn sheep (*Ovis canadensis nelsoni*), Coues' whitetail deer (*Odocoileus virginianus couesi*), coatimundi (*Nausua nausua*), and black bear (*Ursa americanus*). The extremely rich bird fauna of the area includes Mexican duck (*Anas diazi*), Gould's turkey (*Meleagris gallopavo mexicana*), elegant trogon (*Trogon elegans*), and several hummingbird species (MacCarter 1993).

Amphibian and reptile diversity are also very high. Notable lizard species include the Gila monster (*Heloderma suspectum*), gray-checked lizard (*Aspidoscelis dixonii*), giant spotted whiptail lizard (*Aspidoscelis burti stictogramma*), bunch grass lizard (*Sceloporus slevini*), and mountain skink (*Eumeces callicephalus*). Snake species include ridgenosed rattlesnake

(*Crotalus willardi*), lyre snake (*Trimorphodon biscutatus*), green rat snake (*Senticolis triaspis*), Arizona coral snake (*Micruroides euryxanthus*), Sonoran Mountain king snake (*Lampropeltis pyromelana*), and Mojave rattlesnake (*Crotalus scutulatus*) (Degenhardt *et al.* 1996).

3.4 PROTECTED SPECIES AND CRITICAL HABITAT

The U.S. Fish and Wildlife Service's (USFWS) responsibilities under the Endangered Species Act (ESA) include: (1) the identification of threatened and endangered species; (2) the identification of critical habitats for listed species; (3) implementation of research on, and recovery efforts for, these species; and (4) consultation with other Federal agencies concerning measures to avoid harm to listed species.

An endangered species is a species in danger of extinction throughout all or a significant portion of its range. A threatened species is a species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Proposed species are those that have been formally submitted to Congress for official listing as threatened or endangered. Species may be considered endangered or threatened when any of the five following criteria occurs: (1) current/imminent destruction, modification, or curtailment of their habitat or range; (2) overuse of the species for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or human-induced factors affect continued existence. In addition, the USFWS has identified species that are candidates for listing as a result of identified threats to their continued existence. The candidate designation includes those species for which the USFWS has sufficient information to support proposals to list as endangered or threatened under the ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.

3.4.1 Federal

A total of 17 Federally endangered, threatened, proposed threatened, and candidate species occur in Hidalgo, Luna, and Doña Ana counties (USFWS 2006a). A total of nine species are listed as endangered, seven threatened, and one candidate (Table 3-8).

Table 3-8. Federally Listed, Proposed, and Candidate Species Potentially Occurring within Hidalgo, Luna, and Doña Ana Counties

Common Name	Scientific Name	Listing Status	County
BIRDS			
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	All
Interior least tern	<i>Sterna antillarum</i>	E	Doña Ana
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	Doña Ana
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	E	All
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E	All
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	C	Doña Ana, Luna
MAMMALS			
Jaguar	<i>Panthera onca</i>	E	Hidalgo
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	E	Hidalgo
Mexican long-nosed bat	<i>Leptonycteris nivalis</i>	E	Hidalgo
Mexican gray wolf	<i>Canis lupus baileyi</i>	E	Hidalgo, Luna
REPTILES AND AMPHIBIANS			
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	T	Hidalgo, Luna
New Mexico ridge-nosed rattlesnake	<i>Crotalus willardi obscurus</i>	T	Hidalgo
FISHES			
Loach minnow	<i>Tiaroga cobitis</i>	T	Hidalgo
Beautiful shiner	<i>Cyprinella formosa</i>	T	Luna
Spikedace	<i>Meda fulgida</i>	T	Hidalgo
Rio Grande silvery minnow	<i>Hybognathus amarus</i>	E	Doña Ana
PLANTS			
Sneed pincushion cactus	<i>Coryphantha sneedii</i>	E	Doña Ana

Legend: E – Endangered T – Threatened C – Candidate PE – Proposed Endangered

Source: USFWS 2006a. (Last Updated January 7, 2003.)

3.4.2 BLM Sensitive Species

BLM state offices maintain a list of species considered Special Status Species in order to focus management efforts toward maintaining habitats under a multiple use mandate (BLM 2002). The goals of the sensitive species policy are to: 1) maintain vulnerable species and habitat components in functional BLM ecosystems; 2) ensure sensitive species are considered in land management decisions; 3) prevent a need for species listing under the ESA; and 4) prioritize needed conservation work with an emphasis on habitat (BLM 2002). Species designated as BLM sensitive species are afforded the protection provided by the ESA for candidate species (BLM 2002). BLM sensitive species are included as part of the New Mexico Species of Concern List in Appendix B.

Of the BLM species listed in Appendix B, many could potentially occur in the study area. Some bird species that may occur within the study area such as white-faced ibis (*Plegadis chichi*), northern gray hawk (*Asturina nitida mazimus*), burrowing owl (*Athene cunicularia hypugaea*), and loggerhead shrike (*Lanius ludovicianus*) are afforded more protection under the MBTA than as listed BLM sensitive species. Other species including numerous bat species, Texas horned lizards (*Phrynosoma cornutum*), gray-checked whiptails (*Cnemidophorus dixonii*), Mexican garter snakes (*Thamnophis eques megalops*), Arizona shrews (*Sorex arizonae*), white-sided jackrabbits (*Lepus callotis gaillardi*), and yellow-nosed cotton rats (*Sigmodon ochrognathus*) would be noted during project-specific field surveys and environmental design measures should be utilized during project-specific construction even though no protection is afforded to these species.

3.4.3 State

In 1978, the state of New Mexico enacted the Wildlife Conservation Act (WCA) (NMSA 17-2-37 through 17-2-46). The WCA defines an animal species as endangered if it is in jeopardy of extinction or extirpation from the state. A species is threatened if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in New Mexico. Only species native to New Mexico are listed as threatened or endangered (NMDGF 2000). A complete list of threatened and endangered plants and animals potentially occurring in Hidalgo, Luna and Doña Ana Counties is provided in Appendix B (New Mexico Natural Heritage Program [NMNHP] 2003, NMNHP 2006).

Specific habitat requirements for many of the listed species are not found within the immediate study corridor. The spikedace is a small fish listed as threatened by USFWS and NMDGF. In Hidalgo County it is only found in the Gila River system north of the study corridor (USFWS 2005b). The Rio Grande silvery minnow, endangered on Federal and state lists, is considered extirpated below Elephant Butte Reservoir in New Mexico. The beautiful shiner, listed threatened by the USFWS, is found in the Mimbres River north of Deming, New Mexico, but not within the study corridor. The Chihuahua chub (listed threatened by the state) is limited mainly to a 9.5-mile reach of the Mimbres River and Moreno Spring (Propst 1999). This species habitat is well to the north of the proposed corridor. The loach minnow is a bottom-dwelling inhabitant of shallow, swift water over gravel, cobble, and rubble substrates. It requires perennial streams with substrates free of excessive fine sedimentation, and moderate to swift

currents as well as swift pools over sand or gravel substrates. The currently known distribution for loach minnow in Hidalgo County is restricted to the Gila River in the northern portion of Hidalgo County and not in the study corridor.

Bald Eagle

In New Mexico, the bald eagle migrates and winters from the northern border, southward regularly to the Gila, lower Rio Grande, middle Pecos, and Canadian valleys (Hubbard 1985). The species is primarily water-oriented, and the majority of the populations occurring in New Mexico are found near streams and lakes. On the other hand, there are some "dry land" areas where these eagles occur regularly, most notably in the region between the Pecos Valley and the Sandia, Manzano, Capitan, and Sacramento mountains, plus on the Mogollon Plateau. Bald eagles typically night-roost in groups in trees, usually in protected sites such as canyons. Important food items in the southwest include fish, waterfowl, rabbits and carrion. Food availability and perch sites may limit wintering bald eagle abundance in New Mexico. Other factors potentially limiting abundance include human disturbances and loss of mature riparian and riverine habitats. The entire state is considered within the range of wintering bald eagles; however, the important habitat characteristics are not present within the study corridor. This species would be an uncommon transient, if it would occur at all, within the study corridor.

Northern Aplomado Falcon

Northern aplomado falcons are long-tailed falcons, intermediate in size between American kestrels (*Falco sparverius*) and prairie falcons (*Falco mexicanus*) (National Geographic Society 1983). Essential components of their habitat include open terrain with scattered trees, relatively low ground cover, an abundance of small to medium sized birds, and a supply of nesting platforms, particularly yuccas and mesquite (Hector 1983). In New Mexico, the aplomado falcon is known to nest in mesquite, soaptree yucca, cottonwood, western soapberry (*Sapindus saponaria* var. *drummondii*), and cholla (NMDGF 1991).

The northern aplomado falcon was designated as an endangered species by the USFWS on January 25, 1986 (51 FR 6686) and is also listed as endangered by the state of New Mexico. Critical habitat has not been designated for this species, but a Recovery Plan was completed in June 1990. This species is declining because of habitat degradation and habitat-type conversion due to brush encroachment fostered by decades of livestock overgrazing and fire

suppression, overcollecting and reproductive failure of the species caused by organochlorine pesticide use (USFWS 1987). The USFWS has proposed to release a non-essential experimental population throughout the entire study corridor (70 FR 6819).

Southwestern Willow Flycatcher

The southwestern willow flycatcher is a small bird, approximately 6 inches long. It has a grayish-green back and wings, whitish throat, light gray-olive breast, and pale yellowish body. The southwestern willow flycatcher is found on breeding territories by mid-May; nest building and egg laying typically occur in late May and early June; and fledglings can be found in early to mid-July (Sogge *et al.* 1997). The southwestern willow flycatcher occurs in riparian habitats with dense growths of willows (*Salix* sp.), marsh broom (*Baccharis* sp.), arrowweed (*Pluchea* sp.), buttonbush (*Cephalanthus* sp.), tamarisk (*Tamarix* sp.), Russian olive (*Eleagnus* sp.), and often with a scattered overstory of cottonwood (*Populus* sp.). These habitats tend to be rare, widely separated, or small and usually separated by vast expanses of arid lands.

The southwestern willow flycatcher was listed as Federally endangered on February 27, 1995 (60 CFR 10693). Critical habitat was designated totaling 599 river miles within Arizona, California, and New Mexico on July 7, 1997 (62 CFR 39129); however during a hearing on March 25, 2001 the courts overturned the final ruling and the 1997 critical habitat designation no longer exists. On October 12, 2004, a new proposal for critical habitat was announced (69 FR 60706). The proposal calls for 376,095 acres (including 1,556 stream miles) of critical habitat in southern California, southern Nevada, southwestern Utah, south-central Colorado, Arizona, and New Mexico. Five recovery units are further broken down into 21 management units. These management units encompass stream segments essential for southwestern willow flycatcher conservation. The critical habitat designation was made final on September 30, 2005. In total, approximately 120,824 acres were designated as critical habitat (USFWS 2005a). This species is endangered due to the extensive loss and modification of its habitat. In addition, brood parasitism by the brown-headed cowbird (*Molothrus ater*) has significantly contributed to the endangered status of the southwestern willow flycatcher (Sogge *et al.* 1997).

Yellow-billed Cuckoo

The yellow-billed cuckoo is a medium-sized bird of about 12 inches in length and about 2 ounces in weight. The yellow-billed cuckoo is primarily a foliage-gleaning insectivore, but also hover gleans, hawks, and even hops on the ground to obtain prey (Ehrlich *et al.* 1992). In the

east, the cuckoo's prey consists mostly of hairy caterpillars, with lesser numbers of bird eggs, frogs, lizards, berries, and fruit (Ehrlich *et al.* 1988). Breeding often coincides with the appearance of massive numbers of cicadas, caterpillars, or other large insects during summer rains (Ehrlich *et al.* 1992). Clutch size is one to five (commonly two to three) eggs and is largest when prey is abundant (Hughes 1999). Restricted in their distribution to large, continuous blocks of mature cottonwood/willow dominated riparian habitat, the yellow-billed cuckoo has one of the most restrictive macro-habitat requirements of any bird species (Laymon and Halterman 1989). In New Mexico, preferred migration and breeding habitat is found in streamside cottonwood/willow groves, and larger mesquite bosques (Corman 1992). Studies suggest that forest area, continuity, shape, composition, and structure are important characters affecting habitat suitability (Laymon and Halterman 1985).

The primary threat to western cuckoos, both historically and recently, is due primarily to habitat loss on the breeding grounds. Principal causes of riparian habitat losses are conversion to agricultural and other uses, dams and river flow management, stream channelization and stabilization, and livestock grazing. Other serious threats include habitat fragmentation, degradation of riparian woodland due to agricultural and residential development (Dobkin 1994), stochastic extinctions and low colonization rates, flood control (Laymon and Halterman 1987), and riparian habitats invaded by less desirable tamarisk (Hughes 1999).

Chiricahua Leopard Frog

The Chiricahua leopard frog is greenish-brown usually with a green face. This species is highly aquatic, living in a variety of water sources including rocky streams with deep rock-bound ponds, river overflow pools, oxbows, permanent springs, stock tanks, and ponds (Degenhardt *et al.* 1996). The riparian habitat along these water bodies generally consists of oak and mixed oak and pine woodlands, but it can also range into areas of chaparral, grassland, and even desert.

The Chiricahua leopard frog was listed as threatened without critical habitat on July 15, 2002 (*Federal Register* 67(117): 40790-40811). In the petition to list the Chiricahua leopard frog, the USFWS cited known threats as habitat alteration, destruction, and fragmentation; predation by nonnative organisms; introduced species such as bullfrogs and fish; and disease. Habitat loss

has resulted from water diversions, dredging, livestock grazing, mining, degraded water quality, and groundwater pumping. Problems associated with small population numbers and size also threaten the species (Degenhardt *et al.* 1996).

Lesser Long-nosed Bat

The lesser long-nosed bat is a medium-sized bat that has a distinctively elongated nose with a leaf-shaped tip. The bat's long muzzle and tongue are adaptations that allow it to collect nectar from the flowers of columnar cacti, and from paniculate agaves (Arizona Ecological Field Services Office [AEFSO] 2002). They appear to need no standing water, surviving on water from fruits and flower nectar (Cockrum and Petryszyn 1991). In general, foraging takes place from dusk to dawn during the months of May through September. These animals have been captured in New Mexico between July and October. Lactating females have been captured in New Mexico, suggesting that some reproduction may take place in New Mexico (Findley *et al.*, 1975). They migrate south in the fall, leaving New Mexico in September or early October. Their fall migration appears to be linked to the flowering of the agave (Dalton and Dalton 1993).

In New Mexico, the lesser long-nosed bat is found during the summer within desert grasslands and scrubland (Findley *et al.* 1975). Maternity colonies are formed at lower elevations near concentrations of flowering columnar cacti. After the young are weaned, some females and young move to higher elevations, primarily in the southeastern parts of New Mexico near concentrations of blooming paniculate agave (AEFSO 2002). During the day, they roost in mine tunnels and natural caves.

The lesser long-nosed bat occurs in the southeastern New Mexico, Chiricahua Mountains and south to Mexico (AEFSO 2002). Of the approximately 12 known major maternity roosts throughout their range in Central and North America, there are only three verified major maternity roosts of this species in the U.S., all of which are in Arizona (Cockrum and Petryszyn 1991).

The lesser long-nosed bat was listed (originally, as Sanborn's long-nosed bat) as endangered on September 30, 1988 (53 FR 38456). No critical habitat has been designated for this species. Loss of roost and foraging habitat, interdependence with its food resources, and direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current status of the species (AEFSO 2002). This species is particularly vulnerable due to the

fact that pregnant females concentrate their numbers by roosting in only a few sites. Thus, destruction of a single major roost could have serious impacts on the entire species (Henshaw 1972).

Mexican Gray Wolf

The Mexican gray wolf ranges in weight from 68 to 91 pounds for males and 58 to 68 pounds for females (McBride 1980). Wolves do not have any specific habitat requirements and can exist in forests of all types, rangelands, brushlands, steppes, agricultural lands, wetlands, mountaintops, deserts, tundra, and barren ground areas. The only habitat feature of potential importance is the presence of natural water sources such as springs, seeps, pools, riffles, vernal pools, and arid riparian habitat. Dens are usually dug in slopes where tree roots, rocks, or firmness of soil will lessen the likelihood of a cave-in (McBride 1980).

The gray wolf (*Canis lupus*) was listed as endangered by the USFWS on March 11, 1967. The subspecies *C. lupus baileyi* (Mexican wolf) was added as an endangered species on April 28, 1976. The species' decline was primarily due to bounties offered by the livestock industry, which almost extirpated wolves from the region (Rutter and Pimlott 1968). Habitat destruction was an indirect factor in the extirpation because as native habitat was destroyed and livestock introduced, opportunities for wolves to prey on livestock increased. In the southwest, continued urbanization places demands on southwestern forests for recreation, big game hunting, increased production of timber and livestock, and continuing attempts to utilize the soils and water for growing non-native farm crops (Findley *et al.* 1975).

A recovery program for the Mexican gray wolf is currently operational on the Gila National Forest in western New Mexico. Reintroduced wolves are allowed to disperse and colonize an area referred to as the Blue Range Wolf Recovery Area, which includes the Gila National Forest in western New Mexico. The USFWS, USDA Wildlife Services, the AGFD, the New Mexico Department of Game & Fish, and Turner Endangered Species Fund have formed an Interagency Field Team to conduct wolf releases and monitor and manage the wolves (USFWS 2006b).

New Mexico Ridge-nosed Rattlesnake

The New Mexico ridge-nosed rattlesnake is distinguished by its upturned internasal and canthal scales that form a ridge around the front of the snout (Stebbins 2003). This subspecies is

restricted to the Animas Mountains. The New Mexico ridge-nosed rattlesnake is most commonly found in moist canyons in coniferous forests to pine and pine-oak woodland, but it is also found in adjacent, more arid woodland and ecotonal grassland habitats (Stebbins 2003).

The New Mexico ridge-nosed rattlesnake was listed as threatened by the USFWS on August 4, 1978 (43 FR 34479). A recovery plan was completed in March 1985, and critical habitat was designated in a portion of Hidalgo County, New Mexico. The New Mexico ridge-nosed rattlesnake is listed as endangered by the NMDGF. This species is listed as “threatened” because of its limited range, vulnerability, and past collecting. After the species was discovered in 1957 in the Animas Mountains of New Mexico, collectors came from all parts of the country. Some collectors destroyed or altered habitat in their collecting efforts. Other threats include destruction of habitat due to excessive grazing and infestation by certain flagellates and bacterium (Johnson 1983).

Interior Least Tern

The interior least tern was listed as an endangered species in the 1985 *Federal Register* (50 FR 21,784-21,792) in the following states: Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana (Mississippi River and its tributaries north of Baton Rouge), Mississippi (Mississippi River), Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Tennessee, and Texas (except within 50 miles of the Gulf of Mexico coast). At the time of listing, census data estimated the interior least tern population at approximately 5,000 individuals.

Interior least terns are known to occur along major river systems of the U.S. These river systems include the Red, Rio Grande, Arkansas, Missouri, Ohio, and Mississippi. However, no critical habitat has been designated for this species. A recovery plan for the interior least tern was finalized on September 19, 1990 (USFWS 2006c).

The nesting season typically begins in early June and lasts through August when least terns begin their winter migration to South America. Colonies are often loose associations of adults consisting of three to 30 pairs. Although the female does most of the incubation and brooding, both adults participate. Interior least tern nests are scrapes in the sand, approximately 4 inches wide, usually containing two to three eggs. The adults protect nests from predators through a mobbing behavior. The incubation period lasts from 19 to 25 days and chicks become mobile

and leave the nest within a few days of hatching. Chicks are fed small fishes and minnows until they fledge at around 20 days. Fledglings continue to receive food from adults for several weeks as they learn to forage, but are typically ready to disperse from natal colonies within 3 weeks of fledging (USFWS 1990).

Connections to the mainland, or land bridging, allow people and pets, recreational vehicles, livestock, and terrestrial predators greater access to the colonies. Direct human disturbances such as fireworks, camping, picnicking, recreation, and general exploration have also impacted interior least tern nesting habitat (USFWS 1990). Human foot disturbance are common on sandbars along the Rio Grande.

3.4.4 Critical Habitat

The ESA also calls for the conservation of what is termed critical habitat - the areas of land, water, and air space that an endangered species needs for survival. Critical habitat also includes such things as food and water, breeding sites, cover or shelter, and sufficient habitat area to provide for normal population growth and behavior. One of the primary threats to many species is the destruction or modification of essential habitat by uncontrolled land and water development.

One species has designated critical habitat in the study corridor. Critical habitat for the New Mexico ridge-nosed rattlesnake has been determined by USFWS to include the following areas in Hidalgo County: locations between 6,200 feet and 8,532 feet in the Bear, Indian, and Spring Canyons of the Animas Mountains. This is a revised critical habitat designation from the proposed critical habitat of "Elevations above 6,200 feet in the Animas Mountains, Hidalgo County, New Mexico" and is based on updated information USFWS received from NMDGF. The range of the New Mexico ridge-nosed rattlesnake is primarily restricted to three canyons in the Animas Mountains of New Mexico and may involve habitat of approximately 1 square mile or less (*Federal Register* 1978).

3.5 EXOTIC PLANTS

The number of exotic plants recorded in New Mexico has increased over the last century (Cox 2001). Because surrounding states have relatively greater number of established exotic plant populations, the total number of exotics in New Mexico is likely to increase in the near future.

Although the total number of exotics recorded is high (390 species), many of the populations are small, isolated occurrences, represent non-invasive species which do not compete well with native vegetation, or do not exhibit characteristics that alter ecological processes, or otherwise create a negative impact on the state's environment and economy (*i.e.*, noxious weeds). The New Mexico Department of Agriculture (1999) has published a list of 32 plant species considered noxious including eight species that are locally abundant (Class B) and five species that are widespread (Class C). Most of the noxious plants on this list are forbs. The Class B weeds are generally non-palatable and spiny forbs and the Class C weeds include a single grass and three woody species. A review of the USGS Southwest Exotics Database (USGS 2005) produced two records of exotic plants within the study corridor. The Malta starthistle (*Centura melitensis*) is a Class B weed that is not palatable and replaces native bunchgrasses leading to erosion. Malta starthistle populations are found in the Deming Station along New Mexico Highway 180. The African rue (*Peganum harmula*) is a Class B weed that was first reported in New Mexico and has since spread to other states. This species competes with native forage plants and degrades wildlife habitat. Populations of African rue are known to occur within Deming and Lordsburg Stations along New Mexico Highway 180 and NM 9. The complete list of non-native plants (Cox 2001) and the list of noxious weeds (USGS 2005) are presented in Appendix B of this document.

3.6 UNIQUE AND SENSITIVE AREAS

The majority of the study corridor has not been developed or converted to agricultural uses and vast stretches of Chihuahuan Desert vegetation remains relatively untouched (USGS 2004). Most of the Chihuahuan Desert (Brown 1994b) vegetation communities are widely distributed and would not be considered unique. Grassland and chaparral communities of the Chihuahuan Desert are sensitive to fire suppression and grazing; however, most of these areas have already been degraded due to historical management practices.

The unique and sensitive areas within the study corridor of the Santa Teresa Station (Figure 3-5a) include a Wilderness Study Area (WSA), the Rio Grande Riverpark Trail system, and Mount Cristo Rey. The BLM can designate lands as a WSA and development on these lands is restricted. The WSA in Santa Teresa Station covers a large area of the northeast corner of the station including small portion of the project corridor. The City and County of El Paso have partnered with the National Park Service (NPS) to create The Rio Grande Riverpark Trail

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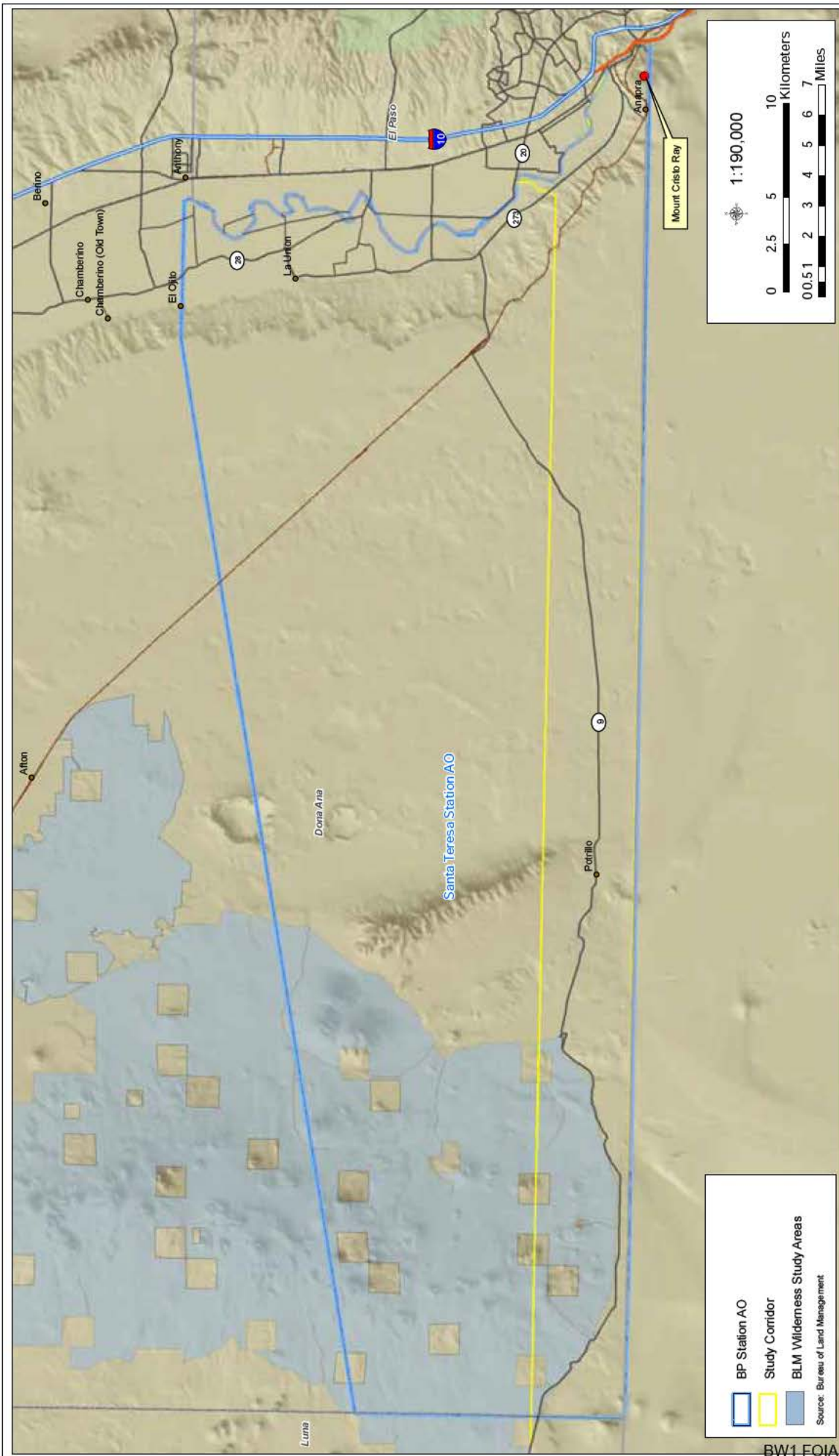


Figure 3-5a: El Paso Sector Unique and Sensitive Santa Teresa Station

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System (El Paso County 2006a), which is planned to follow the course of the river for 32 miles southward from the New Mexico state boundary. The trail system connects existing trails and parks featuring landmarks of southwest history including forts, missions, and archeological sites.

Natural ecosystems including rare wetlands can also be visited from the trail and interconnected, wildlife viewing areas. Mount Cristo Rey (roadsideamerica.com 2006) is part of this system and is found on the border in the southeast corner of Santa Teresa Station near the community of Sunland Park. Mount Cristo Rey includes a statue of Jesus and is open to visitors only during daylight hours due to the presence of vandals.

The unique and sensitive areas within the Deming Station study corridor are limited to a single state park (Figure 3-5b). Pancho Villa State Park is located near Columbus at the international border and maintains historical exhibits from the 1916 raid on the community by General Francisco “Pancho” Villa (Energy, Minerals, and Natural Resources Department [EMNRD] 2006a). The park also offers a visitors center, camping facilities, and interpretive tours. Rockhound State Park (EMNRD 2006b), BLM WSAs, and the BLM's Florida Mountains Area of Critical Environmental Concern (ACEC) are located north of the study corridor. Development within ACECs is also restricted.

The unique and sensitive areas within the Lordsburg Station study corridor include a national forest, WSAs, and ACECs (Figure 3-5c). The Douglas Ranger District of the Coronado National Forest (CNF) (USDA 2006) lies at the western boundary of the Lordsburg Station. The CNF's mission is to protect the biodiversity of unique montane ecosystems, often called “Sky Islands”, and to provide recreational opportunities to the public. Most of this unit has been declared an Inventoried Roadless Area; however, some lands associated with existing roads or private lands have not been designated. Two WSAs and five ACECs are located within the Lordsburg Station study corridor including the Guadalupe Canyon ACEC which is located on the border near the western boundary of the station.

3.7 AESTHETIC RESOURCES

The aesthetic resources within the study corridor include the characteristic geologic features of the Basin and Range Province (USGS 2004b), and the natural vegetation of the Chihuahuan Desert Biome (Brown 1994b). Historic uplift of faulted blocks and their subsequent erosion over

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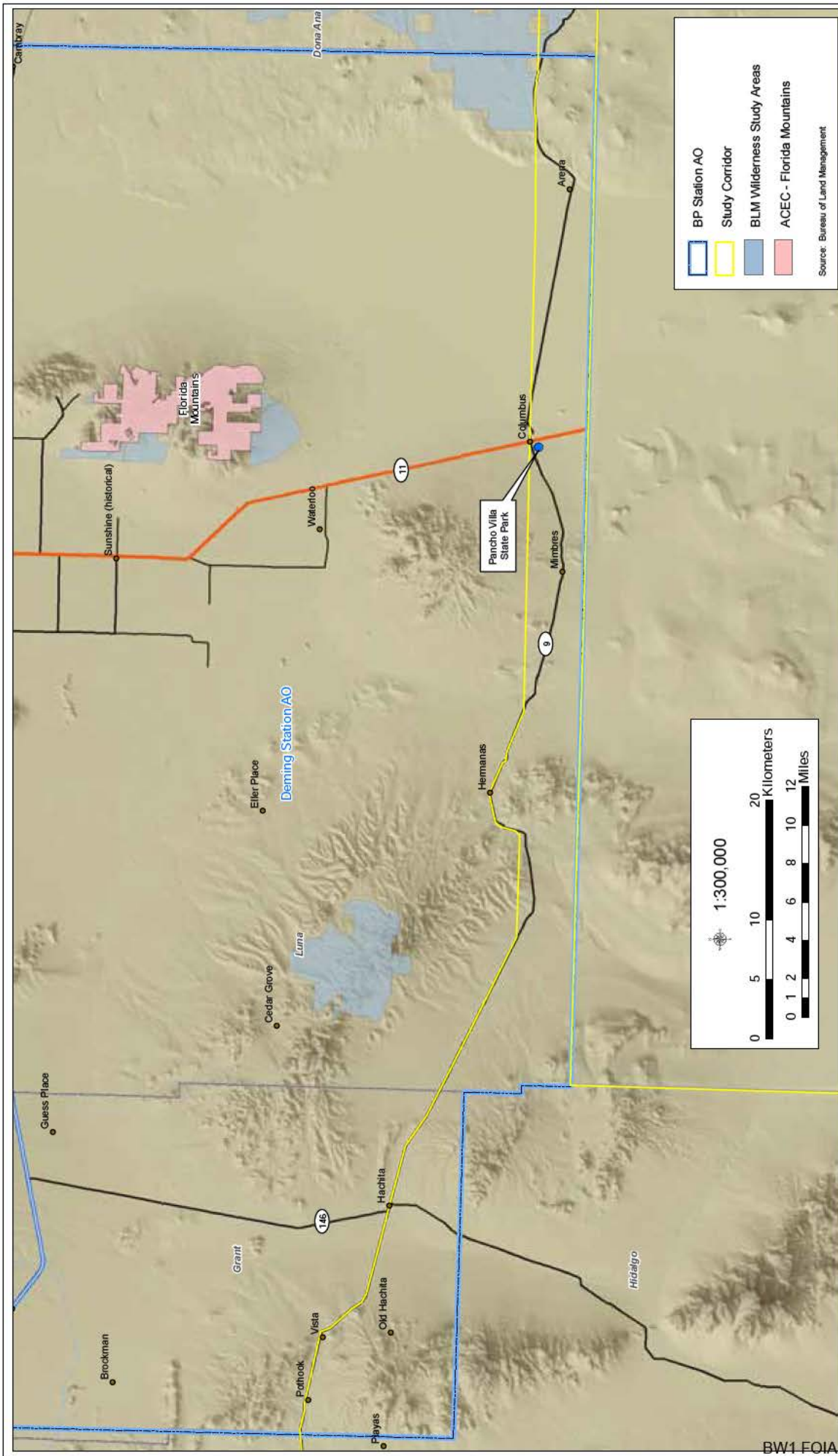


Figure 3-5b: El Paso Sector Unique and Sensitive Deming Station

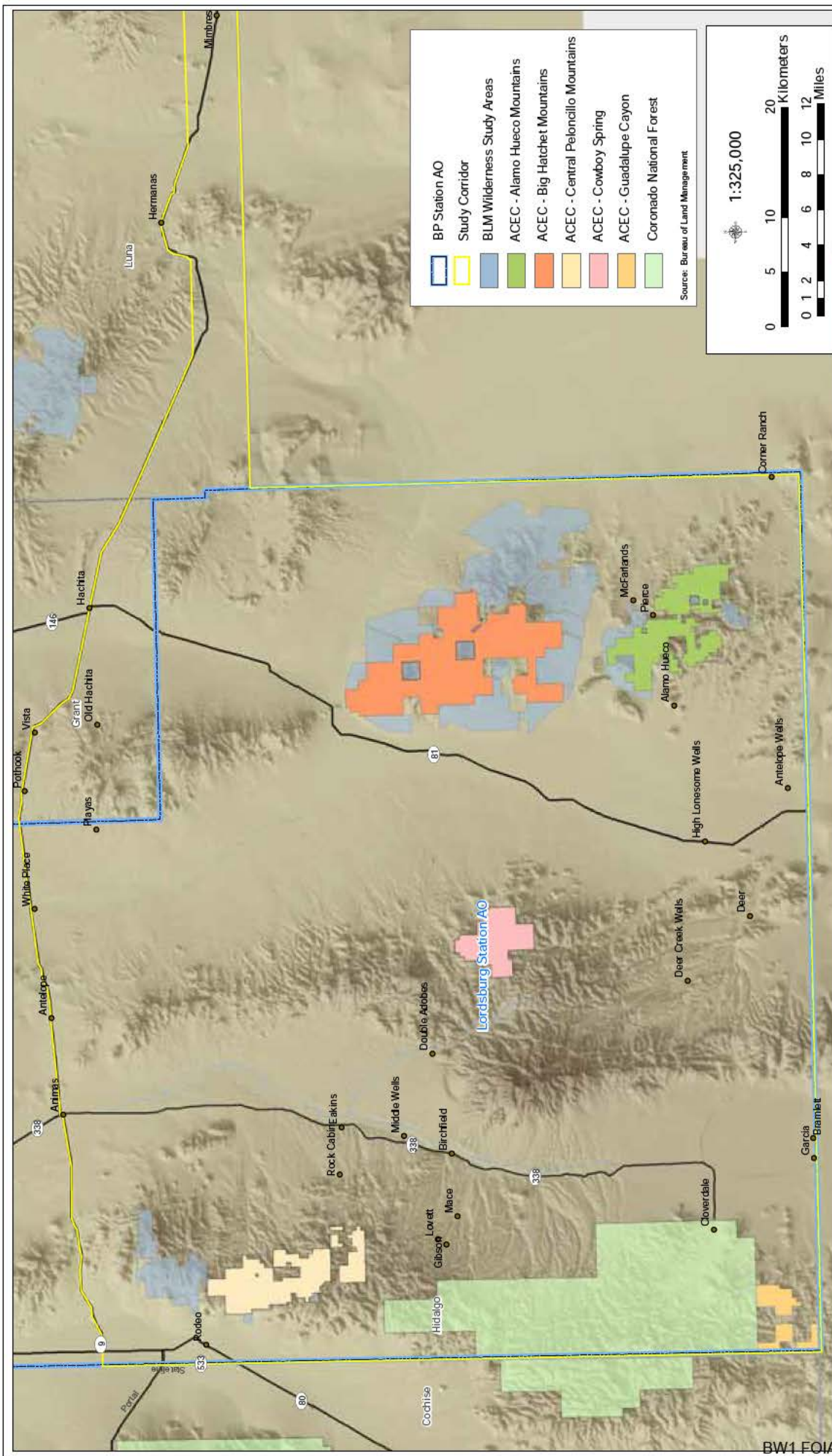


Figure 3-5c: El Paso Sector Unique and Sensitive Lordsburg Station

millions of years has resulted in jagged mountain ridges rising abruptly from vast intermountain ranges. The low diversity and simple appearance of Chihuahuan Desert vegetation held within these relatively flat valleys creates a landscape that changes little in appearance from horizon to horizon. The rural agricultural communities, historic missions and forts, and characteristic architecture contribute to the aesthetic quality of the region.

3.8 AIR QUALITY

3.8.1 Federal and State Standards

The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS), for specific pollutants determined to be of concern with respect to the health and welfare of the general public. The EPA defines ambient air quality in 40 CFR 50 as "that portion of the atmosphere, external to buildings, to which the general public has access". Ambient air quality standards are intended to protect public health and welfare and are classified as either "primary" or "secondary" standards. Primary standards define levels of air quality necessary to protect the public health. National secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. The major pollutants of concern, or criteria pollutants, are carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, suspended particulate matter less than ten microns, and lead. NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. Short-term standards (1-, 8- and 24-hour averaging periods) are established for pollutants contributing to acute health effects, while long-term standards (annual averages) are established for pollutants contributing to long-term health effects. The NAAQS are included in Table 3-9. Areas that do not meet these standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas.

The EPA requires each state to develop a State Implementation Plan (SIP) that sets forth how the Clean Air Act (CAA) provisions will be implemented within that state. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain compliance with the NAAQS within each state. To provide consistency in different state programs and ensure that a state program complies with the requirements of the CAA and EPA, the EPA must approve the SIP. The purpose of the SIP is twofold. First, it must provide a strategy that will result in the attainment and maintenance of the NAAQS. Second, it must

demonstrate that progress is being made in attaining the standards in each non-attainment area.

Table 3-9. National Ambient Air Quality Standards

POLLUTANT	STANDARD VALUE	STANDARD TYPE
Carbon Monoxide (CO)		
8-hour average	9 ppm (10mg/m ³)**	P
1-hour average	35 ppm (40mg/m ³)**	P
Nitrogen Dioxide (NO₂)		
Annual arithmetic mean	0.053 ppm (100µ/m ³)**	P and S
Ozone (O₃)		
8-hour average*	0.08 ppm (157µg/m ³)**	P and S
Lead (Pb)		
Quarterly average	1.5 µg/m ³	P and S
Particulate<10 micrometers (PM₁₀)		
Annual arithmetic mean	50 µg/m ³	P and S
24-hour average	150 µg/m ³	P and S
Particulate<2.5 micrometers (PM_{2.5})		
Annual arithmetic mean	15 µg/m ³	P and S
24-hour average	65 µg/m ³	P and S
Sulfur Dioxide (SO₂)		
Annual average mean	0.03 ppm (80µg/m ³)	P
24-hour average	0.14 ppm (365µg/m ³)	P
3-hour average	0.50 ppm (1300µg/m ³)	S

Legend: P= Primary
 S= Secondary
 ppm = parts per million
 mg/m³ = milligrams per cubic meter of air
 µg/m³ = micrograms per cubic meter of air

Source: EPA 2005

* Parenthetical value is an approximate equivalent concentration

3.8.2 Potential Sources of Pollution

Some potential sources of air pollution within the study corridor have been the result of manmade emissions from sources such as vehicles and industrial establishments. Most prevalent, though are the natural and man induced pollution of particulates less than 10 microns (PM₁₀) due primarily to wind blown dust, to which the entire southern portion of New Mexico is susceptible. Another potential source of PM₁₀ and other air pollutants within the study corridor is smoke clouds blown in from Mexico. The primary source of such smoke is agricultural burning in southeastern Mexico and Central America.

The most common sources of natural wind blown dust included soil disturbance during construction projects, disturbed vacant land, unpaved rural roads or high traffic areas, unpaved parking areas or equipment yards, tilled agricultural fields, and military training activities.

3.8.3 Status of Air Quality

New Mexico is located in the EPA's Region 6. The New Mexico Environment Department's (NMED) Air Quality Bureau is the state agency responsible for "controlling present and future sources of air pollution". New Mexico's Ambient Air Quality Standards (NMAAQS) for the criteria pollutants are more stringent than the NAAQS.

Hidalgo and Luna County are currently in attainment for all criteria pollutants. However, in 2003, Luna County opted to take measures to avoid non-attainment status designation by the EPA for numerous exceedances in PM₁₀ due to natural events. In Doña Ana County, there are two separate areas in the southeastern portion that are in non-attainment (marginal) for ozone and PM₁₀ (EPA 2005 and NMED 2006). Doña Ana County borders El Paso, Texas and Ciudad Juarez, Mexico. This region of the state has historically had air quality problems, including PM₁₀ and ozone pollution. In Anthony, New Mexico, which lies on the border of Texas and New Mexico, there is a PM₁₀ non-attainment area. This area was designated by EPA in 1991. In 1995, the EPA declared a 42-square mile region in the southeast corner of the county on the border of Texas and Mexico as a marginal non-attainment area for the 1-hour ozone standard. This area includes the cities of Sunland Park, Santa Teresa, and La Union, New Mexico (NMED 2006). Sunland Park is currently designated as a maintenance area for the 8-hour NAAQS for ozone.

Due to the arid environment, all counties in southern New Mexico have experienced issues of natural wind blown dust (PM₁₀). Rather than penalizing western arid states for exceedances due to natural events and classifying them as non-attainment areas, the EPA and state regulatory agencies have developed a more effective policy to address PM₁₀ pollution caused by natural events. This policy is known as the Natural Events Policy. Under this policy, the NMED Air Quality Bureau and local governments are required to implement a Natural Events Action Plan (NEAP). The NEAP entails documenting when, and to what extent natural events affect PM₁₀, informing the public about the harmful effects, implementing a notification and health advisory program, and identifying actions needed to reduce PM₁₀ to minimize the effects of natural events. NEAPs have been implemented by Doña Ana and Luna Counties in order to mitigate any man-made contributions such as construction sites. The basis for mitigation in a NEAP is the establishment of Best Available Control Measures (BACM). BACMs are methods that can be used to reduce or eliminate windblown dust in areas where natural soils have been disturbed

and are therefore more susceptible to erosion by the wind. A list of pertinent and suggested BACMs identified in the Doña Ana and Luna County NEAPs are summarized as:

- Road stabilization using water or chemical dust suppressants
- Prioritization of the paving of unpaved roads based on the criteria that includes the amount of traffic, production of dust, and vicinity of people, schools, etc.
- Graveling unpaved roads on a regular basis
- Reducing speed limits on unpaved roads with appropriate enforcement or speed bumps/humps limiting use of unestablished roads through the use of road closures and barricades
- Providing adequate stormwater drainage to reduce soil from being washed or tracked onto paved roads
- Prevent tracking of dirt from construction sites by installing curbs, or stabilizing road shoulders
- Use of devices designed to clean mud and bulk dirt from tires such as steel grates or on-site wheel washes
- For trucks hauling bulk materials to or from the site, fully cover and secure cargo loads and prevent leakage from truck (NMED 2000 and NMED 2004).

3.8.4 Conformity Rule Requirements

The Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria or requirements for conformity determinations for Federal projects. The Federal conformity rule was first promulgated in 1993 by the EPA, following the passage of Amendments to CAA in 1990. The rule mandates that a conformity analysis must be performed when a Federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more NAAQS.

A conformity analysis is the process used to determine whether a Federal action meets the requirements of general conformity rule and the associated SIP. It requires that the affected Federal agency evaluate the nature of the Proposed Action Alternative and associated air pollutant emissions, calculate emissions as a result of the Proposed Action Alternative, and mitigate emissions if thresholds are exceeded.

3.9 WATER RESOURCES

This section of the PEA discusses surface and groundwater resources, wetlands and Waters of the U.S. (WUS), and water quality within the study corridor. In the arid climate of southern New

Mexico, water availability and water quality are often discussed in tandem. Due to the rapid percolation and recharge of aquifers from surface waters, the quality of surface water reaching aquifers can limit the availability of potable water.

Precipitation within the study corridor contributes to surface and groundwaters within the Rio Grande basin (Robinson and Banta 1995, Consortium of the Rio Grande 1997, Texas State Historical Association 2005). One of the longest rivers in the U.S., the Rio Grande flows through New Mexico for 645 miles from its origin in Colorado draining 28,680 square miles of land above El Paso, Texas. The Rio Grande Rectification Project of 1933 resulted in the straightening of the rivers channel from Caballo Dam, north of El Paso Sector, to the Texas border. The river no longer travels the course marking the eastern boundary of the Santa Teresa Station and surface flows along this reach of the Rio Grande are now found primarily within the boundaries of the El Paso Station, Texas. The Rio Grande and ephemeral streams or washes of the project corridor are depicted by station in Figures 3-6a through 3-6c.

The Rio Grande aquifer system (Robinson and Banta 1995) underlies the majority of the El Paso Sector and is the principal aquifer of southern Colorado, central New Mexico, western Texas, and portions of Mexico. The aquifer is formed within the unconsolidated gravel, sand, silt, and clay, or partly consolidated sedimentary or volcanic materials that have filled deep valleys. The most important source of groundwater recharge to the Rio Grande aquifer system primarily originates as precipitation in the mountainous areas of Colorado. Although most precipitation entering the closed basins west of the Portillos Mountains generally flows for short distances before being lost to evaporation and transpiration, streamflow that extends beyond the mountain front provides an important source of surface recharge. Return recharge from irrigation and wastewater is an important component of surface recharge in basins near the Rio Grande. Groundwater is discharged from the Rio Grande aquifer system through evapotranspiration, withdrawal from wells and drains, discharge to streamflow, and underflow from one basin to another.

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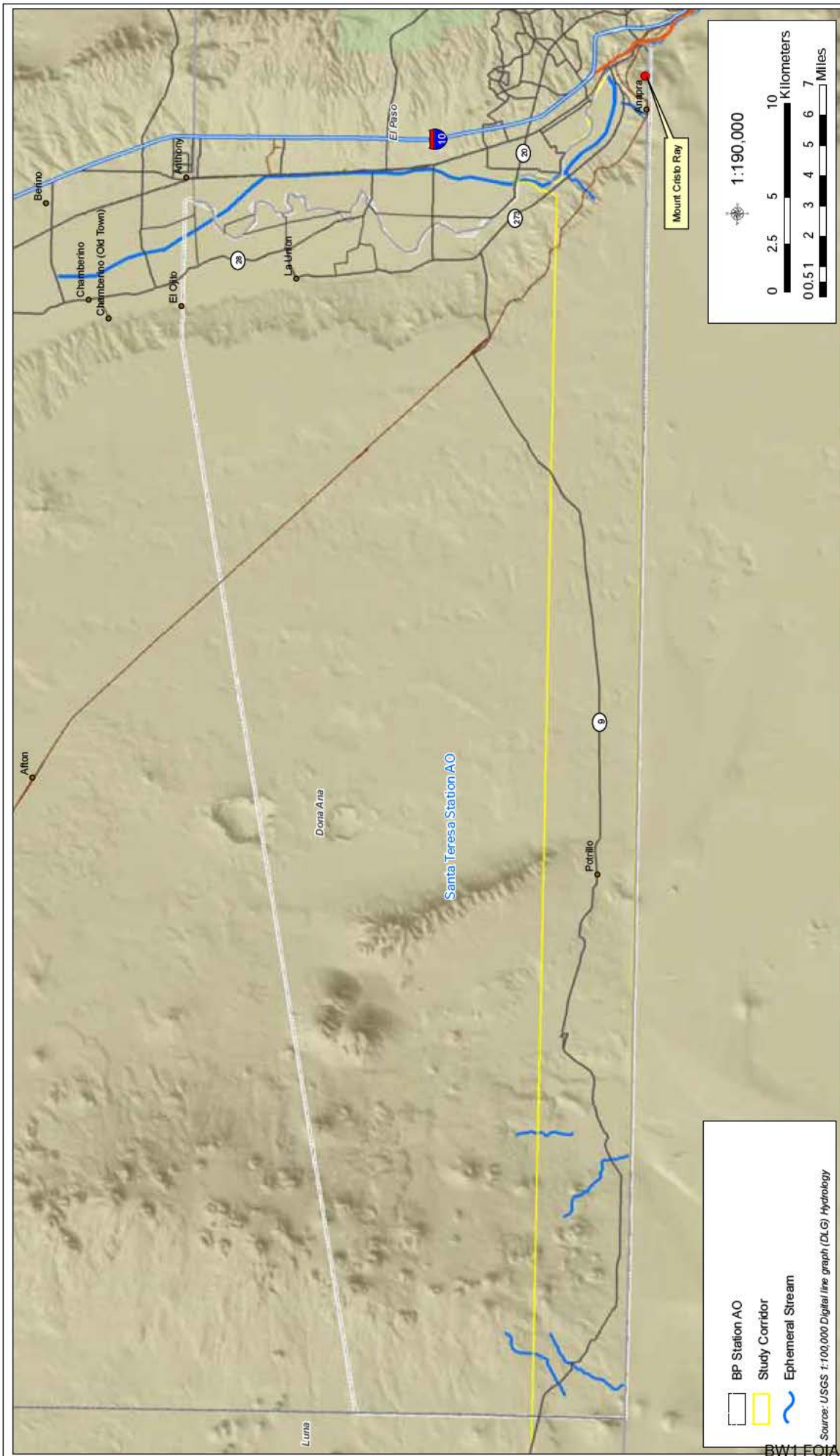


Figure 3-6a: El Paso Sector Water Resources
Santa Teresa Station

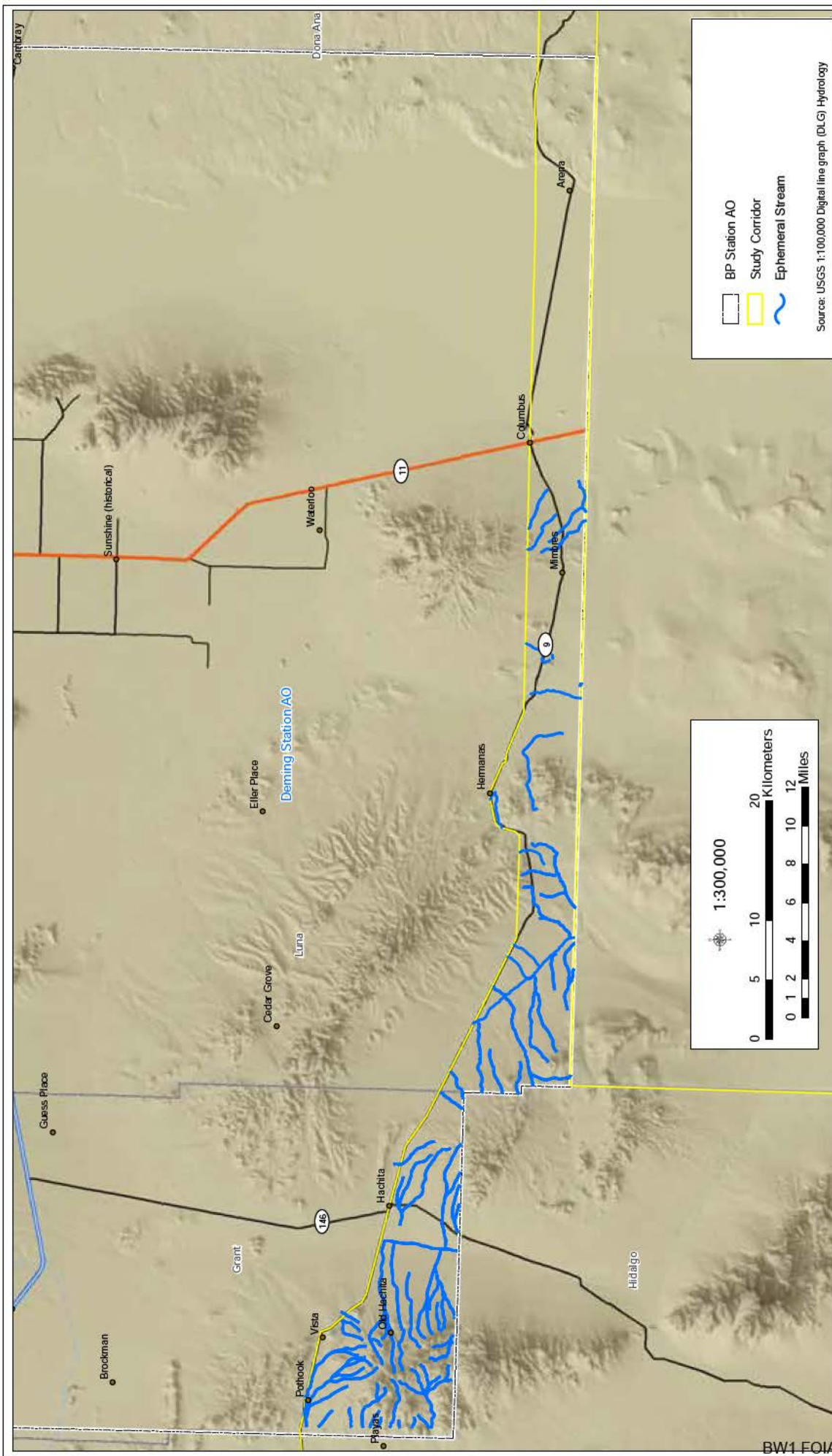


Figure 3-6b: El Paso Sector Water Resources
Deming Station

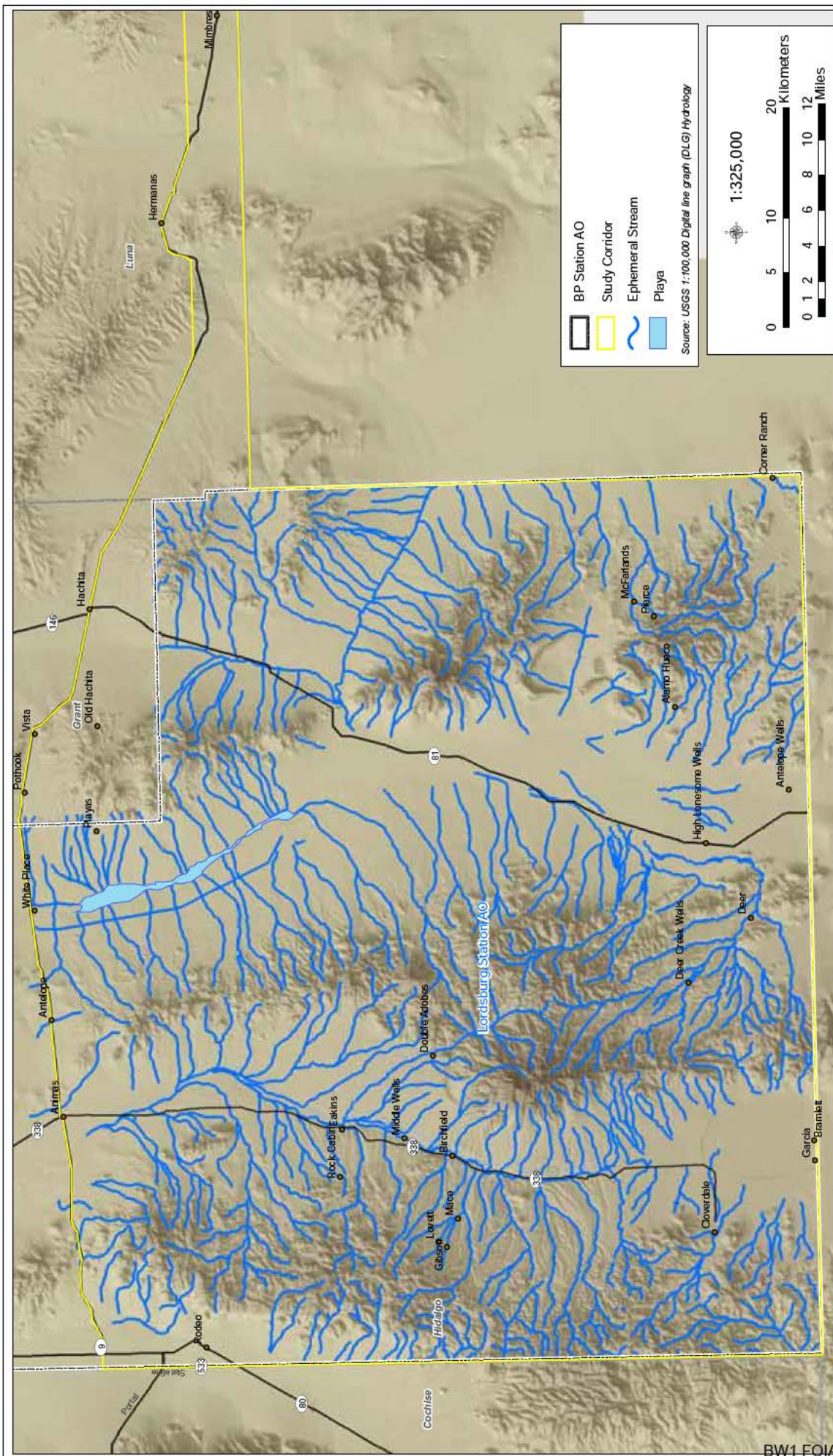


Figure 3-6c: El Paso Sector Water Resources
 Lordsburg Station

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The Mesilla Basin is an open basin that underlies the Rio Grande between Caballo Dam and the narrow mountain pass between the Portrillo and Franklin Mountains at El Paso, Texas. Sporadic storm water runoff, as well as wastewater and irrigation recharge, contributes directly to surface flows of the Rio Grande in this open basin. Valleys within Deming, Lordsburg and the western portion of Santa Teresa stations form closed basins that are not connected to the Rio Grande through surface flows. Streams in these basins are ephemeral, and little if any xeroriparian vegetation develops along their banks. However, groundwater moves from these basins toward the Rio Grande through an interconnected system of aquifers and historically contributed to surface flows of the Rio Grande through upward seepage.

Long-term declines in groundwater levels, resulting from a deficit between recharge and withdrawal, have occurred within heavily developed, closed basins. In the Animas Basin (Lordsburg Station), groundwater withdrawal for agricultural use caused more than 80 feet of water level decline between 1948 and 1981 (Robinson and Banta 1995). The Cloverdale and Playas Lake Basins are located along the southern border of Lordsburg station. The San Simon and San Bernadino Basins extend across the western boundary of Lordsburg Station, but are located primarily within Arizona and ultimately contribute flows to the Lower Colorado River Valley. The Mimbres Basin (Deming Station) is the primary source of water for the Deming/Columbus area and supplies water for approximately 31,000 acres of irrigated land. The Mesilla Basin (Santa Teresa Station) is an open basin, and groundwater withdrawals are offset by induced recharge, captured discharge, and surface recharge. The withdrawal of groundwater from deep within this basin's aquifer has reversed the upward seepage of groundwater. Return flow from over 54,000 acres of irrigated cropland, as well as treated and untreated wastewater returns from Las Cruces, Santa Teresa, and other population centers now seep downward and help to stabilize groundwater levels near the Rio Grande (Robinson and Banta 1995). The majority of groundwater withdrawn from the Rio Grande aquifer system is used for irrigation of cotton, peppers, onions, and pecans; however, municipal and industrial uses near El Paso and Ciudad Juarez are also a significant source of groundwater withdrawal (Robinson and Banta 1995).

Section 404 of the Clean Water Act (CWA) of 1977 (P.L. 95-217) authorizes the Secretary of the Army, acting through the U.S. Army Corps of Engineers (USACE), to issue permits for the discharge of dredged or fill material into WUS, including wetlands. WUS (Section 328.3[2] of the CWA) are those waters used in interstate or foreign commerce, subject to ebb and flow of

tide, and all interstate waters including interstate wetlands. WUS are further defined as, and may include, waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, or impoundments of waters, tributaries of waters, and territorial seas. Jurisdictional boundaries for WUS are defined in the field as the ordinary high water marks which is that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural lines impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory 1987). Site-specific wetland surveys would be completed for individual projects as plans for location and design are identified.

Activities that result in the dredging or filling of WUS, including wetlands, are regulated under Section 404 of the CWA. The USACE has established Nationwide Permits (NWP) to efficiently authorize common activities, which do not significantly impact WUS, including wetlands. The NWPs were modified and reissued by the USACE in the *Federal Register* on 15 January 2002, with an effective date of 18 March 2002. All NWPs have an expiration date of 19 March 2007. The USACE has the responsibility to authorize permitting under a NWP, or to require an Individual Permit.

The CWA Sections 301-320 establishes standards and enforcement guidelines for the protection of water quality. The New Mexico Water Quality Act (74-6-1 et seq., NMSA 1978) establishes the Water Quality Control Commission (WQCC) as the regulatory authority for the administration of state water pollution control including surface and groundwaters. These acts require that states categorize waters by the uses they provide and to establish maximum pollutant levels acceptable for its identified use. If water should become polluted to the extent that it is not suitable for its designated use, the WQCC is required to list this water as impaired under Section 303(d) of the CWA. In compliance with this act, the WQCC has listed two waters within the study corridor as impaired (WQCC 2004). Several reaches of the Mimbres River are listed as impaired, including the reach in the north central portion of Deming Station, because

the reaches do not support their designated use as fishery habitat. The impaired reach within the study corridor represents the final reach of the river before it ceases to flow. The Rio Grande flows through a small portion of Santa Teresa Station and is also listed as impaired. High levels of fecal coliform in the river are attributable to multiple sources including municipal, on-site waste treatment, and agricultural runoff. This impairment prevents safe contact with the water.

The majority of drinking water in the project region is supplied by groundwater within the Rio Grande aquifer system. It has been determined that present water supplies in the upper parts of the basin are barely adequate to meet demands (Robinson and Banta 1995). With diminished recharge from upstream sources and withdrawals increasing to meet the demands of the ever growing population centers along the border, groundwater contamination is a significant issue with interstate and international implications. As surface sources become an increasingly important component of recharge to the aquifer, the quality of groundwater is increasingly influenced by above ground activities. Agricultural operations and untreated domestic waste at individual homes, trailer parks, and small communities are a significant source of nitrate contamination.

3.10 HAZARDOUS MATERIALS

Solid and hazardous wastes are regulated in New Mexico by a combination of mandated laws promulgated by the EPA and the NMED Hazardous Waste Bureau. A search was conducted on the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). CERCLIS contains information on hazardous waste sites, potential hazardous waste sites, and remedial activities, including sites that are on the National Priorities List or being considered for the list. There were 10 sites found on the CERCLIS database within Doña Ana County, three in Luna County, and one in Hidalgo County (EPA 2006). They are listed in Table 3-10.

Table 3-10. CERCLIS Database Results for El Paso County

EPA ID	Site Name	Street Address	County	In Study Corridor?
NM9141199977	BLM-LA MESA LANDFILL	17 miles south of Las Cruces	Doña Ana	No
NMD980964268	BLM-LAS CRUCES LANDFILL	Approximately 2 miles northeast of Las Cruces on East Foothills, Las Cruces	Doña Ana	No
NMD980750046	BLM-MESILLA DAM LANDFILL	T24S, R1E, Section 14 SE ¼ NE ¼ SW ¼ NE ¼, Las Cruces	Doña Ana	No
NM0000605387	DONA ANA METAL SURVEY	3 mile radius of the TX/NM/Mexico, Sunland Park	Doña Ana	Yes
NM0000605622	FORMER FARMERS MARKET AND SUPPLY COMPANY PROPERTIES	121 North main Street and 117 North Hatch	Doña Ana	No
NM0002271286	GRIGGS & WALNUT GROUND WATER PLUME	153 North Cottonwood Street, Las Cruces	Doña Ana	No
NMN000605616	MAIN STREET CLEANERS	705 North Main Street, Las Cruces	Doña Ana	No
NM8800019434	NASA WHITE SANDS TEST FACILITY	14 miles east and north of Las Cruces	Doña Ana	No
NMD986684231	STEPHENSON-BENNETT MINE	1.5 miles south of Organ	Doña Ana	No
NM2750211235	WHITE SANDS MISSILE RANGE	U.S. Army Commissary Building 1510, Las Cruces	Doña Ana	No
NM0000605167	HIGHWAY 549 SOLVENTS	Highway 549, Deming	Luna	No
NMD097119986	PERU HILL MILL	North of Deming	Luna	No
NM0000605379	TULIP DRIVE LANDFILL	Southeast corner of intersection of Highway 26, Deming	Luna	No
NM0000605610	EAST MOTEL DRIVE	Across the street from 992/984 East, Lordsburg	Hidalgo	No

Source: EPA 2006

A Phase I Environmental Site Assessment would be completed prior to the CBP entering into an easement or purchase agreement for lands to execute future projects within the study corridor. Given the industrialized nature of the City of El Paso near the U.S. – Mexico border, there is the potential for solid or hazardous wastes to be encountered within the Santa Teresa Station. The New Mexico Environment Department reports 11 former or current petroleum storage tanks within the study corridor. Four of the tank facilities have reported leaks: San Jose Fina at 222 W. Broadway in Columbus; Hachita Café (P.O. Box 95) in Hachita; New Mexico Department of Transportation (NMDOT) Hachita Patrol Yard on NM 9 in Hachita; and the Mimbres Store at 3090 Highway 35 in Mimbres (Cibas 2006). Project-specific environmental site assessments would locate any additional environmental hazards within specific project footprints.

3.11 NOISE

Noise is generally described as unwanted sound, which can be based either on objective effects (*i.e.*, hearing loss, damage to structures) or subjective judgments (*e.g.*, community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel. Sound on the decibel scale is referred to as sound level.

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by the EPA and has been adopted by most Federal agencies (EPA 1974). A-weighted decibel (dBA) is a measure of noise at a given, maximum level or constant state level) are listed in Table 3-12. A DNL of 65 dBA is the level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like construction. Areas exposed to a DNL above 65 dBA are generally not considered suitable for residential use. A DNL of 55 dBA was identified by EPA, as a level below which there is no adverse impact (EPA 1974).

Table 3-11. A-Weighted (dBA) Sound Levels of Typical Noise Environments

DBA	Overall Level	Noise Environment
120	Uncomfortably Loud (32 times as loud as 70 dBA)	Military jet takeoff at 50 feet
100	Very loud (8 times as loud as 70 dBA)	Jet flyover at 1,000 feet
80	Loud (2 times as loud as 70 dBA)	Down Town with some construction activity Propeller plane flyover at 1,000 feet High urban ambient sound Diesel truck 40 mph at 50 feet
70	Moderately loud	Freeway at 50 feet from pavement edge Vacuum cleaner (indoor)
60	Relatively quiet (1/2 as loud as 70 dBA)	Old urban residential area Air condition unit at 10 feet Dishwasher at 10 feet (indoor)
50	Quiet (1/4 as loud as 70 dBA)	Large transformers Small private office (indoor)
40	Very quiet (1/8 as loud as 70 dBA)	Bird calls Lowest limit of urban ambient sound
10	Extremely quiet (1/64 as loud as 70 dBA)	Just audible
0	Threshold of hearing	

Source: Wyle Research Corporation 1992

The study corridor encompasses primarily urban, sub-urban, and rural/undeveloped areas. The City of Columbus, Luna County and Sunland Park and Santa Teresa in Doña Ana County are the only areas within the study corridor that would be classified as urban. However, Columbus is a very small community and would actually be better classified as rural and marginally suburban. Due to its proximity to the El Paso Metropolitan area in Texas, Sunland Park and Santa Teresa actually serve as suburbs of El Paso and exhibit more suburban and rural aspects than urban areas. Suburban areas such as the growing residential developments emerging along the Rio Grande near Santa Teresa would have a greater level of noise compared to the rural and marginally suburban areas of Columbus or adjacent agricultural and range land. Noise levels are usually very low in rural areas, and the potential for the presence of sensitive receptors for noise is also lower.

3.12 CULTURAL RESOURCES

The NHPA establishes the Federal government's policy to provide leadership in the preservation of historic properties and to administer Federally owned or controlled historic properties in a spirit of stewardship. The NHPA established the Advisory Council on Historic Preservation (ACHP) to advocate full consideration of historic values in Federal decision-making; review Federal programs and policies to promote effectiveness, coordination, and consistency with national preservation policies; and recommend administrative and legislative improvements for protecting our Nation's heritage with due recognition of other national needs and priorities. In addition, the NHPA also established the State Historic Preservation Officers (SHPO) to administer national historic preservation program on the state level and Tribal Historic Preservation Officer (THPO) on tribal lands, where appropriate. The NHPA also establishes the National Register of Historic Places (NRHP). The NRHP is the Nation's official list of cultural resources worthy of preservation and protection. Properties listed in the NRHP include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The NPS administers the NRHP.

Section 106 of the NHPA requires the OBP to identify and assess the effects of its actions on cultural resources. The OBP must consult with appropriate state and local officials, Indian tribes, and members of the public and consider their views and concerns about historic preservation issues when making final project decisions. The historic preservation review

process mandated by Section 106 is outlined in regulations issued by the ACHP. Revised regulations, "Protection of Historic Properties" (36 CFR Part 800), became effective January 11, 2001.

Several other important pieces of legislation include the Native American Graves Protection and Repatriation Act (NAGPRA), along with Executive Order (E.O.) 13007 and E.O. 13175. NAGPRA mandates the OBP to summarize, inventory, and repatriate cultural items in the possession of or control of the Federal agency to lineal descendants or to culturally affiliated Federally recognized Indian tribes. NAGPRA also requires that certain procedures be followed when there is an intentional excavation of or an inadvertent discovery of cultural items. E.O. 13007 was issued on May 24, 1996 in order to facilitate the implementation of the American Indian Religious Freedom Act of 1978. It specifically charges Federal agencies to: (1) accommodate, to the extent practical, American Indian access to and use of sacred sites by religious practitioners; (2) avoid adversely affecting the physical integrity of sacred sites; and (3) to maintain the confidentiality of these sites. E.O. 13175 outlines the official U.S. government policy on consultation and coordination with American tribal governments. The order emphasizes formal recognition of the American Indian Tribes' status as... "domestic independent nations" that have entered into treaties with the U.S. guaranteeing their right to self-government. It stipulates that this consultation would be done on a "government to government basis." Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources are typically divided into three major categories: archaeological resources, architectural resources, and traditional cultural resources.

Archaeological resources are locations where prehistoric or historic activity measurably altered the earth or produced deposits of physical remains (e.g., arrowheads, bottles). Architectural resources include standing buildings, dams, canals, bridges, and other structures of historic or aesthetic significance. Architectural resources generally must be more than 50 years old to be considered for inclusion in the NRHP. However, more recent structures, such as Cold War era resources, may warrant protection if they manifest "exceptional significance" or the potential to gain significance in the future.

Traditional cultural resources are resources associated with cultural practices and beliefs of a living community that are rooted in its history and are important in maintaining the continuing cultural identity of the community. Traditional resources may include archaeological resources, locations of historic events, sacred areas, sources of raw material used to produce tools and sacred objects, topographic features, traditional hunting or gathering areas, and native plants or animals.

Under Federal regulation, only significant cultural resources warrant consideration with regard to adverse impacts resulting from a Federal undertaking. Significant archaeological, architectural, and traditional resources include those that are eligible or recommended as eligible for inclusion in the NRHP. The significance of Native American and Euroamerican archaeological resources is evaluated according to the criteria for eligibility to or inclusion to the NRHP as defined in 36 CFR 60.4 and in consultation with the SHPO. As established in the following criteria, the quality of significance is present in districts, sites, buildings, structures, and objects that:

- a) are associated with events that have made a significant contribution to the broad patterns of history, or
- b) are associated with the lives of persons significant in the past, or
- c) embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic value or represent a significant and distinguishable entity whose components may lack individual distinction, or
- d) have yielded, or may be likely to yield information important in prehistory or history.

Appendix C includes a list of all NRHP listed properties in the study corridor. In addition to these resources, there can be properties and sites within the study corridor that are NRHP-eligible but are not listed on the NRHP, as well as traditional cultural resources. It should also be noted that this list only represents known cultural resources and is not an exhaustive list of all cultural resources within the region. The NRHP is constantly being updated and revised with new properties that are routinely added.

3.12.1 The Section 106 Review Process

The OBP must determine whether its undertaking could affect cultural resources in order to initiate the Section 106 review process. If there is no potential to affect historic properties, then the OBP has no further Section 106 obligations. If there is a potential that either known or unknown historic properties could be affected, then the OBP must identify the appropriate

SHPO and/or THPO to consult with during the evaluation process. In addition, the OBP should also plan to involve the public, and identify other potential consulting parties such as the appropriate Federally recognized tribes that may claim a cultural affinity to the APE.

Once that it has been determined that the OBP's undertaking could affect known or potential cultural resources, it is necessary to identify all cultural resources within the APE. As a result, the OBP would conduct reviews of background information, consult with New Mexico SHPO (NMSHPO)/THPO as well as others, seek information from knowledgeable parties, and conduct additional studies as necessary. Often these efforts would include a standing structures survey and archaeological survey of the area in order to identify potential cultural resources that may be impacted. Cultural resources that are identified are evaluated against the NPS's published criteria outlined above in order to determine if they are eligible for inclusion on the NRHP. If the OBP finds that no potentially eligible or eligible cultural resources are present or affected it then provides documentation to the NMSHPO/THPO and, barring any objections, proceeds with its undertaking. If potentially eligible or eligible cultural resources are present then the OBP will proceed to assess possible adverse impacts.

The OBP, in consultation with the NMSHPO/THPO, makes an assessment of potential adverse effects on the identified cultural resources based on the criteria found in the ACHP's regulations. Potential adverse impacts may include but are not limited to:

- physical destruction or damage
- alteration inconsistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (see <http://www.cr.nps.gov/hps/tps/standguide/> for more information)
- relocation of the property
- change in the character of the property's use or setting
- introduction of incompatible visual, atmospheric, or audible elements
- neglect and deterioration
- transfer, lease, or sale out of Federal control without adequate preservation restrictions

If the NMSHPO and/or THPO agree that there will be no adverse effect, the OBP would proceed with the undertaking and any agreed upon conditions. If it is determined that there is an adverse effect, the OBP would begin consultation to seek ways to avoid, minimize, or mitigate the adverse effects.

The OBP would consult with the NMSHPO and/or appropriate THPO and others, who may include Indian tribes, local governments, permit or license applicants, and members of the public to resolve adverse effects to cultural resources. The ACHP may also participate in the consultation process. The consultation process usually results in a Memorandum of Agreement (MOA), which outlines the agreed-upon measures that the OBP would take to avoid, minimize, or mitigate the adverse effects. If the MOA is executed, the OBP would proceed with its undertaking under the terms of the MOA and the Section 106 process is complete.

3.12.2 Cultural Overview

Prehistoric occupation in the U.S. is generally divided into three major periods that vary regionally: the Paleo-Indian Period, the Archaic Period, and the Late Prehistoric Period. These periods are commonly subdivided into smaller temporal phases based on particular characteristics of the artifact assemblages encountered in each of the archeological regions of the U.S. The prehistoric periods and corresponding phases are defined by the presence of particular diagnostic artifacts such as projectile points, certain types of pottery, and occasionally, particular site locations. For the Historic Period, documentary information more often is used to distinguish certain phases; nevertheless, particular artifacts also can be used to recognize certain historic affiliations. A general chronological sequence for the Deming area and surrounding region is outlined below. The cultural history of the area has been divided into several distinctive periods: the Paleoindian Period (12,000 to 6000 BC), the Archaic Period (6000 BC to AD 200), the Formative Period (AD 200 to 1450), and the Historic Period (AD 1450 to Present). Table 3-12 outlines the prehistoric culture sequence for the southern New Mexico region.

3.12.2.1 Prehistoric Sequence

Despite arguments for a pre-Clovis occupation of the northern Jornada region (MacNeish 1993), the Paleoindian period is the earliest demonstrable cultural tradition in the southwest. Conventional theory dates the Paleoindian period in the study area from 12,000 to 6000 BC, although occupation may have begun earlier (Fiedel 1999). Paleoindian peoples relied on a highly mobile hunting and gathering life style. Many sites include bones of extinct Pleistocene species such as mammoth (*Mammuthus primigenius*), giant sloth (*Megatherium* sp.), and bison (*Bison antiquus*) that were killed and butchered. Campsites are rare and tend to have few remains (Cordell 1984).

Table 3-12. Prehistoric Sequence for the Jornada Mogollon Area

Period	Phase	Dates
Paleo-Indian	Plano Folsom Clovis	12,000 to 6000 BC
Archaic	Gardner Springs Keystone Fresnal Hueco	6000 to 4300 BC 4300 to 2600 BC 2600 to 900 BC 900 BC to AD 200
Formative	Early Mesilla Late Mesilla Doña Ana El Paso	AD 200 to 650 AD 750 to 1100 AD 1100 to 1200 AD 1200 to 1350/1450

The subsequent Archaic Period lasted from roughly 6000 BC to AD 200 in the deserts of southern New Mexico. Throughout most of North America, the hallmark of the Archaic Period was a diversification of the food quest, an inevitable response to the extinction of Pleistocene fauna that had been the mainstay of Paleoindian diets. Although subsistence data are rare from the earliest Archaic sites in southern New Mexico, deer, pronghorn, and other big game remains appear to be common in early Archaic deposits. Most Early Archaic populations were dispersed in small, mobile groups, foraging widely throughout much of the year (Moore 1996).

The beginning date for the Formative (or village farming) Period in southern New Mexico is ambiguous. According to Lehmer (1948), the Mesilla phase began with the appearance of village farming, permanent architecture, pottery containers, and the bow and arrow. Lehmer dated this set of events to AD 900. With larger excavation samples and better dating techniques, each of these events has been pushed back in time by centuries. Year-round villages probably appear very late in the Jornada Mogollon sequence, but the earliest known structures date to the Archaic period. Corn and squash horticulture may be as old as the structures. The earliest known Jornada pottery has been radiocarbon dated to the 6th or 7th century AD, and the beginning of ceramic production may date to about AD 200 (Moore 1996).

Concurrent with the later part of the Mesilla phase and extending into the Doña Ana phase is the Classic Mimbres occupation (or Mimbres Classic phase), which is generally agreed to have

lasted from AD 1000 to 1130. The core of the Mimbres culture centered on the Mimbres Valley and adjacent drainages north of Deming, New Mexico (Cordell 1984; Stuart and Gauthier 1984).

The Doña Ana phase (AD 1100 to 1200) was originally proposed by Lehmer (1948) to describe a transitional period between the pit house villages of the Mesilla phase and the adobe pueblos of the El Paso phase. This transitional phase has caused problems ever since it was proposed, and a number of investigators have either ignored or questioned it. The phase spans 50 to 100 years, about two to four generations, and, partly because of its brief duration, lacks architectural, ceramic, or other “type fossils.” Instead, Doña Ana material culture consists of combinations of earlier and later forms. The principal ceramic indicators of the phase, much more so than El Paso Brown Ware, are Mimbres Classic Black-on-white and Chupadero Black-on-white. Other trade wares that occur consistently but in small frequencies on Doña Ana phase sites include St. John’s Polychrome, Three Rivers Red-on-terracotta, and possibly Playas Red.

According to Lehmer (1948), the El Paso phase began about AD 1200 with the occupation of surface adobe pueblos, and ended with the abandonment of the Jornada region, about the time that early Rio Grande glaze wares appeared in the region, around AD 1400 or 1450. A typical El Paso phase site consisted of an adobe pueblo, usually lines of rooms oriented east-west, or several room blocks clustered around a plaza (Moore 1996).

3.12.2.2 Historic Period

As they approached the Rio Grande from the south, Spaniards in the 16th century viewed two mountain ranges rising out of the desert with a deep chasm between. This site they named El Paso del Norte (the Pass of the North), the future location of two border cities-Ciudad Juárez on the south or right bank of the Rio Grande, and El Paso, Texas, on the opposite side of the river. Since the 16th century, the pass has been a continental crossroads; a north-south route along a historic *camino real* (*king’s highway*) prevailed during the Spanish and Mexican periods, but traffic shifted to an east-west axis in the years following 1848, when the Rio Grande became an international boundary (El Paso County 2006b).

The El Paso area was inhabited for centuries by various Indian groups before the Spaniards came. The first Europeans in all probability were Álvaro Núñez Cabeza de Vaca and his three companions, survivors of an unsuccessful Spanish expedition to Florida, who passed through

the El Paso area in 1535 or 1536, although their exact route is debated by historians (El Paso County 2006b).

The Treaty of Guadalupe Hidalgo (February 2, 1848), which officially ended the Mexican War, fixed the boundary between the two nations at the Rio Grande, the Gila River, and the Colorado River, thence westward to the Pacific. All territory north of that line, known as the Mexican Cession and comprising half of Mexico's national domain, became a part of the U.S., which paid Mexico \$15 million (El Paso County 2006b).

Hidalgo County was created in 1919, and is said to have been named for the patriot priest, Miguel Hidalgo y Costilla, who in 1810 led the revolt that resulted in Mexico's independence, and was also known as Mexico's George Washington (Barnum 2006). Lordsburg is the county seat of Hidalgo county and was created on October 18, 1880 when the South Pacific railroad reached here from the west, and the fledging camp soon had a population of railroad workers, freighters, cowboys, gamblers, and merchants. One version is that the town took the surname of a man who had a chain of eating places along the railroad line. Another version is that it was the name of the engineer in charge of the construction crew. But the version most widely accepted is that it recalls Dr. Charles H. Loyd, a New York native, who came west during the Civil War and stayed to become one of Tucson's leading citizens. He and a partner started a banking and wholesale distributing business, Lord and Williams. When the railroad freight handlers at the new southern New Mexico Camp, still unnamed, came to a piece of the company's merchandise, they simply called out "Lords", a code name everyone knew, and in time the camp took the name of Lordsburg (Barnum 2006).

Deming is the county seat of Luna County and was founded in November 1881. Named for Mary Deming Crocker, wife of a railroad magnate of the Southern Pacific Railway system, the town was the result of railroad expansion to the west. The Southern Pacific, building toward the Pacific coast, reached this point in late 1881, and made preparations for the construction of a round house and repair shops. This activity furnished the incentive for the erection of a city of tents and shanties. Six months later, the Atchison, Topeka and Santa Fe Railway completed its junction with the Southern Pacific at Deming, thus assuring Deming a prominence in the southern part of New Mexico (Deming-Luna County Chamber of Commerce 2005).

Doña Ana County was created in 1852 and is the second-most populated county in the state. It was an Apache ambush on settlers that gave Las Cruces, New Mexico its name. When travelers from Taos were killed along the El Camino Real in 1830, the grieving survivors marked the graves with crosses. Thus, La Placita de Las Cruces, or the Place of the Crosses, became the frontier settlement of Las Cruces in 1849, when the first streets were marked with rawhide rope (Doña Ana County 2006).

In 1900, the county hosted an agriculturally based society with a population of 10,187. The market centers were Las Cruces, El Paso, Texas and Ciudad Juarez, Mexico. By 1990, the county was urbanized with a population of 135,510 and boasted an economy based on service and retail. Rapid population growth has occurred in and around the city of Las Cruces, as well as in the southern part of the county. The part of the county north of Hill remains primarily rural in nature (Doña Ana County 2006).

3.13 SOCIOECONOMICS

3.13.1 Population

Population in the ROI for 2003 was 5,225 in Hidalgo County which ranked 28th in the state. Luna County is part of the Deming, New Mexico Micropolitan Statistical Area. Its 2003 population of 25,692 ranked 18th in the state. Doña Ana County is part of the Las Cruces Metropolitan Statistical Area. Its 2003 population of 182,551 ranked 2nd in the state (U.S. Census Bureau 2000 and U.S. Bureau of Economic Analysis [BEA] 2003) (Table 3-13). The racial mix of Hidalgo, Luna, and Doña Ana counties consists predominantly of Caucasians and some race other than African-American, Native American, Asian, Native Hawaiian, and other Pacific Islander. The remainder is divided among African Americans, Native Americans, Asians, and Native Hawaiians and other Pacific Islanders or people claiming to be two or more races (U.S. Census Bureau 2000). The three counties within the ROI have a significant portion of the population (56 to 63 percent) that claims Hispanic or Latino origins (U.S. Census Bureau 2000).

Table 3-13. Population and Race

Geographic Region	Total Population	Race							
		White (%)	African American (%)	Native American (%)	Asian (%)	Native Hawaiian or other Pacific Islander (%)	Some Other Race (%)	Two or more Races (%)	Hispanic or Latino Origin of any Race (%)
New Mexico	1,819,046	67	2	10	1	<1	17	4	42
Hidalgo County	5,225	84	<1	1	<1	0	12	3	56
Luna County	25,692	74	<1	1	<1	0	20	3	58
Doña Ana County	182,551	68	2	2	<1	<1	25	4	63

Sources: U.S. Census Bureau 2000 and BEA 2003

3.13.2 Employment and Income

The total number of jobs in the ROI was 2,350 for Hidalgo County, 8,633 for Luna County, and 74,974 for Doña Ana County for 2000 (Table 3-14). The unemployment rate for 2000 in the ROI was 9.7 percent in Hidalgo County, 17.1 percent in Luna County, and 9.2 percent for Doña Ana County. Per Capita Personal Income (PCPI) in 2003 was \$17,370 in Hidalgo County, \$17,145 in Luna County, and \$20,756 in Doña Ana County (Table 3-15) (BEA 2003).

Table 3-14. Total Number of Jobs and Employment

Geographic Area	Total Number of Jobs			Unemployment Rate	
	1990	2000	% Change	1990 (%)	2000 (%)
Hidalgo County	2,838	2,380	-16.14	6.6	9.7
Luna County	6,452	8,885	27.39	12.7	17.1
Doña Ana County	58,156	75,557	23.04	7.8	9.2

Source: BEA 2003

Table 3-15. Per Capita Personal Income (PCPI)

	Per Capita Personal Income (PCPI) 2003	State Rank	Percent State Average	Percent National Average	Average Annual Growth Rate 1993-2003 (%)
Nation (Average)	\$30,096	NA	NA	100	4.0
New Mexico (Average)	\$29,039	NA	100	94	4.1
Hidalgo County	\$17,370	27	69	55	0.8
Luna County	\$17,145	28	69	54	3.9
Doña Ana County	\$20,756	17	83	66	4.0

NA=Not Applicable
Source: BEA 2003

The PCPI in all three counties is below both the national and state average. Total Personal Income (TPI) in 2003 was \$91 million in Hidalgo County, \$440 million in Luna County, and nearly \$4 billion for Doña Ana County (Table 3-16) (BEA 2003).

Table 3-16. Total Personal Income

Geographic Region	Total Personal Income (\$1000)		2003 State Rank	Per Cent State Total	Average Annual Growth Rate 1993-2003
	1993	2003			
New Mexico	\$354,212,659	\$651,008,617	NA	100	5.4
Hidalgo County	\$97,043	\$91,281	28	0.2	-0.6
Luna County	\$265,387	\$440,501	19	0.9	5.2
Doña Ana County	\$2,147,324	\$3,789,113	3	8.1	5.8

NA=Not Applicable
Source: BEA 2003

The percentage of all people in poverty was 27.3 in Hidalgo County, 32.9 in Luna County, and 25.4 for Doña Ana County (Table 3-17).

Table 3-17. 2000 Poverty and Median Income by County

Location	Number in Poverty of All Ages	Percentage in Poverty	Median Income
Nation	33,899,812	12.4	\$41,994
New Mexico	60,324	7.3	\$34,133
Hidalgo County	228	9.7	\$24,819
Luna County	1,472	17.1	\$20,784
Doña Ana County	6,861	9.2	\$29,808

Source: U.S. Census Bureau 2004

The percentage of people of all ages under poverty for the three counties is greater than both the percentage of people under poverty for the state of New Mexico (7.3 percent) and the U.S. (12.4 percent). Median household income for the counties in the ROI in 2000 was \$24,819 in Hidalgo County, \$20,784 in Luna County, and \$29,808 for Doña Ana County for 2000. All three counties are below the median household income of both the state of New Mexico (\$34,133) and the U.S. (\$41,994) (U.S. Census Bureau 2000).

3.13.3 Housing

A summary of housing in the ROI is given in Table 3-18. The total number of housing units was 2,848 in Hidalgo County, 11,291 in Luna County, and 65,210 for Doña Ana County. Doña Ana County had the greatest percentage of occupied housing units (91 percent) and Hidalgo County had the greatest percentage of vacant housing units (24 percent).

Table 3-18. Housing Units

County	Total Housing Units	Occupied				
		Total	Percent Occupied	Owner	Renter	Vacant
Hidalgo County	2,848	2,152	76	807	659	686
Luna County	11,291	9,397	83	3,668	2,278	3,451
Doña Ana County	65,210	59,556	91	25,572	19,259	14,725

Source: U.S. Census Bureau 2004

3.13.4 Executive Order 12898, Environmental Justice

The fair treatment of all races has been assuming an increasingly prominent role in environmental legislation and implementation of environmental statutes. In February 1994, President Clinton signed E.O. 12898 titled, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This action requires all Federal agencies to identify and address disproportionately high and adverse effect of its programs, policies, and activities on minority and low-income populations. All three counties have a large proportion of their population claiming to be of Hispanic or Latino origin (see Table 3-13). Furthermore, all three counties are below both the National and state median household income and have a greater percentage of all their populations in poverty relative to both the state and the Nation (see Table 3-17) (U.S. Census Bureau 2000). As a result there is a potential for projects to encounter both minority and low-income populations, and therefore, a potential for environmental justice issues across the ROI.

3.13.5 Executive Order 13045, Protection of Children

E.O. 13045 requires each Federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children”; and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” This E.O. was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse

environmental health and safety risks than adults. In Hidalgo County, 728 individuals, or 39 percent of the population below the poverty level are children under the age of 18. In Luna County, 3,541 individuals, or 47 percent of the population below the poverty level are children under the age of 18. In Doña Ana County, 17,498 individuals, or 41 percent of the population below the poverty level are children under the age of 18. The potential for impacts to the health and safety of children is greater where projects are located near residential areas.

SECTION 4.0
ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

This section of the PEA addresses potential impacts associated with the implementation of the Proposed Action Alternative or alternatives outlined in Section 2.0. Impacts to the human and natural environment can be characterized as beneficial or adverse and can be direct or indirect based upon the result of the action. Direct impacts are those effects that are caused by the action and occur at the same time and place (40 CFR 1508.8[a]). Indirect impacts are those effects that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8[b]). The effects can be temporary, short in duration (short-term), long lasting (long-term), or permanent. For purposes of this EA, temporary effects are defined as those that would last for the duration of the construction period; short-term impacts would last from the completion of construction to three years. Long-term impacts are defined as those impacts that would occur from three to 10 years after construction, while permanent impacts indicate an irretrievable loss or alteration.

Impacts can vary in magnitude from a slight to a total change in the environment. The impact analysis presented in this PEA is based upon existing regulatory standards, scientific and environmental knowledge and best professional opinions. The impacts on each resource are described as significant, moderate, minor (minimal), insignificant or no impact. Significant impacts are those effects that would result in substantial changes to the environment (as defined by 40 CFR 1500-1508). All impacts described are adverse unless otherwise noted. Additionally, a quantitative impact analysis was used to describe potential impacts when data were available for the given resource (*i.e.*, vegetation).

For the purposes of this PEA, it should be emphasized that all impacts are based on the assumption that all infrastructure components would be implemented. The OBP used a full build-out scenario to analyze impacts of infrastructure components. For roadways and improvements a 24-foot wide ROW was used. Where drag roads are proposed, an additional 10-foot wide ROW would be required. Permanent lights would be installed along 30 miles of the study corridor. For permanent light installation and maintenance a 20-foot wide ROW was used. Approximately 7 miles of new pedestrian barrier is proposed to be constructed. A 20-foot ROW was used for pedestrian barrier construction and maintenance. The total ROW necessary for PVBs is 8 feet wide, including a 4-foot wide installation footprint and two 2-foot wide shoulders on either side of the PVBs separating the PVBs from the border and the adjacent

patrol or drag road. Five RVSS sites would be constructed. Each site requires a maximum of a 10,000-square foot installation footprint. Furthermore, it was assumed that the maximum number and length of patrol roads, drag roads, permanent lights, pedestrian barriers, and PVBs would be constructed. Given these assumptions, the anticipated impacts from the proposed infrastructure projects in the study corridor are quantified in Table 4-1.

Table 4-1. Anticipated Impacts By Total Footprint and Infrastructure Type*

Type of Project	Area Impacted from Proposed Action Alternative (Acres)
All-Weather Patrol Roads (24-foot wide footprint x 316 miles)	920
Drag Roads (10-foot wide footprint x 78 miles)	95
Permanent Lights (20-foot wide x 30 miles)	73
Pedestrian Barrier (20-foot wide x 7 miles)	17
RVSS Tower (10,000 square feet x 5 sites)	1
PVBs (8-foot wide x 160 miles)	156
TOTAL ACRES	1,262
EXISTING DISTURBED ACREAGE	373
MAXIMUM NET IMPACTS OF PROPOSED ACTION	889

* Assumes complete build-out of all infrastructure components.

It is also assumed for the planning purposes of this PEA, that the existing patrol road and border access road ROWs would be utilized to the greatest extent practicable. Impacts from all-weather patrol roads are greatly exaggerated, because in most circumstances, 8 to 10 feet of the necessary footprint is already disturbed. Additionally, if all or a combination of TI components are deployed parallel to the U.S.-Mexico border, the ROW needed for construction would not be expected to exceed 60 feet. However, due to rugged terrain in the western portion of the study corridor, some border TI construction would be required beyond 60 feet from the U.S.-Mexico border.

4.1 LAND USE

The significance threshold established for land use is:

- The action is inconsistent with adopted land use plans or would substantially affect those resources required for, supporting, or benefiting current use

4.1.1 Alternative 1: No Action Alternative

The No Action Alternative would not directly affect land use. However, under the No Action Alternative illegal vehicle and foot traffic would continue to impact land use within the study corridor. Without improved efficiency and effectiveness provided by TI improvements, crimes attributable to IA activity would continue to affect urbanized areas. Furthermore, croplands and pasturelands would continue to be degraded by illegal traffic. The condition and extent of cattle fences along the border would not be affected by the No Action Alternative. Indirect impacts from continued IA activity would not support or benefit current land use in the study corridor.

4.1.2 Alternative 2: Proposed Action Alternative

The Proposed Action Alternative would substantially reduce illegal traffic and associated impacts within developed areas and agricultural lands. Approximately 1,262 acres could be impacted within the study corridor, of which 373 acres was previously impacted by existing roads and fences. Direct impacts to land use within each station from the construction of access roads, patrol roads, drag roads, permanent pedestrian barriers, and permanent lighting are shown below in Table 4-2.

Table 4-2. Anticipated Impacts to Land Use in the Santa Teresa, Deming, and Lordsburg Stations' AO*

Type of Land Use	Santa Teresa Station (Acres)	Deming Station (Acres)	Lordsburg Station (Acres)
Mixed Rangeland	0	12	304
Nonforested Wetland	0	3	0
Confined Feeding Operations	0	1	0
Transitional Areas	0	5	0
Evergreen Forestland	0	0	16
Shrub and Brush Rangeland	172	272	307

* Totals do not include acreage impacted by RVSS towers.

Road improvements and vehicle barriers at the border would reduce adverse impacts of illegal traffic within 1,682 acres of developed lands including 350 acres of residential lands near playas and within 540,390 acres of natural lands found within valleys throughout the Santa Teresa AO.

Land use would be impacted by the construction, use and maintenance of the components of the Proposed Action Alternative. The implementation of proposed TI would change land use from rangelands to man-made surfaces (e.g., construction of new roads and foundations for permanent lighting) or temporarily disturbed during construction resulting in a loss of productivity. However, this loss or degradation of rangelands is minimal in comparison to the amount of similar lands available within the region. For example, the estimated total impacts to rangeland would be 1,067 acres, while the total acres of rangeland within the study corridor is 1,446,515 acres. Some sections of the border would remain porous to cattle. Without some form of cattle exclusion, rangelands in the U.S. could be affected by loss of cattle to open rangeland in Mexico, open pathways for potentially diseased Mexican cattle, and easy access for cattle theft.

The Proposed Action Alternative is consistent with land use plans in the region and would not affect those resources that are required for, support, or benefit current land use; therefore, the Proposed Action Alternative would not significantly impact land use.

4.1.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

The beneficial effects of reduced illegal traffic and the adverse effects of lost productivity resulting from Alternative 3 would be equal to those described above for the Proposed Action Alternative. Additionally, this alternative would further benefit rangelands by incorporating a cattle barrier.

4.2 SOILS AND PRIME FARMLANDS

The significance threshold established for soils is:

- Result in substantial soil erosion or loss of topsoil
- Infrastructure is located on inappropriate soil types creating substantial risks to life or property
- Result in the loss of agricultural production on a substantial portion of prime farmlands or farmlands of statewide importance in the region

4.2.1 Alternative 1: No Action Alternative

The implementation of the No Action Alternative would not result in direct impacts to previously undisturbed soils; however, the OBP would not be as effective in detecting or apprehending IAs. Illegal vehicle and foot traffic would continue at its current level or increase. The continuation of illegal traffic and consequent enforcement activities has the potential of impacting soils (*i.e.*, erosion, compaction) in the study corridor. Many soils associated with the study corridor are extremely susceptible to erosion due in part to their high sand content and alluvial nature. The existing patrol roads would continue to degrade as OBP vehicles patrol, adding to existing erosion problems. Continued soil disturbance by illegal traffic as a result of new illegal trails would disturb new areas and ultimately increase soil erosion by wind and water throughout the study corridor.

4.2.2 Alternative 2: Proposed Action Alternative

Ground disturbance would be necessary to implement any of the components of the Proposed Action Alternative and based on Table 4-1, would potentially directly impact as much as 1,262 acres of soils, of which 373 acres was previously impacted by existing roads and fences. The impacts associated with the Proposed Action Alternative would primarily consist of erosion and loss of biological production. Road improvements would be designed and constructed in such a manner to reduce or eliminate long-term erosion problems. Examples of such measures, which would mitigate these effects to a level less than significant, are presented in Section 5.

Long-term direct impacts would result from the loss of biologically productive soils through the construction of the infrastructure components. Although these impacts are considered long-term, they would not result in significant impacts to the region based upon the minimal amount of soils lost (889 acres of soils impacted) related to the overall area within the study corridor (1,540,564 acres within the project corridor). Furthermore, existing roads and previously disturbed areas would be used to the fullest extent possible, thus, lessening any impacts to previously undisturbed soils. Direct impacts to soil associations in the study corridor are presented in Table 4-3.

Temporary indirect impacts would consist of possible soil erosion during construction activities; however, these impacts would be insignificant through the use of erosion control measures and the short duration of the construction process. Site-specific projects greater than 1 acre would require a Storm Water Pollution Prevention Plan (SWPPP) as part of the National Pollution

Table 4-3. Anticipated Impacts to Soils in the Santa Teresa, Deming, and Lordsburg Stations' AO*

Soil Association	Santa Teresa Station (Acres)	Deming Station (Acres)	Lordsburg Station (Acres)
Hondale-Playas	0	66	7
Mohave-Stellar-Forest	0	52	152
Nickel-Upton-Tres Hermanos	0	111	126
Rough broken land-Rock land-Lehmans	0	39	249
Hondale-Mimbres-Bluepoint	23	26	0
Eba-Cloverdale-Eicks	0	0	92
Pintura-Wink	146	0	0
Glendale-Harkey	3	0	0

* Totals do not include acreage impacted by RVSS towers.

Discharge Elimination System permit process. A SWPPP would ensure that erosion control measures such as, the use of silt fences, water bars, gabions, and reseeding of any denuded soils would dramatically reduce potential erosion impacts.

It is possible that prime farmlands or farmland of statewide importance protected by the FPPA may be present at some of the selected TI sites, and the TI would remove these soils from potential agricultural production. In order to evaluate the potential impacts on prime farmlands, the local NRCS office would be contacted once site-specific locations are identified. The local NRCS office would determine if mitigation measures would be necessary to offset the impacts of the proposed infrastructure. Border access roads are the only TI components that would be within agricultural areas that may be considered prime farmland or farmland of statewide importance. Improvements to access roads in these areas would be limited to the existing ROW to the greatest extent practicable.

Indirect beneficial impacts would also be realized from a possible reduction in disturbance to soils caused by illegal traffic.

Impacts to soils from the implementation of the Proposed Action Alternative would not result in substantial soil loss or result in the loss of agricultural production on a substantial portion of prime farmlands or farmlands of statewide importance, nor would TI would be located on inappropriate soil types. Therefore, the Proposed Action Alternative would not significantly impact soils and prime farmlands.

4.2.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

Impacts associated with the implementation of this alternative would be the same in nature and extent to that of the Proposed Action Alternative; installation of barbed wire on PVBs is not expected to result in any additional soil disturbance. While minor, and difficult to quantify, some additional benefits could be realized by reducing or eliminating the potential for uncontrolled grazing and ground disturbance by Mexican cattle crossing into the U.S., which in turn, reduces the potential for soil erosion.

As with the Proposed Action Alternative the NRCS office would be contacted once site-specific locations are identified and if necessary determine mitigation measures to implement in order to protect prime farmlands or farmland of statewide importance.

4.3 BIOLOGICAL RESOURCES

4.3.1 Vegetation Communities

Significance thresholds established for vegetation resources are:

- Any action that affects ecological processes, population size, population connectivity, migration, or individual fecundity to the extent that long-term viability of any species becomes threatened would be significant.
- Any action that results in the permanent loss or substantial degradation of sensitive or rare plant communities (*i.e.*, riparian habitats) would be significant.

4.3.1.1 Alternative 1: No Action Alternative

Under the No Action Alternative, native vegetation communities would continue to be degraded by illegal vehicle and foot traffic. Illegal traffic degrades natural vegetation communities by creating paths, trails, and ruts, damaging individual plants, altering patterns of erosion, and starting uncontrolled fires. Under the No Action Alternative, the condition of existing roads would not be improved. The condition of existing roads results in erosion and loss of soils during storm events, as well as the creation of fugitive dust during normal patrol activities. Erosion and fugitive dust have a minimal effect on vegetation by damaging roots and reducing plant respiration and photosynthesis respectively.

4.3.1.2 Alternative 2: Proposed Action Alternative

Vegetation along the study corridor within the Santa Teresa Station AO consists primarily of Chihuahuan Desertscrub communities and a few small areas of Chihuahuan Semidesert

Grassland. These communities would be temporarily impacted during the construction or improvements of patrol roads, barriers, and permanent lighting. Direct impacts to vegetation communities within the study corridor are shown in Table 4-4.

The vegetation within the study corridor of the Deming Station AO is also primarily Chihuahuan Desertscrub, but includes more small patches of Chihuahuan Semidesert Grassland. These communities would be temporarily impacted during the construction or improvements of patrol and access roads, barriers, and permanent lighting.

Table 4-4. Anticipated Impacts to Vegetation Communities in the Santa Teresa, Deming, and Lordsburg Stations' AO*

Soil Association	Santa Teresa Station (Acres)	Deming Station (Acres)	Lordsburg Station (Acres)
Chihuahuan Broadleaf Deciduous Desert Scrub	141	197	137
Chihuahuan Broadleaf Evergreen Desert Scrub	5	26	151
Chihuahuan Lowland/Swale Desert Grassland	21	14	8
Chihuahuan Foothill-Piedmont Desert Grassland	0	34	138
Short Grass Steppe	0	2	73
Irrigated Agriculture	0	7	0
Madrean Open Oak Woodland	0	3	63
Rock Outcrop	5	4	24
Rocky Mountain Subalpine and Montane Grassland	0	2	0
Barrens	0	2	0
Madrean Closed Conifer Woodland	0	3	13
Mid-Grass Prairie	0	0	17
Rocky Mountain Montane Scrub & Interior Chaparral	0	0	3
River/Lacustrine	0.1	0	0

* Totals do not include acreage impacted by RVSS towers.

Infrastructure improvements within the Lordsburg Station AO's study corridor consist of construction or improvements of patrol, access, and drag roads, as well as the construction of barriers along the border. Due to the topography of the border region in this station, proposed infrastructure includes more access roads than the other stations' AOs. Chihuahuan Desertscrub and Chihuahuan Semidesert Grassland communities would be impacted in the eastern portion of Lordsburg Station. In the western portion of the AO, these communities and

the Coahuila Chaparral and Madrean Evergreen Woodlands would be impacted. Patrol roads, drag roads, and vehicle barriers would be constructed along approximately 40 miles of the border in the Lordsburg Station AO and would permanently replace Chihuahuan Semidesert Grassland and Chihuahuan Desertscrub communities.

Heavy equipment used during the resurfacing of roads could result in inadvertent damage to above ground stems and soil disturbance within construction areas, temporarily degrading up to 899 acres of natural vegetation. Natural vegetation would be allowed to regenerate from the existing seed bank, undamaged root stocks of shrubs, and stem segments of cacti. Therefore, construction related disturbances would have minimal impacts in communities dominated by herbaceous species such as Chihuahuan Semidesert Grasslands and communities dominated by woody shrubs such as Chihuahuan Desertscrub and Coahuila Chaparral. Although some large trees within Madrean Evergreen Woodland communities could be lost during improvements to patrol and access roads, these losses would occur adjacent to existing roadways and would result in minimal impacts to oak or pine populations. The construction of drag roads, pedestrian barriers, PVBs, RVSS, and the installation of lighting would permanently replace up to 342 acres of Chihuahuan Semidesert Grassland and Chihuahuan Desertscrub communities with man-made surfaces. GAP maps do not depict any areas of riparian vegetation communities within the area of potential impacts from TI improvements. If these communities were located as part of individual projects, potential impacts would be analyzed at that time and minimized to the greatest extent practicable. Land development in the region has been relatively sparse and the communities within the study corridor are both locally and regionally common; therefore, adverse effects related to the Proposed Action Alternative would be minimal.

The minimal, temporary impacts of increased fugitive dust and the potential for erosion related to improvements and construction activities would be reduced by watering road surfaces during the construction period and long-term stabilization of soils through improved surface drainage patterns. The creation of fugitive dust resulting from dragging within the Lordsburg Station AO would affect Chihuahuan Desert Scrub and Chihuahuan Semidesert Grassland by reducing respiration and photosynthesis of plants near drag roads. The impacts of fugitive dust are difficult to quantify; however, they are expected to be minimal within these communities due to the typically small leaf area of dominant vegetation and the vertical, photosynthetic surfaces of most cacti.

Cattle from Mexico would be able to access some areas of the border and could degrade habitats if stocking rates are already maximized. Overgrazing can result in the loss of palatable and native grasses, increased erosion, and ultimately irreversible changes to the ecology of native ecosystems. However, much of the area has historically been heavily grazed and the additive effects of stray Mexican cattle would likely be minor. Because the study corridor does not contain any regionally rare or sensitive vegetation communities and has been historically degraded by grazing practices, all impacts to vegetation resulting from the Proposed Action Alternative would be minimal in historical and regional contexts.

The reduction of illegal traffic in the study corridor would ultimately benefit natural vegetation communities. Illegal foot or vehicular traffic, either on established roads or off-road routes degrades the native ecosystem by trampling vegetation and compacting soils. As vegetation is removed, soils become unstable and susceptible to compaction and erosion.

Impacts to vegetation communities would not be significant as they are not expected to inhibit ecological processes, population size, population connectivity, migration, or individual fecundity of any species within the study corridor.

4.3.1.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

Effects of Alternative 3 on natural vegetation would be similar to those resulting from the Proposed Action Alternative. Some further minor benefits would be realized by the exclusion of Mexican cattle.

4.3.2 Wildlife Resources

Significance thresholds established for wildlife resources are:

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved Federal, state or local habitat conservation plan
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident, or migratory wildlife corridors, or impede the use of native wildlife nursery sites

4.3.2.1 Alternative 1: No Action Alternative

No direct effects under the No-Action Alternative would be expected on wildlife resources. However, indirect effects would continue due to IA activities. The intensity of these indirect effects would increase as road conditions deteriorate and OBP efforts to patrol remote areas are

increasingly hampered. IA traffic may increase as a result of reduced patrol activities. IA traffic could result in a minimal loss and degradation of habitat and could cause incidental take of certain species.

4.3.2.2 Alternative 2: Proposed Action Alternative

The Proposed Action Alternative would not likely have direct impacts on fish or other aquatic species because the proposed construction activities would not take place in flowing or standing water. Construction in or near stream crossings would use BMPs and follow the SWPPP to reduce potential impacts downstream. Wildlife species which would potentially be directly impacted from the Proposed Action Alternative include small mammals, reptiles, and bird species. The greatest movement of small animals generally happens when a disturbance such as road grading, dozing, or pedestrian barrier construction occurs. Mobile animals escape to areas of similar habitat, while other slow or sedentary species of reptiles, amphibians, and small mammals could potentially be lost. This displacement or reduction in the number of animals would not significantly impact animal communities due to the presence of similar habitat adjacent to the study corridor. Additionally, less than 4 percent (7 miles) of the border would be impenetrable to some wildlife species, primarily near developed areas. Impacts to wildlife resources would not be significant, as components of the Proposed Action Alternative would be in accordance with Federal, state and local habitat conservation plans within the study corridor and would not substantially interfere with wildlife movements.

The Proposed Action Alternative would directly impact 1,262 acres of wildlife habitat including approximately 373 acres previously disturbed by existing roads and fences. The impacts to resources, such as foraging grass habitat and ground nesting habitat, would be insignificant due to the actual area of adjacent suitable habitat within the study corridor (1,540,564 acres). No long-term significant impacts to small mammal, reptiles, and bird populations would be expected. Larger terrestrial wildlife movements and migrations should not be affected by the Proposed Action Alternative. Additionally, construction activities would be conducted only during daylight hours. Therefore, short-term impacts on wildlife species are expected to be insignificant.

Impacts to wildlife resulting from the operation of lights at night could potentially occur. Additional areas beyond that disturbed from ground disturbance would be illuminated under this alternative. The increase in lights along the border could also produce some long-term

behavioral effects, although the magnitude of these effects in some areas is not presently known. Some species, such as insectivorous bats, may benefit from the concentration of insects that would be attracted to the lights. Continual exposure to light has been proven to slightly alter circadian rhythms in mammals and birds. Studies have demonstrated that under constant light, the time an animal is active, compared with the time it is at rest, increases in diurnal animals but decreases in nocturnal animals (Carpenter and Grossberg 1984). The foraging behavior of frogs was impaired under artificial light. The ability of the frogs to detect, and subsequently consume prey was significantly reduced under the enhanced light treatments relative to the ambient light treatment (Buchanan 1993). Outdoor lighting can disturb flight, navigation, vision, migration, dispersal, oviposition, mating, feeding and crypsis in some moths. In addition it may disturb circadian rhythms and photoperiodism (Frank 1988). It has also been shown that within several weeks under constant lighting, mammals and birds would quickly stabilize and reset their circadian rhythms back to their original schedules (Carpenter and Grossberg 1984). The long-term effects of an increased photoperiod on mobile wildlife species are expected to be insignificant. The “internal clocks” of many species maintain the species’ daily rhythms regardless of the extended presence of daylight or nighttime conditions (Luce 1977). Furthermore, given the vast open area within the proposed study corridor, animals can easily relocate to adjacent unaffected areas. The proposed lighting in the study corridor would illuminate approximately 30 miles of the 178 miles of U.S.-Mexico border in New Mexico. The position of the proposed light poles and shielding will allow for some dark areas to still exist within the immediate area north of the poles.

The RVSS towers could be used by raptors and birds of prey as a perch, which may increase predation upon smaller animals; however, if this were to occur no significant adverse impacts are expected. If project-specific plans require RVSS towers to exceed 200 feet in height, lighting would be installed as required by the Federal Aviation Administration (FAA). A white strobe light would be installed on the tower to avoid or minimize potential effects to migratory birds. In addition, the tower would be freestanding (i.e., no guy wires), thus reducing potential collisions by birds.

Additionally, short-term impacts to wildlife species could include those due to noise from construction activities. Physiological responses from noise range from minor responses such as an increase in heart rate to more damaging effects on metabolism and hormone balance. Long-term exposure to noise can cause excessive stimulation to the nervous system and chronic

stress that is harmful to the health of wildlife species and their reproductive fitness (Fletcher 1990). Behavioral responses vary among species of animals and even among individuals of a particular species. Variations in response may be due to temperament, sex, age, or prior experience. Minor responses include head-raising and body-shifting, and usually, more disturbed mammals will travel short distances. Panic and escape behavior results from more severe disturbances causing the animal to leave the area (Busnel and Fletcher 1978). Since the highest period of movement for most wildlife species occurs during night time or low daylight hours and construction activities would be conducted only during daylight hours, short-term impacts of noise on wildlife species are expected to be insignificant.

The construction of permanent pedestrian barriers, PVBs and use of lights could also indirectly impact wildlife due to fragmentation of habitats. However, fragmentation is also a function of the degree of contrast in quality between the focal habitat and its surroundings (Franklin *et al.* 2002). In this case, much of the project corridor is Chihuahuan Desertscrub and most of the construction would occur in previously disturbed areas. Fragmentation could remove or alter some wildlife habitat, but compared to the vast amounts of similar habitat in the proximity of the project corridor this would be expected to be insignificant. PVBs would not impede wildlife movement nor remove/alter significant amounts of wildlife habitat. While permanent pedestrian barriers would limit the movements of some wildlife species, 7 miles of these barriers would be deployed over the 178 miles of the New Mexico-Mexico border. Permanent pedestrian barriers are typically deployed near POEs and other high traffic areas. Wildlife movements would not be significantly disturbed by the deployment of permanent pedestrian barriers.

Roads could result in other indirect impacts. Improved roads, by design, increased the speed at which vehicles travel and increased traffic as well. Higher vehicular speeds decrease the response time for wildlife to avoid the vehicles, and thus, potentially increase the number of accidental wildlife deaths. However, expected patrol speeds should be less than 25 miles per hour. Impacts from road improvements would not significantly impact wildlife resources.

The reduction of illegal traffic in the study corridor would indirectly benefit wildlife habitat. Illegal foot or vehicle traffic, either on established roads or off-road routes, degrades the native ecosystem by trampling vegetation and compacting soils. Wildlife habitat is directly impacted as vegetation is lost and unable to naturally regenerate due to unstable or compacted soils. Vegetation loss reduces foraging and nesting habitat for many species.

The Proposed Action Alternative would not conflict with the provisions of approved Federal, state or local habitat conservation plans or substantially interfere with the movement of any native or migratory fish or wildlife species. Therefore, the Proposed Action Alternative would not significantly impact wildlife resources.

4.3.2.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

This alternative would have the same impact on all wildlife species as the Proposed Action Alternative. Vehicle barriers with cattle fencing designed according to NMDGF guidelines would not impede the movements of deer, pronghorn, or other large wildlife species.

4.4 PROTECTED SPECIES AND CRITICAL HABITAT

The threshold of significance established for this analysis for threatened and endangered species is:

- The action has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a sensitive or special-status (*i.e.*, threatened or endangered) in local or regional plans, policies or regulations by the USFWS and NMDGF which cannot be mitigated.

Under the ESA, formal consultation with the USFWS is required for any action that may affect Federally-listed species. Additionally, Federal agencies are required to ensure that any action authorized, funded, or carried out by such agencies would not be likely to jeopardize the continued existence of any threatened or endangered species. A copy of the consultation letters with the USFWS and NMDGF is presented in Appendix D. However, further consultation with USFWS and NMDGF would occur as site and project-specific actions are identified.

4.4.1 Alternative 1: No Action Alternative

No direct impacts are expected to occur to threatened and endangered species or their habitats since no future construction or operational activities would occur if the No Action Alternative were implemented. However, indirect effects would continue due to IA activities. The rate of these indirect effects would increase as road conditions deteriorate and OBP efforts to patrol remote areas are hampered or precluded. IA traffic may increase as a result of reduced patrol activities. IA traffic could result in loss and degradation of habitat and could cause incidental take of certain species. No new information regarding threatened or endangered species and

their habitats would be collected because surveys would not be conducted as part of OBP projects.

4.4.2 Alternative 2: Proposed Action Alternative

Based on the information provided in Section 3.4 for protected flora and fauna species and their preferred habitats, there is the potential for some Federally protected and BLM sensitive fauna species to be impacted directly and indirectly as a result of the proposed activities. However, through the use of environmental design measures discussed in Section 5.0 these impacts would be avoided or minimized. Therefore, the Proposed Action Alternative would not substantially affect Federally-listed threatened or endangered species.

Dragging operations, increased road patrols, permanent pedestrian barriers, artificial lighting and vehicle barriers have the potential for direct impacts to protected species including but not limited to fragmentation or degradation of habitat and loss of individuals. At this point in the planning process for the TI improvements in the El Paso Sector, the exact locations and extent of specific construction projects are not known. The primary option for mitigation of loss of habitat (e.g., potential bat habitat near the International Mines area) or individuals of a protected species is avoidance. Site-specific projects would be planned in such a way as to avoid areas where known protected species occur to the greatest extent practicable. For construction projects where avoidance is impractical, Section 7 consultation with the USFWS would be conducted to identify conservation measures and reasonable and prudent measures such as, using biologists to monitor construction progress and conduct post-project, long-term monitoring, as deemed necessary. Monitoring activities would be coordinated with USFWS and the appropriate state resource agencies.

Jaguars have been spotted several times in the Peloncillo Mountains of southwest New Mexico (NMDGF 2001). It is unlikely that a jaguar would be encountered during construction, but through the use of environmental design measures discussed in Section 5.0, adverse impacts to the jaguar would be avoided.

The northern aplomado falcon tends to live in open woodland or savannah, or grassy plains and valleys with scattered mesquite, yucca, and cactus. If any of the proposed construction activities were to take place in northern aplomado falcon habitat, the OBP would initiate informal

or formal Section 7 consultation, as appropriate, with USFWS to identify conservation measures or reasonable and prudent measures to off-set impacts to this species.

The southwestern willow flycatcher breeds in dense riparian habitats that include shrubs and medium sized trees, including willow, cottonwood, and mesquite (U.S. Section of the International Boundary and Water Commission [USIBWC] 2005). It is possible that the southwestern willow flycatcher would utilize vegetation near the Rio Grande. However, the southwestern willow flycatcher would not be present during the winter months. TI construction is not planned within southwestern willow flycatcher habitat in the Rio Grande; therefore, no impacts to the species or its preferred habitat would be expected from the Proposed Action Alternative.

The interior least tern could nest within the Rio Grande channel on sandbars. The only TI components that would potentially disturb nesting least terns are lighting structures within the Santa Teresa Station. Therefore, with the exception of the lighting, the Proposed Action Alternative would not have direct and indirect impacts on least terns. To avoid impacts to least terns from TI, construction would be conducted outside of the nesting season or surveys for nesting terns would be conducted prior to construction to confirm their absence. If the habitat conditions are suitable for nesting for least terns, lighting designs would be modified in that area to minimize stray light from entering the Rio Grande riparian corridor. With the incorporation of this design measure on a project-specific basis, as described in Section 5.0, impacts to this species from the lighting component of the Proposed Action Alternative would be minimized.

The range of the New Mexico ridge-nosed rattlesnake is primarily restricted to three canyons in the Animas Mountains of New Mexico and may involve habitat of approximately 1 square mile or less (*Federal Register* 1978). Through the use of mitigation measures, such as avoidance, discussed in Section 5.0, impacts from the Proposed Action Alternative would be minimized to less than significant levels.

The project corridor would cross habitat for the Chiricahua leopard frog near intermittent creeks and numerous stock tanks of the Animas and Peloncillo mountains in Hidalgo County (Degenhardt *et al.* 1996). However, through the use of mitigation measures such as avoidance, discussed in Section 5.0, impacts from the Proposed Action Alternative would be minimized to less than significant levels. For construction projects where avoidance is impractical, Section 7

consultation with the USFWS would be conducted to identify conservation measures and reasonable and prudent measures such as, using biologists to monitor construction progress and conduct post-project, long-term monitoring, as deemed necessary.

Potential direct impacts to the lesser long-nosed bat would occur from construction within or near roosting or foraging habitat. Noise, increased fugitive dust, and loss of vegetation could all impact the quality of forage available for this species. Possible indirect impacts to the lesser long-nosed bat would be highly dependant on the existence of a resident population and actual home range. Relocation or loss of individual agave plants may reduce one of the preferred food sources for the lesser long-nosed bat. Individual lesser long-nosed bats may be impacted by the Proposed Action Alternative; however, through the use of environmental design measures discussed in Section 5.0, impacts are not likely to adversely affect this species as a whole.

Beneficial impacts to Federal and state listed species and BLM sensitive species and their habitat could occur in the areas surrounding the study corridor by the reduction or elimination of illegal traffic, brush clearing, and fires caused by IAs. However, these beneficial impacts would be considered minimal.

4.4.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

This alternative would likely have no additional impacts on protected species than that of the Proposed Action Alternative. All protected species that could occur within the study corridor would not be restricted by the cattle fence. Protected birds would fly over and protected mammals, reptiles and amphibians would go over or maneuver through the strands of the cattle fence fitted PVBs. Benefits resulting from the fencing of the PVBs would include: the protection of foraging habitat from rogue cattle from Mexico.

4.5 NON-NATIVE AND INVASIVE PLANTS

The threshold of significance established for this analysis for non-native and invasive plant species is:

- The action actively promotes the spread of non-native and invasive plant species

4.5.1 Alternative 1: No Action Alternative

Under the No Action Alternative, illegal vehicular and foot traffic would continue to cross into the study corridor potentially carrying non-native and invasive plant species propagules. In addition, illegal vehicles would continue to disturb soils providing opportunities for non-native and invasive plant species to become established and potentially introducing additional non-native species to the region.

4.5.2 Alternative 2: Proposed Action Alternative

With the implementation of the Proposed Action Alternative, the effects of illegal vehicular and foot traffic would be substantially reduced. Without the use of measures outlined in Section 5.0 to prevent the spread of non-native and invasive plant species, construction activities and increased OBP access to previously inaccessible areas would result in opportunities for the spread of non-native and invasive plant species. Environmental design measures in conjunction with the Proposed Action Alternative would substantially reduce the risk of spreading non-native and invasive plant species as compared to the No Action Alternative.

4.5.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

Alternative 3 would result in an equivalent reduction in the effects of illegal traffic, and would also disturb an equal amount of soils when compared to the Proposed Action Alternative. Alternative 3 would further reduce non-native and invasive plant propagules in the study corridor relative to the other alternatives through the exclusion of Mexican cattle, which could transport these species into the U.S.

4.6 UNIQUE OR SENSITIVE AREAS

The significance thresholds established for unique and sensitive areas are:

- The action is inconsistent with adopted management plans
- The action causes the permanent loss of the characteristics that make an area unique or sensitive

4.6.1 Alternative 1: No Action Alternative

Under the No Action Alternative, the Douglas Ranger District of the CNF, Pancho Villa State Park, Mount Cristo Rey, and other unique and environmentally sensitive areas would remain vulnerable to impacts from illegal traffic. IAs can damage natural habitats and detract from the overall recreational and scenic value of these unique areas by creating trails, discarding trash,

and vandalizing structures. Furthermore, without increased efficiency and effectiveness of OBP apprehension, these unique areas would remain unsafe. This alternative would cause permanent loss of the characteristics which make the above mentioned areas unique or sensitive if the illegal traffic continues and, in particular, if it increases. Under this scenario, the No Action Alternative would have significant impacts to unique and sensitive areas.

4.6.2 Alternative 2: Proposed Action Alternative

The CNF and Pancho Villa State Park are located 10 and 3 miles, respectively, from any proposed TI and would not be directly affected by the Proposed Action Alternative. The construction of permanent pedestrian barriers and installation of permanent lighting would moderately detract from the aesthetic resources near Mount Cristo Rey. Ultimately, the increased lighting and OBP presence near the park would provide protection for those resources (e.g., recreational opportunity, historical structures) which make this park unique by improving safety to visitors and reducing vandalism. The Proposed Action Alternative would indirectly improve the efficiency and effectiveness of OBP apprehension resulting in a substantial reduction of IA degradation of, and presence within, these unique areas. The Proposed Action Alternative does not conflict with management plans, nor would it result in the permanent loss of aesthetic characteristics; therefore, the Proposed Action Alternative would not significantly impact unique and sensitive areas.

4.6.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

Alternative 3 would result in the same effects to unique and sensitive areas as those described for the Proposed Action Alternative.

4.7 AESTHETICS

The significance threshold established for aesthetics is:

- The action substantially and permanently degrades the existing visual character or quality of the region

4.7.1 Alternative 1: No Action Alternative

Under the No Action Alternative illegal vehicle and foot traffic would continue to impact aesthetics within the study corridor. Trash, graffiti, and general vandalism associated with IA traffic would continue to detract from the visual quality of urbanized areas. The trash and trails created by IAs in more remote areas is often not seen by the general public, but detracts from the sense of isolation characteristic of vast, open scrublands and grasslands.

4.7.2 Alternative 2: Proposed Action Alternative

Barriers, RVSS, and lighting would be permanent and could detract from the aesthetic resources where sensitive receptors are present (*i.e.*, residential areas and parks). PVBs could exceed the height of vegetation by up to 2 to 3 feet creating a visual break in the continuous expanse of generally undisturbed vegetation, especially in grassland communities. However, PVBs would be constructed in remote areas where sensitive receptors are absent and would not be visible from distances greater than approximately 1.5 miles; therefore, PVBs would have a minimal effect on aesthetic resources. The existing pedestrian barrier near Anapra would be expanded westward into rangelands. Although the extension of this pedestrian barrier could be visible from NM 9 and residential areas south of the highway, aesthetic impacts would be moderate. In addition, the resulting reduction of IA-related aesthetic degradation would substantially benefit this area. The location of RVSS is unknown at this time, but would likely be in remote areas where sensitive receptors are absent and thus, effects would be minimal. Permanent lighting would be expanded along the northern toe of Mount Cristo Rey and would be visible to residential and commercial areas of Sunland Park as well as recreational visitors of Mount Cristo Rey Park. However, the substantial benefits of reduced vandalism in this area would outweigh any moderate reduction of aesthetics resulting from lighting. The Proposed Action Alternative would improve the efficiency and effectiveness of OBP apprehension resulting in an indirect reduction of IA degradation of the aesthetic environment.

4.7.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

The effects of Alternative 3 on aesthetic quality would be the same as those described for the Proposed Action Alternative.

4.8 AIR QUALITY

Significance thresholds established for air quality are:

- Any action that conflicts with or obstructs implementation of the applicable air quality plan
- Any action that violates any air quality standard or contributes substantially to an existing or projected air quality violation
- Exposes sensitive receptors to substantial pollutant concentrations

4.8.1 Alternative 1: No Action Alternative

Without the proposed infrastructure projects, increased IA activity and subsequent OBP enforcement actions would exacerbate PM₁₀ within the study corridor. The continued use of dirt patrol roads without roadway improvements would result in continued degraded conditions and do little to reduce sources of wind blown dust within the region. Off-road IA activity would further increase the PM₁₀ levels regionally. However, the magnitude of these potential impacts would depend upon several variables including number of vehicle trips, climatic conditions, and soil types.

4.8.2 Alternative 2: Proposed Action Alternative

Due to regional air quality status, natural arid conditions, duration of construction activities, and the type of equipment to be used, air emissions from construction activities would continue to result in temporary adverse air quality impacts in the study corridor. However, these impacts would be temporary as construction activities would be limited to small locations and would not substantially contribute to elevated PM₁₀ levels in Luna County. Furthermore, upon completion of construction activities, routine patrol efforts and routine maintenance efforts by the OBP and from natural sources (e.g., fugitive dust) would be the only PM₁₀ emissions produced. The overall air quality would be improved as all-weather road surfaces would reduce the amount and magnitude of available wind blown dust relative to the No Action Alternative. The improved road surface would be compacted, graded and much less susceptible to effects of erosion. As a result of these TI projects, patrol efforts, apprehensions, and pursuits would likely be reduced, thus potentially reducing the current level of fugitive dust emissions.

In order to comply with the Federal Conformity Final Rule (40 CFR Parts 51 and 93) under the CAA, SIP, and county NEAPs for non-attainment areas (see Section 3.8), an air conformity analysis would be required prior to construction of any site-specific projects. The purpose would be to calculate emissions as a result of specific projects and determine if site-specific construction would generate air pollutants that would exceed current NAAQS *de minimus* thresholds. If necessary, emissions would be mitigated utilizing BACMS such as those identified in Section 3.8.3, as well as any other BMPs identified in Section 5 of this document. The air conformity analysis would be utilized as a construction and planning tool to reduce air pollutant emissions to levels below the NAAQS thresholds, thereby insuring impacts to air quality would be less than significant.

Impacts to air quality from the Proposed Action Alternative would not be significant, because all actions would comply with the applicable air quality plan, no actions would violate air quality standards or substantially contribute to an existing or projected air quality violation, and sensitive receptors would not be exposed to substantial pollutant concentrations.

4.8.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

Construction activities would be the same in footprint and duration to that of the Proposed Action Alternative. Incorporation of barbed wire on PVBs would result in only minimal additional construction time or effort and would be accomplished during the construction period. Therefore, potential air impacts would be similar to that of the Proposed Action Alternative and the same approach (an air conformity analysis with associated BACMS and BMPs) to ensure air pollutant emissions remain below NAAQS thresholds, would be required prior to construction of any site-specific project.

4.9 WATER RESOURCES

The significance thresholds for water resources are:

- The action substantially depletes groundwater supplies, or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume, or a lowering of the local groundwater table
- The action substantially alters existing drainage patterns of the site or area resulting in substantial erosion
- The action results in a permanent loss of a wetland or wetland function that can not be compensated

4.9.1 Alternative 1: No Action Alternative

The No Action Alternative would not require groundwater withdrawal for construction; therefore, this alternative would not directly impact water availability. However, without improved efficiency and effectiveness of apprehension, an increase in IA traffic and OBP activities would occur. Increasing IA activity, including illegal vehicle drive throughs would degrade intermittent or ephemeral streams within the study corridor. Due to the temporary, but torrential nature of flows in these streams, impacts to water quality from any increased sediment loads would be minimal. Contaminants in recharge waters would potentially impact groundwater in the Rio Grande basin; however, the Animas, Mesilla, and Mimbres basins would not be impacted.

4.9.2 Alternative 2: Proposed Action Alternative

Under the Proposed Action Alternative, the potential exists for increased temporary erosion during construction activities; however, as discussed above, temporarily increased sediment and turbidity would have minimal impacts on water quality. At this point in the planning process for the TI improvements in the El Paso Sector, the exact locations and extent of specific construction projects are not known. Site-specific analyses would be required for further evaluation of the amount of water necessary for the project as well as impacts to area water quality. Withdrawal from western basins (Animas, Cloverdale, Playas Lake, and Mimbres) would not be expected to affect long-term water supplies or groundwater quality. It is anticipated that required water would be minimal and due to normal development within these basins, natural recharge volumes would maintain present water levels within the aquifers. The Mesilla groundwater basin is connected to surface flows from the Rio Grande. The withdrawals from this basin would be coordinated with the USIBWC to ensure compliance with applicable international treaties. The volume of water withdrawn would not affect the public drinking water supplies, but could indirectly contribute to aquifer contamination from surface runoff.

Surface flow would permanently be altered due to road improvements and construction; however, the use of BMPs and the development of an SWPPP as described in Section 5.0 would minimize the potential for erosion and could improve erosion conditions at some crossings. The appropriate permits (*i.e.*, Section 404, nationwide permits) from the USACE would be obtained for all surface drainage crossings. The indirect effects of altered surface drainage and potential consequent erosion would have minimal beneficial and adverse impacts to water quality.

The Proposed Action Alternative would not significantly impact water resources. Proposed actions would not substantially deplete groundwater supplies, cause a net deficit in aquifer volume, or lower the groundwater table. The actions would not substantially alter existing drainage patterns or result in a permanent loss of wetlands or wetland function.

4.9.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

The impacts to water resources would be the same for this alternative as those discussed for the Proposed Action Alternative.

4.10 HAZARDOUS MATERIALS

Significance thresholds established for hazardous materials are:

- Any action that creates a hazard to the public or the environment through routine transport, use, or disposal of hazardous materials
- Be located on a site which is included on a list of hazardous materials sites and as a result would create a significant hazard to the public or the environment
- Any action that would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

4.10.1 Alternative 1: No Action Alternative

Under the No Action Alternative, solid or hazardous waste would potentially be abandoned without notification by IAs. In this case, a potentially adverse impact would occur because proper disposal/clean up procedures would not be followed.

4.10.2 Alternative 2: Proposed Action Alternative

It is difficult to determine the location and quantity of hazardous waste that may be present within the general study corridor because of the random nature of illegal dumping along the border areas and the industrial nature of the El Paso, Texas border area. If hazardous materials or wastes were present, there would be a potential for exposure during construction activities. Site-specific Environmental Baseline Studies or Environmental Site Assessments would be conducted for each project where a real property transaction would occur. These studies would identify any environmental liabilities and outline appropriate remediation. Construction personnel would be informed about the potential to encounter hazardous wastes that may be present on the site from illegal dumping and the appropriate procedures to use if suspected hazardous contamination is encountered.

During construction activities, as well as daily maintenance of portable generators, fuels, oils, lubricants, and other hazardous materials would be used. Although catch pans would be used when refueling, accidental spills could occur as a result of daily maintenance procedures to portable light generators. A spill could result in potentially adverse impacts to on-site soils, and threaten the health of the local population, as well as wildlife, soils, water, and vegetation. However, the amount of fuel, lubricants, and oil is limited, and equipment necessary to quickly contain any spills would be present when refueling. A Spill Prevention, Control and Countermeasures Plan would be in place prior to construction, and all personnel would be

briefed in the implementation and responsibilities of the plan. With proper handling, storage, and disposal of solid and hazardous materials there would be no significant adverse impacts to onsite workers and neighboring flora and fauna.

No significant impacts from hazardous materials are expected resultant of the Proposed Action Alternative. The proposed action would not create a hazard to the public or environment through routine transport, use, or disposal of hazardous materials, nor would it be located on a site which is included on a list of hazardous materials sites. The proposed action would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

4.10.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

By implementing this alternative, the potential for major spills or coming into contact with hazardous waste is the same as the Proposed Action Alternative.

4.11 NOISE

Significance thresholds established for noise are:

- Any action that would result in a substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the project
- Any action that would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project

4.11.1 Alternative 1: No Action Alternative

No direct impacts, beneficial or adverse, would occur to ambient noise levels as a result of the No Action Alternative because no new construction activities would take place. Noise generated by OBP activities and routine maintenance would remain at the same levels within the study corridor.

4.11.2 Alternative 2: Proposed Action Alternative

Implementation of this alternative would result in temporary increases in ambient noise levels during construction. Noise levels created by construction equipment would vary greatly depending on factors such as the type of equipment, the specific model, the operation being performed, and the condition of the equipment. Noise levels would be expected to range from quiet urban levels (60 dBA) to brief periods of high urban sound (80 dBA); however, a noise of

80 dBA would be typically attenuated to 50 dBA (quiet) at a distance of 1,067 feet. The equivalent sound level of the construction activity also depends on the fraction of time that the equipment is operated over the time period of the construction. Construction activities as a result of this alternative would produce only short-term noise level increases. Temporary impacts associated with construction noise would remain at a less than significant level when compared to the DNL average. Construction activities would also increase ambient noise levels in rural and undeveloped areas that would normally have a lower DNL than in the more populated areas, but the absence of human noise receptors in the majority of the study corridor would negate the issue of noise. Potential sensitive noise receptors at recreation facilities would not be impacted by the increased noise from construction due to their distance from the construction activities.

The variety of proposed infrastructure would create different changes to noise levels upon completion of construction. The installation of pedestrian barriers, PVBs, and lighting systems would not change the ambient noise levels after the initial construction activities are completed. Generators for backup for the solar-powered RVSS would create temporary noise. Noise from the generators for solar-powered RVSS would only occur when the solar cells are incapable of creating enough power. This occurrence would be infrequent and RVSS would be located in remote areas with few, if any, human noise receptors.

Improvements to patrol roads, drag roads, and ancillary structures would not greatly increase noise levels beyond the construction stage. Traffic along these roads would be limited to OBP or private land owner use and would not cause a dramatic increase in traffic related noise levels.

Both temporary impacts due to initial construction activities or operation and maintenance of TI would result in less than significant impacts to the DNL average, because the actions would not result in substantial permanent or temporary increases in ambient noise levels in the project vicinity. However, each site-specific project would require analysis for the presence of sensitive receptors. If sensitive receptors are identified, measures would be required to ensure that noise impacts do not significantly impact individual receptors.

4.11.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

Temporary and permanent adverse impacts under this alternative would be the same as in the Proposed Action Alternative. However, by applying barbed wire to the main PVB beams to restrict trans-boundary cattle crossings, construction activities may result in a minor increase in noise relative to the Proposed Action Alternative. Although a specific design for attaching the barbed wire to the beams has not been identified, it would likely include tapping pins into the beams by either drilling or welding. In either case, associated construction noise would be minimal, yet slightly greater, than in the Proposed Action Alternative. Nonetheless, adverse impacts would be less than significant as the average DNL would not be increased significantly. As with the Proposed Action Alternative, site-specific projects would require further analysis for presence of sensitive receptors and if required, mitigating measures would be required to minimize noise related impacts in those areas.

4.12 CULTURAL RESOURCES

Significance thresholds established for cultural resources are:

- Any action that would cause a substantial adverse change in a historical or archeological resource
- Any action that would disturb any human remains, including those interred outside of formal cemeteries

4.12.1 Alternative 1: No Action Alternative

The No Action Alternative would not result in any direct effects to cultural resources. However, as illegal traffic and the consequent enforcement actions continue, indirect effects to known and undiscovered sites could be incurred.

4.12.2 Alternative 2: Proposed Action Alternative

Under the Proposed Action Alternative, the construction of various TI projects would involve ground disturbing activities that have the potential to impact previously unrecorded cultural resources, particularly archaeological sites which may not be readily evident. To reduce the level of potential impacts on cultural resources, consultation with NMSHPO and/or the appropriate THPO for the area would be required before construction to identify any known cultural resources, including historic structures, archaeological sites, or sacred sites that may have been recorded in the area. In addition, if the area has not undergone a previous archaeological survey, an investigation would be conducted in the APE of the construction in order to locate any unknown cultural resources within the area. If previously recorded or newly

recorded cultural resources are located within the APE, then mitigation measures would be required. These mitigation measures would be determined through consultation with NMSHPO and/or the appropriate THPO. In addition, if there are cultural resources, particularly historic structures, districts, or sacred sites near the proposed infrastructure, the potential exists for a visual impact to those resources. In these instances, a viewshed analysis may be appropriate to determine the extent of that impact.

The Proposed Action Alternative would not have significant impacts on cultural resources because the actions would not cause a substantial adverse change in a historical or archaeological resource or disturb any human remains that could not be mitigated.

4.12.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

The effects of Alternative 3 on cultural resources would be the same as those resulting from the Proposed Action Alternative.

4.13 SOCIOECONOMICS

The significance thresholds for socioeconomics are:

- The action causes a substantial permanent population increase or reduction in local income.
- The action causes the vacancy rate for temporary housing to fall, requiring relocation of existing people, construction of replacement housing elsewhere, or destruction of housing or businesses.
- The action increases the short or long-term demand for public services in excess of existing and projected capacities.
- The action results in any racial, ethnic, or socioeconomic group bearing a disproportionate share of adverse project effects.

4.13.1 Alternative 1: No Action Alternative

The No Action Alternative would require labor from the OBP maintenance staff, resulting in no increases to population in the project vicinity. Materials and other project expenditures for the construction activities would not be obtained through merchants in the local community.

IA activities and their associated costs would continue. Illegal activities cost U.S. citizens billions of dollars annually due to criminal activities, as well as the cost of apprehension,

detention, incarceration of criminals, and indirectly in loss of property, illegal participation in government programs, and increased insurance costs.

4.13.2 Alternative 2: Proposed Action Alternative

The proposed activities would not have substantial impacts on the local employment or income. Some construction materials will be locally purchased such as aggregate, concrete, water (in some areas), and welding supplies. Also, if military units are used, some commercial construction equipment would still be utilized. Workers may also spend a portion of their incomes in the local community. However, the duration of the projects would not be long enough for their spending to have significant impacts.

Proposed construction would not induce a permanent in-migration of people nor would there be additional permanent employees; therefore, there would be no increase in demand for housing in the ROI.

Indirect impacts to ranchers would potentially occur with the construction of PVBs along the border. Many area ranches depend on the existing barbed wire fence that serves as the boundary between the U.S. and Mexico. In the past, it has been noted that where PVBs are installed, the barbed wire fencing, which is left in place on the Mexican side of the PVB, systematically disappears. With no barbed wire fence to contain the cattle, American ranchers could potentially lose many head of cattle to Mexico. The opposite is also true; that is, cattle from Mexico could potentially enter American ranches with grave consequences, such as overgrazing or unknown diseases.

TI would benefit socioeconomics of the area by reducing the costs associated with illegal activity through the OBP's increased deterrence and apprehension capabilities.

The Proposed Action Alternative would not have a significant impact on local or regional socioeconomics. The action would not cause a substantial permanent population increase or reduction in local income. The action would not cause the vacancy rate for temporary housing to fall. The action would not displace residences or businesses. Most of the affected land is currently owned and managed by the Federal government.

4.13.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

The effects of Alternative 3 on socioeconomics would be similar to those resulting from the Proposed Action Alternative. However, with the inclusion of barbed wire on the PVBs, the impacts to ranchers would be greatly reduced relative to the Proposed Action Alternative.

4.14 CUMULATIVE IMPACTS

This section of the PEA addresses the potential cumulative impacts associated with the implementation of the alternatives outlined in Chapter 2.0 and other projects/programs that are planned for the region. The following paragraphs present a general discussion regarding cumulative effects that would be expected, irrespective of the alternative selected.

The CEQ defines cumulative impacts as the incremental impact of multiple present and future actions with individually minor, but collectively significant effects. Cumulative impacts can be concisely defined as the total effect of multiple land uses and developments, including their interrelationships, on the environment.

In 2001, the INS and JTF-N PEIS assessed the potential cumulative impacts associated with past and future OBP projects for the entire southwestern border and is herein incorporated by reference (INS 2001). In summary, the PEIS estimated that in total, 6,900 acres would be disturbed along the southwestern border by 2004. The actual area impacted by the OBP projects as of March 2006 has not even approached the 2004 estimate.

While the PEIS projected a much greater amount of infrastructure to be constructed, the lack of completed projects does not reflect that the current and future need for infrastructure has diminished. On the contrary, the need is even greater than it was in 2001. Furthermore, the increased reliance on technology-based TI such as RVSS as a force multiplier has reduced the immediate need for some other types of TI originally discussed in the PEIS.

Future projects are being planned by the OBP throughout the El Paso Sector. Other future projects in nearby OBP sectors include infrastructure programs similar to the study corridor addressed in this PEA. Currently, the El Paso Sector is undergoing similar studies for their Texas AO as in the New Mexico AO for proposed infrastructure. The El Paso Sector Texas AO study is planning improvements to or construction of 19 RVSS, improvements to or construction of approximately 99 miles of all-weather patrol roads and approximately 40 miles of drag roads, installation of permanent pedestrian barriers and permanent lights, vegetation management

along the Rio Grande, and construction of ancillary structures (*i.e.*, low water crossings and culverts).

The OBP has currently identified two site-specific projects and has begun the initial planning efforts for these projects. These two projects are (1) the installation of two 90-foot long “Jersey-type” concrete vehicle barriers under the Ysleta POE and (2) the construction of 12 individual, permanent vehicular gates at nine locations along the Rio Grande and irrigation ditch levees. Although the designs for these two projects have not been completed and the impact area is not known at this time, both the concrete vehicle barriers and the permanent vehicular gates are located in previously disturbed, unvegetated areas and would have a very small (*i.e.*, less than 1 acre total) footprint.

The OBP is also planning several facilities projects in the El Paso Sector. These include the construction of new Border Patrol Stations in the vicinity of Fort Hancock, Texas and Lordsburg, construction of a new El Paso Border Patrol Station and Sector Headquarters in El Paso and construction of two forward operating bases, one in the Deming Station AO and the other in the Lordsburg Station AO. The approximate footprint for each forward operating base is 5 acres.

The USIBWC has maintenance responsibilities on the Rio Grande within the program’s study corridor as part of the Upper Rio Grande Project. The Upper Rio Grande Project consists of five separate projects: Canalization, American Dam and Canal, Chamizal, Rectification, and a portion of the Boundary Preservation Project. The Upper Rio Grande Project is operated and maintained as one project. The project extends along the Rio Grande from Percha Diversion Dam in New Mexico downstream to the tri-county line at the southern end of Hudspeth County, Texas a distance of 270 river miles. The project is primarily for flood control, river stabilization, and to control the division of waters for beneficial use between the U.S. and Mexico pursuant to the 1906 Water Treaty with Mexico. Ongoing activities in the project vicinity associated with the Upper Rio Grande project include levee maintenance, grading and sediment removal in the main channel and at mouths of arroyos, maintenance of sediment control dams and grade control structures, clearing of drainage structures, the maintenance of the Fabens-Guadalupe and Fort Hancock-El Porvenir International Bridges, and maintenance of the American Dam and American Canal.

The CNF has implemented an Invasive Exotic Plant Management Program (USFS 2004). It is a complete, integrated vegetation management approach to the management of invasive species on the CNF. The CNF would use all methods to eradicate or contain and control populations of invasive species. The plan is intended for forest-wide management.

The Santa Teresa POE is proposed to become a major North American Free Trade Agreement (NAFTA) import/export facility for both rail and trucking traffic. Increased illegal traffic and the new NAFTA traffic will increase the need for improved border security and infrastructure (Rogers 2006).

The BLM has many on-going and planned projects for the Las Cruces District Office planning area. Many habitat improvement projects are slated over the next five years for bighorn sheep and other species in the Bootheel area in cooperation with NMDGF, the Sikes Act Habitat Stamp Program, NRCS Environmental Quality Incentive Program, and BLM challenge cost share program (Lister 2006). The BLM has communicated with the OBP on the location of water development projects in the Hatchets and Peloncillo mountains. USGS, BLM and NMDGF are conducting nectar feeding bat surveys in the Hatchets, Animas and Peloncillo mountains (Lister 2006). Additional BLM Las Cruces District Office projects are listed below.

- Apache Creek Allotment Decision
- Picacho Peak Fence
- Grazing Permit Transfer for Percha Creek, Allotment # 16085
- Hanson Quarry
- Mendosa Sand and Gravel
- El Paso Electric ROW renewal
- Jupiter Entertainment Film Permit
- Columbus Electric ROW
- El Paso Natural Gas CPS # 1260 Renewal
- Grazing transfer, Akela North, Allotment # 02031
- Dell Telephone Communication Site at Cornudas
- Valley Telephone ROW Amendment
- Key/Vanguard Communication Site Assignment
- Grazing transfer of Rascon allotment
- Animas Mountains NW Allotment Boundary Fence
- Lackey Access Road ROW
- Sierra Electric Poverty Creek ROW
- Besinger Road, Pipeline EA
- Chili Challenge – 2006 SRP
- Aden Hills grassland restoration treatment
- Wamels Pond grassland restoration treatment
- Bartoo Sand and Gravel
- El Paso Electric Company
- NMDOT – Virden

- Otero County Electric Renewal
- Lazy E Ranch pipelines
- Hidalgo County oil & gas lease
- Renewal Butterfield Shooting Range R&PP - Lease
- EPEC White Sands Test Facility Forward Security Gate Powerline
- TNMP 115kiloVolt Transmission Line and Fiber Optic Line
- NASA Withdrawal Revocation
- Qwest
- El Paso Electric
- Council Tree Comm – Assignment to ZGS El Paso
- Renewal El Paso Natural Gas Company
- Renewal Sierra Nevada Property - CX
- Sierra Electric Corporation Ladder Ranch EA, N1/2 SE1/4, Sec. 13, T15S, R7W & Lot 9, Sec. 33, T10S, R8W
- Crown Communications Incorporated Renewal at Oro-Grande, T22S, R8E, Sec. 11, N2SW, SWSW
- Verizon Wireless Equipment Shelter at Steins
- Cingular Wireless ROW Amendment, T24S, R21W, Sec. 15 SE,
- Valley Telephone ROW Tps. 27, 28 S., Rs. 7, 8 W.
- Prospect Pipeline
- Valley Telephone ROW Amendment T. 27 S., R. 8 W., Secs. 28 & 33
- Lufkin Road ROW Assignment T. 16 S., Rs. 13, 14 W.
- Payan Mineral Material Sale Modification T. 24 S., R. 3 E., Sec. 28
- Hidalgo County Oil and Gas Lease Sale Tps. 20, 21 S., R. 20 W.
- EPNG Temporary Construction Areas T. 24 S., R. 3 W., Secs. 28 & 33
- EPNG Pipeline ROW Amendments T. 24 S., R. 3 W., Secs. 28 & 33
- Marytoy Pipeline Reconstruction T. 22 S., R. 12 E., Secs. 7 & 8
- Lazy E Mesquite Control T. 22 S., R. 5 W.
- Moongate Waterline and Storage Tank ROW T. 22 S., Rs. 1, 2 E.
- Seraphim Falls Film Permit Tps. 22, 23 S., R. 20 W.
- Columbus Electric Coop Powerline ROW T. 28 S., R. 19 W., Sec. 29
- Grazing Transfer and Permit Issuance for Jornada Lakes Allotment #06147, T. 14 S., Rs. 1, 2 W.
- Browning Pipeline T. 23 S., R. 18 W.
- Schafer Boundary Fence T. 23 S., R. 18 W.
- West Well Pipeline T. 12 S., R. 8 W., Sec. 3
- Thompson Canyon Pipeline Burial and Extension T. 20 S., R. 17 W., Secs. 26, 27, & 34
- Picacho Peak Trails T. 23 S., Rs. 1 W. & 1 E.
- Berino Sale Tract Road ROW T. 25 S., R. 3 E., Sec. 34
- Hidalgo County Free Use Mineral Material at Steins T. 24 S., R. 21 W., Sec. 30
- Hidalgo County Free Use Mineral Material at Animas T. 27 S., R. 18 W., Sec. 19
- Hidalgo County Free Use Mineral Material at Waldo T. 23 S., R. 18 W., Sec. 8
- Sierra County Free Use Mineral Material at Engle East T. 12 S., R. 1 E., Sec. 31
- Sierra County Free Use Mineral Material at Engle South T. 16 S., R. 2 W., Sec. 12
- Sierra County Free Use Mineral Material at Lone Mountain T. 15 S., R. 3 W., Sec. 21
- South Kelly Erosion Control T. 15 S., R. 5 W., Sec. 31 & T. 16 S., R. 5 W., Sec. 6
- Grazing Transfer and Permit Issuance for Hanover Lease Allotment #04542, T. 17 S., R. 12 W.

- CLC Monitoring Well and Water Storage Tank T. 23 S., R. 2 E., Sec. 11
- Grazing Lease Renewal for Carne Allotment #02534 T. 23 S., Rs. 7, 8 W.
- Grazing Lease Renewal for Catfish Cove Allotment #02516 T. 20 S., Rs. 10, 11 W.
- Grazing Lease Renewal for Taylor Mountain Allotment #02525 T. 20 S., Rs. 10, 11 W.
- Windmill Canyon Well T. 25 S., R. 7 W., Sec. 18
- Grazing Permit Renewal for Foster Canyon Allotment #03006 T. 21 S., R. 1 W.
- Grazing Permit Renewal for Horse Canyon Allotment #03026 T. 20 S., R. 2 W.
- Grazing Permit Renewal for Broad Canyon Allotment #03025 Tps. 20, 21 S., Rs. 1, 2 W.
- Grazing Permit Renewal for Rock Canyon Allotment #03007 T. 20 S., R. 2 W.
- Grazing Permit Renewal for Bignell Arroyo Allotment #03027 Tps. 19, 20 S., R. 2 W.
- Grazing Permit Renewal for Hersey Arroyo Allotment #03014 T. 20 S., R. 2 W.
- Grazing Permit & Lease Renewals for Seventysix Draw Allotments #02041 & #02520, Tps. 26, 27 S., Rs. 7, 8, 9 W.
- Grazing Permit Renewal for Seventeen Well Allotment #02049 T. 26 S., Rs. 8, 9 W.
- Grazing Permit Renewal for Picacho Peak Allotment #03008 Tps. 22, 23 S., Rs. 1 W. & 1 E.
- Grazing Permit Renewal for Sierra Alta Ranch Allotment #03012 Tps. 19, 20 S., Rs. 2, 3 W.
- Grazing Permit Renewal for Alamo Basin Allotment #03015 Tps. 20, 21 S., Rs. 2, 3 W.
- Grazing Permit Renewal for Little Black Mountain Allotment #03048 Tps. 24, 25 S., Rs. 1, 2 E.
- Grazing Permit Renewal for Home Ranch Allotment #03002 Tps. 23, 24, 25 S., Rs. 1, 2 W. & 1 E.
- Grazing Permit Renewal for Palma Park Allotment #03058 Tps. 18, 19 S., Rs. 2, 3 W.
- Grazing Permit Renewal for Thorn Well Allotment #03063 T. 18 S., Rs. 1, 2 W. & 1 E.
- Grazing Permit Renewal for Garfield Allotment #03061 T. 18 S., R. 4 W.
- Grazing Permit Renewal for Akela Allotment #03041 T. 25 S., R. 5 W.
- Grazing Permit Renewal for Upham Allotment #03068 T. 19 S., Rs. 1, 2 W. & 1 E.
- Grazing Lease Renewal for Hay Draw Allotment #04525 Tps. 23, 24 S., Rs. 12, 13, 14 W.
- Grazing Lease Renewal for Red Mountain Allotment #02503 Tps. 24, 25 S., R. 10 W.
- Grazing Permit and Lease Renewals for Flat Ranch Allotments #02020 & #02575, Tps. 25, 26 S., Rs. 10, 11 W.
- Grazing Permit and Lease Renewals for San Juan Ranch Allotment #02033 & Koenig Allotment #02536, Tps. 26, 27 S., Rs. 7, 8 W.
- Grazing Permit Renewal for Altamira Ranch Allotment #03040 Tps. 21, 22 S., Rs. 1 W. & 1 E.
- Grazing Permit Renewal for Akela North Allotment #02031 Tps. 23, 24 S., Rs. 5, 6 W.
- Sierra County Trespass Communication Site T. 11 S., R. 7 W., Sec. 7
- Schafer Fence and Pipeline T. 24 S., Rs. 17, 18 E.
- Jack Cain Erosion Control Tps. 13, 14 S., R. 1 E., Secs. 3, 35, & 36
- Grazing Permit Renewal for Spanish Stirrup Allotment #02035 Tps. 24, 25 S., Rs. 7, 8 W.
- Grazing Permit Renewal for Florida Mtn. Ranch Allotment #02025 Tps. 25, 26 S., Rs. 8, 9 W.
- XT Prescribed Burn Tps. 29, 30, 31 S., Rs. 19, 20 W.
- Grazing Transfer and Permit Issuance for Virden Allotment #01088 Tps. 18, 19 S., R. 21 W.
- McGregor Black Grama Study Plot T. 21 S., R. 11 E., Sec. 10
- McGregor Corrals Reconstructiion T.21S., R.11E., Sec.13; T.23S., R.12E., Sec.18; T.21S., R.12E., Sec.4

- Dogtown Ranch Fence and North Hermanas Pipeline T. 28 S., Rs. 10, 11 W.
- Detroit Pipeline South T. 19 S., R. 1 W., Sec. 29
- Change in Class of Livestock for B T Allotment #09031 Tps. 23, 24, 25 S., Rs. 11, 12, 13 E.
- Grazing Transfer and Permit Issuance for Phillips Ranch Allotment #02043, Tps. 24, 25 S., Rs. 11, 12 W.
- Stepro Mineral Materials Exploration T. 28 S., R. 5 W.; T. 21 S., R. 4 W.; & T. 25 S., R. 2 E.
- Grazing Transfer and Permit Issuance for Brokeoff Ranch Allotment #09062, Tps. 24, 25 S., Rs. 19, 20 E.
- Grazing Transfer and Permit Issuance for Hidden Valley Ranch Allotment #02009, T. 21 S., R. 9 W.
- EBID Mineral Material Permit at Hill T. 22 S., R. 1 E., Sec. 3
- EBID Mineral Material Permit at Salem T. 18 S., R. 4 W., Sec. 25
- EBID Mineral Material Permit at Mesquite T. 24 S., R. 3 E., Sec. 30
- EBID Mineral Material Permit at Mesilla Dam T. 24 S., R. 1 E., Sec. 14
- EBID Mineral Material Permit at La Union T. 27 S., R. 2 E., Sec. 13
- Garfield Dam ROW Amendment T. 18 S., R. 4 W., Sec. 10
- Tri-County Resource Management Plan Doña Ana, Otero, and Sierra Counties
- Orphey Trap and Road T. 26 S., R. 22 W., Sec. 12
- Rocky Nevarez Mineral Material Sale T. 22 S., R. 1 E., Sec. 3
- Continental Divide National Scenic Trail Realignment Luna, Grant, and Hidalgo Counties
- Doña Ana Equine Endurance Rides SRP Tps. 26, 27, 28 S., Rs. 2, 3 E.
- Flaring of Bennett Ranch Unit #1-Y and 25-1 Wells T. 26 S., R. 12 E., Secs. 14 & 25
- Crawford Competitive Land Sale T. 24 S., R. 1 W., Sec. 1
- Cooke's Peak Access Re-Route T. 20 S., R. 8 W., Sec. 29
- Snake Tank Road Re-Route T. 13 S., R. 10 E., Sec. 6
- Change in Livestock from Cattle to Goats for Willow Draw Allotment #02052, Tps. 27, 28 S., Rs. 14, 15 W.
- Change in Livestock from Cattle to Goats for Hachita Allotment #02010 Tps. 27, 28 S., Rs. 14, 15 W.
- Cornucopia Draw Prescribed Burn T. 22 S., R. 16 E., Secs. 20, 21, 28, & 29

The General Services Administration is proposing to construct several modular buildings at the existing Columbus POE in the Deming New Mexico Station AO. These buildings will be used to support POE activities.

Due to the remote and unpopulated areas of Doña Ana, Luna, and Hidalgo counties, there are very few on-going or future projects other than those conducted by the OBP and private ranching activities. The county governments report on-going general maintenance on gravel and dirt surface roads. NMDOT is currently completing a road improvement project on NM 9 in Santa Teresa and all impacts from this project are to be within the current highway ROW. Hidalgo County reports that a chip-seal project is slated to begin in the summer of 2006 on New Mexico Highway 338 south of Animas, New Mexico (Ellis 2006).

The NMDGF conducts big game surveys in the Bootheel area mountain ranges annually. NMDGF and Animal and Plant Health Inspection Service Wildlife Services are conducting predator control activities within BLM's Habitat Management Plan areas in the Bootheel.

The following assessment of potential cumulative impacts is based upon the information provided from the previously listed, past, ongoing and future projects.

4.14.1 Alternative 1: No Action Alternative

The No Action Alternative would not result in direct impacts to any resource. Therefore, the No Action Alternative would not contribute directly to cumulative impacts of all past, present, and reasonably foreseeable projects in the region of potential cumulative impacts. Other projects throughout the region of potential cumulative impacts would primarily occur near to or connecting urbanized areas or otherwise previously disturbed areas. These projects include maintenance of existing roadways and the expansion of the Santa Teresa POE. Thus, on an individual project basis impacts to soils, water resources, vegetation, wildlife, aesthetics, unique and sensitive areas, and land use that are similar in quality to those resulting from the No Action Alternative would also be minimal.

Cultural resources, socioeconomics, environmental justice and protection of children, solid and hazardous waste, and noise could all be minimally affected under the No Action Alternative. However, other projects are not likely to adversely affect these resources. Therefore, there would be no or negligible cumulative impacts to these resources as a result of the No Action Alternative.

Protected species are often given such status because of impacts that have occurred over a large portion of their range and over a long period of time. Historical projects, land management practices, or other factors such as climate change have resulted in significant changes to their environment and must be considered as a contribution to cumulative impacts. Protected species with the potential to be impacted under the No Action Alternative are the lesser long-nosed bat, the aplomado falcon, jaguar, Chiricahua leopard frog, and the Mexican ridged-nosed rattle snake. These impacts are limited to general disturbance and degradation of roosting sites and forage habitats as described in Section 4.4. Other OBP projects potentially affecting

protected species would be mitigated in consultation with the USFWS. Thus, although past activities have degraded habitats and impacts related to the No Action Alternative could be minor, the cumulative impacts to protected species would also be minor.

Indirect impacts related to IA traffic and subsequent OBP activities would continue under the No Action Alternative. These impacts have been discussed above for each resource and all are considered to be minor to moderate when considered independently. In general, the disturbance of soils can degrade vegetation communities but has limited impact on surface water quality and stream habitat. This degradation of vegetation communities has minimal impacts on wildlife habitat suitability and the suitability of lands for their current land use. IA and subsequent OBP activities would continue to contribute to elevated levels of fugitive dust during the construction period of other projects in the region. However, emissions related to the No Action Alternative would primarily occur in remote areas, while emissions related to other projects would primarily affect more urbanized areas and would be limited to the construction period. When taken together impacts related to all of the current and future projects, in combination with historic degradation related to development, would be considered a cumulative impact. Thus, the cumulative impacts to these resources resulting from increased IA traffic and other projects in the region would be minor to moderate.

4.14.2 Alternative 2: Proposed Action Alternative

The majority of the TI projects proposed under the Proposed Action Alternative would be constructed within areas that are already disturbed, continuous with existing urbanized development, or are immediately adjacent to existing infrastructure (*i.e.*, PVBs and patrol roads). This is also true of most other present and reasonably foreseeable projects within the region of potential cumulative impacts, with the exception of some BLM communications and utilities ROW projects. The disturbance or loss of soils, vegetation, and wildlife habitat must be considered a cumulative impact contributing to the historical impacts on these resources. However, these cumulative impacts would be minimized to the extent practical and the Proposed Action Alternative and current management practices would ultimately result in substantial benefits to most resources as described for above in sections 4.1 through 4.11. Impacts to historically affected resources such as rangelands, socioeconomics, noise, air quality and protected species are discussed below.

The native rangelands of the study corridor have been historically overgrazed. The implementation of this alternative would impact grasslands and socioeconomics relating to the cattle industry as discussed in sections 4.3.1 and 4.13.2. BLM actively manages several grazing allotments and permits. BLM also manages grassland restoration projects in order to combat overgrazing. Other projects (including OBP projects, Santa Teresa POE, NMDOT projects) in the study corridor would have little to no impact on these resources due to their locations near more urbanized areas or their location on previously disturbed sites. Historical overgrazing in the area since the 1800s has altered ecological processes resulting in long-term changes to the composition and structure of grasslands, which will not recover unless grazing were discontinued. Although the Proposed Action Alternative would result in a cumulative impact on the quality of grasslands available for use as forage in ranching operations in the study corridor, these impacts would be minimal in relation to historical impacts and future impacts under the No Action Alternative. The Proposed Action Alternative would also benefit these resources by reducing IA traffic. Therefore, the resulting cumulative impacts would be minimal.

Increased vehicle, aircraft and heavy equipment use in the region associated with OBP projects and projects by others (e.g., NMDOT and county governments) would increase air emissions and noise regionally but would not likely result in significant cumulative impacts. However, because the El Paso region is not in attainment for CO and PM₁₀, the cumulative impacts to air quality will be assessed on a project-specific basis for each OBP TI project as the project-specific information becomes available. Most of the OBP TI projects are proposed within a corridor along the border where there are few noise receptors present, and noise increases would be temporary; therefore, no cumulative noise impacts are anticipated.

The implementation of the proposed OBP TI and facilities projects, oil and gas leasing on BLM property, and communications and utilities ROW construction projects would have beneficial cumulative socioeconomic impacts to the region. Construction and maintenance activities associated with these projects would yield expenditures for supplies that would potentially have a moderate cumulative socioeconomic impact. Additionally, the implementation of OBP projects would reduce or eliminate IA traffic and allow for more efficient OBP response times, reducing the pressure on local law enforcement and reducing associated costs of criminal activity. The

majority of other projects in the region would also benefit socioeconomics in the region of potential cumulative impacts; therefore, the cumulative impacts to this resource would also be beneficial.

Any ground disturbing activities associated with these projects have the potential for impacts to cultural resources; however, relative to the No Action Alternative, only beneficial impacts to cultural resources would be realized. All OBP projects would be evaluated by NMSHPO under the Section 106 process. This would minimize or mitigate any project-specific impacts to cultural resources. However, the construction of TI projects and OBP facilities projects in the region would reduce IA pedestrian and vehicle traffic and allow for OBP enforcement actions to remain focused on the immediate border region. The reduction in IA traffic and subsequent OBP enforcement activities would reduce the likelihood of disturbing cultural resources in the region providing beneficial cumulative impacts to cultural resources.

4.14.3 Alternative 3: TI as in Proposed Action with Cattle Fence PVBs

Cumulative impacts from the PVBs equipped with barbed wire are similar to those described in the Proposed Action Alternative except in regards to impacts to grasslands and socioeconomics. Under this alternative, the direct cumulative impacts to grasslands and socioeconomics would be reduced relative to the Proposed Action Alternative. Cattle fencing would control the influx of Mexican cattle, which potentially serve as vectors for non-native vegetation propagules, protect limited foraging habitat resources, and protect the “per head” investments of ranchers.

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SECTION 5.0
ENVIRONMENTAL MITIGATION AND DESIGN FEATURES

5.0 ENVIRONMENTAL DESIGN MEASURES

This chapter describes those measures that would be implemented to reduce or eliminate potential adverse impacts to the human and natural environment. Many of these measures have been incorporated as standard operating procedures for the OBP. The environmental design measures are presented for each resource category that could be potentially affected. The proposed measures would be coordinated through the appropriate agencies and land managers/administrators prior to initiation of construction. Environmental design measures will vary on a case-by-case basis once site-specific projects are identified and will be discussed in greater detail in subsequent tiered NEPA documents.

5.1 SOILS

Before project specific construction activities can occur that may affect prime farmlands, a NRCS Form AD 1006 will be submitted to the NRCS for a farmland conversion rating. Soil erosion control can be greatly enhanced with the use of BMPs. BMPs are designed to reduce the impacts of non-point source pollution during forestry, construction, agriculture and cultivation activities. BMPs include such things as buffers around water bodies to reduce the risk of siltation, installation of water bars to slow the flow of water down hill, and placement of culverts, low water crossings or bridges where streams need to be traversed. These BMPs would greatly reduce the amount of soil lost to runoff during heavy rain events and ensure the integrity of the construction site. In arid areas, BMPs can also reduce impacts to air quality by reducing the amount of airborne soil, sand, and particulate matter.

Vehicular traffic associated with engineering, construction, and patrol activities should remain on established roads to the maximum extent practicable. Previously disturbed routes and locations would be utilized to the maximum extent practicable to reduce soil disturbances. Areas with highly erodible soils would be given special consideration to ensure incorporation of various compaction techniques, aggregate materials, wetting compounds, and revegetation to ameliorate the subsequent soil erosion. Erosion control measures such as waterbars, gabions, hay bales, and reseeded would be implemented during and after construction activities. Revegetation efforts will be needed to ensure long-term recovery of the area and to prevent significant soil erosion problems. Native seeds and plants will be used to assist in the conservation and enhancement of protected species as required by Section 7(a)(1) of the ESA.

5.2 BIOLOGICAL RESOURCES

Construction equipment would be cleaned following BMPs described in the SWPPP for each project prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species. Soil disturbances in temporary impact areas would be rehabilitated. Rehabilitation would include re-vegetating or the distribution of organic and geological materials over the disturbed area to reduce erosion while allowing the area to naturally vegetate. Additionally, the disturbed and restored areas will be monitored for the spread and eventual eradication of non-native invasive plant species as part of periodic maintenance activities.

To minimize vegetation impacts, designated travel corridors would be marked with easily observed removable or biodegradable markers, and travel would be restricted to the project corridor and staging areas. Native seeds or plants, which are compatible with the enhancement of protected species, will be used to the extent practicable, as required under Section 7(a)(1) of the ESA.

Environmental design measures which should be considered, especially in areas that support protected species, include the development of vegetation corridors to avoid habitat fragmentation and the proper placement and size of culverts to adequately convey stormwater and allow wildlife to safely cross roads. The primary option for mitigation of loss of habitat (e.g., potential bat habitat near the International Mines area) or individuals of a protected species is avoidance. Site-specific projects would be planned in such a way as to avoid areas where known protected species occur to the greatest extent practicable. For construction projects where avoidance is impractical, Section 7 consultation with the USFWS would be conducted to identify conservation measures and reasonable and prudent measures such as, using biologists to monitor construction progress and conduct post-project, long-term monitoring, as deemed necessary.

The Migratory Bird Treaty Act requires that Federal agencies coordinate with the USFWS if a construction activity would result in the take of a migratory bird. If construction or clearing activities are scheduled during the nesting season (March through September) surveys would be performed to identify active nests in the project vicinity including burrows suitable for nesting

burrowing owls. If construction activities would result in the take of a migratory bird, then coordination with the USFWS, NMDGF and applicable permits would be obtained prior to construction or clearing activities.

Another environmental design measure that would be considered is to schedule all construction activities outside the nesting season negating the requirement for nesting bird surveys. The proposed RVSS and other communication towers would also comply with USFWS guidelines for reducing fatal bird strikes. These guidelines recommend co-locating new antennae arrays on existing towers whenever possible and to build towers as short as possible without guy wires or lighting. White strobe lights should also be used whenever lights are necessary for aviation safety.

Local threatened and endangered species lists and critical habitat information are included in Section 3. Species and habitat surveys would be performed in the proposed study corridors to determine whether any species or habitat may be detrimentally affected prior to the construction of these projects. If so, then formal Section 7 consultation with the USFWS would be conducted to identify conservation measures.

Proposed construction activities that take place in northern aplomado falcon habitat should be planned to avoid the falcon's breeding season (March through September). In situations where the breeding season cannot be avoided, pre-construction surveys should be conducted to search the area for nests or breeding pairs. If either are found, consultation with USFWS must be immediate and construction must halt.

The range of the New Mexico ridge-nosed rattlesnake is primarily restricted to Indian, Bear, and Spring Canyons in the Animas Mountains of New Mexico. If avoidance is not practicable, vegetation must be maintained or reseeded to serve as ground cover for the snake. A biological monitor may be necessary during construction to ensure the safety of individual snakes.

In the project area, the Chiricahua leopard frog occurs primarily in or near intermittent creeks and stock tanks of the Animas and Peloncillo Mountains of Hidalgo County. For projects in the Animas and Peloncillo mountains, all necessary water should be hauled in from off-site, as any available water on-site is essential to the frog's survival. A SWPPP must be followed to reduce impacts from altering surface water flows and pollution.

To avoid possible indirect impacts to the lesser long-nosed bat, vegetation, especially ocotillo, paloverde, prickly pears, and agave must be protected, maintained, or re-established in project areas to the greatest extent practicable. The bat is easily disturbed while roosting, so known roosting sites must be avoided.

5.3 WATER RESOURCES

The installation of infrastructure projects would likely require a SWPPP as part of the National Pollution Discharge Elimination System permit process because the area of disturbance exceeds 1 acre.

If jurisdictional WUS, including wetlands, are located within the study corridor and are unavoidable, early coordination with the regulatory section of the local USACE district, EPA, the county NRCS, and other appropriate agencies would be completed prior to the initiation of the construction activities. Applicable CWA Section 404/401 permit procedures would be completed prior to any work in these areas and compensatory mitigation implemented, as appropriate. When identified, wetlands would be flagged, and silt fences and hay bales placed around the wetland to eliminate and impede any unnecessary impacts to the wetland areas.

5.4 HAZARDOUS MATERIALS

To minimize potential impacts from solid and hazardous materials, all fuels, waste oils, and solvents will continue to be collected and stored in tanks or drums within secondary containment system that consist of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery will be allowed only at the existing fuel pump island and all vehicles will have drip pans during storage to contain minor spills and drips. Although it will be unlikely for a major spill to occur, any spill of 5 gallons or more will be contained immediately with the application of an absorbent material (e.g., granular, pillow, sock, etc.). Any major spill of 5 gallons or more of a hazardous or regulated substance will be reported immediately to the on-site environmental personnel who will notify appropriate Federal and state agencies. A designated environmental advisor will be on-site during construction activities in case of such accidents.

All used oil and solvents will continue to be recycled if possible. All non-recyclable hazardous and regulated wastes will continue to be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures.

5.5 AESTHETICS

Some environmental design measures to minimize potential impacts resulting from RVSS and utility-associated towers would include, but not be limited to, painting the RVSS and utility-associated towers to blend into their background and the use of decorative fencing in urban areas where there is a high aesthetic value. Lighting would be shielded and wattage would be limited to 5 to 6 lumens in order to minimize the extent of impacted areas.

5.6 CULTURAL RESOURCES

Prior to any ground disturbing activities, consultation will be initiated with NMSHPO and the appropriate THPO. Site records checks and archaeological surveys will be conducted at each specific project location in order to determine if there are any cultural resources that will be impacted during construction. If significant cultural resources are discovered within the area to be impacted, the appropriate mitigation measures would be implemented to minimize the impacts to those resources. These mitigation measures would be developed in consultation with NMSHPO and the appropriate THPO along with other interested parties. The preferred mitigation measure would be avoidance if possible.

In areas where RVSS and communication towers would be constructed, sites would be assessed for visual impacts to any cultural resources within eyesight of the new equipment. If there is a potential for significant visual impacts to cultural resources, particularly structures and/or historic districts, then a viewshed analysis would be appropriate in order to determine the extent of the visual impacts.

Through all levels of the Section 106 and NEPA process, consultation would be conducted with the appropriate Federally recognized tribes that claim a cultural affinity to the impacted area. These consultations could take the form of formal consultation letters, reviews of the NEPA documents, and reviews of the cultural resources survey reports for the appropriate projects.

The construction of RVSS and communication poles and towers can be further expedited through the establishment of Programmatic Agreements (PAs) with the appropriate Native American tribes outlining the types of projects and conditions in which direct consultation would be appropriate. These PEAs would be developed in accordance with appropriate Federal laws regarding Native American consultation between the Federal entity and the Native American Tribes.

SECTION 6.0
PUBLIC INVOLVEMENT

6.0 PUBLIC INVOLVEMENT

6.1 AGENCY COORDINATION

This chapter discusses consultation and coordination that has occurred during preparation of this document. Included are contacts that were made during the development of the action alternatives and writing of the PEA. Formal and informal coordination were conducted with the following agencies:

- U.S. Fish and Wildlife Service (USFWS)
- JTF-N
- Bureau of Land Management (BLM)
- New Mexico Department of Game and Fish (NMDGF)
- New Mexico Environmental Department (NMED)
- U.S. Section, International Boundary and Water Commission (USIBWC)
- U.S. Environmental Protection Agency (EPA)
- Natural Resource Conservation Service (NRCS)
- New Mexico State Historical Association
- Comanche Nation
- Ft. Sill Apache Tribe
- Kiowa Tribe of Oklahoma
- White Mountain Apache Tribal Council
- Mescalero Apache Tribe
- Ysleta del Sur Pueblo
- Good Neighbor Environmental Board

6.2 PUBLIC SCOPING

Prior to the development of the Draft PEA the public was afforded the opportunity to participate in the scoping process. Public meetings were held by the OBP to solicit public comments and concerns in reference to the alternatives proposed in the PEA. Public notices were published in a local and regional newspaper in both English and Spanish. In El Paso (Ysleta area) one individual participated in the scoping process; in Santa Teresa, seven individuals participated; in Deming, 10 individuals participated and in Fort Hancock one individual participated. The sign-in

sheets from all four meetings are provided in Appendix D. Comments were received only at the Deming scoping meeting. Besides a BLM representative at the Deming scoping meeting, no outside Federal or state agencies attended any of the scoping meetings. Concerns from Senator Bingaman's representative as well as area ranchers were addressed during the preparation of this PEA by including cattle fencing as part of the PVB design. Comments received during the scoping process are located in Appendix D.

Meetings were held at the following locations and dates:

- El Paso, Texas at Riverside High School, January 17, 2006
- Santa Teresa, New Mexico at Santa Teresa High School, January 18, 2006
- Deming, New Mexico at the Mimbres Valley Special Events Center, January 19, 2006
- Fort Hancock, Texas at Fort Hancock High School, January 20, 2006

6.3 PUBLIC REVIEW

The draft PEA was made available to the public for 30 days. The NOA was published in The El Paso Times, el Diario USA, the Deming Headlight, the Las Cruces Sun-News, and the Alamogordo News in both Spanish and English and was also available electronically at <http://aerc.swf.usace.army.mil>. Exhibits 1 through 5 are affidavits of publication of the NOA from local newspapers. During this period, one letter was received from the USIBWC and two letters from New Mexico agencies. Their main concern was future cooperation during the planning phases for projects to be tiered from this PEA. The OBP's responses to all comments are included in Appendix D. The NOA for the final PEA was published in the same local newspapers as the draft NOA in both Spanish and English. It is included in this document as Exhibit 6. All correspondence sent or received during the preparation of this PEA is included as Appendix E.

Exhibit 1. Affidavit of Publication – El Paso Times

PUBLISHERS AFFIDAVIT

GSRC

STATE OF TEXAS
COUNTY OF EL PASO

Before me, a Notary Public in and for El Paso County, State of Texas, on this day personally appeared TERRIE CARTER who state upon oath that he is the CLASSIFIED SUPERVISOR of the El Paso Times, a daily newspaper published in the City and County of El Paso, State of Texas, which is a newspaper of general circulation and which has been continuously and regularly published for the period of not less than one year in the said County of El Paso, and that he was such upon the dates herein mentioned:

That the LEGAL copy was published in the El Paso Times for the ONE DAY. The dates of such publication being as follows, to wit APRIL 27, 2006

Subscribed and sworn to before me, Signed Joni A. Carter

This the 27th day of APRIL 2006

Bela Duques



NOTICE OF AVAILABILITY / PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
For Proposed Tactical Infrastructure Projects
Within the El Paso Sector
Office of Border Patrol
El Paso and Hidalgo Counties, Texas
Dona Ana, Laramie, and Hidalgo Counties,
New Mexico
The public is hereby notified of the availability of the draft Programmatic Environmental Assessment (PEA) for the construction, use, and maintenance of tactical infrastructure (TI) along the U.S.-Mexico border within the Office of Border Patrol (OBP) - El Paso Sector. These PEA will address TI proposed for El Paso Sector stations along the international border in Texas and New Mexico. The proposed actions include the construction of patrol roads, drug sniffs, permanent perimeter barriers, remote video surveillance systems, fence access bridges, gates, vegetation management and perimeter lighting structures.
The study area for these PEA for the western

Texas is defined the area of operations between Texas Highway 20 and the U.S. - Mexico border in Huepeth and El Paso counties. For stations in New Mexico, the study area is the international border north to NM Highway 66 or no less than three miles of the international border in Dona Ana, Laramie, and Hidalgo Counties. For the purpose of these PEA, all proposed TI projects on the Texas stations are to be sited near the Rio Grande and south of New Mexico Highway 66 for the New Mexico stations. The draft PEA for Texas stations will be available for review at the El Paso Public Library - School Super Branch and Fort Hancock Public Library. The draft PEA for New Mexico stations will be available for review at the El Paso Public Library - School Super Branch, the Thomas Branigan Memorial Library in Lordsburg, the Marshall Municipal Library in Deming, and the Loring Library in Lordsburg. The documents can also be viewed via the internet at <http://www.uscbp.gov>.

For additional information or to provide comments, please contact Mr. Charles M. McGeorge, J., U.S. Army Corps of Engineers, Environmental Resources Branch, P.O. Box 37580, Fort Worth, Texas 76161-0280 or by FAX at (817) 855-4499.

Exhibit 3. Affidavit of Publication – Alamogordo Daily News

AFFIDAVIT OF PUBLICATION

ALAMOGORDO,
STATE OF NEW
MEXICO
COUNTY OF OTERO.

} SS.

I, RICHARD COLTHARP, being duly sworn, on my oath say that I am the Publisher of the Alamogordo Daily News, a Newspaper of daily circulation, published and printed in the English language at the City of Alamogordo, Otero County, State of New Mexico. That the Alamogordo Daily News has been regularly published and issued for more than nine months prior to the date of the first publication hereinafter mentioned.

That the attached notice was published 1 time in 1 issue of said newspaper, and not in any supplement thereof, the first publication being on April 27, 2006.

That said notice was published in accordance with the laws of the State of New Mexico.

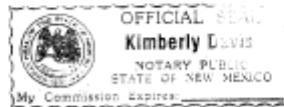
Richard Coltharp
Publisher

Subscribed in my presence and sworn before me this the 1 day of May.

Richard Coltharp
Notary Public

My commission expires 2-20-09

Legal #0265



Legal #0265
NOTICE OF AVAILABILITY
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
For Proposed Tactical Infrastructure Projects Within the El Paso Sector Office of Border Patrol Dona Ana, Luna, and Hidalgo Counties, New Mexico
The public is hereby notified of the availability of the draft Programmatic Environmental Assessment (PEA) for the construction, use, and maintenance of Tactical Infrastructure (TI) along the U.S.-Mexico border within the El Paso Sector. This PEA will address TI proposed for El Paso Sector stations within New Mexico. The proposed actions include the construction of patrol roads, drug roads, permanent pedestrian barriers, permanent vehicle lanes, remote video camera systems, and permanent lighting structures.
The study area for this PEA is defined as all El

Paso Sector stations' area of operations north of the U.S.-Mexico border as far north as New Mexico Highway 9, but no less than 3 miles north of the international border in Dona Ana, Luna, and Hidalgo counties. For the purpose of this PEA, all proposed TI projects are located south of New Mexico Highway 9. The draft PEA will be available for review at the El Paso Public Library - Richard Burgos Branch, the Thomas Branigan Memorial Library in Las Cruces, the Marshall Memorial Library in Deming, and the Lordsburg-Hidalgo Library and is also available at <http://www.swi.usace.army.mil>.

For additional information or to provide comments, please contact Mr. Charles H. McGee, Jr., U.S. Army Corps of Engineers, Environmental Engineering Branch, P.O. Box 17300, Fort Worth, Texas 76102-0300 or by FAX at (817) 885-6499.

NOTIFICACION DE DISPONIBILIDAD VALORACION AMBIENTAL PROGRAMADA
Para Proyectos de Proyectos de Infraestructura Tactical Dentro de el Sector de El Paso Oficina de la Patrulla Fronteriza Condonos de Dona Ana, Luna e Hidalgo, Nueve Mexico

Se le notifica a al publico de la disponibilidad de un ante proyecto PEA por sus siglas en ingles para la construcción, uso y mantenimiento de la Infraestructura Tactical (TI) por sus siglas en ingles a lo largo de la Frontera entre los Estados Unidos y Mexico dentro del Sector de El Paso. Este PEA se dirige a TI propuesta para las estaciones de el sector de El Paso dentro de Nuevo Mexico. Las acciones propuestas incluyen construcciones de caminos de terraceria, caminos de patrullaje, barreras permanentes para pedestres, barreras permanentes para vehiculos, sistemas de vigilancia de video y estructura

se construido permanente. El area de estudio para estos PEAs se define como todas las estaciones de el sector de El Paso en el area de operaciones al norte de la frontera entre EU y Mexico tal y como se muestra en la carta de la frontera internacional de los condados de Dona Ana, Luna e Hidalgo. Para propósitos de este PEA, todos los proyectos TI propuestos están localizados al sur de la corre-

nta 9 de Nuevo Mexico. El ante proyecto del PEA estara disponible para ser revisado en la Biblioteca publica de El Paso - Richard Burgos, en la Biblioteca Thomas Branigan Memorial en Las Cruces, y en la Biblioteca Marshall Memorial en Deming. Y en la Biblioteca Lordsburg-Hidalgo. Los documentos tambien pueden ser revisados en <http://www.swi.usace.army.mil>. Para informacion adicional o para proporcionar comentarios, favor de contactar al Sr. Charles H. McGee, Jr., U.S. Army Corps of Engineers, Branch de Recursos Ambientales, P.O. Box 17300, Fort Worth Texas 76102-0300 a via FAX al (817) 885-6499.

Exhibit 4. Affidavit of Publication – Deming Headlight

The Deming Headlight April 27, 2006

Legal Notice	Legal Notice	Legal Notice
<p>Item 10 of the Act, The Notice of Ordinance is published in NASA 4-37-7.</p> <p>By Scott Vinson Scott Vinson Luna County Manager No. 2750 IT (4-27)</p> <p>LEGAL NOTICE</p> <p>The Board of Luna County Commissioners will hold a regular meeting on Thursday, May 11, 2006 at 4:00 pm. The meeting will be held in the conference room of the Luna County Annex, 221 Spruce, Deming, New Mexico.</p> <p>An Agenda will be available to the public in the County Administration Office located in the Luna County Annex, 221 W. Spruce at least 24 hours prior to the meeting.</p> <p>Luna County Commission meetings are held in accordance with the Open Meetings Act, 10-15-1 NMSA, 1978. Individuals with a disability who are need of special services for a public hearing at meeting should contact the Luna County Manager's Office prior to the meeting or as soon as possible.</p> <p>LUNA COUNTY BOARD OF COUNTY COMMISSIONERS No. 2750 IT (4-27)</p> <p>NOTICE OF AVAILABILITY</p> <p>PROGRAMMATIC ENVIRONMENTAL ASSESSMENT</p> <p>For Proposed Tactical Infrastructure Projects Within the El Paso Sector Office of Border Patrol Dona Ana, Luna, and Hidalgo Counties, New Mexico</p> <p>The public is hereby notified of the availability of the draft Programmatic Environmental Assessment (PEA) for the construction, use, and maintenance of tactical infrastructure (TI) along the U.S.-Mexico Border within the El Paso Sector. This PEA will address TI proposed for El Paso Sector stations within New Mexico. The proposed actions include the construction of patrol roads, permanent pedestrian barriers, permanent vehicle barriers, remote video surveillance systems, and permanent lighting structures.</p> <p>The study area for this PEA is defined as all El Paso Sector stations; a strip of operations north of the U.S.-Mexico border as far north as New Mexico Highway 9, but to cover New Mexico Highway 9 or no less than 3 miles north of the international border in Dona Ana, Luna, and Hidalgo counties. For the purpose of this PEA, all proposed TI projects are located south of New Mexico Highway 9. The draft PEA will be available for review at the El Paso Public Library</p>	<p>Richard Bergen Branch, the Thomas Branigan Memorial Library in Las Cruces, the Marshall Memorial Library in Deming, and the Lordburg-Hidalgo Library and is also available at http://www.conf.usace.army.mil.</p> <p>For additional information or to provide comments, please contact Mr. Charles H. McGregor, Jr., U.S. Army Corps of Engineers, Environmental Resources Branch, 819 Taylor Street, Box 3424, P.O. Box 17300, Fort Worth, Texas, 76102.</p> <p>NOTICE OF PROPOSED ORDINANCE</p> <p>At the May 11, 2006 regular meeting to be held at 321 W. Spruce at 10:15 a.m. in Deming, New Mexico, the Luna County Board of County Commissioners will consider adoption of a revised personnel ordinance entitled "Luna County Personnel Ordinance." The ordinance provides for personnel policies pertaining to the employment of persons by Luna County. The proposed ordinance opens or revises the prior county personnel ordinance.</p> <p>LUNA COUNTY, NEW MEXICO NO. 2752 IT (4-27)</p> <p>NOTIFICACION DE DISPONIBILIDAD VALORACION AMBIENTAL PROGRAMADA</p> <p>Para Propuestas de Proyectos de Infraestructura Táctica Dentro de el Sector de El Paso Oficina de la Patrulla Fronteriza, Condado de Dona Ana, Luna e Hidalgo, Nuevo Mexico</p> <p>Se le notifica a el público de la disponibilidad de un borrador de un estudio de Evaluación Ambiental Programada (PEA) para las acciones de construcción, uso y mantenimiento de la Infraestructura Táctica (IT) por las zonas en la frontera entre los Estados Unidos y Mexico dentro del Sector de El Paso. Este PEA se dirige al TI propuesto para las estaciones de el sector de El Paso Dentro de Nuevo Mexico. Las acciones propuestas incluyen construcción de caminos de patrulla, barreras permanentes para peatones, barreras permanentes para vehículos, sistemas de vigilancia de video y estructura de alumbrado.</p>	<p>do permanente.</p> <p>El area de estudio para estos PEA se define como todas las instalaciones de el sector de El Paso en el area de operaciones al norte de la frontera entre E.U. - Mexico tan lejos al norte como la carretera 9 de Nuevo Mexico y al sur de 3 millas de la frontera internacional de las condados de Dona Ana, Luna, e Hidalgo. Para propósitos de este PEA, todos los proyectos TI propuestos están localizados al sur de la carretera 9 de Nuevo Mexico. El borrador de PEA estará disponible para ser revisado en la Biblioteca pública de El Paso - Richard Branigan, en la Biblioteca Thomas Branigan Memorial en Las Cruces y en la Biblioteca Marshall Memorial en Deming. Y en la Biblioteca Lordburg-Hidalgo. Los documentos también estarán disponibles en http://www.usace.army.mil.</p> <p>Para información adicional o para proporcionar comentarios, favor de contactar al Sr. Charles H. McGregor, Jr., U.S. Army Corps of Engineers, Branch de Recursos Ambientales, P.O. Box 17300, Fort Worth, Texas 76102 (817) 551-5399</p> <p>SPECIAL BOARD MEETING DEMING PUBLIC SCHOOLS DEMING, NEW MEXICO</p> <p>Publication of 10-15-1 NMSA, 1978 and an amended 1989, notice is hereby published.</p> <p>CARPENTER, CONCRETE MASON & FRAMER</p> <p>Carpenter, concrete mason, and frames wanted. Aggressive Caribed, NV firm needs the previous trades ASAP. Willing to pay competitive wages. Multiple projects ongoing. Please send resume to: Carpenter P.O. Box 1629 Box 17 Clo Corners-Angus Caribed, NM 88221-1629</p>
<p>Professional Help 234</p>	<p>Professional Help 234</p>	<p>FINANCE DIR</p> <p>The Texas-New Mexico Newspaper Partnership Director to manage the financial and accounting of daily newspapers, a twice-weekly, and various other. This position reports to the Las Cruces Sun-News.</p> <p>Qualified candidates must have experience in managing a newspaper business. Successful candidate needs to have a proven record, excellent strategic planning, communication, and teamwork skills, and be a team player. Willing to</p>

Exhibit 5. Affidavit of Publication – Las Cruces Sun News

PROOF OF PUBLICATION

Lou Hendren, being duly sworn, deposes and says that he is the Classified Manager of the Las Cruces Sun-News, a newspaper published daily in the county of Dona Ana, State of New Mexico; that the notice 36091 per clipping attached was published once a week/day in regular and entire issue of said newspaper and not in any supplement thereof for 1 consecutive week(s) (day(s)), the first publication was in the issue dated April 27, 2006 and the last publication was April 27, 2006.

Deponent further states this newspaper is duly qualified to publish legal notice or advertisements within the meaning of Sec. Chapter 167, Laws of 1937.

Signed [Signature] Classified Manager Official Position

STATE OF NEW MEXICO ss. County of Dona Ana

Subscribed and sworn before me this 17th day of May 2006

[Signature] Notary Public in and for Dona Ana County, New Mexico Oct 7, 2009 My Term Expires

NOTICE OF AVAILABILITY PROGRAMMATIC ENVIRONMENTAL ASSESSMENT For Proposed Tactical Infrastructure Projects Within the El Paso Sector Office of Border Patrol: Dona Ana, Luna, and Hidalgo Counties, New Mexico

include the construction of lighted roads, drug snuff, permanent pedestrian barriers, permanent vehicle barriers, remote video surveillance systems, and permanent lighting structures. The study area for this PEA is defined as all El Paso Sector stations' area of operations north of the U.S.-Mexico border on or north of New Mexico Highway 7, but no less than 3 miles north of the international border in Dona Ana, Luna, and Hidalgo counties. For the purpose of this PEA, all proposed TI projects are located south of New Mexico Highway 7. The draft PEA will be available for review at the El Paso Public Library - Richard Connor Branch, the Thomas Doniphan Memorial Library in Las Cruces, the Marshall Memorial Library in Lordsburg, and the Lucifern-Hidalgo Library and is also available at http://caic.evl.usace.army.mil. For additional information or to provide comments, please contact Mr. Charles H. McGregor, Jr., U.S. Army Corps of Engineers, Environmental Resources Branch, P.O. Box 17388, Fort Worth, Texas 76152-0388 or by FAX at (817) 888-6499. PUB NO: 36091 PUB DATE: April 27, 2006

1000328158

Exhibit 6. Notice of Availability of the final PEA.

NOTICE OF AVAILABILITY

**PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
For Proposed Tactical Infrastructure Projects
Within the El Paso Sector
Office of Border Patrol
Dona Ana, Luna, and Hidalgo Counties, New Mexico**

The public is hereby notified of the availability of the final Programmatic Environmental Assessment (PEA) for the construction, use, and maintenance of Tactical Infrastructure (TI) along the U.S.-Mexico Border within the El Paso Sector. This PEA will address TI proposed for El Paso Sector stations within New Mexico. The proposed actions include the construction of patrol roads, drag roads, permanent pedestrian barriers, permanent vehicle barriers, remote video surveillance systems, and permanent lighting structures.

The study area for this PEA is defined as all El Paso Sector stations' area of operations north of the U.S.-Mexico border as far north as New Mexico Highway 9, but no less than 3 miles north of the international border in Dona Ana, Luna, and Hidalgo counties. For the purpose of this PEA, all proposed TI projects are located south of New Mexico Highway 9. The final PEA will be available for review at the El Paso Public Library - Richard Burges Branch, the Thomas Branigan Memorial Library in Las Cruces, the Marshall Memorial Library in Deming, and the Lordsburg-Hidalgo Library and is also available at <http://aerc.swf.usace.army.mil>.

For additional information, please contact Mr. Charles H. McGregor, Jr., U.S. Army Corps of Engineers, Environmental Resources Branch, P.O. Box 17300, Fort Worth, Texas 76102-0300 or by FAX at (817) 886-6499.

SECTION 7.0
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7.0 REFERENCES

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SECTION 8.0
LIST OF PREPARERS

8.0 LIST OF PREPARERS

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

NAME	AGENCY/ ORGANIZATION	DISCIPLINE/EXPERTISE	EXPERIENCE	ROLE IN PREPARING EA
Kevin Feeney	Customs and Border Protection	Environmental Planning	22 years, NEPA studies for Federal Projects	EA Review
Mark Gable	Customs and Border Protection	NEPA/DHS PM and Regional Environmental Officer	25 years Environmental Management and Review	EA review
Nancy Parrish	USACE, Fort Worth District, AERC	Archaeology	10 years professional archaeologist/cultural resource manager	Cultural resources manager and cultural resources review
Charles McGregor	USACE, Ft. Worth District, AERC	NEPA	10 years Environmental Management and NEPA Studies	Project manager, EA review and coordination
Suna Adam Knaus	Gulf South Research Corporation	Forestry/Wildlife	17 years natural resources	EA review
Chris Ingram	Gulf South Research Corporation	Biology/Ecology	25 years EA/EIS studies	EA review
Eric Webb, Ph.D.	Gulf South Research Corporation	Ecology/Wetlands	15 years natural resources and NEPA studies	EA review and Project Manager
Maria Bernard Reid	Gulf South Research Corporation	Environmental Studies	4 years NEPA and natural resources studies	Project Manager
John Mire	Gulf South Research Corporation	Natural Resources	11 years NEPA and natural resources studies	EA preparation (geology, soils and prime farmlands, air quality, and noise)
Carl Welch	Gulf South Research Corporation	Archaeology/Anthropology	5 years professional archeologist/cultural resources	EA preparation (cultural resources and socioeconomics)
David Alford	Gulf South Research Corporation	GIS/graphics	5 years GIS/graphics experience	GIS/graphics
Michael Hodson	Gulf South Research Corporation	Community Ecology	2 years NEPA and natural resources	EA preparation (land use, vegetation communities, non-native and invasive plants, unique and sensitive areas, aesthetics, water resources)
Greg Lacy	Gulf South Research Corporation	Wildlife Biology	10 years NEPA and natural resources	EA preparation (wildlife resources and protected species and critical habitat)

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SECTION 9.0
ACRONYMS



9.0 ACRONYMS

ACHP	Advisory Council on Historic Preservation
AHPA	Archeological and Historical Preservation Act
ACEC	Area of Critical Concern
AO	Area of Operations
APE	Area of Potential Effect
AEFSO	Arizona Ecological Field Service Office
BACM	Best Available Control Measures
BEA	Bureau of Economic Analysis
BLM	Bureau of Land Management
BMP	Best Management Practices
CAA	Clean Air Act
CBP	Customs and Border Protection
CEQ	Council on Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
CNF	Coronado National Forest
CWA	Clean Water Act
dBA	A Weighted Decibel
DHS	Department of Homeland Security
DNL	Day-night Average Sound Level
DOI	Department of the Interior
E.O.	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FPPA	Farmland Protection Policy Act
FY	Fiscal Year
GAP	Gap Analysis Program
IA	Illegal Alien
IIRIRA	Illegal Immigration Reform and Immigrant Responsibility Act
INA	Immigration and Nationality Act
INS	Immigration and Naturalization Service
JTF-6	Joint Task Force 6
JTF-N	Joint Task Force North
MOA	Memorandum of Agreement
NAAQS	National Ambient Air Quality Standards
NAFTA	North American Free Trade Agreement
NAGPRA	Native American Graves Protection and Repatriation Act
NEAPS	Natural Events Action Plan
NEPA	National Environmental Policy Act
NHPA	National Historical Preservation Act
NM 9	New Mexico Highway 9
NMAAQS	New Mexico Ambient Air Quality Standards
NMED	New Mexico Environmental Department
NMDGF	New Mexico Department of Game and Fish
NMDOT	New Mexico Department of Transportation
NMSHPO	New Mexico State Historic Preservation Officer

NOA	Notice of Availability
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWP	Nationwide Permits
OBP	Office of Border Patrol
PCPI	Per Capita Personal Income
PEA	Programmatic Environmental Assessment
PEIS	Programmatic Environmental Impact Statement
POE	Port of Entry
PVB	Permanent Vehicle Barriers
ROI	Region of Influence
ROW	Right-of-way
RVSS	Remote Video Surveillance System
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SWPPP	Storm Water Pollution Prevention Plan
THPO	Tribal Historic Preservation Officer
TI	Tactical Infrastructure
TPI	Total Personal Income
U.S.	United States
USIBWC	U.S. Section of International Boundary Water Commission
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WCA	Wildlife Conservation Act
WQCC	Water Quality Control Commission
WUS	Waters of the U.S.

APPENDIX A
LIST OF SOIL TYPES AND PRIME FARMLANDS IN STUDY CORRIDOR

Soils found Within Major soil Associations Within the Study Area

Hondale-Mimbres-Bluepoint association	
NAME	STATION
Hondale-Verhalen association	Deming
Lehmans-Lithic Haplargids complex	Deming
Lithic Haplargids-Rock outcrop association	Deming
Nickel-Upton association	Deming
Stellar-Mohave association	Deming
Stellar-Verhalen-Mimbres association	Deming
Tres Hermanos-Upton complex	Deming
Akela very gravelly loam	Deming
Berino and Mohave soils	Deming
Eba very gravelly clay loam	Deming
Hondale-Mimbres complex	Deming
Lehmans very rocky loam	Deming
Lehmans extremely rocky loam	Deming
Mimbres and Verhalen soils	Deming
Mohave sandy clay loam	Deming
Nickel very gravelly sandy loam	Deming
Nickel-Tres Hermanos complex	Deming
Rock land	Deming
Rough broken and Rock land	Deming
Stellar silty clay loam	Deming
Stony land	Deming
Tres Hermanos gravelly loam	Deming
Turney-Dona Ana association	Deming
Upton gravelly sandy loam,	Deming

Pintura-Bernino-Simona	
NAME	STATION
Mohave sandy loam, 0 to 1 percent slopes	Deming
Sonoita gravelly sandy loam	Deming
Verhalen silty clay loam, alkali	Deming
Hondale-Verhalen association, 0 to 3 percent slopes	Deming
Stellar-Mohave association, 0 to 5 percent slopes	Deming
Tres Hermanos-Upton complex, 0 to 5 percent slopes	Deming
Akela very gravelly loam, 0 to 10 percent slopes	Deming
Akela very gravelly loam, 10 to 25 percent slopes	Deming
Dona Ana sandy loam	Deming
Dona Ana sandy clay loam	Deming
Hondale loam	Deming
Hondale soils, strongly alkali	Deming
Jal fine sandy loam	Deming
Maricopa sandy loam	Deming
Mimbres silty clay loam, alkali	Deming
Mimbres and Verhalen soils	Deming
Mohave sandy clay loam, 0 to 3 percent slopes	Deming
Nickel-Tres Hermanos complex	Deming

Pintura-Berino complex, eroded	Deming
Sonoita gravelly sandy loam	Deming
Stellar silty clay loam	Deming
Stellar silty clay loam, 0 to 1 percent slopes	Deming
Tres Hermanos gravelly loam, 1 to 5 percent slopes	Deming
Upton gravelly sandy loam, 3 to 10 percent slopes	Deming
Verhalen silty clay loam	Deming

Mohave-Stellar association	
NAME	STATION
Dune land-Pintura complex	Deming
Simona loamy sand, 0 to 5 percent slopes	Deming
Akela very gravelly loam, 0 to 10 percent slopes	Deming
Lehmans extremely rocky loam, 10 to 25 percent slope	Deming
Pintura-Berino complex, eroded	Deming
Sonoita gravelly sandy loam	Deming

Nickel-Upton-Tres Hermanos association	
NAME	STATION
Gila loam	Deming
Akela very gravelly loam, 0 to 10 percent slopes	Deming
Bluepoint loamy sand, 0 to 3 percent slopes	Deming
Bluepoint-Onite association	Deming
Dona Ana sandy loam	Deming
Hondale loam	Deming
Hondale soils, strongly alkali	Deming
Hondale soils, eroded	Deming
Hondale-Mimbres complex	Deming
Hondale-Bluepoint association	Deming
Maricopa sandy loam	Deming
Mimbres loam	Deming
Mimbres silty clay loam, alkali	Deming
Pintura-Berino complex, eroded	Deming
Water	Deming
Yturbide loamy sandy	Deming

Rough broken land-Rock Land-Lehmans association	
NAME	STATION
Mimbres-Arizo-Riverwash association, 0 to 5 percent	Deming
Mimbres soils	Deming
Lithic Haplargids-Rock outcrop association, 15 to 75	Deming
Nickel-Upton association, 2 to 15 percent slopes	Deming
Stellar-Mohave association, 0 to 5 percent slopes	Deming
Tres Hermanos-Lehmans association, 1 to 15 percent s	Deming
Eba very gravelly clay loam, 0 to 10 percent slopes	Deming
Lehmans very rocky loam, 0 to 10 percent slopes	Deming
Lehmans extremely rocky loam, 10 to 25 percent slope	Deming
Lozier extremely rocky loam, 0 to 10 percent slopes	Deming

Mimbres and Verhalen soils	Deming
Mohave sandy clay loam, 0 to 3 percent slopes	Deming
Nickel very gravelly sandy loam, 3 to 9 percent sloop	Deming
Rock land	Deming
Rough broken and Rock land	Deming
Sonoita gravelly sandy loam	Deming
Stellar silty clay loam	Deming
Turney-Dona Ana association	Deming
Upton gravelly sandy loam, 3 to 10 percent slopes	Deming

Eba-Cloverdale-Eicks association	
NAME	STATION
Lithic Haplargids-Rock outcrop association, 15 to 75	Lordsburg
Stellar-Verhalen-Mimbres association, 0 to 2 percent	Lordsburg
Berino loamy sand, hummocky	Lordsburg
Berino sandy loam	Lordsburg
Eba very gravelly loam, 1 to 15 percent slopes	Lordsburg
Forrest gravelly loam	Lordsburg
Gila sandy loam	Lordsburg
Glendale-Arizo complex	Lordsburg
Graham rocky clay loam, 1 to 9 percent slopes	Lordsburg
Hondale soils	Lordsburg
Jal loam	Lordsburg
Lehmans extremely rocky loam, 10 to 25 percent slope	Lordsburg
Lehmans-Nickel association, 1 to 9 percent slopes	Lordsburg
Mimbres and Glendale silty clay loams	Lordsburg
Mohave sandy clay loam, 0 to 5 percent slopes	Lordsburg
Nickel gravelly sandy loam, 3 to 9 percent slopes	Lordsburg
Nickel-Turney association, 0 to 5 percent slopes	Lordsburg
Rock land	Lordsburg
Rough broken land and Rock land	Lordsburg
Stellar sandy clay loam	Lordsburg
Terino-Turney association	Lordsburg
Tres Hermanos gravelly clay loam	Lordsburg
Ubar soils	Lordsburg
Upton gravelly loam, 1 to 5 percent slopes	Lordsburg
Verhalen silty clay loam	Lordsburg
Verhalen silty clay loam, alkali	Lordsburg
Yturbide gravelly loamy sand	Lordsburg

Mohave-Stellar-Forest association	
NAME	STATION
Hondale-Verhalen association, 0 to 3 percent slopes	Lordsburg
Forrest-Pinaleno association	Lordsburg
Hap-Yturbide association, 1 to 9 percent slopes	Lordsburg
Pinaleno-Mimbres association	Lordsburg
Riverwash	Lordsburg
Berino loamy sand, hummocky	Lordsburg
Berino sandy loam	Lordsburg
Cloverdale stony clay loam, 3 to 15 percent slopes	Lordsburg
Eba very gravelly loam, 1 to 15 percent slopes	Lordsburg

Eba-Nickel complex, 10 to 60 percent slopes	Lordsburg
Forrest gravelly loam	Lordsburg
Forrest-Stellar association	Lordsburg
Frye sandy loam, hummocky	Lordsburg
Frye loam	Lordsburg
Gila sandy loam	Lordsburg
Gila loam	Lordsburg
Glendale-Arizo complex	Lordsburg
Graham rocky clay loam, 1 to 9 percent slopes	Lordsburg
Graham extremely rocky clay loam, 0 to 3 percent slo	Lordsburg
Graham extremely rocky clay loam, 10 to 45 percent s	Lordsburg
Hondale soils	Lordsburg
Hondale complex	Lordsburg
Jal loam	Lordsburg
Lehmans extremely rocky loam, 10 to 25 percent slope	Lordsburg
Lehmans-Nickel association, 1 to 9 percent slopes	Lordsburg
Maricopa loamy sand	Lordsburg
Mimbres and Glendale loams	Lordsburg
Mimbres and Glendale silty clay loams	Lordsburg
Mimbres and Glendale silty clay loams, alkali	Lordsburg
Mohave sandy clay loam, 0 to 1 percent slopes	Lordsburg
Mohave sandy clay loam, 1 to 3 percent slopes	Lordsburg
Mohave sandy clay loam, 0 to 5 percent slopes	Lordsburg
Nickel gravelly sandy loam, 3 to 9 percent slopes	Lordsburg
Nickel gravelly loam, 1 to 5 percent slopes	Lordsburg
Nickel-Turney association, 0 to 5 percent slopes	Lordsburg
Nickel-Turney association, 0 to 5 percent slopes	Lordsburg
Pima-Hawkeye complex	Lordsburg
Pintura-Berino complex, eroded	Lordsburg
Rock land	Lordsburg
Rock land	Lordsburg
Rough broken land and Rock land	Lordsburg
Sonoita sandy loam	Lordsburg
Sonoita-Yturbide complex	Lordsburg
Stellar sandy clay loam	Lordsburg
Stellar silty clay loam	Lordsburg
Stellar cobbly silty clay loam	Lordsburg
Terino-Turney association	Lordsburg
Tres Hermanos gravelly clay loam	Lordsburg
Ubar silt loam	Lordsburg
Ubar soils	Lordsburg
Upton gravelly loam, 1 to 5 percent slopes	Lordsburg
Upton gravelly loam, 1 to 9 percent slopes	Lordsburg
Vekol sandy clay loam	Lordsburg
Vekol silty clay loam	Lordsburg
Vekol soils	Lordsburg
Verhalen silty clay loam	Lordsburg
Whitlock gravelly loam, 5 to 10 percent slopes	Lordsburg
Yana gravelly sandy loam, 1 to 9 percent slopes	Lordsburg
Yturbide gravelly loamy sand	Lordsburg
Yturbide soils	Lordsburg
Yturbide loamy sand, heavy subsoil variant	Lordsburg

Nickel-Upton-Tres Hermanos association	
NAME	STATION
Anamite silty clay loam	Lordsburg
Berino sandy loam	Lordsburg
Cloverdale loam, 0 to 3 percent slopes	Lordsburg
Cloverdale stony clay loam, 3 to 15 percent slopes	Lordsburg
Cloverdale-Stellar association, 0 to 3 percent slope	Lordsburg
Eba very gravelly loam, 1 to 15 percent slopes	Lordsburg
Eba-Nickel complex, 10 to 60 percent slopes	Lordsburg
Eicks loam	Lordsburg
Frye loam	Lordsburg
Glendale-Arizo complex	Lordsburg
Mohave sandy clay loam, 0 to 5 percent slopes	Lordsburg
Pima-Hawkeye complex	Lordsburg
Rock land	Lordsburg
Yturbide soils	Lordsburg
Yturbide loamy sand, heavy subsoil variant	Lordsburg

Hondale-Playas association	
NAME	STATION
Playas	Lordsburg
Stellar-Verhalen-Mimbres association, 0 to 2 percent	Lordsburg
Berino loamy sand, hummocky	Lordsburg
Berino sandy loam	Lordsburg
Hondale silt loam, strongly alkali	Lordsburg
Hondale soils	Lordsburg
Hondale complex	Lordsburg
Jal loam	Lordsburg
Lehmans extremely rocky loam, 10 to 25 percent slope	Lordsburg
Mimbres and Glendale silty clay loams	Lordsburg
Mimbres and Glendale silty clay loams, alkali	Lordsburg
Mohave sandy clay loam, 0 to 1 percent slopes	Lordsburg
Mohave sandy clay loam, 0 to 5 percent slopes	Lordsburg
Nickel gravelly sandy loam, 3 to 9 percent slopes	Lordsburg
Nickel gravelly loam, 1 to 5 percent slopes	Lordsburg
Nickel-Turney association, 0 to 5 percent slopes	Lordsburg
Rock land	Lordsburg
Rough broken land and Rock land	Lordsburg
Sonoita sandy loam	Lordsburg
Sonoita-Yturbide complex	Lordsburg
Stellar sandy clay loam	Lordsburg
Terino-Turney association	Lordsburg
Ubar silt loam	Lordsburg
Ubar soils	Lordsburg
Upton gravelly loam, 1 to 5 percent slopes	Lordsburg
Upton gravelly loam, 1 to 9 percent slopes	Lordsburg
Verhalen silty clay loam	Lordsburg
Verhalen silty clay loam, alkali	Lordsburg

Yturbide gravelly loamy sand	Lordsburg
Yturbide soils	Lordsburg
Yturbide loamy sand, heavy subsoil variant	Lordsburg

Rough broken land-Rock Land-Lehmans association	
NAME	STATION
Tres Hermanos-Lehmans association, 1 to 15 percent s	Lordsburg
Forrest loam	Lordsburg
Nickel-Upton association, 2 to 15 percent slopes	Lordsburg
Berino sandy loam	Lordsburg
Cloverdale loam, 0 to 3 percent slopes	Lordsburg
Cloverdale stony clay loam, 3 to 15 percent slopes	Lordsburg
Cloverdale-Stellar association, 0 to 3 percent slope	Lordsburg
Eba very gravelly loam, 1 to 15 percent slopes	Lordsburg
Eba-Nickel complex, 10 to 60 percent slopes	Lordsburg
Forrest gravelly loam	Lordsburg
Graham rocky clay loam, 1 to 9 percent slopes	Lordsburg
Graham extremely rocky clay loam, 0 to 3 percent slo	Lordsburg
Jal loam	Lordsburg
Lehmans extremely rocky loam, 10 to 25 percent slope	Lordsburg
Lehmans-Nickel association, 1 to 9 percent slopes	Lordsburg
Mimbres and Glendale silty clay loams	Lordsburg
Mohave sandy clay loam, 0 to 5 percent slopes	Lordsburg
Nickel gravelly sandy loam, 3 to 9 percent slopes	Lordsburg
Nickel gravelly loam, 1 to 5 percent slopes	Lordsburg
Pima-Hawkeye complex	Lordsburg
Rock land	Lordsburg
Rough broken land and Rock land	Lordsburg
Sonoita-Yturbide complex	Lordsburg
Stellar sandy clay loam	Lordsburg
Stellar silty clay loam	Lordsburg
Stellar cobbly silty clay loam	Lordsburg
Tres Hermanos gravelly clay loam	Lordsburg
Upton gravelly loam, 1 to 5 percent slopes	Lordsburg
Upton gravelly loam, 1 to 9 percent slopes	Lordsburg
Vekol silty clay loam	Lordsburg
Verhalen silty clay loam	Lordsburg
Yturbide gravelly loamy sand	Lordsburg
Yturbide soils	Lordsburg

Haplargids-Torripsamments

NAME	STATION
Akela-Rock outcrop complex	Santa Teresa
Berino-Pintura complex	Santa Teresa
Minlith-Rock outcrop association	Santa Teresa
Rock outcrop-Torriorthents association	Santa Teresa

Pintura-Wink association	
NAME	STATION

Mimbres silty clay loam	Santa Teresa
Nickel-Upton association	Santa Teresa
Onite-Pajarito association	Santa Teresa
Rock outcrop-Lozier association	Santa Teresa
Aftaden-Rock outcrop association	Santa Teresa
Akela-Rock outcrop complex	Santa Teresa
Anthony-Vinton fine sandy loams	Santa Teresa
Bluepoint loamy sand, 1 to 5 percent slop	Santa Teresa
Bluepoint loamy sand, 5 to 15 percent slo	Santa Teresa
Bluepoint-Caliza-Yturbide complex	Santa Teresa
Dumps	Santa Teresa
Pajarito fine sandy loam	Santa Teresa
Pajarito-Pintura complex	Santa Teresa
Riverwash	Santa Teresa
Rock outcrop-Torriorrhents association	Santa Teresa
Simona-Harrisburg association	Santa Teresa
Tencee-Upton association	Santa Teresa
Wink-Harrisburg association	Santa Teresa
Wink-Pintura complex	Santa Teresa

Alkela-Rock outcrop Aftaden association	
NAME	STATION
Aftaden-Rock outcrop association	Santa Teresa
Rock outcrop-Torriorrhents association	Santa Teresa

Glendale-Harkey association	
NAME	STATION
Belen loam	Santa Teresa
Harkey fine sandy loam	Santa Teresa
Harkey loam, saline-alkali	Santa Teresa
Harkey clay loam	Santa Teresa
Agua loam	Santa Teresa
Agua variant and Belen variant soils	Santa Teresa
Anapra silt loam	Santa Teresa
Anapra clay loam	Santa Teresa
Anthony-Vinton fine sandy loams	Santa Teresa
Anthony-Vinton loams	Santa Teresa
Anthony-Vinton clay loams	Santa Teresa
Armijo clay loam	Santa Teresa
Belen clay loam	Santa Teresa
Bluepoint loamy sand, 1 to 5 percent slop	Santa Teresa
Bluepoint loamy sand, 5 to 15 percent slo	Santa Teresa
Brazito loamy fine sand	Santa Teresa
Brazito very fine sandy loam, thick surfa	Santa Teresa
Dumps	Santa Teresa
Glendale loam	Santa Teresa
Glendale clay loam	Santa Teresa
Harkey loam	Santa Teresa
Pajarito fine sandy loam	Santa Teresa

Riverwash	Santa Teresa
Rock outcrop-Torriorthents association	Santa Teresa

APPENDIX B
NEW MEXICO SPECIES OF CONCERN & NON-NATIVE PLANTS
& NOXIOUS WEEDS LISTS

New Mexico Species of Concern - Luna County

Common Name.....	SCIENTIFIC NAME.....	FWS..	NM...	FS.	BLM..	NM...	FWS.
		ESA	WCA	R3	NM	Sen	SOC
Longfin Dace	Agosia chrysoaster	-	-	-	S	-	-
Rio Grande Sucker	Catostomus plebeius	-	-	S	-	-	S
Great Plains Narrowmouth Toad	Gastrophryne olivacea	-	(E)	S	-	-	-
Chiricahua Leopard Frog	Rana chiricahuensis	T	-	S	-	S	-
Texas Horned Lizard	Phrynosoma cornutum	-	(E)	S	S	-	-
Reticulate Gila Monster	Heloderma suspectum suspectum	-	(E)	S	-	-	-
Desert Kingsnake	Lampropeltis getula splendida	-	-	S	-	-	-
White-faced Ibis (no data)	Plegadis chihi	-	-	S	S	-	-
Bald Eagle	Haliaeetus leucocephalus	AD, T mg	(T)	S	-	-	-
Northern Gray Hawk	Asturina nitida maximus	-	(E)	S	S	-	-
Common Black-Hawk	Buteogallus anthracinus anthracinus	-	(T)	S	-	-	S
Swainson's Hawk	Buteo swainsoni	-	-	S	-	-	-
Ferruginous Hawk	Buteo regalis	-	(E)	S	S	-	-
Aplomado Falcon	Falco femoralis septentrionalis	E mg	(E)	S	-	-	-
American Peregrine Falcon	Falco peregrinus anatum	DM m	(E)	S	-	-	S
White-tailed Kite (no data)	Elanus caeruleus majusculus	-	-	S	-	-	-
Mountain Plover	Charadrius montanus	PT	-	S	-	S	-
Black-necked Stilt (no data)	Himantopus mexicanus	-	-	S	-	-	-
Long-billed Curlew	Numenius americanus americanus	-	-	S	-	-	-
Common Ground-dove	Columbina passerina pallescens	-	(E)	S	-	-	-
Burrowing Owl	Athene cunicularia hypugaea	-	-	S	-	S	S
Mexican Spotted Owl	Strix occidentalis lucida	T hmg	(T)	S	-	S	-
Lucifer Hummingbird (no data)	Calothorax lucifer	-	(E)	S	-	-	-
Southwestern Willow Flycatcher	Empidonax traillii extimus	E h	(E)	S	-	-	-
Loggerhead Shrike	Lanius ludovicianus	-	-	S	-	S	-
Bell's Vireo	Vireo bellii	-	(E)	S	-	-	S
Gray Vireo	Vireo vicinior	-	(T)	S	-	-	-
Gray Catbird	Dumetella carolinensis ruficrissa	-	-	S	-	-	-
American Redstart	Setophaga ruticilla tricolora	-	-	S	-	-	-
Baird's Sparrow	Ammodramus bairdii	-	(E)	S	S	-	S
Long-legged Myotis Bat	Myotis volans interior	-	-	-	S	S	-
Fringed Myotis Bat	Myotis thysanodes thysanodes	-	-	-	S	S	-
Pale Townsend's Big-eared Bat	Plecotus townsendii pallescens	-	-	-	S	S	S
Desert Pocket Gopher	Geomys arenarius arenarius	-	-	-	S	-	S
Ringtail	Bassariscus astutus	-	-	S	-	S	-
Western Spotted Skunk	Spilogale gracilis	-	-	-	-	S	-
Hooded Skunk	Mephitis macroura milleri	-	-	-	-	S	-
Chihuahuan Pronghorn	Antilocapra americana mexicana	-	-	S	-	M	-
Cook's Peak Woodlandsnail	Ashmunella macromphala	-	(T)	-	S	n	S
Fairy Shrimp	Streptocephalus moorei	-	-	-	-	S	-
SW Pearly Checkerspot Butterfly	Charidryas acastus sabina	-	-	-	-	-	S

NATIVE SPECIES APPARENTLY NO LONGER OCCURRING IN LUNA COUNTY

Beautiful Shiner	Cyprinella formosa mearnsi (extirpated from NM)
Chihuahua Chub	Gila nigrescens
Falomas Pupfish	Cyprinodon sp (extirpated from NM)
Arizona Black-tailed Prairie Dog	Cynomys ludovicianus arizonensis
Mexican Gray Wolf	Canis lupus baileyi
Desert Bighorn Sheep	Ovis canadensis mexicana
Florida Mountainsnail	Oreohelix florida (extinct, NM endemic)

New Mexico Species of Concern - Dona Ana County Page 1 of 2

Common Name.....	SCIENTIFIC NAME.....	FWS..	NM...	FS.	BLM..	NM...	FWS.
		ESA	WCA	R3	NM	Sen	SOC
Northern Leopard Frog	Rana pipiens	-	-	S	-	-	-
Bleached Earless Lizard	Holbrookia maculata ruthveni	-	-	-	-	S N	-
Texas Horned Lizard	Phrynosoma cornutum	-	-	S	S	-	-
White Sands Prairie Lizard	Sceloporus undulatus cowlesi	-	-	-	-	S N	-
Little White Whiptail	Cnemidophorus gypsi	-	-	-	-	S N	-
Desert Kingsnake	Lampropeltis getula splendida	-	-	S	-	-	-
Brown Pelican (no data)	Pelecanus occidentalis carolinensis	E	E	S	-	-	-
Neotropic Cormorant	Phalacrocorax brasilianus	-	T	S	-	-	-
American Bittern	Botaurus lentiginosus	-	-	S	-	-	-
Great Egret	Ardea alba egretta	-	-	S	-	-	-
Snowy Egret	Egretta thula brewsteri	-	-	S	-	-	-
Green Heron	Butorides virescens	-	-	S	-	-	-
Black-crowned Night-Heron	Nycticorax nycticorax hoactli	-	-	S	-	-	-
White-faced Ibis	Plegadis chihi	-	-	S	S	-	-
Osprey	Pandion haliaetus carolinensis	-	-	S	-	-	-
White-tailed Kite (no data)	Elanus caeruleus majusculus	-	-	S	-	-	-
Mississippi Kite	Ictinia mississippiensis	-	-	S	-	-	-
Bald Eagle	Haliaeetus leucocephalus	AD, T	mg	T	S	-	-
Northern Goshawk	Accipiter gentilis	-	-	S	S	S	S
Common Black-Hawk	Buteogallus anthracinus anthracinus	-	T	S	-	-	-
Swainson's Hawk	Buteo swainsoni	-	-	S	-	-	-
Ferruginous Hawk	Buteo regalis	-	-	S	S	-	-
Aplomado Falcon	Falco femoralis septentrionalis	E	mg	E	S	-	-
American Peregrine Falcon	Falco peregrinus anatum	DM	m	T	S	-	S
Sora	Porzana carolina	-	-	S	-	-	-
Whooping Crane	Grus americana	EXPN,	E	mg	E	S	-
Western Snowy Plover	Charadrius alexandrinus nivosus	-	-	S	-	-	-
Mountain Plover	Charadrius montanus	PT	-	S	-	S	-
Black-necked Stilt	Himantopus mexicanus	-	-	S	-	-	-
Long-billed Curlew	Numenius americanus americanus	-	-	S	-	-	-
Interior Least Tern	Sterna antillarum athalassos	E	mg	E	S	-	-
Black Tern	Chlidonias niger surinamensis	-	-	S	-	S	S
Common Ground-dove	Columbina passerina pallescens	-	E	S	-	-	-
Burrowing Owl	Athene cunicularia hypugaea	-	-	S	-	S	S
Mexican Spotted Owl	Strix occidentalis lucida	T	hmg	-	S	-	S
Yellow-billed Cuckoo	Coccyzus americanus occidentalis	C	-	S	-	S	-
Broad-billed Hummingbird	Cynanthus latirostris magicus	-	T	S	-	-	-
Costa's Hummingbird	Calypte costae	-	T	S	-	-	-
Belted Kingfisher	Ceryle alcyon	-	-	S	-	-	-
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	h	E	S	-	-
Loggerhead Shrike	Lanius ludovicianus	-	-	S	-	S	-
Bell's Vireo	Vireo bellii	-	T	S	-	-	S
Gray Vireo	Vireo vicinior	-	T	S	-	-	-
Gray Catbird	Dumetella carolinensis ruficrissa	-	-	S	-	-	-
American Redstart	Setophaga ruticilla tricolora	-	-	S	-	-	-
Baird's Sparrow	Ammodramus bairdii	-	T	S	S	-	S
Varied Bunting	Passerina versicolor	-	T	S	-	-	-
Western Small-footed Myotis Bat	Myotis ciliolabrum melanorhinus	-	-	-	S	S	-
Yuma Myotis Bat	Myotis yumanensis yumanensis	-	-	-	S	S	-
Occult Little Brown Myotis Bat	Myotis lucifugus occultus	-	-	S	S	S	-
Long-legged Myotis Bat	Myotis volans interior	-	-	-	S	S	-
Fringed Myotis Bat	Myotis thysanodes thysanodes	-	-	-	S	S	-

New Mexico Species of Concern - Dona Ana County Page 2 of 2

Common Name.....	SCIENTIFIC NAME.....	FWS..	NM...	FS.	BLM..	NM...	FWS.
		ESA	WCA	R3	NM	Sen	SOC
Western Red Bat	<i>Lasiurus blossevillii</i>	-	-	s	-	s	s
Eastern Red Bat	<i>Lasiurus borealis</i>	-	-	s	-	s	-
Spotted Bat	<i>Euderma maculatum</i>	-	T	s	s	-	s
Pale Townsend's Big-eared Bat	<i>Plecotus townsendii pallescens</i>	-	-	s	s	s	-
Big Free-tailed Bat	<i>Nyctinomops macrotis</i>	-	-	s	s	s	-
Organ Mountains Colorado Chipmunk	<i>Tamias quadrivittatus australis</i>	-	-	-	s	-	s
Desert Pocket Gopher	<i>Geomys arenarius arenarius</i>	-	T	-	s	-	s
Desert Pocket Gopher	<i>Geomys arenarius brevirostris</i>	-	-	-	s	-	s
Rock Pocket Mouse	<i>Chaetodipus intermedius rupestris</i>	-	-	-	-	s n	-
Pecos River Muskrat	<i>Ondatra zibethicus ripensis</i>	-	-	-	-	s	-
Red Fox	<i>Vulpes vulpes</i>	-	-	-	s	s	s
Ringtail	<i>Bassariscus astutus</i>	-	-	-	-	s	-
Western Spotted Skunk	<i>Spilogale gracilis</i>	-	-	s	-	s	-
Common Hog-nosed Skunk	<i>Conepatus mesoleucus</i>	-	-	-	-	s	-
Chihuahuan Pronghorn	<i>Antilocapra americana mexicana</i>	-	-	-	-	s	-
Desert Bighorn Sheep	<i>Ovis canadensis mexicana (endangered pops)</i>	-	E	s	-	m	-
Dona Ana Talussnail	<i>Sonorella todsoni</i>	-	T	-	s	n	s
Anthony Blister Beetle	<i>Lytta mirifica</i>	-	-	-	s	s	s
Obsolete Viceroy Butterfly	<i>Basilarchia archippus obsoleta</i>	-	-	s	-	-	s

NATIVE SPECIES APPARENTLY NO LONGER OCCURRING IN DONA ANA COUNTY

American Eel	<i>Anguilla rostrata</i>	(extirpated from NM)
Mexican Tetra	<i>Astyanax mexicanus</i>	
Rio Grande Chub	<i>Gila pandora</i>	
Rio Grande Silvery Minnow	<i>Hybognathus amarus</i>	
Rio Grande Shiner	<i>Notropis jemezianus</i>	
Rio Grande Bluntnose Shiner	<i>Notropis simus simus</i>	(extinct)
Gray Redhorse	<i>Moxostoma congestum</i>	
Flathead Catfish	<i>Pylodictis olivaris</i>	
Blue Sucker	<i>Cycleptus elongatus</i>	
Arizona Black-tailed Prairie Dog	<i>Cynomys ludovicianus arizonensis</i>	
Mexican Gray Wolf	<i>Canis lupus baileyi</i>	
Swift Fox	<i>Vulpes velox velox</i>	
Grizzly Bear	<i>Ursus arctos</i>	(extirpated from NM)
Jaguar	<i>Panthera onca arizonensis</i>	
American Bison	<i>Bos bison</i>	
NM Ramshorn Snail	<i>Pecosorbis kansasensis</i>	
Ovate Vertigo Snail	<i>Vertigo ovata</i>	

New Mexico Species of Concern - Hidalgo County Page 1 of 3

Common Name.....	SCIENTIFIC NAME.....	FWS.. ESA	NM... WCA	FS. R3	BLM.. NM	NM... Sen	FWS. SOC
Longfin Dace	Agosia chrysogaster	-	-	-	S	-	-
Roundtail Chub	Gila robusta	-	E	S	S	-	S
Spikedace	Meda fulgida	T hmg	T	S	-	-	-
Loach Minnow	Rhinichthys cobitis	T hm	T	S	-	-	-
Desert Sucker	Catostomus clarki	-	-	-	S	S	S
Sonora Sucker	Catostomus insignis	-	-	-	S	S	S
Colorado River Toad	Bufo alvarius	-	T	S	-	-	-
Chiricahua Leopard Frog	Rana chiricahuensis	T	-	S	-	S	-
Lowland Leopard Frog	Rana yavapaiensis	-	E	S	S	-	S
Texas Horned Lizard	Phrynosoma cornutum	-	-	S	S	-	-
Bunch Grass Lizard	Sceloporus slevini	-	T	S	-	-	-
Giant Spotted Whiptail	Cnemidophorus burti	-	T	S	S	-	-
Gray-checked Whiptail	Cnemidophorus dixonii	-	E	-	S	-	S
Mountain Skink	Eumeces callicephalus	-	T	S	-	-	-
Reticulate Gila Monster	Heloderma suspectum suspectum	-	E	S	-	-	-
Desert Kingsnake	Lampropeltis getula splendida	-	-	S	-	-	-
Green Rat Snake	Senticolis triaspis intermedia	-	T	S	-	-	-
Yaqui Blackhead Snake	Tantilla yaquia	-	-	-	-	S	-
Mexican Garter Snake	Thamnophis eques megalops	-	E	S	S	-	S
Narrowhead Garter Snake	Thamnophis rufipunctatus rufipunctatus	-	T	S	S	-	S
NM Ridgenose Rattlesnake	Crotalus willardi obscurus	T hmg	E	S	-	-	-
Neotropical Cormorant	Phalacrocorax brasilianus	-	T	S	-	-	-
Least Bittern	Ixobrychus exilis exilis	-	-	S	-	-	-
Snowy Egret	Egretta thula brewsteri	-	-	S	-	-	-
Green Heron	Butorides virescens	-	-	S	-	-	-
Black-crowned Night-Heron	Nycticorax nycticorax hoactli	-	-	S	-	-	-
White-tailed Kite (no data)	Elanus caeruleus majusculus	-	-	S	-	-	-
Mississippi Kite	Ictinia mississippiensis	-	-	S	-	-	-
Bald Eagle	Haliaeetus leucocephalus	T mg	T	S	-	-	-
Northern Goshawk	Accipiter gentilis	-	-	S	S	S	S
Northern Gray Hawk	Asturina nitida maximus	-	-	S	S	-	-
Common Black-Hawk	Buteogallus anthracinus anthracinus	-	T	S	-	-	S
Swainson's Hawk	Buteo swainsoni	-	-	S	-	-	-
Zone-tailed Hawk	Buteo albonotatus	-	-	S	-	-	-
Ferruginous Hawk	Buteo regalis	-	-	S	S	-	-
Aplomado Falcon	Falco femoralis septentrionalis	E mg	E	S	-	-	-
American Peregrine Falcon	Falco peregrinus anatum	DM n	T	S	-	-	S
Gould's Wild Turkey	Meleagris gallopavo mexicana	-	T	S	-	-	S
Sora	Porzana carolina	-	-	S	-	-	-
Mountain Plover	Charadrius montanus	PT	-	S	-	S	-
Upland Sandpiper	Bartramia longicauda	-	-	S	-	-	-
Long-billed Curlew	Numenius americanus americanus	-	-	S	-	-	-
Common Ground-dove	Columbina passerina pallescens	-	E	S	-	-	-
Yellow-billed Cuckoo	Coccyzus americanus occidentalis	C	-	S	-	S	-
Flammulated Owl	Otus flammeolus	-	-	S	-	-	-
Whiskered Screech Owl	Otus trichopsis asperus	-	T	-	-	-	-
Elf Owl	Micrathene whitneyi whitneyi	-	-	S	-	-	-
Burrowing Owl	Athene cunicularia hypugaea	-	-	-	S	-	S
Mexican Spotted Owl	Strix occidentalis lucida	T hmg	-	S	-	S	-
Buff-collared Nightjar	Caprimulgus ridgwayi ridgwayi	-	E	S	-	-	-
Broad-billed Hummingbird	Cynanthus latirostris magicus	-	T	S	-	-	-

Biota Information System Of New Mexico (BISON-M) April 2003- Dept. of Game & Fish,
Conservation Services Div.

New Mexico Species of Concern - Hidalgo County Page 2 of 3

Common Name.....	SCIENTIFIC NAME.....	FWS..	NM...	FS. BLM..	NM...	FWS.
		ESA	WCA	R3	NM	Sen
White-eared Hummingbird	Hylocharis leucotis borealis	-	T	s	-	-
Violet-crowned Hummingbird	Amazilia violiceps ellioti	-	T	s	-	-
Blue-throated Hummingbird	Lampornis clemenciae bessophilus	-	-	s	-	-
Lucifer Hummingbird	Calothorax lucifer	-	T	s	-	-
Costa's Hummingbird	Calypte costae	-	T	s	-	-
Elegant Trogon	Trogon elegans canescens	-	E	s	-	-
Gila Woodpecker	Melanerpes uropygialis uropygialis	-	T	s	-	-
Northern Beardless Tyrannulet	Camptostoma imberbe ridgwayi	-	E	s	-	-
Southwestern Willow Flycatcher	Empidonax traillii extimus	E h	E	s	-	-
Buff-breasted Flycatcher	Empidonax fulvifrons pygmaeus	-	-	-	-	-
Thick-billed Kingbird	Tyrannus crassirostris	-	E	s	-	-
Loggerhead Shrike	Lanius ludovicianus	-	-	-	s	s
Bell's Vireo	Vireo bellii	-	T	s	-	-
Gray Vireo	Vireo vicinior	-	T	s	-	-
Mexican Chickadee	Poecile sclateri eidos	-	-	s	-	-
Sprague's Pipit	Anthus spragueii	-	-	s	-	-
Abert's Towhee	Pipilo aberti aberti	-	T	s	-	-
Botteri's Sparrow	Aimophila botteri arizonae	-	-	-	-	s
Baird's Sparrow	Ammodramus bairdii	-	T	s	s	-
AZ Grasshopper Sparrow	Ammodramus savannarum amolegus	-	T	-	-	-
Yellow-eyed Junco	Junco phaeonotus palliatus	-	T	s	-	-
McCown's Longspur	Calcarius mccownii	-	-	s	-	-
Varied Bunting	Passerina versicolor	-	T	s	-	-
Arizona Shrew	Sorex arizonae	-	E	-	s	-
Mexican Long-tongued Bat	Choeronycteris mexicana	-	-	s	s	s
Mexican Long-nosed Bat	Leptonycteris nivalis	E mg	E	s	-	-
Lesser Long-nosed Bat	Leptonycteris curasoae yerbabuena	E m	T	s	-	-
Western Small-footed Myotis Bat	Myotis ciliolabrum melanorhinus	-	-	-	s	s
Yuma Myotis Bat	Myotis yumanensis yumanensis	-	-	-	s	s
Cave Myotis Bat	Myotis velifer	-	-	s	s	s
Long-legged Myotis Bat	Myotis volans interior	-	-	-	s	s
Fringed Myotis Bat	Myotis thysanodes thysanodes	-	-	-	s	s
Western Yellow Bat	Lasiurus xanthinus	-	T	s	-	-
Western Red Bat	Lasiurus blossevillii	-	-	s	-	s
Eastern Red Bat	Lasiurus borealis	-	-	s	-	s
Pale Townsend's Big-eared Bat	Plecotus townsendii pallescens	-	-	s	s	s
Big Free-tailed Bat	Nyctinomops macrotis	-	-	-	s	s
Greater Western Mastiff Bat	Eumops perotis californicus	-	-	-	s	s
White-sided Jack Rabbit	Lepus callotis gaillardi	-	T	s	s	-
Black-tailed Prairie Dog	Cynomys ludovicianus ludovicianus	C m	-	-	-	s
Mearns' Pocket Gopher	Thomomys bottae mearnsi	-	-	-	s	s
Southern Pocket Gopher	Thomomys umbrinus emotus	-	T	-	-	-
Yellow-nosed Cotton Rat	Sigmodon ochrognathus	-	-	-	s	-
Ringtail	Bassariscus astutus	-	-	s	-	s
White-nosed Coati	Nasua narica	-	-	s	-	s
Western Spotted Skunk	Spilogale gracilis	-	-	-	-	s
Hooded Skunk	Mephitis macroura milleri	-	-	-	-	s
Common Hog-nosed Skunk	Conepatus mesoleucus	-	-	-	-	s
Jaguar	Panthera onca arizonensis	E mg	R	s	-	s
Chihuahuan Pronghorn	Antilocapra americana mexicana	-	-	s	-	m
Desert Bighorn Sheep	Ovis canadensis mexicana (endangered pops)	-	E	s	-	m
Desert Bighorn Sheep	Ovis canadensis mexicana (hunted pop)	-	-	s	-	s m
Mexican Gray Wolf	Canis lupus baileyi	EXPN, E	-	-	-	-

Biota Information System Of New Mexico (BISON-M) April 2003- Dept. of Game & Fish,
Conservation Services Div.

New Mexico Species of Concern - Hidalgo County Page 3 of 3

Common Name.....	SCIENTIFIC NAME.....	FWS..	NM...	FS.	BLM..	NM...	FWS.
		ESA	WCA	R3	NM	Sen	SOC
Shortneck Snaggletooth Snail	<i>Gastrocopta dalliana dalliana</i>	-	E	-	-	-	S
Hacheta Grande Woodlandsnail	<i>Ashmunella hebaridi</i>	-	T	-	S	n	S
Animas Minute Moss Beetle	<i>Limnebius aridus</i>	-	-	-	S	S	S
Obsolete Viceroy Butterfly	<i>Basilarchia archippus obsoleta</i>	-	-	S	-	-	-

NATIVE SPECIES APPARENTLY NO LONGER OCCURRING IN HIDALGO COUNTY

Gila Chub	<i>Gila intermedia</i>	
Razorback Sucker	<i>Xyrauchen texanus</i>	
Arizona Black-tailed Prairie Dog	<i>Cynomys ludovicianus arizonensis</i>	
Grizzly Bear	<i>Ursus arctos</i>	(extirpated from NM)
Southwestern River Otter	<i>Lutra canadensis sonorae</i>	(extirpated from NM)
Merriam's Elk	<i>Cervus elaphus merriami</i>	(extinct)

September 20, 1999

MEMORANDUM

TO: General Public

FROM: Frank A. DuBois

SUBJECT: New Mexico Noxious Weed List

The New Mexico Department of Agriculture has selected the following plant species to be targeted as noxious weeds for control or eradication pursuant to the Noxious Weed Management Act of 1998.

New Mexico's noxious weed list is classified into three divisions: Class A, Class B, and Class C weeds, all of which are non-native to New Mexico. Class A weeds are species that currently are not present in New Mexico or have limited distribution; preventing new infestations of these species and eradicating existing infestations is the highest priority.

Class B weeds are species that are limited to portions of the state. In areas that are not infested, these species should be treated as class A weeds. In areas with severe infestations, management plans should be designed to contain the infestation and stop any further spread.

Class C weeds are species that are wide-spread in the state. Management decisions for these species should be determined at the local level based on feasibility of control and level of infestation.

This list does not include every plant species with a potential to negatively impact the state's environment and economy. Vegetation managers are also encouraged to recognize plant species listed on the federal noxious weed list or other western states' noxious weed lists as potentially having negative impacts and to manage them accordingly.

New Mexico Noxious Weed List

<u>Class A Weeds</u>	<u>Latin name</u>	<u>Origin</u>
Alfombrilla	<i>Drymaria arenarioides</i>	Mexico
Black Henbane	<i>Hyoscyamus niger</i>	Europe
Camelthorn	<i>Alhagi pseudalhagi</i>	Asia
Canada Thistle	<i>Cirsium arvense</i>	Eur asia
Dalmatian Toadflax	<i>Linaria genisitifolia</i> ssp. <i>dalmatica</i>	Europe
Diffuse Knapweed	<i>Centaurea diffusa</i>	Mediterranean
Dyer s Woad	<i>Isatis tinctoria</i>	Europe
Eurasian Watermilfoil	<i>Myriophyllum spicatum</i>	Eur asia
Hoary Cress	<i>Cardaria draba</i>	Europe
Hydrilla	<i>Hydrilla verticillata</i>	South Africa
Leafy Spurge	<i>Euphorbia esula</i>	Eur asia
Onionweed	<i>Asphodelus fistulosus</i>	Mediterranean
Perennial Pepperweed	<i>Lepidium latifolium</i>	South Europe
Purple Loosestrife	<i>Lythrum salicaria</i>	Europe
Purple Starthistle	<i>Centaurea calcitrapa</i>	Europe
Scotch Thistle	<i>Onopordum acanthium</i>	Europe
Spotted Knapweed	<i>Centaurea maculosa</i>	Eur asia
Yellow Starthistle	<i>Centaurea solstitialis</i>	Europe
Yellow Toadflax	<i>Linaria vulgaris</i>	Eur asia
 <u>Class B Weeds</u>		
African Rue	<i>Peganum harmala</i>	North Africa
Bull Thistle	<i>Cirsium vulgare</i>	Eur asia
Halogeton	<i>Halogeton glomeratus</i>	Asia
Malta Starthistle	<i>Centaurea melitensis</i>	Europe
Musk Thistle	<i>Carduus nutans</i>	South Europe
Russian Knapweed	<i>Acroptilon repens</i>	Eur asia
Poison Hemlock	<i>Conium maculatum</i> L.	Europe
Teasel	<i>Dipsacus fullonum</i>	Europe
 <u>Class C Weeds</u>		
Field Bindweed	<i>Convolvulus arvensis</i> L.	Europe
Jointed Goatgrass	<i>Aegilops cylindrica</i>	South Europe
Russian Olive	<i>Elaeagnus angustifolia</i> L.	Europe
Saltcedar	<i>Tamarix</i> sp.	Europe
Siberian Elm	<i>Ulmus pumila</i>	Europe



A Newsletter for the flora of New Mexico, from the Range Science Herbarium and Cooperative Extension Service, College of Agriculture and Home Economics, New Mexico State University.

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- Botanical Literature of Interest.....7
- What's in a Name?8

An Inventory and Analysis of the Alien Plant Flora of New Mexico

George W. Cox

Biosphere and Biosurvival, 13 Vuelta Maria, Santa Fe, NM 87501

Abstract

I summarized published information on non native vascular plants recorded as established in the wild in New Mexico. Alien plants numbered 390 species and one additional hybrid form, with 13 species being represented by two or three alien subspecies. Alien plant species comprised 1 family and species of fern, 50 families and 270 species of Dicotyledons, and 5 families and 119 species of Monocotyledons. The families with most alien species were Poaceae, with 112, Asteraceae, with 43, Brassicaceae, with 42, Fabaceae, with 22, and Chenopodiaceae, with 18. About 77.2 percent of alien species were of Eurasian origin, with 11.3 percent being from other parts of North America. Annual forbs, vines and grasses constituted 44.9 percent of the aliens, whereas trees and shrubs constituted 8.5 percent of alien species. Since publication of the first state flora, the number of alien plants has increased from 136 in 1915 to 390 in 2000. The pattern of increase has been exponential, with about 6.75 new aliens appearing per year since 1980. Many other alien plants are present in neighboring states, and the potential for additional invasions is great.

Introduction

New Mexico, with a vascular plant flora of about 3542 species in AD 2000, is experiencing invasions of alien plant species from several phytogeographic regions: the Chihuahuan and Sonoran desert regions to the south and west, the Colorado Plateau and Great Basin to the northwest, the Rocky Mountain region to the north, and the Great Plains to the east. Although New Mexico is somewhat remote from the points of introduction of alien plants from outside North America, many such species are now appearing. This review examines the known flora of alien plants in New Mexico, and traces the history of invasion from 1915, the date of publication of the first state flora, to 2000.

Methods

Information on the current presence of alien species was taken from Allred (2000), Carter (1997), and recent issues of *The New Mexico Botanist*. Data on the presence of alien plants at earlier dates were taken from Wootton and Standley (1915), Tidestrom and Kittell (1941), and Martin and Hutchins (1980/1981). Data on growth form, life history pattern, and native region were obtained from Martin and Hutchins (1980/1981), other regional floras, and the National Resource Conservation Service's Plants Database (USDA NRCS 2000). Plant nomenclature was based on Allred (2000) and Carter (1997), the latter for woody plants not included in the former. The current species total for New Mexico was obtained from the statistical summary given by Roalson and Allred (1995) plus species new to the state reported since then in *The New Mexico Botanist*.

Results

A total of 390 species plus one hybrid taxon were recognized as established aliens (Appendix I). Three additional species were characterized as cryptogenic species (Carlton 1996), that is, species of uncertain status because natural pre European invasion might have occurred or because European settlers might have introduced these species before the first studies of the flora of North America. Three species of dicots and 10 of grasses were represented by 2 or 3 subspecies. Alien species included 1 family and species of fern, 50 families and 270 species of Dicotyledons, and 5 families and 119 species of Monocotyledons. Seven families were represented by more than 10 species: Poaceae (112), Asteraceae (43), Brassicaceae (42), Fabaceae (22), Chenopodiaceae (18), Caryophyllaceae (12), and Polygonaceae (12).

(Continued on page 2, Aliens)

Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.

— **Linnaeus**



(Aliens, Continued from page 1)

Since the total number of species known in New Mexico is now about 3542, alien species make up about 11.0 percent of the state's flora.

Species classified as cryptogenic included *Amaranthus hybridus* L., Slim Amaranth; *Limosella aquatica* L., Mudwort; and *Xanthium strumarium* var. *canadense* (Mill.) Torr., Cocklebur. These species, all widespread in Europe, were well established in eastern North America in the early 18th Century, and might have reached North America by natural or human assisted dispersal.

Several species occasionally considered alien are omitted from the list because of recent analyses that establish them as native. These include several taxa of *Corispermum*, which Martin and Hutchins (1980/81) characterize as alien. Mosyakin (1996) has revised this group and determined our species to be native to North America. New Mexican varieties of *Oxalis corniculata*, some North American forms of which are European exotics, are natives (Turner 1994). The New Mexican subspecies of *Calystegia sepium*, listed in some floras as a European import, is likewise native to western North America (Austin 1990).

The number of species of alien plants has increased by a factor of 2.88 fold since publication of the state's first flora (Wooton and Standley 1915)(Table 1). In 1915, only 136 species of 32 families had been recorded, corresponding to 4.6 percent of the flora then known (2975 species), or 4.1 percent of the flora known today. By 1942, no additional families of aliens had appeared, but the total number of alien species had increased to 181, a rate of increase of 1.67 species per year. Between 1942 and 1980, aliens belonging to 14 additional families had appeared, with total species increasing to 255, a rate of increase of 1.95 per year. Since 1980, 10 new families of aliens have appeared and 135 additional species have been recognized, a rate of increase of 6.75 per year. The number of alien species established in New Mexico has thus been increasing exponentially.

Most of the 24 families of aliens appearing since 1942 are now represented by only 1-2 species. Altogether, these families have contributed only 43 species to the current alien list. Two families however, have contributed more substantially; 5 species of the Rosaceae, all native to Europe or Eurasia, and 4 species of the Ranunculaceae, all from the Old World, have appeared in New Mexico's alien flora since 1942.

Since 1915, the major families increasing most in relative number of species were the Brassicaceae (3.82 fold increase), Poaceae (3.61 fold increase), and Asteraceae (2.87 fold increase). These three families have contributed 55.1 percent(140 species) of the increase in number of alien species since 1915.

Annual forbs were the most frequent life form group among aliens, followed by perennial forbs, annual grasses and perennial grasses (Table 2). Annuals of all groups make up 44.9 percent of the present alien flora. Graminoids constitute 29.2 percent of the total alien flora.

From 1915 to 2000, the groups increasing most in relative species number were trees, which increased 6.67 fold, and shrubs, which increased 4.33 fold. Graminoids as a whole increased 3.56 fold, with annual grasses increasing 4.20 fold and perennial grasses 3.00 fold. Forbs increased only 2.44 fold.

Forbs and vines with variable life history patterns (i.e., annual/biennial, annual/perennial, or biennial/perennial) almost doubled in numbers between 1980 and 2000. The total number of vines and woody plants more than doubled during this same period.

About 77.2 percent of present alien plants are native to temperate Eurasia (Table 3). An additional 11.3 percent are native to the United States, Canada, and Mexico. The representation of temperate Eurasian species has declined somewhat since 1915, when it was about 83.8 percent. Species native to Africa and the Old World trop-

ics have increased 6.33 fold; 13 of the 19 species from these areas are grasses. Since 1980, the numbers of alien species from other parts of North America have increased 2.44 fold.

Discussion

The alien component of the New Mexico flora, 11.0 percent, is only slightly greater than that estimated for the coterminous United States, 10.8 percent (Vitousek et al. 1997). The number of established alien plants in the coterminous United States, however, is estimated to be about 2,100 species. This number, together with the fact that northern Mexico and states adjacent to New Mexico possess many alien species that have not yet invaded New Mexico indicates that many additional invasions are certain to occur. In 1990, for example, Texas was estimated to possess 492 established alien plants, which equaled 9.9 percent of that state's flora (Vitousek et al. 1997). Colorado, with a total flora of 3088 taxa (species, subspecies, and varieties), has 492 alien taxa, which equal 15.9 percent of the flora (Weber and Wittman 1992). In both states, the absolute number of alien species is more than 100 greater than the number established in New Mexico. No statewide analysis is available for Arizona, but California has about 1045 established alien plants, which make up 17.7 percent of the state flora (Randall et al. 1998). Many of California's alien plants reach Arizona, so that Arizona probably has a substantially larger number of alien plant species than New Mexico.

The native regions of alien plants in New Mexico differ somewhat from those of eastern North America. In the central and northern eastern United States and adjacent Canada, 87.9 percent of alien plants are of Eurasian origin, with only 4.3 percent coming from other parts of North America (Foy et al. 1983). In New Mexico, the representation of Eurasian species is 10.4 percent less, but the importance of exotics from elsewhere in North America is greater. This reflects the fact that New Mexico is located central to several diverse native floras, and to the fact that urban and agricultural development of the state have created environments favorable for invasion of many species from the more humid eastern part of the continent.

New Mexico also differs somewhat from areas of the Pacific Coast in the representation of alien plants from different regions. In California, roughly 65 percent of alien plants come from Eurasia (Randall et al. 1998). For New Mexico, the percentage of aliens from Eurasia is thus about 12.2 percent greater, with the bulk of these being of European origin. The greater isolation of California, compared to New Mexico, from the European source area of exotic plants probably accounts for this difference. About 5 percent of California's exotics come from Australia and New Zealand, whereas less than 1 percent of New Mexico's exotics come from this region. An additional 7 percent of California's aliens come from southern Africa, compared to about 3.1 percent for New Mexico.

The large increase in alien woody plant species in New Mexico over the last 20 years of the 20th Century may be somewhat more apparent than real. Field botanists have often overlooked the early stages of establishment of many of these species in the wild, documenting them only when they appear far from areas of obvious planting (Jack L. Carter, Pers. Comm.). Nevertheless, these species represent one of our most serious ecological threats because of their tendency to invade native riparian ecosystems.

The abundance of alien plant species in bordering states means that New Mexico is poised to receive many new invaders in coming years. Indeed, the current rate of increase in alien species suggests that at least 6 to 7 species are likely to appear per year in the immediate future. This likelihood argues for establishment of an early detection and eradication program for alien invaders in New Mexico.

(Continued on page 3, Aliens)



(Aliens, Continued from page 2)

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Table 1. The number of families and species of alien plants in the New Mexico flora from 1915 through 2000.

	1915 ¹	1942 ²	1980 ³	2000
Ferns				
Families				1
Species				1
Dicots				
Families	29	29	41	50
Species	104	125	184	270
Monocots				
Families	3	3	5	5

	Species	33	58	72	119
Total					
	Families	32	32	46	56
	Species	136	181	255	390

¹Wootton and Standley (1915)
²Tidestrom and Kittell (1942)
³Martin and Hutchins (1980/81)

Table 2. The number of alien species of different life forms in the New Mexico flora from 1915 through 2000.

	1915 ¹	1942 ²	1980 ³	2000
Forbs				
Annual	54	65	83	110
Biennial	4	6	16	19
Perennial	29	33	52	73
Annual/Biennial	5	7	10	21
Annual/Perennial	3	4	5	6
Biennial/Perennial	1	1	2	5
Vines				
Annual	1	1	1	2
Perennial	1	1	3	6
Annual/Perennial				1
Graminoids				
Annual	15	34	40	63
Perennial	17	23	28	51
Shrubs	3	3	4	13
Trees	3	3	11	20
TOTAL	136	181	255	390

¹Wootton and Standley (1915)
²Tidestrom and Kittell (1942)
³Martin and Hutchins (1980/81)

Table 3. The number of alien species of different geographical origins in the New Mexico flora from 1915 through 2000.

	1915 ¹	1942 ²	1980 ³	2000
Temperate Eurasia				
Europe	81	101	138	196
Eurasia	27	38	51	72
Asia	6	7	19	33
Old World Tropics	1	3	4	7
Africa	2	3	6	12
New World Tropics	6	10	11	14
Temperate South America	4	6	7	10
Australia	1	1	1	2
North America				
USA/Canada	7	11	15	38
Mexico	1	1	3	6
TOTAL	136	181	255	390

¹Wootton and Standley (1915)
²Tidestrom and Kittell (1942)
³Martin and Hutchins (1980/81)

(Continued on page 4, Aliens)



(Aliens, Continued from page 3)

Appendix I. Alien plants known to be established in New Mexico (December 2000).

Ferns and Allies

Salviniaceae

Salvinia minima Baker, Water Spangles

Angiosperms: Dicotyledoneae

Aceraceae

Acer saccharinum L., silver maple

Amaranthaceae

Amaranthus albus L., prostrate pigweed
Amaranthus caudatus L., love lies bleeding
Amaranthus cruentus L., red amaranth
Amaranthus hypochondriacus L., Prince of Wales feather
Amaranthus retroflexus L., redroot amaranth
Amaranthus viridis L., slender amaranth

Apiaceae

Apium graveolens L., wild celery
Apium leptophyllum (Pers.) Sprague ex Britt. & Wilson, marsh parsley
Carum carvi L., caraway
Conium maculatum L., poison hemlock
Coriandrum sativum L., coriander
Daucus carota L., Queen Anne's lace
Foeniculum vulgare Mill., fennel
Levisticum officinale W.D.J. Koch, garden lovage
Pastinaca sativa L., wild parsnip

Asteraceae

Acroptilon repens (L.) DC., Russian knapweed
Anthemis cotula L., camomile
Arctium minus (Hill) Bernh., burdock
Artemisia biennis Willd. var. *biennis*, biennial wormwood
Calyptocarpus vialis Less., straggler daisy
Carduus acanthoides L., spiny plumeless thistle
Carduus nutans L., musk thistle
Carthamus tinctorius L., safflower
Centaurea calcitrapa L., purple starthistle
Centaurea diffusa Lam., diffuse knapweed
Centaurea maculosa Lam., spotted knapweed
Centaurea melitensis L., Malta starthistle
Centaurea solstitialis L., yellow starthistle
Chrysanthemum leucanthemum L., oxeye daisy
Cichorium intybus L., chicory
Cirsium arvense (L.) Scop., Canada thistle
Cirsium vulgare (Savi) Ten., bull thistle
Coryza bonariensis (L.) Cronq., asthmaweed
Coryza ramosissima Cronq., dwarf horseweed
Cosmos bipinnatus Cav., garden cosmos
Cotula australis (Sieber) Hook. f., Australian waterbuttons
Eclipta prostrata (L.) L., false daisy
Erigeron annuus (L.) Pers., eastern daisy fleabane
Galinsoga parviflora Cav., gallant soldier
Hedynois cretica (L.) Willd., cretanweed
Hypochaeris radicata L., hairy catsear
Lactuca serriola L. var. *integriifolia* Bogehn., prickly lettuce
Lactuca serriola L. var. *serriola*, prickly lettuce
Onopordum acanthum L., Scotch thistle
Pentzia incana (Thunb.) O. Kuntze, African sheepbush
Scorzonera laciniata L., cutleaf vipergrass
Senecio vulgaris L., common groundsel

Silybum marianum L., blessed milkthistle
Sonchus arvensis L., field sowthistle
Sonchus asper (L.) Hill, spiny leaved sowthistle
Sonchus oleraceus L., common sowthistle
Tanacetum vulgare L., common tansy
Taraxicum laevigatum (Willd.) DC., red seeded dandelion
Taraxicum officinale Weber, common dandelion
Tragopogon dubius Scop., yellow salsify
Tragopogon porrifolius L., salsify
Tragopogon pratensis L., meadow goatsbeard
Vernonia noveboracensis (L.) Michx., New York ironweed
Xanthium spinosum L., cocklebur

Bignoniaceae

Catalpa speciosa Warder, northern catalpa

Boraginaceae

Cynoglossum officinale L., common hound's tongue
Echium vulgare L., viper's bugloss
Lappula squarrosa (Retz.) Dumort., European stickseed
Myosotis scorpioides L., true forget me not
Symphytum officinale L., common comfrey

Brassicaceae

Alyssum desertorum Stapf., desert madwort
Alyssum minus (L.) Rothm., alyssum
Berteroa incana (L.) DC., hoary false madwort
Barbarea vulgaris R. Br., common wintercress
Brassica juncea (L.) Cosson, India mustard
Brassica napus L., turnip
Brassica rapa L., field mustard
Brassica tournefortii Gouan, Asian mustard
Camelina microcarpa Andrzej., littlepod false flax
Camelina sativa (L.) Crantz, gold of pleasure
Capsella bursa pastoris (L.) Medic., shepherd's purse
Cardamine hirsuta L., hairy bittercress
Cardaria draba (L.) Desv., hoary cress
Cardaria chalapensis (L.) Handel Mazetti, lenspod whitetop
Chorispora tenella (Pall.) DC., crossflower
Conringia orientalis (L.) Dumort., hare's ear mustard
Coronopus didymus (L.) I. E. Smith, lesser swinecress
Descurainia sophia (L.) Webb, flaxweed
Diplotaxis muralis (L.) DC., annual wallrocket
Diplotaxis tenuifolia (L.) DC., perennial wallrocket
Eruca vesicaria (L.) Cav., rocketsalad
Erysimum repandum L., spreading wallflower
Hesperis matronalis L., dames rocket
Iberis umbellata L., globe candytuft
Isatis tinctoria L., dyer's woad
Lobularia maritima (L.) Desv., sweet alyssum
Lepidium campestre (L.) R. Br., field pepperweed
Lepidium latifolium L., perennial pepperweed
Lepidium perfoliatum L., clasping pepperweed
Malcolmia africana (L.) R. Br., African mustard
Matthiola bicornis DC., night scented stock
Nasturtium officinale R. Br., watercress
Raphanus sativus L., radish
Rapistrum rugosum (L.) Allioni, annual bastardcabbage
Rorippa microphylla (Boehn. ex Reichenb.) Hyland ex Löve & Löve, onerow yellowcress
Sinapis alba L., white mustard
Sinapis arvensis L., charlock mustard
Sisymbrium altissimum L., tall tumbleweed
Sisymbrium irio L., London rocket
Sisymbrium loeselii L., small tumbleweed mustard
Sisymbrium officinale (L.) Scop. L., hedgemustard
Thlaspi arvense L., pennycress

(Continued on page 5, Aliens)

Botany is the natural science that transmits the knowledge of plants.

— **Linnaeus**



(Aliens, Continued from page 4)

Caesalpinaceae

- Caesalpinia gilliesii* (Hook.) Wallich ex D. Dietr., bird of paradise
Gleditsia triacanthos L., honey locust

Campanulaceae

- Campanula rapunculoides* L., rampion bellflower

Cannabaceae

- Cannabis sativa* L., marijuana

Caprifoliaceae

- Lonicera japonica* Thunb., Japanese honeysuckle
Lonicera morrowii A. Gray, Morrow's honeysuckle
Lonicera tatarica L., Tatarian honeysuckle
Lonicera x bella Zabel [*morrowii* X *tatarica*], pretty honeysuckle

Caryophyllaceae

- Agrostemma githago* L., common corncockle
Arenaria serpyllifolia L. thyme leafed sandwort
Cerastium viscosum L., sticky chickweed
Cerastium vulgatum L., common mouse eared chickweed
Dianthus armeria L., Deptford pink
Saponaria officinalis L., bouncing bet
Silene latifolia Poir. ssp. *alba* (Miller) (= *Lychnis alba* Miller), white cockle
Silene noctiflora L., night flowering catchfly
Spergularia media L., media sandspurry
Spergularia rubra L., red sandspurry
Stellaria media (L.) Cyrillo, common chickweed
Vaccaria hispanica (Miller) Rauschert, cow cockle

Chenopodiaceae

- Atriplex hortensis* Moq., garden orache
Atriplex rosea L., tumbling saltweed
Atriplex semibaccata R. Br., Australian saltbush
Bassia hyssopifolia (Pal.) Kuntze, five hook
Chenopodium album L., lamb's quarters
Chenopodium capitatum (L.) Asch., strawberry blite
Chenopodium glaucum L. ssp. *glaucum*, oakleaf goosefoot
Chenopodium hircinum Schrad., avian goosefoot
Chenopodium murale L., nettle leaf goosefoot
Chenopodium paganum Reichb., goosefoot
Chenopodium rubrum L., red goosefoot
Halogeton glomeratus (Bieb.) C. A. Mey., halogeton
Kochia scoparia (L.) Roth, summer cypress
Salsola collina P. S. Pallas, slender Russian thistle
Salsola paulsenii Litv., Russian thistle
Salsola tragus L., prickly Russian thistle
Teloxys ambrosioides L., Mexican tea
Teloxys botrys (L.) W. A. Weber, Jerusalem oak goosefoot

Clusiaceae

- Hypericum perforatum* L., common St. Johnswort

Convolvulaceae

- Convolvulus arvensis* L., field bindweed
Ipomoea hederacea (L.) Jacq., ivyleaf morning glory
Ipomoea purpurea (L.) Roth, tall morning glory

Cucurbitaceae

- Citrullus vulgaris* Schrad. var. *citroides* Bailey, watermelon
Citrullus vulgaris Schrad. var. *vulgaris* Bailey, watermelon
Cucumis melo L., cantaloupe
Mormordica balsamina L., balsam apple

Cuscutaceae

- Cuscuta epithimum* L., clover dodder

Dipsacaceae

- Dipsacus fullonum* L. ssp. *sylvestris* (Huds.) Clapham, teasel

Elaeagnaceae

- Elaeagnus angustifolia* L., Russian olive

Euphorbiaceae

- Euphorbia esula* L., leafy spurge
Euphorbia peplus L., petty spurge

Fabaceae

- Alhagi maurorum* Medikus., camelthorn
Caragana arborescens Lam., Siberian pea shrub (George W. Cox)
Coronilla varia L., purple crownvetch
Lathyrus latifolius L., perennial pea
Lotus corniculatus L., birdfoot deerfvetch

- Medicago lupulina* L., black medic
Medicago polymorpha L., burclover
Medicago sativa L., alfalfa
Melilotus indicus (L.) All., annual yellow sweetclover
Melilotus officinalis (L.) Lam., sweetclover
Onobrychis viciifolia Scop., sainfoin
Robinia hispida L., bristly locust
Robinia pseudo acacia L., black locust
Sphaerophysa salsula (Pall.) DC., alkali Swainsonpea
Trifolium fragiferum L., strawberry clover
Trifolium hybridum L., alsike clover
Trifolium pratense L., red clover
Trifolium procumbens L., field clover
Trifolium repens L., white clover
Vicia dasycarpa Ten., winter vetch
Vicia sativa L. ssp. *nigra* (L.) Ehrh., garden vetch
Vicia villosa Roth, winter vetch

Gentianaceae

- Sabatia angularis* (L.) Pursh, rosepink

Geraniaceae

- Erodium cicutarium* (L.) L'Her., red stemmed filaree

Haloragaceae

- Myriophyllum aquaticum* (Vell.) Verdc., parrot feather watermilfoil
Myriophyllum spicatum L., spike watermilfoil
Myriophyllum verticillatum L., whorl leaf watermilfoil

Lamiaceae

- Lamium amplexicaule* L., henbit deadnettle
Leonurus cardiaca L., motherwort
Marrubium vulgare L., horehound
Mentha rotundifolia (L.) Huds., apple mint
Mentha spicata L., spearmint
Nepeta cataria L., catnip
Prunella vulgaris L., heal all
Salvia pratensis L., meadow sage
Scutellaria galericulata L., marsh skullcap

Linaceae

- Linum usitatissimum* L., common flax

Lythraceae

- Lythrum salicaria* L., purple loosestrife

Malvaceae

- Abutilon theophrasti* Medic., velvetleaf
Alcea rosea L., hollyhock
Hibiscus trionum L., flower of an hour
Malva crispa L., curly mallow
Malva neglecta Wallr., common mallow
Malva parviflora L., cheeseweed mallow
Malva sylvestris L., high mallow

Meliaceae

- Melia azedarach* L., Chinaberry

Mimosaceae

- Albizia julibrissin* Durazzini, mimosa

Molluginaceae

- Mollugo cerviana* L., threadstem carpetweed
Mollugo verticillata L., green carpetweed

Moraceae

- Machura pomifera* (Raf.) Schneid., Osage orange
Morus alba L., White Mulberry

Oleaceae

- Fraxinus pennsylvanica* Marsh., green ash
Ligustrum vulgare L., European privet

Papaveraceae

- Papaver rhoeas* L., corn poppy
Papaver somniferum L., opium poppy

Plantaginaceae

- Plantago lanceolata* L., narrowleaf plantain
Plantago major L., common plantain

Polemoniaceae

- Phlox divaricata* L., wild blue phlox (George W. Cox)

Polygonaceae

- Fagopyrum esculentum* Moench, buckwheat
Polygonum aubertii Henry, Chinese fleeciveine

(Continued on page 6, Aliens)



(Aliens, Continued from page 5)

Polygonum aviculare L., knotweed
Polygonum convolvulus L., black bindweed
Polygonum lapathifolium L., currtop willowweed
Polygonum persicaria L., spotted ladysthumb
Rumex acetosella L., sheep sorrel
Rumex crispus L., curly dock
Rumex obtusifolius L., bitter dock
Rumex patientia L., patience dock
Rumex pulcher L., fiddle dock
Rumex stenophyllus Ledeb., narrowleaf dock (Roger S. Peterson)

Portulacaceae
Portulaca oleracea L. ssp. *impolita* Danin & H. G. Baker, purslane
Portulaca oleracea L. ssp. *oleracea*, purslane
Portulaca oleracea L. ssp. *papillito stellulata* Danin & H. G. Baker, purslane

Primulaceae
Anagallis arvensis L., scarlet pimpernel
Centunculus minimus L., chaffweed

Ranunculaceae
Clematis orientalis L., Oriental virginsbower
Consolida ajacis (L.) Schur., rocket larkspur
Ranunculus acris L., tall buttercup
Ranunculus testiculatus Crantz, curvseed butterwort

Rosaceae
Malus sylvestris P. Mill., European crabapple
Pyracantha coccinea Roemer, scarlet firethorn
Pyrus communis L., common pear
Rubus discolor Weihe & Nees, Himalayan blackberry
Sanguisorba minor Scop., small burnet

Rubiaceae
Galium aparine L., cleavers

Salicaceae
Populus alba L., white poplar
Salix alba L., white willow
Salix babylonica L., weeping willow
Salix fragilis L., crack willow

Scrophulariaceae
Linaria dalmatica (L.) Mill., Dalmatian toadflax
Linaria vulgaris Mill., yellow toadflax
Verbascum blattaria L., moth mullein
Verbascum thapsus L., common mullein
Verbascum virgatum Stokes, wand mullein
Veronica anagallis aquatica L., water speedwell
Veronica arvensis L., corn speedwell
Veronica persica Poir., birdeye speedwell
Veronica serpyllifolia L., thymeleaf speedwell

Simaroubaceae
Ailanthus altissima (Mill.) Swingle, ailanthus

Solanaceae
Datura innoxia Miller, angel's trumpet
Datura stramonium L., jimsonweed
Hyoscyamus niger L., black henbane
Lycium barbarum Mill., matrimony vine
Nicotiana glauca Graham, tree tobacco
Physalis ixocarpa Brot. ex Hornem., Mexican groundcherry
Solanum nigrum L., black nightshade
Solanum sarachoides Sendt. In Mart., hairy nightshade

Tamaricaceae
Tamarix chinensis Lour, fivestamen tamarisk
Tamarix ramosissima Ledeb., saltcedar

Ulmaceae
Ulmus pumila L., Siberian elm

Verbenaceae
Phyla nodiflora (L.) Greene, turkey tangle frogfruit
Verbena tenuisecta Briq., South American mock vervain
Vitex agnus castus L., lilac chastetree

Zygophyllaceae
Peganum harmala L., African rue
Tribulus terrestris L., goathead
Zygophyllum fabago L., Syrian beancaper

Angiosperms: Monocotyledoneae

Cyperaceae
Cyperus esculentus L., chufa flatsedge
Cyperus rotundus L., nutgrass

Hydrocharitaceae
Egeria densa Planch, Brazilian waterweed

Liliaceae
Asparagus officinalis L., garden asparagus
Asphodelus fistulosus L., onionweed
Muscari neglectum Guss. ex Ten., starch grape hyacinth

Poaceae
Aegilops cylindrica Host, jointed goatgrass
Agropyron cristatum (L.) Gaertn. ssp. *cristatum*, crested wheatgrass
Agropyron cristatum (L.) Gaertn. ssp. *desertorum* (Fisch. ex Link) Löve, crested wheatgrass
Agropyron cristatum (L.) Gaertn. ssp. *fragile* (Roth) Löve, crested wheat grass
Agrostis gigantea Roth, redtop
Agrostis stolonifera L., creeping bentgrass
Aira elegans Willd. ex Gaudin., annual silver hairgrass
Alopecurus geniculatus L., water foxtail
Alopecurus myosuroides Huds., foxtail
Alopecurus pratensis L., meadow foxtail
Anthoxanthum odoratum L., sweet vernalgrass
Apera interrupta (L.) Beauv., apera
Aristida oligantha Michx., oldfield threawn
Arrhenatherum elatius (L.) J. & C. Presl, tall oatgrass
Arundo donax L., giant reed
Avena barbata Pott ex Link, slender oat
Avena fatua L. var. *fatua*, wild oat
Avena fatua L. var. *sativa* (L.) Hausskn., wild oat
Bothriochloa bladhii (Retz.) S. T. Blake, Australian bluestem
Bothriochloa ischaemum (L.) Keng var. *ischemum*, yellow bluestem
Bothriochloa ischaemum (L.) Keng var. *songarica* (Rupr.) Celerier & Harlan, King Ranch bluestem
Briza minor L., little quakinggrass
Bromus brizaeformis Fisch. & Mey., rattlesnake chess
Bromus catharticus Vahl, rescuegrass
Bromus diandrus Roth, ripgut brome
Bromus hordeaceus L., soft brome
Bromus inermis Leyss., smooth brome
Bromus japonicus Thunb. ex Murray, Japanese brome
Bromus rubens L., foxtail brome
Bromus secalinus L., rye chess
Bromus sterilis L., poverty brome
Bromus tectorum L., cheatgrass
Catopodium rigidum (L.) C. E. Hubb., ferngrass
Cenchrus echinatus L., southern sandbur
Chloris submutica Kunth, Mexican windmillgrass
Chloris virgata Sw., showy windmillgrass
Cynodon dactylon L., Bermudagrass
Dactylis glomerata L., orchardgrass
Dactyloctenium aegypticum (L.) Willd., crowfootgrass
Deschampsia danthonioides (Trin.) Munro, annual hairgrass
Digitaria ciliaris (Retz.) Koel., southern crabgrass
Digitaria eriantha Steudel, pangola grass
Digitaria ischaemum (Schreb.) Muhl., smooth crabgrass
Digitaria sanguinalis (L.) Scop., hairy crabgrass
Echinochloa colona (L.) Link, junglerice
Echinochloa crus galli (L.) Beauv., barnyardgrass
Echinochloa crus pavonis (Kunth) Schult., barnyardgrass
Eleusine indica (L.) Gaertn., goosegrass
Elymus elongatus (Host) Runem. ssp. *elongatus*, tall wheatgrass
Elymus elongatus (Host) Runem. ssp. *ponticus* (Podp.) Melderis, tall wheat grass
Elymus hispidus (Opiz) Melderis ssp. *hispidus*, intermediate wheatgrass
Elymus hispidus (Opiz) Melderis ssp. *barbulatus* (Schur), pubescent wheat grass
Elymus repens (L.) Gould, quackgrass
Eragrostis barrelieri Daveau, Mediterranean lovegrass

(Continued on page 7, Aliens)



(Aliens, Continued from page 6)

- Eragrostis cilianensis* (All.) Vign. ex Janchen, stinkgrass
Eragrostis curvula (Schrad.) Nees var. *conferta* Nees, Boer lovegrass
Eragrostis curvula (Schrad.) Nees var. *curvula*, weeping lovegrass
Eragrostis lehmanniana Nees, Lehmann lovegrass
Eragrostis superba Peyr., Wilman lovegrass
Eremopyrum triticeum (Gaertn.) Nevski, annual wheatgrass
Festuca arundinacea Schreber, tall fescue
Festuca pratensis Huds., meadow fescue
Festuca trachyphylla (Hack.) Krajina, hard fescue
Hackelochloa granularis (L.) Kuntze, Hackelochloa
Hierochloa odorata (L.) Beauv., sweetgrass
Holcus lanatus L., velvetgrass
Hordeum arizonicum Covas, Arizona barley
Hordeum murinum L. ssp. *glaucum* (Steud) Tsvelev, wall barley
Hordeum murinum L. ssp. *leporinum* (Link) Arcangeli, hare barley
Hordeum vulgare L., barley
Lolium perenne L. var. *perenne*, perennial ryegrass
Lolium perenne L. var. *aristatum* Willd., Italian ryegrass
Lolium temulentum L., poison darnel
Panicum amarum Ell., bitter panicum
Panicum antidotale Retz., blue panicum
Panicum coloratum L., Kleingrass
Panicum dichotomiflorum Michx., fall panicum
Panicum hians Ell., gaping panicum
Panicum milaceum L., broomcorn millet
Paspalum dilatatum Poir., Dallisgrass
Pennisetum ciliare (L.) Link, buffelgrass
Phalaris angusta Nees ex Trin., canarygrass
Phalaris canariensis L., canarygrass
Phalaris minor Retz., canarygrass
Phleum pratense L., timothy
Pleuraphis rigida Thurber in S. Wats., big galleta
Poa annua L., annual bluegrass
Poa arachnifera Torr., Texas bluegrass
Poa bulbosa L., bulbous bluegrass
Poa compressa L., Canada bluegrass
Poa pratensis L. *pratensis* phase, Kentucky bluegrass
Poa trivialis L., rough bluegrass
Polypogon interruptus Kunth, ditch polypogon
Polypogon monspeliensis (L.) Desf., rabbitfoot grass
Polypogon viridis (Gouan) Breistroffer, water polypogon
Psathyrostachys juncea (Fischer) Nevski, Russian wildrye
Puccinellia distans (L.) Parl., Parrish's alkali grass
Rhynchelytrum repens (Willd.) C. E. Hubb., Natal grass
Saccharum ravennae (L.) Murray, Ravennagrass
Schismus arabicus Nees, Mediterranean grass
Schismus barbatus (L.) Thell., Mediterranean grass
Sclerochloa dura (L.) Beauv., hardgrass
Secale cereale L., rye
Setaria adhaerens (Forsskal) Chiov., clinging bristlegrass
Setaria italica (L.) Beauv., foxtail millet
Setaria magna Griesb., giant foxtail
Setaria pumila (Poir.) Roem. & Schult., yellow bristlegrass
Setaria verticillata (L.) Beauv., hooked bristlegrass
Setaria viridis (L.) Beauv., green bristlegrass
Sorghum bicolor (L.) Moench ssp. *bicolor*, sorghum
Sorghum bicolor (L.) Moench ssp. *drummondii* (Steud.) DeWet, Sudangrass
Sorghum halepense (L.) Pers., Johnsongrass
Sporobolus neglectus Nash, puffsheath dropseed
Sporobolus vaginiflorus (Torr. ex Gray) Wood, poverty dropseed
Tragus berteronianus Schult., spike burgrass
Tridens eragrostoides (Vasey & Scribn.) Nash, tridens
Tridens flavus (L.) A.S. Hitchc., purpletop
Triticum aestivum L., wheat
Urochloa panicoides Beauv., liverseed grass
Vulpia bromoides L., Brome, six weeksgrass
Vulpia myuros (L.) K. C. Gmelin var. *myuros*, rattail six weeksgrass
Vulpia myuros (L.) K. C. Gmelin var. *hirsuta* Hack., rattail six weeksgrass
Zea mays L. ssp. *mays*, maize
Potamogetonaceae
Potamogeton crispus L., curly pondweed



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RARE, THREATENED, AND ENDANGERED PLANTS:

- [See New Mexico Rare Plants, presented by the NM Rare Plant Technical Council: <http://nmrareplants.unm.edu>]

WEB SITES OF INTEREST:

- U.S. Executive Order 13112. 1999. *Executive Order on invasive alien species*. [<http://www.pub.whitehouse.gov/uri/res/I2R?urn:pdii://oma.eop.gov.us/1999/2/3/14.text.2>]
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Kelly Allred
Range Plant Specialist

What's In A Name?

It's helpful and even satisfying for us to know the meaning of the scientific names of New Mexico plants. We delight in knowing that *Iris* means *rainbow* (Greek), commemorate the great Swedish naturalist with *Linnaea* (Latin), nod knowingly with *Dracocephalum* (dragon's head, Greek), scratch our heads a bit over *Gaura*, meaning superb (Greek), and take comfort that *Alyssum* (without madness, Greek) was recommended as a cure for rabies. But not all generic names are so meaningful. It is perfectly acceptable and within the rules to rearrange the letters of a closely related genus to arrive at a new name. Thus we have *Sibara* from *Arabis* (Cruciferae), *Sartidia* from *Aristida* (Gramineae), *Litrisia* from *Liatris* (Compositae), *Milula* from *Allium* (Liliaceae), and *Leymus* from *Elymus* (Gramineae). Some untapped anagrams for future botanists are *Spoilage* from *Aegilops*, *Precis* from *Crepis*, *Acid rio* from *Dicoria*, *Septic* from *Pectis*, *Altercate* from *Tetraclea*, and *Ada sue* from *Suaeda*. 



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APPENDIX C
LIST OF PREVIOUSLY SURVEYED ARCHAEOLOGICAL SITES
IN THE STUDY CORRIDOR

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Hidalgo	498	Prehistoric	Yes
Hidalgo	593	Prehistoric	No
Hidalgo	1369	Prehistoric	Yes
Hidalgo	2469	Prehistoric	Unknown
Hidalgo	2758	Prehistoric	Unknown
Hidalgo	4979	Prehistoric	Yes
Hidalgo	4980	Prehistoric	Yes
Hidalgo	5689	Prehistoric	Unknown
Hidalgo	5690	Prehistoric	Unknown
Hidalgo	5691	Prehistoric	Unknown
Hidalgo	5692	Historic	Unknown
Hidalgo	5693	Prehistoric	Unknown
Hidalgo	5694	Unknown	Unknown
Hidalgo	5695	Unknown	Unknown
Hidalgo	5696	Unknown	Unknown
Hidalgo	5697	Prehistoric	Unknown
Hidalgo	5698	Prehistoric	Yes
Hidalgo	5699	Unknown	Unknown
Hidalgo	5700	Historic	Unknown
Hidalgo	5701	Unknown	Unknown
Hidalgo	5702	Prehistoric	Unknown
Hidalgo	5703	Prehistoric	Unknown
Hidalgo	5704	Unknown	Unknown
Hidalgo	5705	Prehistoric	Unknown
Hidalgo	11823	Both	Yes
Hidalgo	12129	Prehistoric	Unknown
Grant	13199	Unknown	Unknown
Hidalgo	13201	Prehistoric	Unknown
Hidalgo	13202	Prehistoric	Unknown
Hidalgo	13203	Prehistoric	Unknown
Hidalgo	13204	Unknown	Unknown
Hidalgo	13205	Unknown	Unknown
Hidalgo	13206	Prehistoric	Unknown
Grant	13207	Unknown	Unknown
Grant	20138	Historic	Unknown
Hidalgo	20140	Historic	Unknown
Hidalgo	25970	Unknown	Unknown
Hidalgo	25971	Unknown	Unknown
Hidalgo	25972	Unknown	Unknown
Hidalgo	25973	Unknown	Unknown
Grant	29349	Both	Unknown
Hidalgo	29350	Unknown	Unknown
Hidalgo	31050	Prehistoric	Yes
Hidalgo	34392	Historic	Unknown
Grant	34393	Unknown	Unknown
Grant	34394	Unknown	Unknown
Grant	34395	Historic	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Hidalgo	34907	Prehistoric	Unknown
Hidalgo	34908	Unknown	Unknown
Hidalgo	35265	Prehistoric	Unknown
Hidalgo	37397	Unknown	Unknown
Luna	37536	Unknown	Unknown
Hidalgo	37665	Unknown	Unknown
Hidalgo	38048	Unknown	Unknown
Hidalgo	38049	Prehistoric	Unknown
Hidalgo	38050	Unknown	Unknown
Hidalgo	38051	Unknown	Unknown
Hidalgo	38449	Prehistoric	Unknown
Hidalgo	38450	Both	Unknown
Hidalgo	38451	Prehistoric	Unknown
Hidalgo	38452	Prehistoric	Unknown
Luna	44811	Historic	No
Hidalgo	49989	Historic	Unknown
Grant	50085	Historic	Unknown
Hidalgo	50093	Historic	Unknown
Hidalgo	54015	Prehistoric	Unknown
Hidalgo	54016	Prehistoric	Unknown
Hidalgo	54017	Prehistoric	Unknown
Hidalgo	54018	Prehistoric	Unknown
Hidalgo	54019	Unknown	Unknown
Hidalgo	54020	Prehistoric	Yes
Hidalgo	54021	Prehistoric	Yes
Hidalgo	54022	Prehistoric	Unknown
Hidalgo	54023	Unknown	Unknown
Hidalgo	54024	Prehistoric	Unknown
Hidalgo	54025	Unknown	Unknown
Hidalgo	54026	Prehistoric	Yes
Hidalgo	54027	Unknown	Unknown
Hidalgo	54028	Prehistoric	Yes
Hidalgo	54029	Prehistoric	Yes
Hidalgo	54030	Unknown	Unknown
Hidalgo	54031	Prehistoric	Yes
Hidalgo	54032	Prehistoric	Unknown
Hidalgo	54033	Prehistoric	Yes
Hidalgo	54034	Prehistoric	No
Hidalgo	54035	Unknown	Unknown
Hidalgo	54036	Prehistoric	No
Hidalgo	54037	Prehistoric	Unknown
Hidalgo	54038	Prehistoric	Yes
Hidalgo	54039	Prehistoric	Yes
Hidalgo	54040	Prehistoric	Unknown
Hidalgo	54041	Unknown	Unknown
Hidalgo	54042	Prehistoric	Yes
Hidalgo	54043	Prehistoric	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Hidalgo	54044	Prehistoric	Unknown
Hidalgo	54045	Prehistoric	Unknown
Hidalgo	54046	Unknown	Unknown
Hidalgo	54047	Unknown	Unknown
Hidalgo	54048	Prehistoric	Yes
Hidalgo	54049	Prehistoric	Yes
Hidalgo	54050	Prehistoric	Yes
Hidalgo	54051	Prehistoric	Yes
Hidalgo	54052	Both	Unknown
Hidalgo	54053	Prehistoric	Yes
Hidalgo	54054	Unknown	Unknown
Hidalgo	54055	Unknown	Unknown
Hidalgo	54056	Unknown	Unknown
Hidalgo	54057	Unknown	Unknown
Hidalgo	54058	Unknown	Unknown
Hidalgo	54059	Unknown	Unknown
Hidalgo	54060	Unknown	Unknown
Hidalgo	54061	Unknown	Unknown
Hidalgo	54062	Unknown	Unknown
Hidalgo	54063	Unknown	Unknown
Hidalgo	54064	Unknown	Unknown
Hidalgo	54065	Unknown	Unknown
Hidalgo	54066	Unknown	Unknown
Hidalgo	54067	Unknown	Unknown
Hidalgo	54273	Unknown	Unknown
Hidalgo	54953	Unknown	Unknown
Hidalgo	54954	Prehistoric	Unknown
Grant	55873	Unknown	Unknown
Hidalgo	59936	Historic	Unknown
Hidalgo	59937	Prehistoric	Unknown
Hidalgo	59938	Prehistoric	Unknown
Hidalgo	59939	Unknown	Unknown
Hidalgo	59940	Unknown	Unknown
Hidalgo	59941	Unknown	Unknown
Hidalgo	59942	Unknown	Unknown
Hidalgo	59943	Unknown	Unknown
Hidalgo	59944	Unknown	Unknown
Hidalgo	59945	Prehistoric	Unknown
Hidalgo	59946	Unknown	Unknown
Hidalgo	59972	Unknown	Unknown
Hidalgo	61947	Prehistoric	Unknown
Hidalgo	67961	Historic	Unknown
Hidalgo	67962	Historic	No
Hidalgo	68028	Historic	Unknown
Hidalgo	71697	Prehistoric	Unknown
Hidalgo	71698	Unknown	Unknown
Hidalgo	72893	Both	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Hidalgo	72901	Both	Unknown
Hidalgo	73374	Historic	Unknown
Hidalgo	73401	Historic	Unknown
Hidalgo	75393	Prehistoric	Unknown
Hidalgo	75394	Unknown	Unknown
Hidalgo	75459	Prehistoric	Unknown
Hidalgo	77494	Historic	Unknown
Hidalgo	79732	Unknown	Unknown
Hidalgo	79733	Unknown	Unknown
Hidalgo	79734	Unknown	Unknown
Hidalgo	80525	Prehistoric	Unknown
Hidalgo	85739	Both	No
Hidalgo	85745	Unknown	No
Hidalgo	85762	Prehistoric	No
Hidalgo	86866	Historic	Unknown
Hidalgo	86955	Prehistoric	Unknown
Hidalgo	86956	Unknown	Unknown
Hidalgo	88357	Historic	Unknown
Hidalgo	89142	Historic	Unknown
Hidalgo	89226	Prehistoric	Unknown
Hidalgo	89227	Prehistoric	Unknown
Hidalgo	89345	Historic	No
Hidalgo	100528	Historic	Unknown
Hidalgo	101502	Unknown	Unknown
Hidalgo	104052	Historic	No
Hidalgo	104599	Prehistoric	No
Hidalgo	104600	Unknown	No
Hidalgo	104601	Unknown	No
Hidalgo	104602	Prehistoric	No
Hidalgo	104603	Unknown	No
Hidalgo	104604	Prehistoric	No
Hidalgo	85791	Unknown	Unknown
Hidalgo	109519	Prehistoric	No
Hidalgo	85740	Both	Unknown
Luna	85778	Historic	Unknown
Hidalgo	85784	Prehistoric	Unknown
Hidalgo	85785	Unknown	Unknown
Hidalgo	85787	Historic	Unknown
Hidalgo	85788	Historic	Unknown
Hidalgo	85789	Historic	Unknown
Hidalgo	85790	Unknown	Unknown
Hidalgo	85792	Unknown	Unknown
Hidalgo	85794	Prehistoric	Unknown
Hidalgo	85795	Prehistoric	Unknown
Hidalgo	85796	Prehistoric	Unknown
Hidalgo	89048	Prehistoric	Unknown
Hidalgo	89049	Unknown	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Hidalgo	89050	Unknown	Unknown
Hidalgo	89051	Unknown	Unknown
Hidalgo	98629	Unknown	Unknown
Hidalgo	98630	Unknown	Unknown
Hidalgo	98631	Unknown	Unknown
Hidalgo	98632	Prehistoric	Unknown
Hidalgo	98633	Unknown	Unknown
Hidalgo	98634	Prehistoric	Unknown
Hidalgo	98635	Unknown	Unknown
Hidalgo	98636	Both	Unknown
Hidalgo	98637	Unknown	Unknown
Hidalgo	98638	Unknown	Unknown
Hidalgo	98639	Unknown	Unknown
Hidalgo	98640	Unknown	Unknown
Luna	100707	Historic	Unknown
Hidalgo	120638	Unknown	Unknown
Hidalgo	120640	Unknown	Unknown
Hidalgo	121072	Historic	No
Hidalgo	121151	Historic	No
Hidalgo	126127	Prehistoric	Unknown
	130157	Historic	Unknown
	130156	Historic	Unknown
	130159	Prehistoric	Unknown
	130160	Prehistoric	Unknown
	130161	Prehistoric	Unknown
	130163	Historic	Unknown
Hidalgo	131178	Historic	Unknown
Hidalgo	131179	Historic	Unknown
Hidalgo	131180	Historic	Unknown
Hidalgo	131181	Unknown	Unknown
Hidalgo	131182	Historic	Unknown
Hidalgo	131526	Unknown	Unknown
	137052	Historic	Unknown
Dona Ana	462	Prehistoric	Unknown
Dona Ana	1049	Prehistoric	Unknown
Dona Ana	1644	Prehistoric	Unknown
Dona Ana	1645	Prehistoric	Unknown
Dona Ana	1646	Prehistoric	Unknown
Dona Ana	1651	Prehistoric	Unknown
Dona Ana	1658	Prehistoric	Unknown
Dona Ana	1659	Prehistoric	Unknown
Dona Ana	1660	Prehistoric	Unknown
Dona Ana	1671	Both	Unknown
Dona Ana	1801	Prehistoric	Unknown
Dona Ana	2287	Prehistoric	Unknown
Luna	5197	Historic	Unknown
Dona Ana	12794	Prehistoric	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Dona Ana	12795	Prehistoric	Unknown
Dona Ana	12796	Prehistoric	Unknown
Dona Ana	12797	Prehistoric	Unknown
Dona Ana	12798	Prehistoric	Unknown
Dona Ana	12799	Prehistoric	Unknown
Dona Ana	12824	Prehistoric	Unknown
Dona Ana	12825	Unknown	Unknown
Dona Ana	12826	Prehistoric	Unknown
Luna	12839	Historic	Unknown
Luna	19072	Prehistoric	Unknown
Dona Ana	21134	Prehistoric	No
Dona Ana	26966	Prehistoric	Unknown
Dona Ana	26976	Prehistoric	Unknown
Dona Ana	26991	Unknown	Unknown
Dona Ana	26992	Prehistoric	Unknown
Dona Ana	27754	Prehistoric	Unknown
Dona Ana	27755	Prehistoric	Unknown
Dona Ana	27756	Unknown	Unknown
Dona Ana	35121	Prehistoric	Unknown
Dona Ana	35122	Prehistoric	Unknown
Dona Ana	35123	Unknown	Unknown
Dona Ana	35124	Prehistoric	Unknown
Dona Ana	35125	Unknown	Unknown
Dona Ana	35126	Prehistoric	Unknown
Dona Ana	35127	Unknown	Unknown
Dona Ana	35128	Unknown	Unknown
Dona Ana	35129	Unknown	Unknown
Dona Ana	35130	Unknown	Unknown
Dona Ana	35131	Unknown	Unknown
Dona Ana	35132	Prehistoric	Unknown
Dona Ana	35133	Unknown	Unknown
Dona Ana	35134	Unknown	Unknown
Dona Ana	35135	Prehistoric	Unknown
Dona Ana	35136	Prehistoric	Unknown
Dona Ana	35137	Unknown	Unknown
Dona Ana	35138	Prehistoric	Unknown
Dona Ana	35139	Prehistoric	Unknown
Dona Ana	35141	Unknown	Unknown
Dona Ana	35142	Unknown	Unknown
Dona Ana	35143	Prehistoric	Unknown
Luna	35202	Prehistoric	Unknown
Luna	35203	Unknown	Unknown
Dona Ana	35216	Prehistoric	Unknown
Dona Ana	35217	Prehistoric	Unknown
Dona Ana	35218	Prehistoric	Unknown
Dona Ana	35219	Prehistoric	Unknown
Dona Ana	35220	Prehistoric	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Dona Ana	35221	Prehistoric	Unknown
Dona Ana	35222	Prehistoric	Unknown
Luna	35223	Unknown	Unknown
Luna	35224	Prehistoric	Unknown
Luna	35225	Prehistoric	Unknown
Luna	35226	Prehistoric	No
Luna	35227	Prehistoric	Unknown
Luna	35228	Unknown	Unknown
Luna	35229	Unknown	Unknown
Luna	35230	Unknown	Unknown
Luna	35231	Unknown	Unknown
Luna	37538	Prehistoric	Unknown
Luna	38037	Unknown	Unknown
Dona Ana	39162	Prehistoric	Unknown
Dona Ana	43943	Historic	Unknown
Dona Ana	45516	Prehistoric	Unknown
Dona Ana	46441	Unknown	Unknown
Dona Ana	49317	Prehistoric	Unknown
Dona Ana	49318	Prehistoric	Unknown
Dona Ana	49319	Prehistoric	Unknown
Dona Ana	49320	Prehistoric	Unknown
Dona Ana	49321	Prehistoric	Unknown
Dona Ana	49322	Prehistoric	Unknown
Dona Ana	49323	Prehistoric	Unknown
Dona Ana	49324	Prehistoric	Unknown
Dona Ana	49325	Prehistoric	Unknown
Dona Ana	49326	Prehistoric	Unknown
Dona Ana	49327	Prehistoric	Unknown
Dona Ana	49328	Prehistoric	Unknown
Dona Ana	49329	Prehistoric	Unknown
Dona Ana	49330	Prehistoric	No
Dona Ana	49331	Prehistoric	Unknown
Dona Ana	49332	Prehistoric	Unknown
Dona Ana	49337	Prehistoric	Unknown
Dona Ana	49338	Prehistoric	Unknown
Dona Ana	49341	Prehistoric	Unknown
Dona Ana	49342	Prehistoric	Unknown
Dona Ana	49343	Prehistoric	No
Dona Ana	49345	Prehistoric	Unknown
Dona Ana	49346	Both	Unknown
Dona Ana	49348	Prehistoric	Unknown
Dona Ana	49350	Prehistoric	Unknown
Dona Ana	49351	Prehistoric	No
Dona Ana	49352	Prehistoric	Unknown
Dona Ana	49354	Prehistoric	Unknown
Dona Ana	49355	Prehistoric	No
Dona Ana	49356	Prehistoric	No

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Dona Ana	49357	Prehistoric	No
Dona Ana	49358	Prehistoric	No
Dona Ana	49359	Prehistoric	No
Dona Ana	49360	Prehistoric	Unknown
Dona Ana	49361	Prehistoric	Unknown
Dona Ana	49362	Prehistoric	Unknown
Dona Ana	49363	Prehistoric	Unknown
Dona Ana	49364	Prehistoric	Unknown
Dona Ana	49365	Prehistoric	Unknown
Dona Ana	49366	Prehistoric	Unknown
Dona Ana	49367	Prehistoric	Unknown
Dona Ana	49368	Prehistoric	Unknown
Dona Ana	49369	Prehistoric	Unknown
Dona Ana	49370	Prehistoric	Unknown
Dona Ana	49371	Prehistoric	Unknown
Dona Ana	49372	Prehistoric	Unknown
Dona Ana	49374	Prehistoric	Unknown
Dona Ana	49376	Prehistoric	Unknown
Dona Ana	49377	Prehistoric	Unknown
Dona Ana	49378	Prehistoric	Unknown
Dona Ana	49379	Prehistoric	Unknown
Dona Ana	49380	Prehistoric	Unknown
Dona Ana	49381	Prehistoric	Unknown
Dona Ana	49382	Prehistoric	Unknown
Dona Ana	49383	Prehistoric	Unknown
Dona Ana	49384	Prehistoric	Unknown
Dona Ana	49385	Prehistoric	Unknown
Dona Ana	49386	Prehistoric	Unknown
Luna	50343	Historic	Unknown
Luna	50344	Historic	Unknown
Luna	50345	Historic	Unknown
Luna	50346	Historic	Unknown
Luna	50347	Historic	Unknown
Luna	50349	Historic	Unknown
Luna	50353	Historic	Unknown
Dona Ana	51123	Prehistoric	Unknown
Dona Ana	51124	Prehistoric	Unknown
Dona Ana	51125	Prehistoric	Unknown
Dona Ana	51126	Prehistoric	Unknown
Dona Ana	51130	Unknown	Unknown
Dona Ana	52219	Prehistoric	Unknown
Dona Ana	52220	Prehistoric	Unknown
Dona Ana	52221	Prehistoric	Unknown
Dona Ana	54089	Prehistoric	Unknown
Dona Ana	54471	Prehistoric	Unknown
Luna	54816	Prehistoric	Unknown
Dona Ana	54875	Historic	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Dona Ana	54876	Historic	Unknown
Dona Ana	54877	Historic	Unknown
Dona Ana	54878	Historic	Unknown
Dona Ana	54879	Historic	Unknown
Dona Ana	54880	Historic	Unknown
Luna	54881	Historic	Unknown
Luna	54882	Historic	Unknown
Luna	54883	Historic	Unknown
Dona Ana	54892	Prehistoric	Unknown
Luna	54893	Unknown	Unknown
Luna	54894	Unknown	Unknown
Luna	54895	Unknown	Unknown
Luna	54905	Prehistoric	Unknown
Dona Ana	56000	Prehistoric	Unknown
Dona Ana	56001	Prehistoric	Unknown
Dona Ana	56002	Prehistoric	Unknown
Dona Ana	56003	Prehistoric	Unknown
Dona Ana	56004	Prehistoric	Unknown
Dona Ana	56005	Prehistoric	Unknown
Dona Ana	56006	Prehistoric	Unknown
Dona Ana	56007	Prehistoric	Unknown
Dona Ana	56008	Prehistoric	Unknown
Dona Ana	56009	Prehistoric	Unknown
Dona Ana	56010	Prehistoric	Unknown
Dona Ana	56011	Prehistoric	Unknown
Dona Ana	56012	Prehistoric	Unknown
Dona Ana	56013	Prehistoric	Unknown
Dona Ana	56014	Prehistoric	Unknown
Dona Ana	56015	Prehistoric	Unknown
Dona Ana	56016	Prehistoric	Unknown
Dona Ana	56017	Prehistoric	Unknown
Dona Ana	56018	Prehistoric	Unknown
Dona Ana	56019	Prehistoric	Unknown
Dona Ana	56020	Prehistoric	Unknown
Dona Ana	56021	Unknown	Unknown
Dona Ana	56022	Prehistoric	Unknown
Dona Ana	56023	Prehistoric	Unknown
Dona Ana	56024	Unknown	Unknown
Dona Ana	56025	Prehistoric	Unknown
Dona Ana	56026	Prehistoric	Unknown
Dona Ana	56027	Prehistoric	Unknown
Dona Ana	56028	Prehistoric	No
Dona Ana	56029	Unknown	Unknown
Dona Ana	56030	Prehistoric	Unknown
Dona Ana	56031	Prehistoric	Unknown
Dona Ana	56033	Prehistoric	Unknown
Dona Ana	56034	Prehistoric	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Dona Ana	56035	Prehistoric	Unknown
Dona Ana	56036	Prehistoric	Unknown
Dona Ana	56040	Prehistoric	Unknown
Dona Ana	56041	Prehistoric	Unknown
Dona Ana	56042	Prehistoric	Unknown
Dona Ana	56043	Prehistoric	Unknown
Dona Ana	56044	Prehistoric	Unknown
Dona Ana	56045	Prehistoric	Unknown
Dona Ana	56046	Prehistoric	Unknown
Dona Ana	56047	Prehistoric	Unknown
Dona Ana	56048	Unknown	Unknown
Dona Ana	56051	Prehistoric	Unknown
Dona Ana	56052	Prehistoric	Unknown
Dona Ana	56053	Prehistoric	Unknown
Dona Ana	56836	Historic	Unknown
Luna	58907	Historic	Unknown
Dona Ana	59698	Unknown	Unknown
Dona Ana	59740	Unknown	Unknown
Dona Ana	59741	Unknown	Unknown
Dona Ana	59742	Unknown	Unknown
Dona Ana	59743	Unknown	Unknown
Dona Ana	59744	Unknown	Unknown
Dona Ana	59745	Unknown	Unknown
Dona Ana	59746	Unknown	Unknown
Dona Ana	59747	Unknown	Unknown
Dona Ana	59748	Unknown	Unknown
Dona Ana	59749	Unknown	Unknown
Dona Ana	59750	Unknown	Unknown
Dona Ana	59751	Unknown	Unknown
Dona Ana	59752	Unknown	Unknown
Dona Ana	59753	Unknown	Unknown
Dona Ana	59754	Prehistoric	Unknown
Dona Ana	59755	Unknown	Unknown
Dona Ana	59756	Unknown	Unknown
Dona Ana	59757	Prehistoric	Unknown
Dona Ana	59758	Unknown	Unknown
Dona Ana	59759	Unknown	Unknown
Dona Ana	59760	Unknown	Unknown
Dona Ana	59761	Unknown	Unknown
Dona Ana	59762	Unknown	Unknown
Dona Ana	59763	Unknown	Unknown
Dona Ana	59764	Unknown	Unknown
Dona Ana	59765	Unknown	Unknown
Dona Ana	59766	Unknown	Unknown
Dona Ana	59767	Unknown	Unknown
Dona Ana	59769	Unknown	Unknown
Dona Ana	59770	Unknown	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Dona Ana	59771	Unknown	Unknown
Dona Ana	59772	Unknown	Unknown
Dona Ana	59773	Unknown	Unknown
Dona Ana	59774	Prehistoric	Unknown
Dona Ana	59775	Unknown	Unknown
Dona Ana	59776	Unknown	Unknown
Dona Ana	59777	Unknown	Unknown
Dona Ana	59778	Unknown	Unknown
Dona Ana	59779	Unknown	Unknown
Dona Ana	59780	Unknown	Unknown
Dona Ana	59781	Unknown	Unknown
Dona Ana	59782	Unknown	Unknown
Dona Ana	59783	Prehistoric	Unknown
Dona Ana	59784	Prehistoric	Unknown
Dona Ana	59785	Prehistoric	Unknown
Dona Ana	59786	Unknown	Unknown
Dona Ana	59787	Unknown	Unknown
Dona Ana	59788	Unknown	Unknown
Dona Ana	59789	Unknown	Unknown
Dona Ana	59790	Unknown	Unknown
Dona Ana	59791	Unknown	Unknown
Dona Ana	59792	Prehistoric	Unknown
Dona Ana	59793	Unknown	Unknown
Dona Ana	59794	Unknown	Unknown
Dona Ana	59795	Unknown	Unknown
Dona Ana	59796	Both	Unknown
Dona Ana	59797	Unknown	Unknown
Dona Ana	59798	Unknown	Unknown
Dona Ana	59799	Prehistoric	Unknown
Dona Ana	59800	Prehistoric	Unknown
Dona Ana	59801	Unknown	Unknown
Dona Ana	59802	Unknown	Unknown
Dona Ana	59803	Unknown	Unknown
Dona Ana	59804	Unknown	Unknown
Dona Ana	59805	Unknown	Unknown
Dona Ana	59806	Prehistoric	Unknown
Dona Ana	59807	Unknown	Unknown
Dona Ana	59808	Unknown	Unknown
Dona Ana	59809	Unknown	Unknown
Dona Ana	59810	Unknown	Unknown
Dona Ana	59811	Unknown	Unknown
Dona Ana	59812	Unknown	Unknown
Dona Ana	59813	Unknown	Unknown
Dona Ana	59814	Unknown	Unknown
Dona Ana	59815	Unknown	Unknown
Dona Ana	59816	Unknown	Unknown
Dona Ana	59817	Unknown	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Dona Ana	59818	Unknown	Unknown
Dona Ana	59819	Unknown	Unknown
Dona Ana	59820	Unknown	Unknown
Dona Ana	59821	Unknown	Unknown
Dona Ana	59822	Unknown	Unknown
Dona Ana	59823	Unknown	Unknown
Dona Ana	59824	Prehistoric	Unknown
Dona Ana	59825	Unknown	Unknown
Dona Ana	59826	Unknown	Unknown
Dona Ana	59827	Historic	Unknown
Dona Ana	59828	Prehistoric	Unknown
Dona Ana	59829	Prehistoric	Unknown
Dona Ana	59830	Historic	Unknown
Dona Ana	59831	Historic	Unknown
Dona Ana	59832	Unknown	Unknown
Dona Ana	59833	Unknown	Unknown
Dona Ana	59834	Historic	Unknown
Dona Ana	59835	Prehistoric	Unknown
Dona Ana	59836	Unknown	Unknown
Dona Ana	59837	Historic	Unknown
Dona Ana	59838	Unknown	Unknown
Dona Ana	59839	Prehistoric	Unknown
Dona Ana	59841	Unknown	Unknown
Dona Ana	59843	Historic	Unknown
Dona Ana	59846	Historic	Unknown
Dona Ana	59847	Prehistoric	Unknown
Dona Ana	59849	Prehistoric	Unknown
Dona Ana	59850	Unknown	Unknown
Dona Ana	59851	Prehistoric	Unknown
Dona Ana	59852	Prehistoric	Unknown
Dona Ana	59853	Prehistoric	Unknown
Dona Ana	59854	Prehistoric	Unknown
Dona Ana	59855	Prehistoric	Unknown
Dona Ana	59856	Prehistoric	Unknown
Dona Ana	59857	Prehistoric	Unknown
Dona Ana	59858	Unknown	Unknown
Dona Ana	59860	Unknown	Unknown
Dona Ana	59861	Historic	Unknown
Dona Ana	59862	Prehistoric	Unknown
Dona Ana	59863	Prehistoric	Unknown
Dona Ana	59864	Unknown	Unknown
Dona Ana	59865	Prehistoric	Unknown
Dona Ana	60630	Unknown	Unknown
Dona Ana	60631	Unknown	Unknown
Dona Ana	60632	Unknown	Unknown
Dona Ana	60633	Prehistoric	Unknown
Dona Ana	60634	Unknown	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Dona Ana	60635	Prehistoric	Unknown
Dona Ana	60636	Prehistoric	Unknown
Dona Ana	60637	Prehistoric	Unknown
Dona Ana	60638	Prehistoric	Unknown
Dona Ana	60639	Prehistoric	Unknown
Dona Ana	60640	Prehistoric	Unknown
Dona Ana	60641	Prehistoric	Unknown
Dona Ana	60642	Prehistoric	Unknown
Dona Ana	60643	Prehistoric	Unknown
Luna	61480	Unknown	Unknown
Luna	61481	Unknown	Yes
Luna	61482	Historic	Yes
Dona Ana	67691	Prehistoric	Unknown
Dona Ana	67692	Prehistoric	Unknown
Dona Ana	67694	Prehistoric	Unknown
Dona Ana	67695	Both	Unknown
Dona Ana	67696	Prehistoric	Unknown
Dona Ana	69483	Historic	Unknown
Dona Ana	69484	Unknown	Unknown
Dona Ana	76002	Prehistoric	Unknown
Dona Ana	79551	Prehistoric	No
Dona Ana	82890	Historic	No
Dona Ana	84649	Prehistoric	Unknown
Dona Ana	84670	Prehistoric	No
Dona Ana	84671	Unknown	No
Luna	85076	Both	No
Dona Ana	86774	Prehistoric	No
Dona Ana	86775	Prehistoric	Unknown
Dona Ana	86776	Prehistoric	Unknown
Dona Ana	86777	Prehistoric	Unknown
Dona Ana	86778	Prehistoric	Unknown
Dona Ana	86779	Prehistoric	No
Dona Ana	86780	Prehistoric	Unknown
Dona Ana	86781	Prehistoric	Unknown
Dona Ana	86782	Prehistoric	Unknown
Dona Ana	86783	Prehistoric	Unknown
Dona Ana	86784	Prehistoric	Unknown
Dona Ana	86785	Prehistoric	Unknown
Dona Ana	86786	Prehistoric	Unknown
Dona Ana	86787	Prehistoric	Unknown
Dona Ana	86790	Prehistoric	Unknown
Dona Ana	86791	Prehistoric	Unknown
Dona Ana	87595	Prehistoric	No
Dona Ana	87596	Prehistoric	No
Dona Ana	89131	Prehistoric	Unknown
Luna	89132	Prehistoric	Unknown
Dona Ana	98641	Prehistoric	No

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
Dona Ana	98642	Prehistoric	No
Dona Ana	98643	Prehistoric	No
Dona Ana	98732	Prehistoric	Unknown
Dona Ana	98733	Both	Unknown
Dona Ana	98734	Prehistoric	Unknown
Dona Ana	99914	Prehistoric	No
Dona Ana	99915	Prehistoric	No
Dona Ana	99916	Prehistoric	No
Dona Ana	99917	Prehistoric	No
Dona Ana	99913	Prehistoric	No
Dona Ana	99912	Prehistoric	No
Dona Ana	106197	Prehistoric	Unknown
Dona Ana	107246	Prehistoric	No
Dona Ana	107777	Historic	Unknown
Dona Ana	108456	Prehistoric	No
Dona Ana	108457	Prehistoric	No
Dona Ana	108458	Prehistoric	No
Dona Ana	108459	Prehistoric	No
Luna	109327	Unknown	No
Luna	109328	Prehistoric	No
Dona Ana	85761	Prehistoric	Unknown
Luna	85765	Prehistoric	No
Luna	85772	Prehistoric	No
Luna	85774	Both	No
Luna	85798	Unknown	Unknown
Luna	100525	Unknown	Unknown
Luna	100526	Prehistoric	Unknown
Dona Ana	100527	Prehistoric	Unknown
Dona Ana	113683	Prehistoric	Unknown
Dona Ana	113684	Prehistoric	Unknown
Dona Ana	114176	Historic	Unknown
Dona Ana	121555	Unknown	No
Dona Ana	121556	Unknown	No
Dona Ana	121557	Prehistoric	No
Dona Ana	121558	Prehistoric	No
Dona Ana	121559	Prehistoric	No
Dona Ana	121560	Prehistoric	No
Dona Ana	121562	Prehistoric	No
Dona Ana	123207	Prehistoric	No
El Paso, TX	127181		Unknown
Dona Ana	127393	Historic	Unknown
Dona Ana	129531	Prehistoric	Unknown
	130158	Historic	Unknown
	131430	Prehistoric	Unknown
Luna	131438	Historic	Unknown
	131904	Historic	Unknown
Luna	136115	Historic	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
	138499	Both	Unknown
	138500	Both	Unknown
	138501	Both	Unknown
Dona Ana	56050	Prehistoric	Unknown
Dona Ana	56032	Prehistoric	Unknown
Dona Ana	49344	Prehistoric	Unknown
Dona Ana	130169	Historic	Unknown
Dona Ana	130170	Historic	Unknown
Dona Ana	129523	Prehistoric	Unknown
Dona Ana	129524	Prehistoric	Unknown
Dona Ana	129529	Prehistoric	Unknown
Dona Ana	129530	Prehistoric	Unknown
Dona Ana	129532	Prehistoric	Unknown
Luna	136113	Prehistoric	Unknown
Luna	136160	Unknown	Unknown
Hidalgo	135022	Historic	Unknown
Grant	20139	Historic	Unknown
Hidalgo	20141	Prehistoric	Unknown
Hidalgo	135021	Prehistoric	Unknown
Grant	135181	Unknown	Unknown
Hidalgo	135965	Historic	Unknown
	139027	Both	Unknown
Grant	139387	Historic	Unknown
Dona Ana	85744	Prehistoric	Unknown
Hidalgo	135180	Unknown	Unknown
Hidalgo	139971	Historic	Unknown
Grant	99349	Historic	No
Dona Ana	134139	Historic	Unknown
	146527	Prehistoric	Unknown
	146534	Prehistoric	Unknown
	146540	Prehistoric	Unknown
	146541	Prehistoric	Unknown
	146543	Prehistoric	Unknown
	146561	Prehistoric	Unknown
	146562	Prehistoric	Unknown
	146563	Prehistoric	Unknown
	146564	Prehistoric	Unknown
	146565	Prehistoric	Unknown
	146566	Prehistoric	Unknown
	146567	Prehistoric	Unknown
	146568	Prehistoric	Unknown
	146569	Prehistoric	Unknown
	146570	Prehistoric	Unknown
	146571	Prehistoric	Unknown
	146572	Prehistoric	Unknown
	146576	Prehistoric	Unknown
	146577	Prehistoric	Unknown

List of Previously Surveyed Archaeological Sites in the Study Corridor

County	LA. No.	Site Designation	NRHP Recommendation (Yes/No)
	146578	Prehistoric	Unknown
	146579	Prehistoric	Unknown
	146850	Historic	Unknown
	146859	Unknown	Unknown
	146860	Both	Unknown
	146861	Prehistoric	Unknown
	146862	Prehistoric	Unknown
	146863	Prehistoric	Unknown
Luna	146906	Historic	Unknown
Luna	146907	Historic	Unknown
Luna	146908	Historic	Unknown
Luna	146909	Historic	Unknown
	147175	Prehistoric	Unknown
	147176	Prehistoric	Unknown
	147177	Both	Unknown
	147178	Prehistoric	Unknown
	147179	Prehistoric	Unknown
	146542	Prehistoric	Unknown
	148995	Historic	Unknown
Grant	129785	Historic	Unknown
Dona Ana	85759	Prehistoric	Unknown
	150502	Prehistoric	Unknown
Dona Ana	145145	Historic	Unknown

APPENDIX D
PUBLIC MEETINGS SIGN-IN SHEETS & COMMENTS RECEIVED



DEPARTMENT OF HOMELAND SECURITY
BUREAU OF CUSTOMS AND BORDER PROTECTION
OFFICE OF BORDER PATROL
EL PASO SECTOR

PUBLIC SCOPING MEETING
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
FOR PROPOSED INFRASTRUCTURE PROJECTS IN THE
EL PASO, YSLETA, FABENS AND FORT HANCOCK STATIONS
EL PASO SECTOR, TEXAS
JANUARY 17, 2006

	Name (Please Print)	Address (Mailing)	Representing	Would you like to receive a copy of the environmental assessment?
1	JOSE LOPEZ	119 S. OLD PUEBLO RD EL PASO, TX 79907	YSLETA DEL SUR PUEBLO	YES.
2				
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DEPARTMENT OF HOMELAND SECURITY
BUREAU OF CUSTOMS AND BORDER PROTECTION
OFFICE OF BORDER PATROL
EL PASO SECTOR

PUBLIC SCOPING MEETING
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
FOR PROPOSED INFRASTRUCTURE PROJECTS IN THE
SANTA TERESA, LAS CRUCES, DEMING AND LORDSBURG STATIONS
EL PASO SECTOR, TEXAS
JANUARY 18, 2006

	Name (Please Print)	Address (Mailing)	Representing	Would you like to receive a copy of the environmental assessment?
1	Alex Todd	PO Box 3 Santa Teresa NM 88008	Catalina Dent	Yes
2	BENNIE JO RANGICH	1091 THUNDERBIRD EL PASO 79902	SELF	YES
3	Ed Garland	9770 N. MAIN LAS CRUCES NM 88001	SELF	Yes
4	Josée Motte	P.O. Box 108 Subd Park P8063	SELF	Yes
5	Paul Wells		USCP	NO
6	René A. Valorena		USBP	NO
7	John Colquhitt	201 E Main # 4th Floor El Paso TX 79901	Verde Group	Yes
8	Jim Calkin	220 DOMINICK BLVD SANTA TERESA, NM 88008	NM BRAN BUREAU	Yes
9	Mike Donachester	P.O. Box 30002 L.C. New Mex 88003	NMBO-PSL	Yes
10				



DEPARTMENT OF HOMELAND SECURITY
BUREAU OF CUSTOMS AND BORDER PROTECTION
EL PASO SECTOR

PUBLIC SCOPING MEETING
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
FOR PROPOSED INFRASTRUCTURE PROJECTS IN THE
SANTA TERESA, LAS CRUCES, DEMING AND LORDSBURG STATIONS
EL PASO SECTOR, TEXAS
JANUARY 19, 2006

	Name (Please Print)	Address (Mailing)	Representing	Would you like to receive a copy of the environmental assessment?
1	Carol Schuchtz	1705 Salceda SW Deming, NM 88030		
2	Nancy Castle	5275 Rockhound Rd SE Deming NM 88030		yes
3	Gerald Donaldson	210 Cortez Hawley, NM 88043	PD NMO	yes
4	LARRY CALDWELL	211 N. ZINK, DEMING, NM 88030		yes -
5	MARK WINDER	P.O. Box 601 Columbus, NM 88029	myself	yes
6	Greg Bloom	505 S. Main #148 LC, NM 88005	Sen. Bingaman	yes
7	Lori Allen	BLM 1800 Manglers Las Cruces, NM 88005	BLM	yes
8	Chris N. Lynch	PO Box 2503 Deming NM 88031	NM Livestock Board	yes
9	Mary Means	P.O. Box 2, Arivaca, NM		yes
10	K C Galyon	Box 3 Arivaca N.M.		NO

DEPARTMENT OF HOMELAND SECURITY
 BUREAU OF CUSTOMS AND BORDER PROTECTION
 OFFICE OF BORDER PATROL
 EL PASO SECTOR



PUBLIC SCOPING MEETING
 PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
 FOR PROPOSED INFRASTRUCTURE PROJECTS IN THE
 EL PASO, YSLETA, FABENS AND FORT HANCOCK STATIONS
 EL PASO SECTOR, TEXAS
 JANUARY 20, 2006

Name (Please Print)	Address (Mailing)	Representing	Would you like to receive a copy of the environmental assessment?
1 KAREN BROWNFIELD	PO Box 206, Ft Hancock, TX 79839	FHTISD	YES
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DEPARTMENT OF HOMELAND SECURITY
 BUREAU OF CUSTOMS AND BORDER PROTECTION
 OFFICE OF BORDER PATROL
 EL PASO SECTOR

Questions, Comments, or Suggestions

The Office of Border Patrol and the U.S. Army Corps of Engineers are interested in addressing your concerns and questions regarding this study. Suggestions regarding alternatives, resource issues, public involvements, etc. are encouraged as well. Your input is an important part of the NEPA process. Please write your question, comment, or suggestion on the space provided below. If you would like to be kept informed about this study please provide your name and address. Feel free to use the back of this form or add pages if needed. You may also take this form with you and return it to the address below.

BLM would like to be considered as a cooperating agency or at least discuss the option.

Name: Lori Allen Affiliation: BLM - Las Cruces
 Address: 1800 Marquess City: Las Cruces State: NM
 Zip: 88005 Phone: 505-325-4454 E-mail: Lori-Allen@nm.blm.gov

Point of Contact:
Mr. Charles McGregor
 Environmental Resource Planner
 Fort Worth District, U.S. Army Corps of Engineers
 819 Taylor Street, Room 3A14
 Fort Worth, TX 76102
 Fax (817) 886-6499



US Army Corps
of Engineers.

OFFICE OF SENATOR JEFF BINGAMAN
UNITED STATES SENATE

FACSIMILE TRANSMITTAL SHEET

TO:	Charlex McGregor	FROM:	Greg Bloom
COMPANY:		DATE:	JANUARY 30, 2006
FAX NUMBER:	817-886-6499	TOTAL NO. OF PAGES INCLUDING COVER:	2
RE:	NEPA Process: El Paso Border Patrol Sector		

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

NOTES/COMMENTS:

Charles,

Please email so that I know you have received this.

Let me know if you need anything else or any sort of clarification.

Thanks,
Greg

Greg Bloom
505.523.4775 (ph)
505.523.6584 (fax)
greg_bloom@bingaman.senate.gov

703 HART SENATE OFFICE BUILDING, WASHINGTON, DC 20510
MAIN: (202) 224-5521 9 AM TO 6 PM ET FAX: (202) 224-2852 TDD: (202) 224-1792

BW1 FOIA CBP 005896



Questions, Comments, or Suggestions

The Office of Border Patrol and the U.S. Army Corps of Engineers are interested in addressing your concerns and questions regarding this study. Suggestions regarding alternatives, resource issues, public involvements, etc. are encouraged as well. Your input is an important part of the NEPA process. Please write your question, comment, or suggestion on the space provided below. If you would like to be kept informed about this study please provide your name and address. Feel free to use the back of this form or add pages if needed. You may also take this form with you and return it to the address below.

Our office coordinates the SW Border Security Task
Force which works with and for the NM border
counties by bringing together local, state & Federal
organizations & elected officials. The
BSTF has recommended that all vehicular
barriers also serve to stop cattle from
crossing in areas where vehicular barriers
parallel cattle fencing. This recommendation
is the result of the theft of cattle fencing after
the installation of vehicular barriers. Please consider
this in your work. Thank you.

Name: Greg Bloom

Affiliation: U.S. Senator Bingaman

Address: 505 S. Main St. #148 City: Las Cruces

State: NM

Zip: 88005

Phone: 505-523-4775

E-mail: Greg_Bloom@Bingaman.Senate.gov

Point of Contact:

Mr. Charles McGregor

Environmental Resource Planner

Fort Worth District, U.S. Army Corps of Engineers

819 Taylor Street, Room 3A14

Fort Worth, TX 76102

Fax (817) 886-6499



US Army Corps
of Engineers

January 26, 2006
711 N. Zinc Street
Deming, NM 88030
Phone: 505.546.9316

Mr. Charles McGregor, Environ-
mental Resource Planner
Fort Worth District
U.S. Army Corps of Engineers
819 Taylor Street, Room 3A14
Fort Worth, TX 76102

Subject: Public Scoping: Programmatic)
Environmental Assessment for)
the Proposed Infrastructure)
Projects in Santa Teresa, Las)
Cruces, Deming and Lordsburg)
Stations El Paso Sector, New)
Mexico.)

Mr. McGregor:

Pursuant to the above subject, appended are public comment
for your consideration.

Please be so kind as to add my name and address to your mail-
ing list, so I may receive program documents.

Thank you.

I am,



Larry Caldwell

LLC/lb

cc: file (1)
letterbook (1)

public comment

larry caldwell

In considering current and future infrastructure needs, the PEA/PEIS should be determined and mitigation undertaken using a baseline that existed prior to the present environmental incursions caused by illegals/local/state/federal entities.

DEPARTMENT OF HOMELAND SECURITY
BUREAU OF CUSTOMS AND BORDER PROTECTION

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PUBLIC SCOPING MEETING
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT
FOR THE PROPOSED INFRASTRUCTURE PROJECT
EL PASO SECTOR, NEW MEXICO

ORAL COMMENT OF

ORIGINAL

MARK WINDER

JANUARY 19, 2006

ORAL COMMENT of MARK WINDER, was recorded
on the 19th of January, 2006, before Rhonda McCay, RPR,
CSR in and for the States of Texas and New Mexico,
reported by machine shorthand, at the Mimbres Valley
Special Events Center, 2300 East Pine, Deming, New
Mexico.

1 MARK WINDER: My name is Mark, M-A-R-K,
2 Winder, W-I-N-D-E-R. I live west of Columbus, two and a
3 half miles from the international border.

4 And I've been talking to some of the Corps
5 of Engineers people about what the upcoming mission is
6 going to be. I'd like to make some comments about my
7 feelings on what should happen, since we live in close
8 proximity to the border.

9 I understand that one of the main tasks
10 that the Corps of Engineers has is the construction of
11 roads and improvements to roads to give the Border
12 Patrol better access. We need that.

13 In addition, we need a plan to keep the
14 roads maintained. In the past, we have had roads
15 constructed out there. If we have a heavy rain or wind
16 storm, the roads are back to the same condition before
17 the improvements were initiated. So we need a plan to
18 maintain the roads.

19 And secondly, I understand that lighting is
20 one of the issues that is going to be brought up during
21 the meeting. And I'm not sure how much good that
22 lighting along the border is going to do.

23 One of my concerns, living so close to the
24 border, if the lighting is going to bleed off in our
25 direction, northward, is that going to create problems

1 with us, since we are close to the border. One of the
2 things we don't want to see is high-intensity lights
3 lighting our house all night long and interfering with
4 our sleep and activities we might do at our house.

5 One of the additions, one of the things
6 that I would like to see is the anti-intrusion barrier.
7 The vehicle anti-intrusion barriers, I support you 100
8 percent. We need those. We've had problems, before the
9 State police arrived, with the intrusion of Mexican
10 vehicles into the United States.

11 One additional comment that I don't think
12 would be brought up in the meeting, is, what I'd like to
13 see is a fence a few miles on either side of the port of
14 entry to prevent the tremendous influx of people coming
15 through our property and coming along the border there.
16 It seems to be a major staging area, the town of
17 Palomas. If they were pushed more east or west into
18 other areas, it would benefit us. We are in daily
19 contact with the Border Patrol, having damage to our
20 fences and our property and picking up trash these
21 people leave behind.

22 If that is an issue that would come up in
23 the future, that is one of the things that we would like
24 to see.

25 I think that's it.
(Comment concluded)

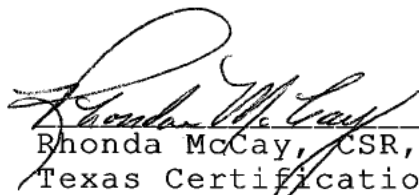
C E R T I F I C A T E

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STATE OF TEXAS)
COUNTY OF EL PASO)

I, Rhonda McCay, Certified Shorthand Reporter in
and for the State of Texas and Registered Professional
Reporter hereby certify that this transcript is a true
record of the said proceedings, and that said
transcription is done to the best of my ability.

Given under my hand and seal of office on this
27th day of January, 2006.



Rhonda McCay, CSR, RPR
Texas Certification Number 4457
Date of Expiration: 12/31/2006
REPORTERS, INK.
Firm Registration Number 420
221 N. Kansas, Suite 1201
El Paso, Texas 79901
Ph.: 915.544.1515



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

MAY 30 2006

Mr. Charles H. McGregor, Jr.
United States Army Corps of Engineers
CESWF-PER-EE
819 Taylor Street
Fort Worth, TX 76140-0300

Dear Mr. McGregor:

Thank you for the opportunity to comment on the draft Programmatic Environmental Assessment (PEA) for the proposed construction of tactical infrastructure projects along the New Mexico/Mexico international border. The United States Section of the International Boundary and Water Commission (USIBWC) has reviewed the PEA and would like to offer the following comments for your perusal.

The USIBWC has a duty to access, maintain, and utilize the international boundary monuments along the United States/Mexico international land boundary. The USIBWC is charged with these duties through treaties and international agreements between the United States and Mexico. We require that the proposed works, and related facilities not affect the permanence (disturb the foundations) of existing boundary monuments nor impede access for their maintenance. In addition, any proposed construction must allow for line-of-sight visibility between each of the boundary monuments.

USIBWC 1

The USIBWC requires that final engineering drawings be submitted to the USIBWC for review and approval prior to beginning any construction near the international boundary. These drawings must show the location of each component in relation to the international boundary and the boundary monuments. The USIBWC requires that all structures be off-set from the international boundary by a minimum of two feet, maintain a clear line-of-sight between any affected boundary monuments, and maintain a 10-foot radius off-set around the international monuments (see attached).

USIBWC 2

The USIBWC requests that proposed construction activities be accomplished in a manner that does not change historic surface runoff characteristics at the international border. The USIBWC will not approve any construction near the international boundary in the United States that increases, concentrates, or relocates overland drainage flows into either country. This requirement is intended to ensure that developments in one country will not cause damage to lands or resources in the other country. The USIBWC will need copies of any hydrological or hydraulic studies and site specific drawings for work proposed in the vicinity of the international boundary, particularly if culverts or other structures are proposed to be constructed in any drainage courses that cross the boundary. We will also require that you assure that structures constructed along the U.S./Mexico border are maintained in an adequate manner and that liability issues created by these structures are addressed.

USIBWC 3

The Commons, Building C, Suite 100 • 4171 N. Mesa Street • El Paso, Texas 79902
(915) 832-4100 • (FAX) (915) 832-4190 • <http://www.ibwc.state.gov>

USIBWC 1: Thank you for your comment. The CBP/OBP will continue to coordinate with the U.S. Section IBWC as project-specific plans and designs are identified. As this is a programmatic document, project-specific design plans are not available at this time. In the past, similar projects to those proposed in the Programmatic Environmental Assessment have not impeded access to boundary monuments or impacted the line of sight visibility between monuments. A statement has been added to Section 5.6, describing line-of-sight and access requirements.

USIBWC 2: Please see the response to comment USIBWC 1.

USIBWC 3: Please see the response to comment USIBWC 1. Also, project-specific designs and Stormwater Pollution Prevention Plans would be submitted to USIBWC for review as part of future projects that will tier from this PEA.

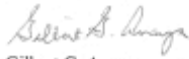
For your information, on June 25, 1897 a Presidential Proclamation was signed by President William McKinley to keep lands free from obstruction as protection against smuggling of goods between the United States and Mexico. The proclamation reserved a strip of land 60 feet wide, parallel with and adjacent to the international boundary, extending one mile east and one mile west of Monument No. 122 within the City of Nogales, Arizona. Following a recommendation that additional lands be reserved along the boundary, President Theodore Roosevelt signed a Presidential Proclamation on May 27, 1907 reserving a 60-foot wide strip of land parallel with and adjacent to the international boundary on all lands which were not already patented (i.e. Indian Reservations, National Parks and Monuments, private property etc.) to the boundary line through New Mexico, Arizona, and California. It is the responsibility of the United States (federal agencies) to ensure the integrity of the 60-foot strip of reserved land. Similar lands are also designated by Mexico along its side of the land boundary. The provisions of the 1907 Presidential declaration for the 60-foot wide strip adjacent to the international boundary should be observed.

USIBWC 4

Once the proposed tactical infrastructure projects are better defined, we recommend that project specific details be submitted for review and comment by both Sections of the IBWC. If you have any questions regarding these comments, please call me at (915) 832-4702 or contact Environmental Protection Specialist, Daniel Borunda at (915) 832-4767.

USIBWC 5

Sincerely,

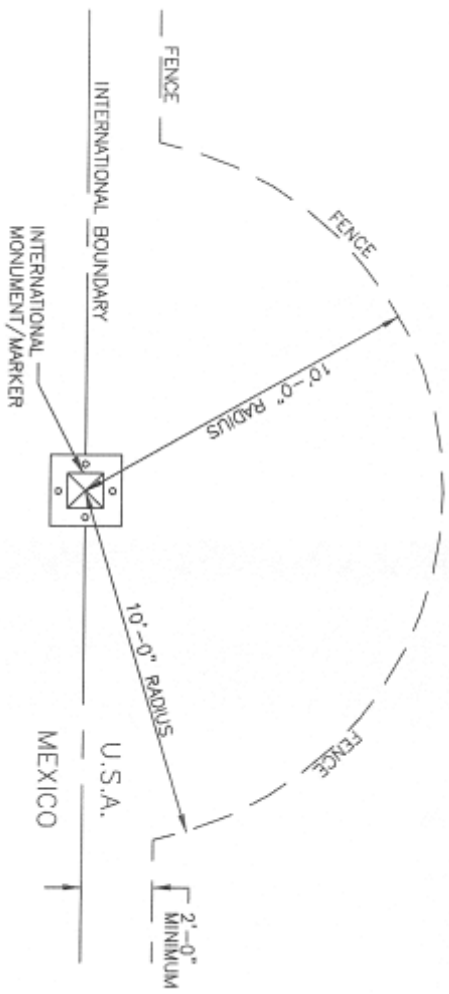


Gilbert G. Anaya
Supervisory Environmental Protection Specialist
Environmental Management Division

Enclosures:
(As stated)

USIBWC 4: The provisions of the 1907 Presidential declaration for the 60-foot wide reservation adjacent to the international boundary will be observed.

USIBWC 5: IBWC would be contacted as part of the NEPA coordination process for each subsequent project-specific document to be tiered from this programmatic document.



LOCATION OF FENCE NEAR INTERNATIONAL MONUMENTS/MARKERS
 N.T.S.

- NOTES:
1. FENCES AND ASSOCIATED GATES MUST BE CONSTRUCTED IN A MANNER AS NOT TO INTERFERE WITH LINE-OF-SIGHT BETWEEN INTERNATIONAL MONUMENTS OR ACCESS TO THESE MONUMENTS.
 2. FENCE OFFSETS FROM THE INTERNATIONAL BOUNDARY LINE MUST BE AT LEAST TWO FEET (2'). HOWEVER, LARGER OFFSET DISTANCES MAY BE REQUIRED AT SPECIFIC SITES.
 3. THE CONSTRUCTION OF GATEWAYS OR PRIVATE FACILITIES (BUILDINGS, UTILITIES, WALLS, STORM DRAINS, ETC.) IN THE VICINITY OF UNITED STATES/MEXICO INTERNATIONAL BOUNDARY MUST NOT OBSCURE THE INTERNATIONAL MONUMENTS OR MARKERS.

REV.	DESCRIPTION	RECORD NO.	DATE
1	INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO UNITED STATES SECTION INTERNATIONAL MONUMENTS		
DRAWN: C.R.			
DESIGNED: D.B.			
CHECKED: C.M.			
APPROVED: D.B.			
1 OF 1		EL PASO, TEXAS	MAY 1999
35989			



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

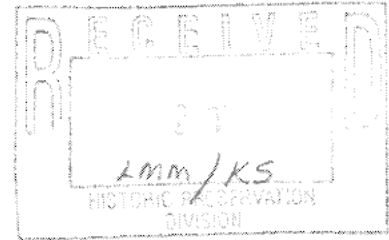
April 24, 2006

Planning, Environmental and
Regulatory Division

077797

Subject: Office of Border Patrol El Paso Sector Programmatic Environmental Assessments

Ms. Katherine Slick, Director
Department of Cultural Affairs
Historic Preservation Division
228 East Palace Ave, Room 320
Santa Fe, NM 87501



Dear Ms. Slick,

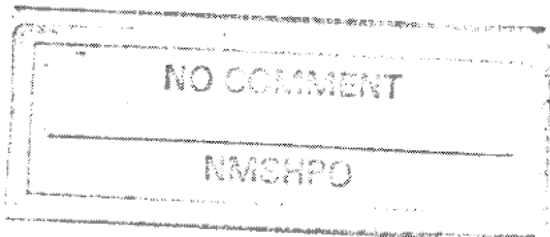
In a letter dated February 28, 2006, the United States Army Corps of Engineers, Fort Worth District, on behalf of the Department of Homeland Security, Customs and Border Protection, and the Office of Border Patrol (OBP) initiated consultation with you regarding the production of Programmatic Environmental Assessments (PEA) for potential impacts of the proposed installation of tactical infrastructure in the OBP's El Paso Sector for stations in Texas and New Mexico. The purpose of the proposed action is to deter illegal vehicle traffic from entering the United States, specifically along the Rio Grande in Texas and the international border in New Mexico. Enclosed please find a copy of the draft PEA for El Paso Sector stations in New Mexico for your review and comment.

We appreciate your involvement in this consultation process. We respectfully request that all comments be received within 30 days of the publication of the Notice of Availability. The Notice of Availability is expected to occur on April 27, 2006. Comments will be received until May 29, 2006.

Comments can be sent by mail to Mr. Charles McGregor at United States Army Corps of Engineers, 819 Taylor Street, Room 3A14, Fort Worth, TX 76140-0300, by FAX at (817) 886-6499, or by e-mail to Charles.McGregor@swf02.usace.army.mil. Thank you for your cooperation.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division



Enclosure

NMSHPO: Thank you for your prompt attention.



STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One NMDF Building
One 100th Ave SE
Santa Fe, NM 87504
Phone: (505) 476-6000
Fax: (505) 476-6127

Web Site: www.nm.gov/dgf
The New Mexico Department of Game and Fish is an Equal Opportunity Employer

Larry V. Gandy, Director
100th, NM

Dr. Tom Armit, Wildlife Research
Administrator, NM

David Anderson, Conservation
Specialist, NM

Alfred Arroyave, Conservation
Administrator, NM

Walter Fry, Conservation
Specialist, NM

Guy Hansen, Conservation
Administrator, NM

M. E. "Cotton" Johnson, Conservation
Specialist, NM

April 27, 2006

Charles H. McGregor
US Army Corps of Engineers
CESWF-PER-EE
819 Taylor Street, Room 3A14
PO Box 17300
Fort Worth, TX 76102-0300

Re: Programmatic Environmental Assessment for Proposed Tactical Infrastructure along the International
Border
NMDF No. 10623

Dear Mr. Charles H. McGregor:

In response to your letter dated 27 April 2006 regarding the above referenced project, the Department has identified wildlife related concerns in previous correspondence (see attachments). We have reviewed the draft Programmatic Environmental Assessment (PEA) and do not find that the document does not address or discuss the issues raised. By our agency nor have mitigative actions been identified.

NMDGF 1

The Department would like to submit an additional recommendation that where normal range fencing is used that the specifications for this fencing should include wildlife considerations. The Department's 2003 guidelines for fencing have been attached.

NMDGF 2

Thank you for the opportunity to review and comment on this document. If you have any questions, please contact Pat Matlin, Habitat Specialist, at (505) 532-2100 or patmatlin@dmr.state.nm.us.

Sincerely,

Lisa Kinigotrick, Chief
Conservation Services Division

LS/ps

cc: Russ Holder, Acting Ecological Services Field Supervisor, USFWS
Luis Rios, SW Area Operations Chief, NMDF
Pat Matlin, SW Area Habitat Specialist, NMDF

NMDGF 1: Please see comments and responses on the following page in regards to the original letter.

NMDGF 2: These fencing guidelines would be used during the project-specific planning process for future projects tiered from this programmatic document.



STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way
P.O. Box 104 2011
Santa Fe, NM 87504
Phone: (505) 476-6066
Fax: (505) 476-6125

Visit our website at www.wildlife.state.nm.us
For more information on any of our publications: (505) 476-6125

- Lee A. Gray, 3-Division
Tulare, NM
- Dr. Tony Arnes, Vice-Chief
Albuquerque, NM
- David Hardman, Commissioner
Santa Fe, NM
- Alfred Montoya, Commissioner
Albuquerque, NM
- Peter Pico, Commissioner
Las Alamos, NM
- Ray Rios, Commissioner
Albuquerque, NM
- W. H. "Skip" Walker, Commissioner
Silver City, NM

April 7, 2006

Charles H. McGregor
US Army Corps of Engineers
CESWF-PER-EE
819 Taylor Street, Room 3A14
PO Box 17300
Fort Worth, TX 76102-0300

Re: Programmatic Environmental Assessment for Proposed Tactical Infrastructure along the International Border
NMDGF No. 16708

Dear Mr. Charles H. McGregor:

In response to your letter dated 27 February 2006, regarding the above referenced project, a list of species of concern that occur in Dona Ana, Luna and Hidalgo Counties has been enclosed. The Department is concerned that increases of infrastructure on the border has the potential to adversely impact wildlife species and we ask that you analyze these potential impacts within the draft programmatic EIS (DPEIS). Some anticipated adverse impacts are the fragmentation of habitat and the reduction or closure of dispersal corridors caused by the construction of vehicle and pedestrian barriers. Construction design for barriers should accommodate, to the greatest extent possible, the free passage of wildlife.

NMDGF 3
NMDGF 4

Construction of new roads and the improvement of existing roads will also fragment habitat and impede movement corridors of native wildlife. Increased patrol activity from improved roads can alter behavior patterns and cause wildlife to move away from these areas, thus reducing available habitat. Construction of towers (i.e. video surveillance systems, light structures) can adversely impact and cause mortality to raptor, passerine and bat species and may adversely impact migration of some wildlife.

NMDGF 5
NMDGF 6

The Department suggests that the DPEIS should analyze these issues and discuss cumulative impacts of increasing tactical infrastructure along the international border. If proposed projects will have an adverse impact to wildlife, species the Department would like to see mitigation measures proposed that would alleviate or minimize these impacts.

NMDGF 7
NMDGF 8

Other sources of biological information are:

1. Species Accounts: <http://fwis.fwr.usgs.gov/nm/nm.htm>
2. Species Searches: <http://www.nmns.usgs.gov/nmns/conservation/plan>
3. New Mexico Wildlife of Concern by Corbin Lutz
http://www.wildlife.state.nm.us/conservation/ibars_wild_wildlife/documents/speciesofconcern.pdf
4. Habitat Handbook Project Guidelines:
http://wildlife.state.nm.us/conservation/habitat_handbook/index.htm
5. For custom site-specific database searches on plants and wildlife, Go to Data then to Free On-Line Data and follow the directions go to: <http://www.nmns.usgs.gov>

NMDGF 3: Impacts to wildlife, including dispersal and migration impacts, are discussed in Section 4.3.2 of the Draft Programmatic Environmental Assessment. Impacts to Protected Species and Critical Habitat are discussed in Section 4.4.

NMDGF 4: Construction designs for vehicle barriers impede vehicle entry only. Pedestrian or wildlife movements are not precluded. See Section 2.2.3.

NMDGF 5: Impacts to wildlife including habitat fragmentation and wildlife movements and behavior are discussed in Section 4.3.2.2.

NMDGF 6: Impacts to wildlife from RVSS and lighting structures, including impacts to raptors, avian wildlife, and bats, are discussed in Section 4.3.2.2.

NMDGF 7: Cumulative impacts from increasing tactical infrastructure along the international border are discussed in Section 4.14.

NMDGF 8: Mitigation measures for wildlife are included in Section 5.2 Biological Resources.

6. New Mexico State Forestry Division (505-827-5830) or <http://www.nmplants.com.edu/index.html> for state-listed plants
7. For the most current listing of federally listed species always check the U.S. Fish and Wildlife Service at (505-346-2525) or <http://fws.gov/EndangeredSpecies/lists/>.

Thank you for the opportunity to review and comment on your project. If you have any questions, please contact Pat Mathis, Habitat Specialist, at (505) 332-2100 or patrick.mathis@state.nm.us.

Sincerely,

Lisa Kirkpatrick, Chief
Conservation Services Division

LK/pzn

cc: Russ Holder, Acting Ecological Services Field Supervisor, USFWS
Luis Rios, SW Area Operations Chief, NMGF
Pat Mathis, SW Area Habitat Specialist, NMGF

NEW MEXICO DEPARTMENT OF GAME AND FISH

Recommendations for Constructing Wire Fences
for Livestock in Big Game Habitats
July 2003

Recommendations for wire fencing will vary with the purpose of the fence, the kinds of livestock and big game present, and any clear or implied legal requirements for fence design. Fences may be intended to restrict both livestock and wildlife, or to restrict livestock while allowing for passage of wildlife. Fencing needs may vary between interior and exterior fences in livestock pastures. Fences may be used for protection along highways, or to protect wildlife areas or habitat improvements from livestock entry. The ability of livestock or big game to negotiate a type of fence will vary with the species or breed, and sex/age of the animals. Further, regional variation in the behavior of pronghorn and desert bighorn in reaction to fences (Bear 1969:270, Elenowitz 1983:37) suggests that learned behavior may create additional variation in animal responses to fence designs. Landowners increase their legal protection against trespass livestock by having fences that are at least equal to the 4-strand fence described in 77-16-4 NMSA as a "legal fence" (Appendix A). The State Highway Department and county commissions are required by 30-8-13 NMSA to construct and maintain fences along certain roads in order to prevent livestock entry (Appendix B). However, a 1991 opinion of the Interior Department Solicitor's Office (Appendix C) indicates that federal mandates to protect wildlife on the federal lands may take precedence over state requirements for fencing of highways. Considering such variation in fence purposes, kinds of animals present, and legal constraints, a variety of types of fences should be available for recommended use, according to each local situation.

Published recommendations for fence designs (Kie et al. 1994, Kindschy 1996, and standard designs of the U.S. Forest Service and the Bureau of Land Management) are based largely upon field experiences. There has been little experimental research to test the abilities of various kinds of animals to negotiate various types of fences. Experiments have been conducted by Bear 1969, Helvie 1971, Gross et al. 1983 and Howard 1991).

The Bureau of Land Management (BLM) and the New Mexico Department of Transportation (NMDOT) have a 1990 Memorandum of Understanding in which fence standards are described (Appendix D). This attachment states that right-of-way fence specifications in areas of big game habitat will be developed through coordination between BLM and the Department of Game and Fish. Further, the attachment describes a 4-strand fence to be used along rights-of-way through pronghorn habitat. Ten other fence designs are recommended in the BLM manual (Appendix E). Each of these fences is recommended for a specific combination of big game species and type of livestock.

The U.S. Forest Service and the NMDOT modified their Memorandum of Understanding in 1982, to address right-of-way fencing in wildlife areas. The agreed-upon 4-strand fence is shown in Exhibit 9 of the MOU (Appendix F).

The Department of Game and Fish has recommended at least four fence designs during the 1980's and 1990's. Variation in Department recommendations reflects the lack of experimental

research with fence designs. Lacking a basis in research, recommendations were based upon opinions and influenced by experiences of various biologists. Both 3-strand and 4-strand fences have been recommended. Separate fence designs have been proposed for bighorn sheep habitats. Recommended fences have ranged from 34 to 42 inches high, with bottom strands varying between 12 and 20 inches above ground.

Livestock fences may prohibit or inhibit big game movements and may cause injury or death to animals that unsuccessfully negotiate fences. Big game traverse wire fences by crawling under the bottom strand, by penetrating between strands, and by jumping over fences. The propensities for using these 3 strategies vary among big game species, and among age/sex classes of animals. Further, there are regional differences in the propensities of some big game species to use certain strategies (Bear 1969:270, Elenowitz 1983:37), indicating that there are learned adaptations for crossing fences in some populations.

Crawling animals may sustain cuts by a low bottom wire. Pronghorn, javelina, and young of other species are most apt to use this strategy. Most published recommendations for fences in pronghorn habitat suggest a smooth bottom wire at least 16 inches above ground, although a bottom wire at 10 inches above ground is suggested when holding domestic sheep is necessary.

Penetrating animals may be cut by barbed wires. Worse, they may pass horns or antlers through the fence, be unable to penetrate with their entire bodies, and have horns or antlers entangled between wires with 6-8 inch spacings. They then "fight" the fence, risking cuts to the head and neck and potentially death. Most publications recommend wire spacings of 10 to 15 inches to accommodate penetrating big game. However, closer spacings are needed to hold domestic sheep, or where extreme restriction of livestock movements is needed.

Jumping animals may be cut by a barbed top wire; may entangle legs between the two top wires; or may become hung up with front and back legs on opposite sides of the fence. Adult deer and elk are most prone to jump fences. However bighorn in Southwest New Mexico (Elenowitz 1983) and some pronghorn jump fences. The lowest possible fence presents the least hazard. Published recommendations are for fences between 32 and 40 inches high, depending largely upon whether domestic sheep or domestic cattle are being held. A smooth top strand, or covering the top strand with white 1-inch PVC pipe, is recommended in areas of abundant big-game use, where trails cross fence lines, and in fence corners within big game habitats. Entanglement between the top two wires usually involves a hind leg, and presumably occurs as an animal attempts to jump with the hind legs "tucked" under the body. A leg going under the top wire may kick back into the second wire, entangling the animal. As the animal falls, a hind leg pivoting over the top wire may twist the second wire upward, producing a tight bind around the leg. This is most apt to occur if the top wires are closely spaced and not strung tightly. To avoid this problem, most published recommendations are that the top strands be 10 to 12 inches apart, and that frequent stays be used to inhibit twisting of the top wires.

Kie et al. (1994) and BLM guidelines recommend a fence with only 4 inches between the two top wires for use in bighorn sheep habitats. The recommendations appear to be based upon the research of Helvie (1971) who worked with bighorn that used a penetrating strategy, but did not jump fences. The Department of Game and Fish does not recommend this fence because bighorn

frequently jump fences in southwest New Mexico and because deer, which frequently jump fences, are present in most bighorn areas.

In wildlife habitat, where it is intended to minimize restriction of big game, fence construction must be a compromise between minimizing the risks to wildlife and holding livestock. Net wire fences are strongly discouraged. If necessary, they should be no more than 36 inches high, preferably less. A preferred net wire fence has 24 inches of woven wire with two strands of barbed wire at 2 and 10 inches above the net wire. For big game, an ideal strung-wire fence has few, tight, mostly smooth wires, widely spaced for penetration; with a high bottom strand for crawling animals and a low top strand for jumping animals. A preferred 3-strand fence is described in Fig. 1. However, this fence will not hold domestic sheep and may not hold cattle at pressure points.

In practice, 4-strand fences almost always have equally spaced wires. Their abilities to hold livestock have been demonstrated by experience. Such fences may be designed to allow crawling and jumping strategies, but equally spaced wires are expected to deter penetration, or to injure penetrating animals. Accepting this limitation, a 4-strand fence with nearly equal wire spacings is recommended in Fig. 2.

Four-strand fences with unequally spaced wires have not been tested for their abilities to hold livestock or to allow big game passage. Having unequally spaced wires could allow for big game penetration, as well as for crawling and safe jumping. Two 4-strand fences (Fig.3) are recommended for testing of their ability to hold cattle. These fences should be tested – perhaps as short segments in areas of abundant big game use – on Department lands, and on other lands where restriction of livestock is not critical.

In any wire fence, probability of entanglement between wires is diminished by taut wire with posts and stays 10 feet apart.

In extremely steep terrain, fences may be unnecessary to hold livestock. Such areas should be unfenced to allow free movement of big game. In critical areas and migration seasons, when livestock are not present, lay-down panels are requested to allow movements of big game.

Literature Cited:

Bear, G. D. 1969. Antelope and net wire fences. Proc. Western Assn. St. Game and Fish comm. 49:265-271.

Brigham, W.R. 1990. Fencing wildlife water developments. Pages 37-43 in G. K. Tsukamoto and S. J. Stiver, eds. Proc Wildlife Water Development Symposium. Nev. Chap. The Wildl. Soc., U. S. Bur. Land Manage., and Nev. Dept. Wildl.

Elenowitz, A. S. 1983. Habitat use and population dynamics of transplanted desert bighorn sheep in the Peloncillo Mountains, New Mexico. M. Sc. Thesis, New Mexico State University., Las Cruces. ___pp.

Kie, J. G., V. C. Bleigh, A. L. Medina, J. D. Yoskum and J. W. Thomas. 1994. Managing Rangelands for Wildlife. Chapt. 27, pp. 663-688 in Bookout, T. A., (Ed.) Research and management techniques for wildlife and habitats. Fifth ed. The Wildlife Society, Bethesda, MD. 704pp.

Gross, B. D., J.L. Holechek, D. Hallford and R. D. Pieper. 1983. Effectiveness of antelope pass structures in restriction of livestock. *J. Range Manage.* 36:22-24.

Hall, F. C. 1985. Wildlife habitats in managed rangelands- the Great Basin of southeastern Oregon: management options and practices. U. S. For. Serv. Gen. Tech. Rep. PNW-189. 17pp.

Helvie, J.B. 1971. Bighorns and fences. *Desert Bighorn Council. Trans.* 15:53-62.

Howard, J.W. Jr. 1991. Effects of electric predator-excluding fences on movements of mule deer in pinyon/juniper woodlands. *Wildl. Soc. Bull.* 19:331-334.

Kindschy, R. r. 1996. Fences, waterholes and other range improvements. Chapt. 22, pp. 369-381 in Krausman, P. R. (Ed.) Rangeland Wildlife. The Society of Range Management, Denver, CO. 440 pp.

Figure 1. The preferred 3-strand fence for big game habitats in New Mexico. Top and bottom wires are best if smooth, rather than barbed. This is more critical for the top wire. Fence posts and stays should be no more than 10 feet apart, to keep a taut fence. Wires should be at 16, 26 and 38 inches above the ground to accommodate crawling, penetrating and jumping animals.

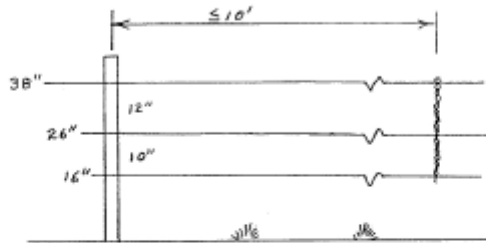
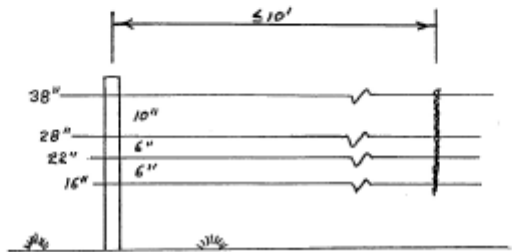


Figure 2. Recommended 4-strand fence with nearly-equal wire spacings. Top and bottom wires are best if smooth, rather than barbed. This is more critical for the top wire. Fence posts and stays should be no more than 10 feet apart, to keep a taut fence. Wires should be at 16, 22, 28 and 38 inches above ground to accommodate crawling and jumping animals.





BEIL RICHARDSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Office of the Secretary
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502-6110
Telephone (505) 827-2855



RON CURRY
SECRETARY
DEBRITH WATCHMAN-MOORE
DEPUTY SECRETARY

May 19, 2006

Charles H. McGregor, Jr.
U.S. Army Corps of Engineers
819 Taylor Street, CESWF-PER-EE
Forth Worth, TX 76140-0300

Fax: 817.886.6490

Dear Mr. McGregor:

RE: DRAFT PROGRAMMATIC ENVIRONMENTAL ASSESSMENT FOR PROPOSED
TACTICAL INFRASTRUCTURE OFFICE OF BORDER PATROL, EL PASO
SECTOR NEW MEXICO STATIONS

This transmits New Mexico Environment Department (NMED) staff comments concerning the
above-referenced Draft Programmatic Environmental Assessment (DPEA).

Surface Water Quality

The U.S. Environmental Protection Agency (USEPA) requires National Pollutant Discharge
Elimination System (NPDES) Construction General Permit (CGP) coverage for storm water
discharges from construction projects (common plans of development) that will result in the
disturbance (or re-disturbance) of one or more acres, including expansions, of total land
area. Because this project exceeds one acre (including staging areas, etc.), it will require
appropriate NPDES permit coverage prior to beginning construction (small, one - five acre,
construction projects may be able to qualify for a waiver in lieu of permit coverage - see
Appendix D).

Among other things, this permit requires that a Storm Water Pollution Prevention Plan
(SWPPP) be prepared for the site and that appropriate Best Management Practices
(BMPs) be installed and maintained both during and after construction to prevent, to the
extent practicable, pollutants (primarily sediment, oil & grease and construction materials
from construction sites) in storm water runoff from entering waters of the U.S. This permit
also requires that permanent stabilization measures (revegetation, paving, etc.), and
permanent storm water management measures (storm water detention/retention structures,
velocity dissipation devices, etc.) be implemented post construction to minimize, in the long
term, pollutants in storm water runoff from entering these waters. In addition, permittees
must ensure that there is no increase in sediment yield and flow velocity from the

NMED 1

NMED 1: As this is a programmatic document, project-specific design plans are not available at this time. NPDES permits would be applied for by the construction contractor once project-specific construction plans are identified, and engineering plans, Stormwater Pollution Prevention Plans and project-specific NEPA documents are prepared.

construction site (both during and after construction) compared to pre-construction, undisturbed conditions (see Subpart 9.C.1)

You should also be aware that EPA requires that all "operators" (see Appendix A) obtain NPDES permit coverage for construction projects. Generally, this means that at least two parties will require permit coverage. The owner/developer of this construction project who has operational control over project specifications (probably U.S. Customs & Border Protection in this case), the general contractor who has day-to-day operational control of those activities at the site, which are necessary to ensure compliance with the storm water pollution plan and other permit conditions, and possibly other "operators" will require appropriate NPDES permit coverage for this project.

The CGP was re-issued effective July 1, 2003 (see Federal Register/Vol. 68, No. 126/Tuesday, July 1, 2003 pg. 39087). The CGP, Notice of Intent (NOI), Fact Sheet, and Federal Register notice can be downloaded at: <http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>

Air Quality

The project as proposed takes place along the New Mexico-Mexico border in the following New Mexico counties; Hidalgo, Luna, and Doña Ana.

Hidalgo County is considered to be in attainment with all New Mexico and National Ambient Air Quality Standards.

While Luna County is currently considered to be in attainment with New Mexico and National Ambient Air Quality Standards; the AQB has recorded exceedances of the standard for particulate matter 10 micron and less in size (PM10) in the County. In response to the recorded exceedances of the standard for PM10, a Natural Events Action Plan (NEAP) for the County is currently being prepared. Although dust control measures have not been developed for this area to date, to reduce the impact of fugitive dust on the community members during construction-related activities, dust control measures should be taken.

Doña Ana County is currently considered to be in attainment with the NAASQ; however, the AQB has recorded exceedances of the standard for particulate matter (PM10). In response to the recorded exceedances of the standard for PM10, a Natural Events Action Plan (NEAP) for Doña Ana County has been prepared and submitted to the U.S. Environmental Protection Agency for approval. As part of the NEAP, a dust control ordinance (Doña Ana County Ordinance No. 194-2000; Erosion Control Regulation) was adopted by Doña Ana County. To ensure air quality standards are met, applicable local or county regulations requiring noise and/or dust control must be followed; if none are in effect for a specific project area, controlling construction-related air quality impacts during projects should be considered to reduce the impact of fugitive dust and/or noise on community members. The NEAP for Doña Ana County, and County Ordinance 194-2000 if applicable, should be referenced in the final environmental review.

Part of the proposed project area is located in Sunland Park, New Mexico area. The City of Sunland Park is presently designated a maintenance area for the 8-hour National Ambient Air Quality Standard (NAAQS) for ozone.

NMED 1, continued

NMED 2

NMED 2: Thank you for your comment. The affect resource, air quality, is discussed in Section 3.8 of the Draft Programmatic Environmental Assessment (DPEA). The status of air quality as reported in this comment was also included in the DPEA in Section 3.8.3. The Natural Events Action Plan for Dona Ana County is also discussed in Section 3.8.3.

To further ensure air quality standards are met, applicable local or county regulations requiring noise and/or dust control must be followed; if none are in effect, controlling construction-related air quality impacts during projects should be considered to reduce the impact of fugitive dust and/or noise on community members.

NMED 3

Potential exists for temporary increases in dust and emissions from earthmoving, construction equipment, and other vehicles, however the increases should not result in non-attainment of air quality standards. Dust control measures should be taken to minimize the release of particulates due to vehicular traffic and construction. Areas disturbed by the construction activities, within and adjacent to the project area should be reclaimed to avoid long-term problems with erosion and fugitive dust.

All asphalt, concrete, quarrying, crushing and screening facilities contracted in conjunction with the proposed project must have current and proper air quality permits. For more information on air quality permitting and modeling requirements, please refer to 20.2.72 NMAC.

NMED 4

If back up electric generation is used, be advised that records should be kept for hours of operation per generator. An application for a construction permit must be submitted for standby generators used 500 hours per year or more.

The project as proposed should have no long-term significant impacts to ambient air quality.

Petroleum Storage Tanks

The Petroleum Storage Tank Bureau knows of eleven former or current tank facilities, four of which have experienced releases, within the proposed project area for the Office of Border Patrol proposed tactical infrastructure. Some of the sites listed may not be affected by this project. Please check the local street address to see if this information applies. The contractors should remain alert for indications of soil or groundwater contamination in the vicinity of any of the listed sites.

There may be wells or remediation equipment installed at the leak sites. If the design for the proposed tactical infrastructure intersects any part of a remediation system or monitoring well, please contact the bureau to coordinate construction with preservation or modification of the remediation equipment. If contaminated soil or water is encountered during construction, all monitoring, handling and disposal requirements must be met in order to protect workers, the public and the environment, from contaminants. You can contact the PST Bureau at 505 984-1741.

NMED 5

Tank Facility Name	Address	Leak Reported
Columbus Vortac	8 Miles East of Columbus	No
San Jose Fins	222 W. Broadway, Columbus	Yes
US Border Patrol, Columbus	Broadway Avenue	No
Hachita Café	P.O. Box 95	Yes
Hachita Food Mart	4398 Highway 9, Hachita	No
Hachita Supply	Hachita	No

NMED 3: BACMs from the NEAPs are summarized in Section 3.8.3. BACMs and Best Management Practices, as discussed in Section 5.1, for reducing the impacts to air quality would be identified and implemented in future project-specific documents once engineering plans are developed.

NMED 4: All necessary permits and records would be addressed in project-specific documents once engineering plans, environmental documents, and funding procedures are completed.

NMED 5: The list of petroleum tanks with reported leaks was added to the document in the Hazardous Materials section, Section 3.10. Project-specific environmental site assessments would occur as project sites are identified.

Charles H. McGregor, Jr.
May 19, 2006
Page 4


NMDDOT Hachits Patrol Yd.	NM 9 MP 14 9
Old Fina Station	Hwy 9
Western NM University	Hachits
Mimbres Store	3090 Hwy 35, Mimbres
Joe E. Montoya	4047 Hwy 61 N, Mimbres

Yes
No
No
Yes
No

NMED 5, continued

We appreciate the opportunity to comment on this document.

Sincerely,



Gedi Cibas, Ph.D.
Environmental Impact Review Coordinator

NMED File No. 2302ER

APPENDIX E
COORDINATION LETTERS





DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

27 February 2006

Planning, Environmental and Regulatory Division

SUBJECT: Programmatic Environmental Assessment for Proposed Tactical
Infrastructure along the International Border

Mr. Mathew J. Craddock
Bureau of Land Management
Las Cruces District Office
1800 Marquess
Las Cruces, NM 88005

Dear Mr. Craddock:

The U.S. Army Corps of Engineers (USACE), Fort Worth District is acting on behalf of the U.S. Department of Homeland Security (DHS), Customs and Border Protection (CBP) in preparing a Programmatic Environmental Assessment (PEA) for tactical infrastructure (TI) along the U.S. – Mexico International Border in the Office of Border Patrol's (OBP) El Paso Sector.

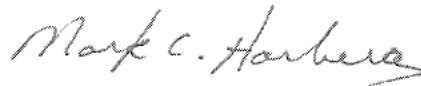
The PEA will address the installation, construction or improvement of patrol roads, drag roads, vehicle and pedestrian barriers, remote video surveillance systems, and permanent lighting structures along the international border in the state of New Mexico that may be required over the next five years. The actual infrastructure required will vary depending upon enforcement strategies and potential impacts to the environment and will be addressed in more detail in station level environmental assessments. Military units, private contractors or a combination thereof would perform the construction and installation activities.

The PEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. The PEA is a planning level document and is to be followed at a later date by more detailed station specific environmental assessments. The PEA will also describe the cumulative effects of the proposed TI projects in conjunction with other on-going and proposed projects. Enclosed is a map showing the location of the project corridors for the PEA. We are currently in the process of gathering the most current information available for this area and respectfully requests that your agency provide input regarding interests and unique or environmentally sensitive areas that you believe may be affected by the proposed OBP activities.

We intend to provide your agency with a copy of the Draft PEA once completed. Please inform us if additional copies are needed and/or if someone else within your

agency other than you should receive the documents. Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Mr. Charles H. McGregor, Jr. at (817) 886-1708.

Sincerely,

A handwritten signature in cursive script that reads "Mark C. Harbera".

^{For} William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

27 February 2006

Planning, Environmental and Regulatory Division

SUBJECT: Programmatic Environmental Assessment for Proposed Tactical Infrastructure along the International Border

Mr. Richard Galindo
International Boundary and Water Commission
U.S. Section
504 South Miranda Street
Las Cruces, NM 88001

Dear Mr. Galindo:

The U.S. Army Corps of Engineers (USACE), Fort Worth District is acting on behalf of the U.S. Department of Homeland Security (DHS), Customs and Border Protection (CBP) in preparing a Programmatic Environmental Assessment (PEA) for tactical infrastructure (TI) along the U.S. – Mexico International Border in the Office of Border Patrol's (OBP) El Paso Sector.

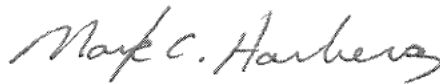
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Sincerely,

A handwritten signature in cursive script that reads "Mark C. Harber".

For William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

27 February 2006

Planning, Environmental and Regulatory Division

SUBJECT: Programmatic Environmental Assessment for Proposed Tactical
Infrastructure along the International Border

Ms. Lisa Kirkpatrick
Chief, Conservation Services Division
New Mexico Department of Game and Fish
P.O. Box 25112
Santa Fe, NM 87504

Dear Ms. Kirkpatrick:

The U.S. Army Corps of Engineers (USACE), Fort Worth District is acting on behalf of the U.S. Department of Homeland Security (DHS), Customs and Border Protection (CBP) in preparing a Programmatic Environmental Assessment (PEA) for tactical infrastructure (TI) along the U.S. – Mexico International Border in the Office of Border Patrol's (OBP) El Paso Sector.

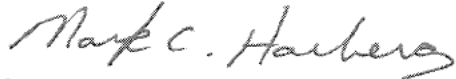
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Sincerely,

A handwritten signature in cursive script that reads "Mark C. Hauberg".

^{for} William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

27 February 2006

Planning, Environmental and Regulatory Division

SUBJECT: Programmatic Environmental Assessment for Proposed Tactical
Infrastructure along the International Border

Field Supervisor
U.S. Fish and Wildlife Service
NM Ecological Services State Office
2105 Osuna NE
Albuquerque, NM 87113

Dear Field Supervisor:

The U.S. Army Corps of Engineers (USACE), Fort Worth District is acting on behalf of the U.S. Department of Homeland Security (DHS), Customs and Border Protection (CBP) in preparing a Programmatic Environmental Assessment (PEA) for tactical infrastructure (TI) along the U.S. – Mexico International Border in the Office of Border Patrol's (OBP) El Paso Sector.

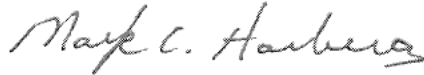
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Sincerely,

A handwritten signature in cursive script that reads "Mark C. Harber".

For William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

MAR 13 2006

Thank you for your recent request for information on threatened or endangered species or important wildlife habitats that may occur in your project area. The New Mexico Ecological Services Field Office has posted lists of the endangered, threatened, proposed, candidate and species of concern occurring in all New Mexico Counties on the Internet. Please refer to the following web page for species information in the county where your project occurs: http://ifw2es.fws.gov/NewMexico/SBC_intro.cfm. If you do not have access to the Internet or have difficulty obtaining a list, please contact our office and we will mail or fax you a list as soon as possible.

After opening the web page, find New Mexico Listed and Sensitive Species Lists on the main page and click on the county of interest. Your project area may not necessarily include all or any of these species. This information should assist you in determining which species may or may not occur within your project area.

Under the Endangered Species Act, as amended (Act), it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with us further. Similarly, it is their responsibility to determine if a proposed action has no effect to endangered, threatened, or proposed species, or designated critical habitat. If your action area has suitable habitat for any of these species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts. Please keep in mind that the scope of federally listed species compliance also includes any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects.

Candidates and species of concern have no legal protection under the Act and are included on the web site for planning purposes only. We monitor the status of these species. If significant declines are detected, these species could potentially be listed as endangered or threatened. Therefore, actions that may contribute to their decline should be avoided. We recommend that candidates and species of concern be included in your surveys.

Also on the web site, we have included additional wildlife-related information that should be considered if your project is a specific type. These include communication towers, power line safety for raptors, road and highway improvements and/or construction, spring developments and livestock watering facilities, wastewater facilities, and trenching operations.

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BW1 FOIA/CBP 005940

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. We recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands. These habitats should be conserved through avoidance, or mitigated to ensure no net loss of wetlands function and value.

The Migratory Bird Treaty Act (MBTA) prohibits the taking of migratory birds, nests, and eggs, except as permitted by the U.S. Fish and Wildlife Service. To minimize the likelihood of adverse impacts to all birds protected under the MBTA, we recommend construction activities occur outside the general migratory bird nesting season of March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until nesting is complete.

We suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding fish, wildlife, and plants of State concern.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area.

Sincerely,



Russell Holder
Acting Field Supervisor

RECEIVED

GOVERNOR
Bill Richardson



STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way
Post Office Box 25112
Santa Fe, NM 87504
Phone: (505) 476-8008
Fax: (505) 476-8128

STATE GAME COMMISSION

Leo V. Sims, II, Chairman
Hobbs, NM

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Silver City, NM

DIRECTOR AND SECRETARY
TO THE COMMISSION
Bruce C. Thompson

Visit our website at www.wildlife.state.nm.us
For basic information or to order free publications: 1-800-862-9310.

April 1, 2006

Charles H. McGregor
US Army Corps of Engineers
CESWF-PER-EE
819 Talyor Street, Room 3A14
PO Box 17300
Fort Worth, TX 76102-0300

Re: Programmatic Environmental Assessment for Proposed Tactical Infrastructure along the International Border.
NMGF No. 10690

Dear Mr. Charles H. McGregor

In response to your letter dated 27 February 2006, regarding the above referenced project, a list of species of concern that occur in Dona Ana, Luna and Hidalgo Counties has been enclosed. The Department is concerned that increases of infrastructure on the border has the potential to adversely impact wildlife species and we ask that you analyze these potential impacts within the draft programmatic EIS (DPEIS). Some anticipated adverse impacts are the fragmentation of habitat caused by the construction of vehicle and pedestrian barriers. All barriers should be constructed as to allow for the free passage of wildlife. Construction of new roads and the improvement of existing roads will also fragment habitat and impede migration corridors of native wildlife. Increased patrol activity from improved roads can alter migration patterns and cause wildlife to move away from these areas, thus reducing available habitat. Construction of video surveillance systems can adversely impact and cause mortality to raptor and passerine species. Construction of lighting structures can adversely impact bats and possibly interfere with the migration patterns of avian wildlife.

The Department suggests that the DPEIS should disclose the potential adverse impacts to wildlife caused by increasing infrastructure and the cumulative impacts should be analyzed. If proposed projects will have an adverse impact to wildlife species the Department would like to see mitigation measures proposed that would alleviate these impacts.

Other sources of biological information are:

1. Species Accounts: <http://fwie.fw.vt.edu/states/nm.htm>
2. Species Searches: <http://nmmhp.unm.edu/bisonnm/bisonquery.php>
3. New Mexico Wildlife of Concern by Counties List:
http://www.wildlife.state.nm.us/conservation/share_with_wildlife/documents/speciesofconcern.pdf
4. Habitat Handbook Project Guidelines:
http://wildlife.state.nm.us/conservation/habitat_handbook/index.htm
5. For custom, site-specific database searches on plants and wildlife. Go to Data then to Free On-Line Data and follow the directions go to: <http://nmmhp.unm.edu>
6. New Mexico State Forestry Division (505-827-5830) or <http://nmrareplants.unm.edu/index.html> for state-listed plants

7. For the most current listing of federally listed species always check the U.S. Fish and Wildlife Service at (505-346-2525) or <http://ifw2es.fws.gov/EndangeredSpecies/lists/>.

Thank you for the opportunity to review and comment on your project. If you have any questions, please contact Pat Mathis, Habitat Specialist, at (505) 532-2100 or patrick.mathis@state.nm.us.

Sincerely,



Lisa Kirkpatrick, Chief
Conservation Services Division

LK/pm

xc: Russ Holder, Acting Ecological Services Field Supervisor, USFWS
Luis Rios, SW Area Operations Chief, NMGF
Pat Mathis, SW Area Habitat Specialist, NMGF

NEW MEXICO WILDLIFE OF CONCERN DONA ANA COUNTY

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service NM Ecological Services Field Office website at [http://www.fws.gov/lfw2es/New Mexico/SBC_Intro.cfm](http://www.fws.gov/lfw2es/New%20Mexico/SBC_Intro.cfm). For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to <http://nmrareplants.unm.edu/>. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information.

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical habitat</u>
Bleached Earless Lizard	Holbrookia maculata ruthveni	s		
Southwestern Fence Lizard	Sceloporus cowlesi	s		
Little White Whiptail	Aspidoscelis gypsi	s		
Brown Pelican	Pelecanus occidentalis	E		
Neotropic Cormorant	Phalacrocorax brasilianus	T		
Bald Eagle	Haliaeetus leucocephalus	T	T	
Northern Goshawk	Accipiter gentilis	s	SOC	
Common Black-Hawk	Buteogallus anthracinus	T	SOC	
Aplomado Falcon	Falco femoralis	E	E	
Peregrine Falcon	Falco peregrinus	T	SOC	
Mountain Plover	Charadrius montanus	s	SOC	
Least Tern	Sterna antillarum	E	E	
Black Tern	Chlidonias niger surinamensis		SOC	
Common Ground-Dove	Columbina passerina	E		
Yellow-billed Cuckoo	Coccyzus americanus	s	C	
Mexican Spotted Owl	Strix occidentalis lucida	s	T	Y
Burrowing Owl	Athene cunicularia		SOC	
Buff-collared Nightjar	Caprimulgus ridgwayi	E		
Broad-billed Hummingbird	Cynanthus latirostris	T		
Violet-crowned Hummingbird	Amazilia violiceps	T		
Costa's Hummingbird	Calypte costae	T		
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y
Loggerhead Shrike	Lanius ludovicianus	s		
Bell's Vireo	Vireo bellii	T	SOC	
Gray Vireo	Vireo vicinior	T		
Baird's Sparrow	Ammodramus bairdii	T	SOC	
Varied Bunting	Passerina versicolor	T		
Western Small-footed Myotis Bat	Myotis ciliolabrum melanorhinus	s		
Yuma Myotis Bat	Myotis yumanensis yumanensis	s		
Occult Little Brown Myotis Bat	Myotis lucifugus occultus	s		
Long-legged Myotis Bat	Myotis volans interior	s		
Fringed Myotis Bat	Myotis thysanodes thysanodes	s		
Western Red Bat	Lasiurus blossewilli	s	SOC	
Spotted Bat	Euderma maculatum	T		
Pale Townsend's Big-eared Bat	Corynorhinus townsendii pallascens	s	SOC	
Big Free-tailed Bat	Nyctinomops macrotis	s		
Organ Mountains Colorado Chipmunk	Neotamias quadrivittatus australis	T	SOC	
Desert Pocket Gopher	Geomys arenarius	s	SOC	
Pecos River Muskrat	Ondatra zibethicus ripensis	s	SOC	

Red Fox	<i>Vulpes vulpes</i>	s	
Western Spotted Skunk	<i>Spilogale gracilis</i>	s	
Common Hog-nosed Skunk	<i>Conepatus leuconotus</i>	s	
Desert Bighorn Sheep	<i>Ovis canadensis mexicana</i>	E	
Dona Ana Talussnail	<i>Sonorella todseni</i>	T	SOC
Anthony Blister Beetle	<i>Lytta mirifica</i>	s	SOC
Desert Viceroy Butterfly	<i>Limenitis archippus obsoleta</i>		SOC

NEW MEXICO WILDLIFE OF CONCERN HIDALGO COUNTY

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service NM Ecological Services Field Office website at [http://www.fws.gov/lfw2es/New Mexico/SBC_intro.cfm](http://www.fws.gov/lfw2es/New%20Mexico/SBC_intro.cfm). For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to <http://nmrareplants.unm.edu/>. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information.

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical habitat</u>
Roundtail Chub	<i>Gila robusta</i>	E	SOC	
Spikedace	<i>Meda fulgida</i>	T	T	Y
Loach Minnow	<i>Rhinichthys cobitis</i>	T	T	Y
Desert Sucker	<i>Catostomus clarki</i>	s	SOC	
Sonora Sucker	<i>Catostomus insignis</i>	s	SOC	
Colorado River Toad	<i>Bufo alvarius</i>	T		
Chiricahua Leopard Frog	<i>Rana chiricahuensis</i>	s	T	
Lowland Leopard Frog	<i>Rana yavapaiensis</i>	E	SOC	
Bunch Grass Lizard	<i>Sceloporus slevini</i>	T		
Giant Spotted Whiptail	<i>Aspidoscelis burti</i>	T		
Gray-checked Whiptail	<i>Aspidoscelis dixonii</i>	E	SOC	
Mountain Skink	<i>Eumeces callicephalus</i>	T		
Reticulate Gila Monster	<i>Heloderma suspectum suspectum</i>	E		
Green Rat Snake	<i>Senticolis triaspis intermedia</i>	T		
Yaqui Blackhead Snake	<i>Tantilla yaquia</i>	s		
Mexican Garter Snake	<i>Thamnophis eques megalops</i>	E	SOC	
Narrowhead Garter Snake	<i>Thamnophis rufipunctatus rufipunctatus</i>	T	SOC	
NM Ridgenose Rattlesnake	<i>Crotalus willardi obscurus</i>	E	T	Y
Neotropic Cormorant	<i>Phalacrocorax brasilianus</i>	T		
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	T	
Northern Goshawk	<i>Accipiter gentilis</i>	s	SOC	
Gray Hawk	<i>Buteo nitidus</i>		SOC	
Common Black-Hawk	<i>Buteogallus anthracinus</i>	T	SOC	
Aplomado Falcon	<i>Falco femoralis</i>	E	E	
Peregrine Falcon	<i>Falco peregrinus</i>	T	SOC	
Gould's Wild Turkey	<i>Meleagris gallopavo mexicana</i>	T	SOC	
Mountain Plover	<i>Charadrius montanus</i>	s	SOC	
Common Ground-Dove	<i>Columbina passerina</i>	E		
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	s	C	
Whiskered Screech Owl	<i>Otus trichopsis</i>	T	SOC	
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	s	T	Y
Burrowing Owl	<i>Athene cunicularia</i>		SOC	
Buff-collared Nightjar	<i>Caprimulgus ridgwayi</i>	E		
Black Swift	<i>Cypseloides niger</i>	s		
Broad-billed Hummingbird	<i>Cynanthus latirostris</i>	T		
White-eared Hummingbird	<i>Hylocharis leucotis</i>	T		
Violet-crowned Hummingbird	<i>Amazilia violiceps</i>	T		
Lucifer Hummingbird	<i>Calothorax lucifer</i>	T		
Costa's Hummingbird	<i>Calypte costae</i>	T		

Elegant Trogon	Trogon elegans	E		
Gila Woodpecker	Melanerpes uropygialis	T		
Northern Beardless-Tyrannulet	Camptostoma imberbe	E		
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y
Thick-billed Kingbird	Tyrannus crassirostris	E		
Loggerhead Shrike	Lanius ludovicianus	s		
Bell's Vireo	Vireo bellii	T	SOC	
Gray Vireo	Vireo vicinior	T		
Abert's Towhee	Pipilo aberti	T		
Botteri's Sparrow	Aimophila botterii	s		
Baird's Sparrow	Ammodramus bairdii	T	SOC	
Arizona Grasshopper Sparrow	Ammodramus savannarum ammolegus	T		
Yellow-eyed Junco	Junco phaeonotus	T		
Varied Bunting	Passerina versicolor	T		
Arizona Shrew	Sorex arizonae	E	SOC	
Mexican Long-tongued Bat	Choeronycteris mexicana	s	SOC	
Mexican Long-nosed Bat	Leptonycteris nivalis	E	E	
Lesser Long-nosed Bat	Leptonycteris curasoae yerbabuenae	T	E	
Western Small-footed Myotis Bat	Myotis ciliolabrum melanorhinus	s		
Yuma Myotis Bat	Myotis yumanensis yumanensis	s		
Cave Myotis Bat	Myotis velifer	s		
Long-legged Myotis Bat	Myotis volans interior	s		
Fringed Myotis Bat	Myotis thysanodes thysanodes	s		
Western Yellow Bat	Lasiurus xanthinus	T		
Western Red Bat	Lasiurus blossevillii	e	SOC	
Pale Townsend's Big-eared Bat	Corynorhinus townsendii pallescens	s	SOC	
Big Free-tailed Bat	Nyctinomops macrotis	s		
Greater Western Mastiff Bat	Eumops perotis californicus	s		
White-sided Jack Rabbit	Lepus callotis gaillardi	T	SOC	
Black-tailed Prairie Dog	Cynomys ludovicianus ludovicianus	s	SOC	
Mearns' Pocket Gopher	Thomomys bottae mearnsi	s	SOC	
Southern Pocket Gopher	Thomomys umbrinus emotus	T		
Yellow-nosed Cotton Rat	Sigmodon ochrognathus		SOC	
Mexican Gray Wolf	Canis lupus baileyi	E	Exp	
Jaguar	Panthera onca arizonensis	R	E	
White-nosed Coati	Nasua narica	s		
Western Spotted Skunk	Spilogale gracilis	s		
Hooded Skunk	Mephitis macroura milleri	s		
Common Hog-nosed Skunk	Conepatus leuconotus	s		
Desert Bighorn Sheep	Ovis canadensis mexicana	E		
Shortneck Snaggletooth Snail	Gastrocopta dalliana dalliana	E	SOC	
Hacheta Grande Woodlandsnail	Ashmunella hebardi	T	SOC	
Animas Minute Moss Beetle	Limnebius aridus	s	SOC	
Desert Viceroy Butterfly	Limenitis archippus obsoleta		SOC	



DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

17 April 2006

REPLY TO
ATTENTION OF:

Planning, Environmental and Regulatory Division

SUBJECT: Cooperating Agency Status

Brigadier General Jose D. Riojas
Commander, Joint Task Force North
Bldg 11603, SSG Sims Street
Fort Bliss, Texas 79918-0058

Dear General Riojas:

The U.S. Army Corps of Engineers - Fort Worth District is acting on behalf of the U.S. Department of Homeland Security, Customs and Border Protection (CBP) in preparing two Programmatic Environmental Assessments (PEA) to address the potential effects, beneficial and adverse, of the proposed installation, operation and maintenance of various proposed tactical infrastructures (TI) that will include physical barriers, roads, vegetation management and lighting along the international border in the Office of Border Patrol's (OBP) El Paso Sector that covers El Paso County and portions of Hudspeth County in Texas and Dona Ana, Luna, and Hidalgo counties in New Mexico.

In compliance with Section 1501.6 of the Council on Environmental Quality Regulations for Implementing the National Environmental Policy Act, we are inviting Joint Task Force North to be a cooperating agency in the preparation of these PEAs. One assessment will address the impacts of the construction of TI along the international border in the two western counties of Texas and the other along the international border in the state of New Mexico.

The mission of CBP and its agents in the field is to prevent terrorist and terrorist weapons from entering the U.S. This mission involves a diverse, multi-layered approach, aimed at improving security along the international border, Ports of Entry (POE), and extending the physical zone of security beyond the Nation's physical borders. In addition, CBP must also fulfill its traditional mission that includes: controlling the sovereign borders of the U.S. by apprehending individuals attempting to enter the U.S. illegally; stemming the flow of illegal drugs and other contraband, protecting the Nation's agriculture and economic interest from harmful pest and diseases; facilitating international trade; collecting import duties; and enforcing U.S. trade, immigration and other laws of the U.S. at and beyond the Nation's borders.

The installation of various TI is being proposed by the CBP in an effort to enhance the OBP's capability to gain, maintain and extend control of the border in areas between the POEs. In brief, the purpose and need for the proposed TI are to:

- Increase apprehension of illegal aliens, thus improving deterrence,

- Reduce crime along the border areas by enhancing the effectiveness of OBP agents in their daily operations,
- Provide 24-hour operations through the use of technology (e.g., lights) as force multipliers,
- Provide improved access to remote areas along the U.S.-Mexico border,
- Secure the safety of OBP agents and U.S. residents, and
- Improve the ability of OBP agents to rescue IAs in distress.

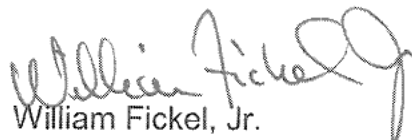
Construction and improvements of TI components would predominantly occur in previously disturbed or unvegetated areas where possible to minimize the impacted footprint to the extent practicable. Both military units and private contractors would perform construction and installation activities. The construction of proposed TI would occur in a prioritized and phased approach over the next 5 years.

The locations of the proposed TI components have been selected based upon the known high illegal traffic areas and the juxtaposition with existing infrastructure to ensure that the optimum benefits to the OBP's mission would be provided. Factors taken into account for location selection were based upon the proximity to existing roads, tactical relevance, power sources, condition of current infrastructure, ability to obtain a lease, easement or right-of-way, and topography.

Based on the common interest shared by both agencies, it is in our best interest to pursue an agreement in the preparation of these documents. We would appreciate knowing of your agency's interest in participating in the NEPA process as a cooperating agency as soon as possible. To this end if you intend to participate, CBP respectfully requests your agency provide any additional existing or draft environmental or cultural documents, technical expertise and possibly resources at your disposal to accomplish the proposed action. Your agency has been provided copies of both preliminary draft programmatic environmental assessment documents for Texas and New Mexico stations and has provided comments to each. Enclosed is a map showing the location of the project corridor. As part of this participation CBP would be asking your agency to continue to review documents and provide comments in an expedited manner to assist us in achieving the milestones in our aggressive schedule.

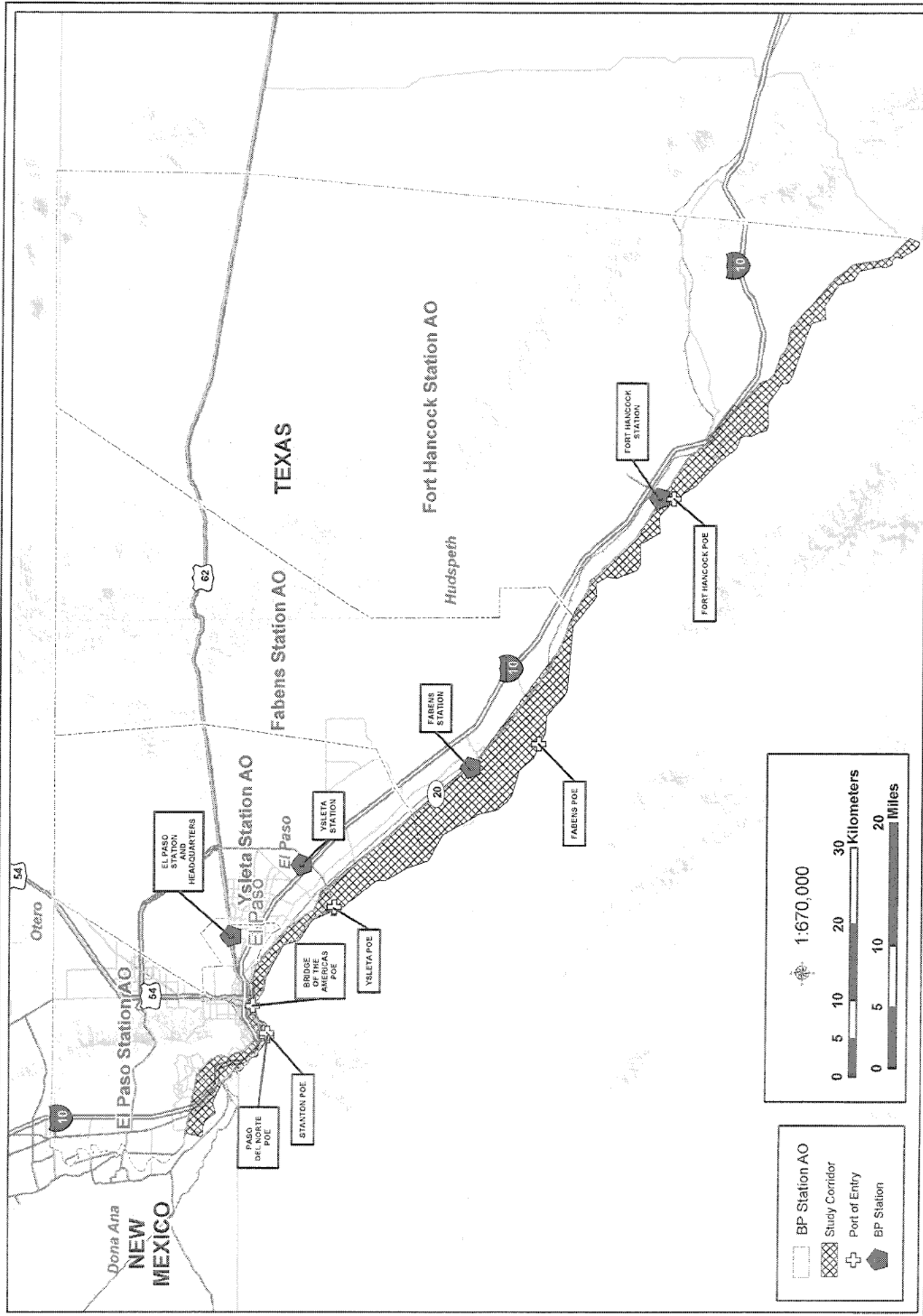
Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Charles McGregor at (817) 886-1708.

Sincerely,



William Fickel, Jr.
Chief, Planning, Environmental
and Regulatory Division

Enclosure



El Paso Sector
Texas Stations Study Corridor

BP Station AO

- BP Station AO
- Study Corridor
- Port of Entry
- BP Station

1:670,000

0 5 10 20 30 Kilometers

0 5 10 20 Miles

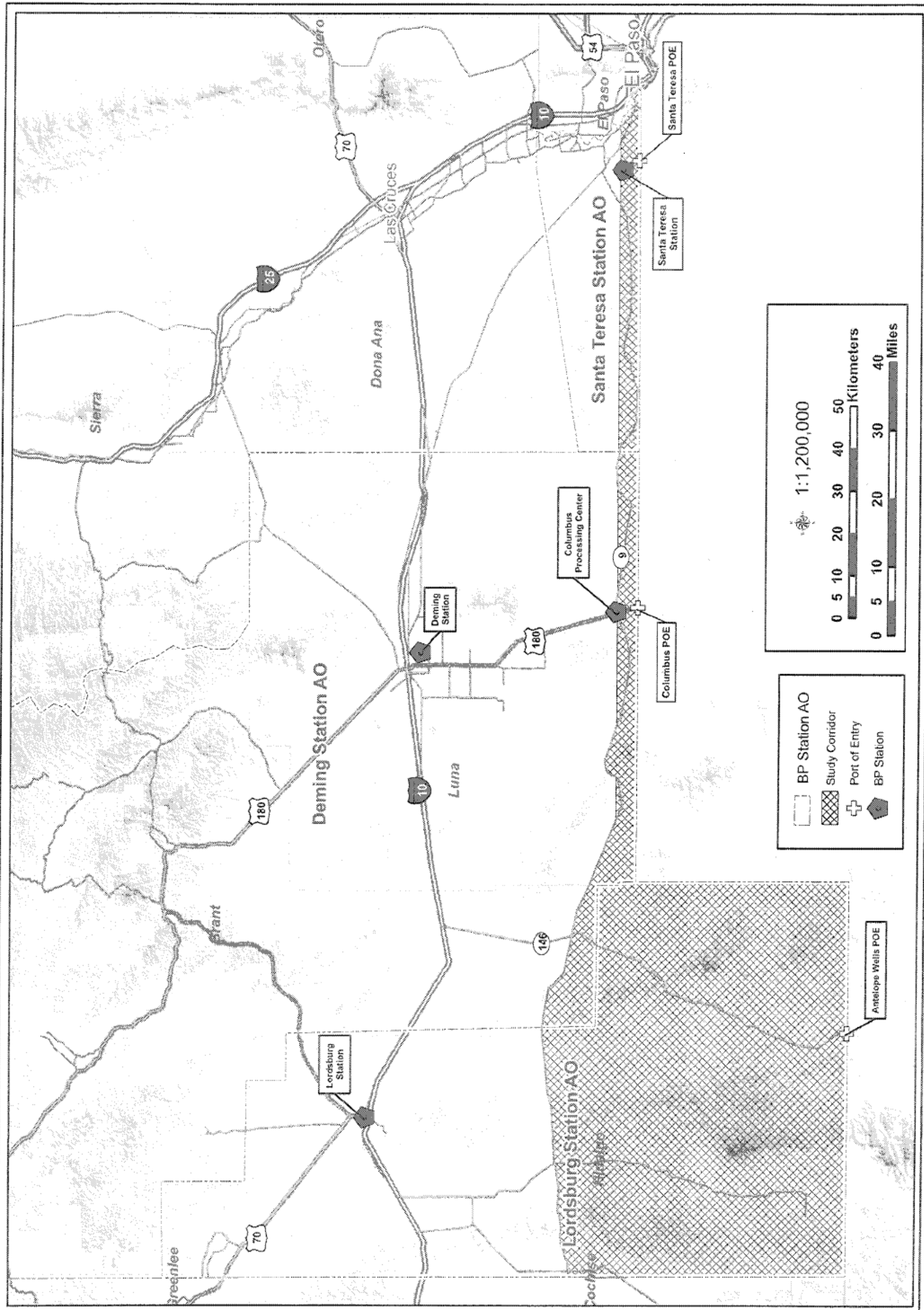


Figure 1: El Paso Sector
New Mexico Stations Study Corridor



IN REPLY REFER TO:

2800 (03000)

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Las Cruces District Office
1800 Marquess
Las Cruces, New Mexico 88005
www.nm.blm.gov



APR 18 2006

Mr. Charles H. McGregor, Jr.
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, TX 76102-0300

Dear Mr. McGregor:

We appreciate the opportunity to be a part of the Programmatic Environmental Assessment (PEA) for Proposed Tactical Infrastructure along the International Border. As you are aware, the Bureau of Land Management (BLM), Las Cruces District Office (LCDO) manages land near the International Border. The U.S. Army Corps of Engineer (USACE), U.S. Department of Homeland Security (DHS), and Customs and Border Protection (CBP) proposal to address the tactical infrastructure along the International Border could involve rights-of-way from the BLM.

In response to your April 5, 2006 letter, we agree to serve as a Cooperating Agency with the USACE, DHS, and CBP in development of the PEA. We believe we can provide valuable data on the resources we manage. We look forward to entering into a Memorandum of Understanding, which will identify the roles and responsibilities for our involvement.

Our desire to become a Cooperating Agency will allow us to tier to and use the PEA when analyzing your individual projects. In addition, it will save us additional analysis and DHS/CBP costs incurred during processing of your applications.

We look forward to assisting you in this effort as a Cooperating Agency. If you have any questions regarding this matter, please contact Lori Allen at (505) 525-4454 or at Lori_Allen@nm.blm.gov.

Sincerely,

Edwin L. Roberson
District Manager