

FINAL
ENVIRONMENTAL ASSESSMENT
ADDRESSING PROPOSED TACTICAL INFRASTRUCTURE
MAINTENANCE AND REPAIR ALONG THE U.S./MEXICO
INTERNATIONAL BORDER IN NEW MEXICO



Department of Homeland Security
U.S. Customs and Border Protection
U.S. Border Patrol

JULY 2015

ABBREVIATIONS AND ACRONYMS

µg/m ³	micrograms per cubic meter	ESP	Environmental Stewardship Plan
ACEC	Areas of Critical Environmental Concern	FEMA	Federal Emergency Management Agency
ACHP	American Council on Historic Preservation	FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
ACM	asbestos-containing material	FLPMA	Federal Land Policy and Management Act
AQCR	air quality control region	FM&E	Facilities Management and Engineering
BLM	Bureau of Land Management	FONSI	Finding of No Significant Impact
BMP	Best Management Practice	FPPA	Farmland Protection Policy Act
BP	before present	FR	Federal Register
CAA	Clean Air Act	FY	Fiscal Year
CBP	U.S. Customs and Border Protection	GHG	greenhouse gas
CEQ	Council on Environmental Quality	HAP	hazardous air pollutant
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System	HPD	Historic Preservation Division
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	I	Interstate
CFR	Code of Federal Regulations	LBP	lead-based paint
CO	carbon monoxide	mg/m ³	milligrams per cubic meter
CO ₂	carbon dioxide	MOU	Memorandum of Understanding
CWA	Clean Water Act	mph	miles per hour
dba	a-weighted decibel	msl	mean sea level
DHS	Department of Homeland Security	NAAQS	National Ambient Air Quality Standards
DOD	U.S. Department of Defense	NAGPRA	Native American Graves Protection and Repatriation Act
DVD	digital video disc	NEPA	National Environmental Policy Act
EA	Environmental Assessment	NHPA	National Historic Preservation Act
EIA	U.S. Energy Information Administration	NMDGF	New Mexico Department of Game and Fish
EIS	Environmental Impact Statement	NMED	New Mexico Environmental Department
EO	Executive Order	NM	New Mexico State Highway
ESA	Endangered Species Act	<i>continued on inside of back cover →</i>	

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NMSLO	New Mexico State Land Office
NO ₂	nitrogen dioxide
NOA	Notice of Availability
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O ₃	Ozone
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
Pb	Lead
PCB	polychlorinated biphenyl
PCE	primary consistent elements
PM _{2.5}	particulate matter equal to or less than 2.5 microns in diameter
PM ₁₀	particulate matter equal to or less than 10 microns in diameter
PMO	Program Management Office
POE	Port of Entry
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RMP	Resource Management Plan
ROI	region of influence
RVSS	Remote Video Surveillance System
ROW	right of way
SBI	Secure Border Initiative

SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SMA	Special Management Areas
SOP	Standard Operating Procedure
SO ₂	sulfur dioxide
SSPP	Strategic Sustainability Performance Plan
tpy	tons per year
TSCA	Toxic Substances Control Act
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound
WSA	Wilderness Study Area

FINAL

FINDING OF NO SIGNIFICANT IMPACT

**Addressing Proposed Tactical Infrastructure
Maintenance and Repair Along the
U.S./Mexico International Border in New Mexico**

Introduction

Pursuant to the National Environmental Policy Act (NEPA), the U.S. Department of Homeland Security (DHS) and U.S. Customs and Border Protection (CBP) has prepared an Environmental Assessment (EA), which is attached hereto and incorporated herein by reference, to document its consideration of the potential environmental impacts of a proposal to maintain and repair certain existing tactical infrastructure along the U.S./Mexico international border in the State of New Mexico. The tactical infrastructure proposed to be maintained and repaired consists of existing fences and gates, roads and bridges/crossovers, drainage structures and grates, lighting and ancillary power systems, and communication and surveillance tower components (including, but not limited to, Remote Video Surveillance System [RVSS] or Secure Border Initiative [SBInet] towers (henceforth referred to as towers)). The existing tactical infrastructure occurs in the U.S. Border Patrol (USBP) El Paso Sector.

CBP is charged with the dual mission of securing the United States' borders while facilitating legitimate trade and travel. In supporting CBP's mission the USBP has multiple missions; to apprehend terrorists and terrorist weapons illegally entering the United States, deter illegal entries through improved enforcement and to detect, apprehend and deter smugglers of humans, drugs, and other contraband.

Proposed Action

This Proposed Action will include the maintenance and repair of tactical infrastructure along the U.S./Mexico international border in New Mexico in the USBP El Paso sector. The tactical infrastructure included in this analysis crosses multiple privately owned land parcels, and public lands managed by the Bureau of Land Management (BLM), and the U.S. Forest Service (USFS). The CBP Facilities Management and Engineering (FM&E) Office is responsible for maintenance and repair of tactical infrastructure (e.g., fences, roads, lights, communications and surveillance towers, and drainage structures) to support CBP border security requirements.

Purpose and Need

The purpose of the Proposed Action is to ensure that the physical integrity of the existing tactical infrastructure and associated supporting elements continue to perform as intended and to assist the USBP in securing the U.S./Mexico international border in New Mexico. The Proposed Action will assist CBP agents and officers in continuing the effective control of our nation's southwestern border in New Mexico. In many areas, tactical infrastructure is a critical element of border security, which assists in controlling and preventing illegal border intrusion and preventing illegal border intrusion. To achieve effective control of our nation's borders, CBP is developing a combination of personnel, technology, and infrastructure; mobilizing and rapidly

deploying highly trained USBP agents; placing tactical infrastructure strategically; and fostering partnerships with other law enforcement agencies.

The need for the Proposed Action is to ensure that the effective level of border security provided by the installed tactical infrastructure is not compromised by impacts occurring through acts of sabotage, acts of nature, or a lack of maintenance and repair. CBP must ensure that tactical infrastructure functions as it is intended, which assists CBP with the following mission requirements:

- Ensuring the highest probability of apprehending terrorists and their weapons as they attempt to enter illegally between the Ports of Entry (POEs)
- Deterring illegal entries through improved enforcement
- Detecting, apprehending, and deterring smugglers of humans, drugs, and other contraband.

This EA will provide the necessary disclosure of environmental impacts under NEPA for two Federal agencies: CBP and the BLM. All maintenance and repair work on BLM administered lands will be executed in accordance with the ROW stipulations developed by BLM and CBP. The BLM purpose, as a multiple use agency, is to make public land and its resources available for use and development to meet National, regional, and local needs, consistent with national objectives, while simultaneously applying the principles of sustained yield governing the many resources the agency manages.

The BLM's purpose is to manage roads across Public Lands that are currently utilized by CBP to support the national security mission of the United States. The BLM's specific need is to issue right of way (ROW) grant for the construction, maintenance, operation, and termination of roads on public land.

The principles of sustained yield include safeguarding wildlife and their habitat, threatened species and their habitat, endangered species and their habitat, sensitive species and their habitat, water quality, soils, paleontological, archaeological, vegetation, and watershed functions. Goals and objectives for these resources were set forth in the Mimbres Resources Management Plan (December 1993). The need is to respond to an application submitted by CBP for the subject road segments under section 507 of the Federal Land Policy and Management Act (FLPMA).

In addition, tactical infrastructure will be maintained to ensure the safety of USBP agents by preventing potential vehicular accidents by minimizing and eliminating hazardous driving conditions.

Description of the Proposed Action

The proposed maintenance and repair of existing tactical infrastructure is found in along the U.S./Mexico international border in New Mexico. However, the maintenance and repair of tactical infrastructure assets that are already addressed in previous NEPA documents will not be included. In addition, tactical infrastructure assets that are covered by a waiver issued by the Secretary of Homeland Security will not be included. The maintenance and repair activities are necessary to repair damages caused due to natural disasters, normal deterioration due to wear and

tear, and intentional destruction or sabotage. The USBP El Paso sector along the U.S./Mexico international border in New Mexico has identified a need for tactical infrastructure maintenance and repair to ensure their continued utility in securing the border. All maintenance and repair activities will be coordinated by the CBP FM&E Sector Coordinator in close coordination with the sector and managed by the Project Management Office's Maintenance and Repair Supervisor. CBP proposes to conduct the following forms of tactical infrastructure maintenance and repair.

Fences and Gates. Maintenance and repair of fences and gates consist of welding of metal fence components, replacement of damaged or structurally compromised members, reinforcing or bracing of foundations, repairing burrowing activities under fences and gates, repairing weather-related damages, and the removal of vegetation and accumulated debris. The Proposed Action will also include the repair or replacement of gate-operating equipment (e.g., locks, opening/closing devices, motors, and power supplies). There are approximately 120 miles of fence on non-tribal lands in New Mexico. The fencing consists of primary border fencing and a variety of perimeter security fencing for protecting sensitive infrastructure. Approximately 5 percent of the total fences and gates in the New Mexico region of analysis are not waived or previously covered and are therefore analyzed in this EA.

Currently, CBP has not identified fences and gates requiring maintenance on BLM controlled land. The majority of fences and gates to be repaired occur within the Roosevelt Reservation and are outside the oversight or control of Federal land managers.

Access Roads and Integrated Bridges/Crossovers. Maintenance and repair activities will consist of filling in potholes, regrading road surfaces, implementing improved water drainage measures (ensure road crowns shed water and establish drainage ditches, culverts, or other water-control features as needed to control runoff and prevent deterioration to existing infrastructure or surrounding land), applying soil stabilization agents, controlling vegetation and debris, and adding lost road surface material to reestablish intended surface elevation needed for adequate drainage. Approximately 275 miles of the 550 miles of road that are used by CBP are not waived or previously analyzed and are therefore evaluated in the EA. Most of the 275 miles are within 25 miles of the U.S./Mexico international border in New Mexico. BLM will issue a standard 60-foot ROW for 50.45 miles of road with the understanding that maintenance and repair will be confined to the width of the existing road located within the 60-foot-wide ROW—CBP will not be able to expand the road footprint beyond its current limits. The exact number of miles of roads on non-BLM lands in New Mexico could change over time to accommodate CBP needs. Bridges will also be inspected on a routine basis and their structural integrity maintained. Currently, CBP has not identified bridges that require maintenance on BLM-controlled lands. In the event that a bridge on BLM-controlled lands requires maintenance, CBP will notify BLM and seek concurrence for the maintenance and repair before executing any proposed work.

Drainage Management Structures. Maintenance and repair of drainage systems will consist of cleaning blocked culverts and grates of trash and general debris and repairing or replacing nonfunctional or damaged drainages when necessary. In addition, maintenance and repair of riprap and low-water crossings will occur when necessary to maintain proper functionality. There are an estimated 150 such structures that will be maintained and repaired by CBP in New

Mexico. Approximately 20 percent of these structures are not waived or previously analyzed and are therefore evaluated in this EA.

Vegetation Control to Maintain Road Visibility. Vegetation encroaching upon roads and bridges will be maintained to ensure visibility and to sustain safe driving conditions for USBP agents during travel. Control will be achieved by trimming, mowing, and applying selective herbicides. Application of terrestrial and aquatic herbicide will be made with products approved by the USEPA and the relevant Federal land management agency, where appropriate. Certified USBP sector or contract support personnel will use all herbicides in accordance with label requirements. Herbicide use would be part of an integrated approach that uses minimal quantities of herbicide. Vegetation control will not be conducted in designated critical habitat, suitable habitat, or in areas where threatened or endangered species occur unless a survey is conducted to ensure that the species are not present. If threatened and endangered species are present, consultation with the USFWS will be required. Any vegetation-clearing activities will only be undertaken with the permission of the landowner.

Lighting and Ancillary Power Systems. The maintenance and repair of lighting and ancillary power systems will consist of the replacement of burned-out light bulbs, restoring or replacement of damaged power lines or onsite power-generating systems (e.g., generators, fuel cells, wind turbine generators, and photovoltaic arrays), repair and replacement of associated electrical components and, where necessary, vegetation control and debris removal. Approximately 25 percent of CBP's estimated 150 lighting and ancillary power systems within the New Mexico region of analysis are not waived or previously analyzed and are therefore evaluated in this EA.

Communication and Surveillance Towers. Communication and surveillance towers and components are mounted on a combination of monopoles, water towers, radio towers, telephone poles, and buildings. The physical structures of the tower components will be repaired and maintained (e.g., painting or welding to maintain existing metal towers), as necessary. Heavy equipment potentially needed to maintain lighting and ancillary power systems includes lifts, track-hoes, backhoes, and flatbed trucks. Maintenance and repair of secondary power-generation systems will consist of replacing burned-out light bulbs, restoring and replacing damaged power lines, repairing and replacing associated electrical components, and, where necessary, controlling vegetation and removing debris. Between 10 and 15 of the total towers used by CBP in the New Mexico region of analysis are not waived or previously analyzed and are therefore considered in this EA. No water towers exist on BLM land.

Each of the towers has a small footprint; none exceeds 10,000 square feet. For all water and radio towers, the total amount of disturbance would not exceed 4 acres. Access roads to the towers are included in the road mileage previously discussed.

Equipment Storage. The maintenance and repair of the existing tactical infrastructure as previously described, requires the use of various types of equipment and support vehicles. Such equipment could include graders, backhoes, tractor mowers, dump trucks, and pick-up trucks. When assigned to an activity, the equipment will be stored within the existing footprint of the maintenance and repair location or at a staging area previously designated for such purposes by CBP. The analysis of staging areas was addressed in previous NEPA documents or was exempt under the Secretary's waiver. All staging areas, and, in turn, the activities occurring therein, that

would be used by CBP as a part of the Proposed Action have either already been analyzed in previous NEPA documents or are covered by the Secretary's waiver. Requests for staging areas on BLM administered lands will require additional planning and coordination with BLM prior to use.

Alternatives

Two alternatives were considered: Alternative 1: Proposed Action and Alternative 2: No Action Alternative.

Alternative 1: Proposed Action. Under the Proposed Action, the scope of the tactical infrastructure maintenance and repair program will be incorporated as part of the proposed maintenance and repair activities to minimize potential impacts. Maintenance and repair will occur via a periodic work plan based on anticipated situations within each sector and funding availability. Maintenance and repair requirements could change over time based on changes in usage or location, but will not exceed the scope of the EA. If the scope of the EA is exceeded, new NEPA analysis will be required. Through the use of a periodic work plan, FM&E and sector managers will still be committed to a preventative maintenance strategy and performing repairs to specified standards where necessary, but will not be subject to applying all standards to all tactical infrastructures on a fixed schedule. FM&E and the sectors will ensure the sustainability of tactical infrastructure to support mission requirements.

Alternative 2: No Action Alternative. Under the No Action Alternative, the tactical infrastructure will be maintained on an as-needed basis and will be considered primarily reactive maintenance. There will be no centralized planning process for maintenance and repair. In addition, there will be no established design or performance specifications, and not all BMPs intended to reduce impacts will be implemented. Consequently, as-needed repairs could be required more often and evaluation of potential environmental impacts will occur on a case-by-case basis.

The tactical infrastructure breakdowns that have already occurred or are imminent will likely be given the highest priority for maintenance and repair. Examples include the foundation of fencing eroding to the point of imminent failure, roads becoming impassable due to severe rutting, or uncontrolled vegetation growth impeding storm water drainage flow. Preventative maintenance and repair will be limited to those situations where a USBP Sector identifies a potential trouble spot and makes a specific request for some type of preventative maintenance and repair.

The Proposed Action and No Action Alternative have been reviewed in accordance with NEPA as implemented by the regulations of the Council on Environmental Quality (CEQ). No significant impacts on any environmental resources will be expected from the implementation of the Proposed Action. Any potential adverse impacts would be expected to be negligible to minor. Details of the environmental consequences can be found in the EA, which is hereby incorporated by reference.

Public Involvement

CBP notified relevant Federal, state, and local agencies of the Proposed Action and requested input regarding environmental concerns they might have. As part of the NEPA process, CBP coordinated with the U.S. Environmental Protection Agency (USEPA); USFWS; BLM; New Mexico Office of Historic Preservation; and other Federal, state, and local agencies. Input from agency responses has been incorporated into the analysis of potential environmental impacts.

A Notice of Availability (NOA) for this EA and Draft Finding of No Significant Impact (FONSI) was published in the *Deming Headlight*, *Las Cruces Sun-News*, and the *Carlsbad Current-Argus* on March 16 and 17, 2015. This was done to solicit comments on the Proposed Action and involve the local community in the decisionmaking process.

During the 30-day public review and comment period for the Draft EA, CBP accepted comment submissions by fax, email, and by mail from the public; Federal and state agencies; Federal, state, and local elected officials; stakeholder organizations; and businesses. Three comment letters were received from Federal, state, and local agencies and were incorporated into the Final EA.

Environmental Consequences

CBP prepared a Biological Assessment (BA) in accordance with the legal requirements set forth under regulations implementing Section 7 of the Endangered Species Act (50 Code of Federal Regulations [CFR] 402; 16 United States Code [U.S.C.] 1536[c]). The purpose of this BA was to review the Proposed Action in sufficient detail to determine if it could affect any federally threatened or endangered species or their critical habitat.

CBP obtained a list of federally listed species from the USFWS online database of threatened, endangered, and proposed species that occur within the four New Mexico counties within the action area. Based on NatureServe data, species listings, recovery-planning documents, and other information, CBP determined that 20 species are known to occur within or near the action area. In addition to those 20 species, nonessential experimental populations of the Mexican wolf (*Canis lupus baileyi*) and northern aplomado falcon (*Falco femoralis septentrionalis*) have been designated in New Mexico (63 FR 1752–1772, 71 FR 42298–42315). Further, CBP has concluded that the Proposed Action will have no effect on an additional 13 species or their critical habitat.

Based on the description of the Proposed Action, the descriptions of the 20 species and their habitat, the environmental baseline, the evaluation of potential effects of the Proposed Action, and BMPs developed to avoid or minimize impacts, CBP concluded that implementation of the Proposed Action is not likely to adversely affect the 20 species considered in the BA, or any designated critical habitat of those species. Additionally, the Proposed Action would have no effect on the Mexican wolf and the aplomado falcon would have no jeopardy to continued existence. These determinations were based primarily on the following factors:

- The program involves the maintenance and repair of existing tactical infrastructure. Program activities will be conducted within and immediately adjacent to the footprint of that infrastructure.

- CBP will use a centralized maintenance and repair planning process to ensure that program activities are appropriately planned and implemented.
- CBP will implement design standards and BMPs to avoid directly harming protected species and to minimize other direct and indirect adverse effects.
- When appropriate, surveys will be conducted prior to implementing maintenance and repair activities such as vegetation control and clearing within critical habitat, occupied habitat, and suitable habitat.
- The program will result in no or very minor habitat degradation and few other direct and indirect impacts on threatened and endangered species; therefore, any contribution to the cumulative adverse effects of future non-Federal activities in the region would be insignificant.
- CBP will seek approval or additional consultation from the USFWS for activities that have the potential to harm protected species or adversely modify their critical habitat.

BMPs were also developed for the following resource areas:

- Migratory Birds
- Wildlife
- Vegetation
- Land Use
- Water Resources
- Air Quality
- Geology and Soil Resources
- Noise
- Cultural Resources
- Roadways and Traffic
- Hazardous Materials and Waste Management.

A complete detailed description of BMPs can be found in **Appendix E** of the EA and is incorporated here by reference. Impacts on resources under the Proposed Action and No Action Alternative are listed below in **Table 1**.

CBP will comply with all regulatory procedures pursuant to the National Historic Preservation Act in the implementation of the Proposed Action. CBP is currently developing a Programmatic Agreement with appropriate parties for the undertakings as specified in the Proposed Action.

Table 1. Summary of Anticipated Environmental Impacts by Alternative


Resource Area	Alternative 1: Proposed Action	Alternative 2: No Action Alternative
Land Use	No effects.	No effects.
Geology and Soils	Short- and long-term, minor, adverse effects.	Short- and long-term, minor, adverse effects.

Resource Area	Alternative 1: Proposed Action	Alternative 2: No Action Alternative
Vegetation	Short- and long-term, negligible to moderate, adverse effects.	Short- and long-term, minor to moderate, adverse effects.
Terrestrial and Aquatic Wildlife Resources	Short- and long-term, negligible to minor, adverse effects.	Short- and long-term, minor to moderate, adverse effects.
Threatened and Endangered Species	Short- and long-term, negligible to minor, adverse effects.	Short- and long-term, minor to moderate, adverse effects.
Hydrology and Groundwater	Short- and long-term, negligible to minor, adverse effects.	Short- and long-term, minor to moderate, adverse effects.
Surface Waters and Waters of the United States	Short- and long-term, negligible to minor, adverse effects.	Short- and long-term, minor to major, adverse effects.
Floodplains	Short-term, negligible to minor, adverse effects.	Short- and long-term, minor, adverse effects.
Air Quality	Short-term, negligible to minor, adverse effects.	No effects.
Noise	Long-term, negligible to minor, adverse effects.	Long-term, negligible to minor, adverse effects.
Cultural Resources	Long-term, negligible to minor, adverse effects.	Long-term, negligible, adverse effects.
Roadways and Traffic	Short-term, negligible to minor, adverse effects.	Short- and long-term, negligible to minor, adverse effects.
Hazardous Materials and Waste Management	Long-term, negligible to minor, adverse effects.	Long-term, negligible to minor, adverse effects.
Socioeconomic Resources, Environmental Justice, and Protection of Children	Short- and long-term, negligible, beneficial effects.	No effects.
BLM Realty and Minerals	Long-term, beneficial effects.	Short- and long-term, negligible to minor, adverse effects.
Sustainability and Greening	No effects.	No effects.
Aesthetics and Visual Resources	No effects.	No effects.
Climate Change	No effects.	No effects.
Human Health and Safety	No effects.	No effects.
Utilities and Infrastructure	No effects.	No effects.


Finding

Based upon the results of the EA and the environmental design measures to be implemented, the Preferred Alternative is not expected to have a significant effect on the environment. Therefore, no additional environmental documentation under NEPA is warranted, and the preparation of an Environmental Impact Statement is not required.

6-25-15
Date


Woody Lee
Chief
Strategic Planning and Analysis Directorate
U.S. Customs and Border Protection

7-13-2015
Date


Karl H. Calvo
Executive Director
Facilities Management and Engineering
U.S. Customs and Border Protection

COVER SHEET

FINAL ENVIRONMENTAL ASSESSMENT ADDRESSING PROPOSED TACTICAL INFRASTRUCTURE MAINTENANCE AND REPAIR ALONG THE U.S./MEXICO INTERNATIONAL BORDER IN NEW MEXICO

**DEPARTMENT OF HOMELAND SECURITY,
U.S. CUSTOMS AND BORDER PROTECTION,
U.S. BORDER PATROL**

Lead Agency: Department of Homeland Security (DHS), U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP).

Cooperating Agency: U.S. Department of the Interior, Bureau of Land Management (BLM), Las Cruces District Office.

Affected Location: U.S./Mexico international border in New Mexico.

Proposed Action: CBP proposes to maintain and repair existing tactical infrastructure along the U.S./Mexico international border in New Mexico. The existing tactical infrastructure along the U.S./Mexico international border in New Mexico is within the USBP El Paso Sector.

Report Designation: Final Environmental Assessment (EA).

Abstract: CBP proposes to maintain and repair existing tactical infrastructure along the U.S./Mexico international border in New Mexico. The existing tactical infrastructure includes fences and gates, roads and bridges/crossovers, drainage structures and grates, lighting and ancillary power systems, and communication and surveillance tower components (including, but not limited to, Remote Video Surveillance System [RVSS] or Secure Border Initiative [SBI] towers [which are, henceforth, referred to as towers]). The existing tactical infrastructure occurs within the USBP El Paso Sector in New Mexico.

The EA analyzes and documents potential environmental consequences associated with the Proposed Action. The analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, and a Finding of No Significant Impact (FONSI) has been prepared in accordance with CBP requirements. A separate FONSI/Decision Record will be prepared by the BLM.

Throughout the National Environmental Policy Act (NEPA) process, the public may obtain information concerning the status and progress of the Proposed Action and the EA via the project Web site at <http://www.cbp.gov/about/environmental-cultural-stewardship/nepa-documents/docs-review> by emailing NM.TIMR.EA@cbp.dhs.gov; by written request to Mr. Joseph Zidron, Environmental Protection Specialist, Customs and Border Protection, 24000 Avila Road – Suite 5020, Laguna Niguel, CA 92677; or by fax to (919) 785-1187.

FINAL

**ENVIRONMENTAL ASSESSMENT
ADDRESSING PROPOSED TACTICAL
INFRASTRUCTURE MAINTENANCE AND REPAIR
ALONG THE U.S./MEXICO INTERNATIONAL
BORDER IN NEW MEXICO**

**Department of Homeland Security
U.S. Customs and Border Protection
U.S. Border Patrol**

JULY 2015



This document printed on paper that contains at least 30 percent postconsumer fiber.

EXECUTIVE SUMMARY

INTRODUCTION

The Department of Homeland Security (DHS) and U.S. Customs and Border Protection (CBP) propose to maintain and repair certain existing tactical infrastructure within a corridor ranging from approximately 10 to 52 miles north along the U.S./Mexico international border in the State of New Mexico. The existing tactical infrastructure proposed to be maintained and repaired consists of fences and gates, roads and bridges/crossovers, drainage structures and grates, lighting and ancillary power systems, and communication and surveillance tower components (including, but not limited to, Remote Video Surveillance System [RVSS] or Secure Border Initiative [SBI] towers [henceforth referred to as towers]). The existing tactical infrastructure occurs in U.S. Border Patrol (USBP) El Paso Sector.

The tactical infrastructure included in this analysis crosses multiple privately owned land parcels, and Federal and state lands managed by the Bureau of Land Management (BLM), the U.S. Forest Service (USFS), and the New Mexico State Land Office (NMSLO), respectively. The CBP Facilities Management and Engineering (FM&E) Office is responsible for tactical infrastructure maintenance and repair to support CBP border security requirements.

The Environmental Assessment (EA) addresses the maintenance and repair of existing tactical infrastructure. Tactical infrastructure included in this EA is found in the USBP El Paso Sector along the U.S./Mexico international border in New Mexico. However, the maintenance and repair of tactical infrastructure assets that are already covered in previous National Environmental Policy Act (NEPA) documents will not be included within the scope of this EA. This EA also does not address maintenance and repair of any tactical infrastructure on tribal lands in New Mexico. In addition, tactical infrastructure assets that are covered by a waiver issued by the Secretary of Homeland Security (the Secretary) are also excluded from the scope of this EA.

This EA has been prepared through coordination with Federal and state agencies to identify and assess the potential impacts associated with the proposed maintenance and repair of tactical infrastructure. This EA is also being prepared to fulfill the requirements of the NEPA.

PURPOSE AND NEED

The purpose of the Proposed Action is to ensure that the physical integrity of the existing tactical infrastructure and associated supporting elements continue to perform as intended and assist the USBP in securing the U.S./Mexico international border in New Mexico. In many areas, tactical infrastructure is a critical element of border security, which contributes as a force multiplier for controlling and preventing illegal border intrusion. To achieve effective control of our nation's borders, CBP is developing the right combination of personnel, technology, and infrastructure; mobilizing and rapidly deploying people and resources; and fostering partnerships with other law enforcement agencies.

The Proposed Action is needed to maintain the level of border security provided by the existing tactical infrastructure that could otherwise become compromised through acts of sabotage, acts

of nature, or a concession in integrity due to a lack of maintenance and repair. CBP must ensure that tactical infrastructure functions as it is intended, which assists CBP with the following mission requirements:

- Establishing substantial probability of apprehending terrorists and their weapons as they attempt to enter illegally between the Ports of Entry (POEs)
- Deterring illegal entries through improved enforcement
- Detecting, apprehending, and deterring smugglers of humans, drugs, and other contraband.

Furthermore, well-maintained tactical infrastructure allows ready access to the U.S./Mexico international border for rapid response to detected threats and facilitates the ability to adjust quickly to changing threats.

This EA will provide the necessary disclosure of environmental impacts under NEPA for two Federal agencies: CBP and the U.S. Department of the Interior Bureau of Land Management BLM. The BLM would utilize the analysis of this EA to develop a Finding of No Significant Impact (FONSI) and Decision Record, in accordance with Public Land regulation. All maintenance and repair work on BLM administered lands will be executed in accordance with the ROW stipulations developed by BLM and CBP; a copy of the ROW stipulations is included in this EA as **Appendix H**. The BLM purpose, as a multiple use agency, is to make public land and its resources available for use and development to meet National, regional, and local needs, consistent with national objectives, while simultaneously applying the principles of sustained yield governing the many resources the agency manages.

The BLM's purpose is to manage roads across Public Lands that are currently utilized by CBP to support the national security mission of the United States. The BLM's specific need is to issue right of way (ROW) grant for the construction, maintenance, operation, and termination of roads on public land.

The principles of sustained yield include safeguarding wildlife and their habitat, threatened species and their habitat, endangered species and their habitat, sensitive species and their habitat, water quality, soils, paleontological, archaeological, vegetation, and watershed functions. Goals and objectives for these resources were set forth in the Mimbres Resources Management Plan (December 1993). The need is to respond to an application submitted by CBP for the subject road segments under section 507 of the Federal Land Policy and Management Act (FLPMA).

PUBLIC INVOLVEMENT

CBP notified relevant Federal, state, and local agencies of the Proposed Action and requested input regarding environmental concerns they might have. As part of the NEPA process, CBP coordinated with the U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS); New Mexico Historic Preservation Division; and other Federal, state, and local agencies. Input from agency responses has been incorporated into the analysis of potential environmental impacts.

Notices of Availability (NOAs) for this EA and Draft FONSI were published in the *Deming Headlight*, *Las Cruces Sun-News*, and *Carlsbad Current-Argus*. This was done to solicit comments on the Proposed Action and involve the local community in the decisionmaking process.

During the 30-day public review and comment period for the Draft EA, CBP accepted comment submissions by fax, by email, through the project-specific web site, and by mail from the public; Federal and state agencies; Federal, state, and local elected officials; stakeholder organizations; and businesses. Three comment letters were received from Federal, state, and local agencies and were incorporated into the Final EA (see **Appendix B**).

DESCRIPTION OF THE PROPOSED ACTION

CBP proposes to maintain and repair existing tactical infrastructure consisting of fences and gates, roads and bridges/crossovers, drainage structures and grates, lighting and ancillary power systems, and communications and surveillance tower components not directly associated with the tactical infrastructure covered by the Secretary's waiver and prior NEPA documentation. The maintenance and repair activities are necessary to repair damage caused by natural disasters, normal deterioration due to wear and tear, and intentional destruction or sabotage. The existing tactical infrastructure is found along the U.S./Mexico international border in New Mexico and cuts across multiple landownership categories including lands under CBP ownership, lands managed by other Federal agencies, and private property. Most of the maintenance and repair activities associated with the Proposed Action would occur within 25 miles of the U.S./Mexico international border in New Mexico. CBP would develop a comprehensive protocol for coordinating the necessary maintenance and repair activities within the different classes of landownership. No tactical infrastructure on tribal lands is included in this EA.

All maintenance and repair activities would be executed in accordance with the ROW stipulations included in **Appendix H**, coordinated by the CBP FM&E Sector Coordinator in close coordination with the El Paso Sector, and managed by the Program Management Office's Maintenance and Repair Supervisor. Maintenance and repair activities on BLM land would comply with the BLM Gold Book Standards, as required. CBP proposes to conduct the following forms of tactical infrastructure maintenance and repair.

Fences and Gates

Maintenance and repair of existing fences and gates would consist of welding metal fence components, replacing damaged or structurally compromised components, reinforcing or bracing foundations, repairing burrowing activities under fences and gates, repairing weather-related damages, and removing vegetation and accumulated debris. The Proposed Action would also include the repair or replacement of gate-operating equipment (e.g., locks, opening/closing devices, motors, and power supplies). There are approximately 120 miles of fence on non-tribal lands in New Mexico. The fencing consists of primary border fencing and a variety of perimeter security fencing to protect sensitive infrastructure. Approximately 5 percent of the fences and gates installed by CBP within the New Mexico region of analysis are not covered by a Secretary's waiver or previously analyzed and are, therefore, evaluated in this EA.

Currently, CBP has not identified fences and gates requiring maintenance on BLM-managed land. The majority of fences and gates to be repaired occur within the Roosevelt Reservation and are outside the oversight or control of Federal land managers.

Access Roads and Integrated Bridges/Crossovers

Maintenance and repair of access roads and bridges would consist of filling in potholes, regrading road surfaces, implementing improved water drainage measures (e.g., ensuring road crowns shed water and establishing drainage ditches, culverts, or other water-control features as needed to control runoff and prevent deterioration to existing infrastructure or surrounding land), applying soil stabilization agents, controlling vegetation and debris, and adding lost road surface material to reestablish intended surface elevation needed for adequate drainage. BLM will issue a standard 60-foot ROW for 50.45 miles of road with the understanding that maintenance and repair will be confined to the width of the existing road located within the 60-foot-wide ROW—CBP will not be able to expand the road footprint beyond its current limits. If future CBP needs identify that additional road segments require maintenance and repair on BLM property, CBP would apply for a ROW amendment to add the additional road segments. The ROW amendment would be subject to additional environmental evaluation in order to satisfy NEPA requirements. Additionally, if any future proposed maintenance and repair activities would occur outside the existing road footprint on BLM-managed lands, CBP would coordinate with BLM prior to beginning maintenance and repair activities. The exact number of miles of roads within New Mexico could change over time to accommodate CBP needs.

Approximately 275 of the 550 miles of road within the region of analysis that are used by CBP are not covered by a Secretary's waiver or previously analyzed and are therefore evaluated in this EA. Most of the 275 miles are within 25 miles of the U.S./Mexico international border in New Mexico. Currently, CBP has not identified bridges that require maintenance on BLM-managed lands. In the event that a bridge on BLM-managed lands requires maintenance, CBP would notify BLM and seek concurrence for maintenance and repair activities before executing any proposed work.

Drainage Management Structures

Maintenance and repair of drainage systems would consist of cleaning blocked culverts and grates of trash and general debris and repairing or replacing nonfunctional or damaged drainage structures when necessary. Resizing and replacing or repairing culverts or flow structures would occur, as necessary, to maintain proper functionality; and riprap, gabions, and other erosion-control structures would be repaired, resized, or added to reduce erosion and improve water flow. In addition, maintenance and repair of riprap and low-water crossings would occur when necessary to maintain proper functionality. Maintenance and repair requirements would consist of restoring or replacing damaged or displaced riprap. The removal of any accumulated debris to create a sustainable, efficient low-water crossing could also occur. All debris and trash removed from culverts and grates would be hauled away to an appropriate disposal facility. There are an estimated 150 such structures that would be maintained and repaired by CBP in New Mexico. Approximately 20 percent of these structures are not covered by a Secretary's waiver or previously analyzed and are, therefore, evaluated in this EA.

Vegetation Control to Maintain Road Visibility

Vegetation encroaching upon roads and bridges would be maintained to ensure visibility and to sustain safe driving conditions for USBP agents during travel. Control of vegetation would be achieved by trimming, mowing, and applying selective herbicides. In areas deemed too difficult to mow, such as under guardrails, within riprap, and immediately adjacent to bodies of water within the proposed setbacks, herbicides would be used if appropriate. Appropriate best management practices (BMPs) would be followed for all herbicide use (see **Appendix E**). Herbicides safe for aquatic use would be used within aquatic systems. Application of terrestrial and aquatic herbicide would be made with products approved by the USEPA and the relevant Federal land management agency, where appropriate. Certified USBP sector or contract support personnel certified in herbicide application would use all herbicides in accordance with label requirements. Herbicide use would be part of an integrated approach that uses minimal quantities of herbicide, and would not be applied in, or immediately adjacent to, BLM Wilderness Study Areas (WSAs). Heavy equipment needed would include mowers, trimmers, and equipment necessary for mechanical grubbing. BMPs would be used to stabilize the work areas and avoid impacts on biological resources (see **Appendix E**).

CBP would conduct surveys for nesting migratory birds and nests if maintenance occurred during the nesting season (February 1 through September 1). Vegetation control would not occur in critical habitat of threatened or endangered species. If CBP determined that vegetation control must be conducted within critical habitat of threatened or endangered species, they would consult further with the USFWS.

Lighting and Ancillary Power Systems

Maintenance and repair would consist of the replacement of burned-out light bulbs, restoring/replacement of damaged power lines or onsite power-generating systems (e.g., generators, fuel cells, wind turbine generators, and photovoltaic arrays), repair and replacement of associated electrical components, and, where necessary, vegetation control and debris removal. Heavy equipment potentially needed to maintain lighting and ancillary power systems includes lifts, track-hoes, backhoes, and flatbed trucks. Approximately 25 percent of CBP's estimated 150 lighting and ancillary power systems within the New Mexico region of analysis are not covered by a Secretary's waiver or previously analyzed and are, therefore, evaluated in this EA.

Communications and Surveillance Towers

Communications and surveillance towers and their components are mounted on a combination of monopoles, water towers, radio towers, telephone poles, and buildings. The physical structures of the communications and surveillance tower components would be repaired and maintained (e.g., painting and welding to maintain existing metal towers), as necessary. Painting towers on BLM land would be done in accordance with BLM-approved communication site plan stipulations. Heavy equipment potentially needed to maintain lighting and ancillary power systems includes lifts, track-hoes, backhoes, and flatbed trucks. Maintenance and repair of secondary power-generation systems would consist of the replacement of burned-out light bulbs, restoration or replacement of damaged power lines, repair and replacement of associated

electrical components, and, where necessary, vegetation control and debris removal. Between 10 and 15 of the total towers used by CBP in the New Mexico region of analysis are not covered by a Secretary's waiver or previously analyzed and are, therefore, considered in this EA. No water towers exist on BLM land.

Each of the towers has a small footprint; none exceeds 10,000 square feet. For all water and radio towers, the total amount of disturbance would not exceed 4 acres. Access roads to the towers are included in the road mileage previously discussed.

Equipment Storage

The maintenance and repair of the existing tactical infrastructure, as previously described, requires the use of various types of equipment and support vehicles. Such equipment could include graders, backhoes, tractor mowers, dump trucks, flatbed trucks, and pick-up trucks. When assigned to an activity, the equipment will be stored within the existing footprint of the maintenance and repair location or at a staging area previously designated for such purposes by CBP. All the staging areas, and, in turn, the activities occurring therein that would be used by CBP as a part of the Proposed Action have either already been analyzed in previous NEPA documents or are covered by the Secretary's waiver. Requests for staging areas on BLM administered lands would require additional planning and coordination with BLM prior to use. BMPs would be used to avoid impacts on wildlife and threatened and endangered species once equipment is moved (see **Appendix E**).

ALTERNATIVES ANALYSIS

Alternatives Considered

Alternative 1: Proposed Action. Under the Proposed Action, maintenance and repair would be performed as described in **Section 2.2**. A comprehensive set of BMPs would be incorporated as part of the proposed maintenance and repair activities to minimize potential impacts. Maintenance and repair would occur via a periodic work plan based on anticipated situations within the Sector and funding availability. Although centrally managed by FM&E, prioritization of projects based upon evolving local requirements within the Sector would determine maintenance and repair schedules. This alternative would accommodate changes in tactical infrastructure maintenance and repair requirements. Maintenance and repair requirements could change over time based on changes in usage or location, but would not exceed the scope of the EA. If the scope of the EA is exceeded, new NEPA analysis would be required. Using such an approach, FM&E and sector managers would be committed to a preventative maintenance strategy and performing repairs to specified standards where necessary. FM&E and the Sector would ensure the sustainability of tactical infrastructure to support mission requirements.

Alternative 2: No Action Alternative. Under the No Action Alternative, the tactical infrastructure along the U.S./Mexico international border in New Mexico would be maintained on an as-needed basis and would consist primarily of reactive maintenance. This approach would lack centralized standardization of maintenance and repair activities, and BMPs intended to reduce impacts might not be implemented. Such ad hoc maintenance would not address the overall maintenance requirements for tactical infrastructure and would not be considered

sustainable in quality, resulting in the gradual degradation of the tactical infrastructure. Maintenance and repair activities planned on an ad hoc basis without uniform application of centralized standards would likely lead to inconsistent outcomes and greater risk to environmental resources, CBP personnel, and CBP needs if no BMPs could be implemented. The No Action Alternative would not meet CBP mission needs and does not address the Congressional mandates for gaining effective control of the U.S./Mexico international border in New Mexico. However, inclusion of the No Action Alternative is prescribed by the Council on Environmental Quality (CEQ) regulations and has been carried forward for analysis in the EA. The No Action Alternative also serves as a baseline against which to evaluate the impacts of the Proposed Action.

SUMMARY OF ENVIRONMENTAL IMPACTS

Table ES-1 provides an overview of potential impacts anticipated under each alternative considered, broken down by resource area. **Section 3** of this EA addresses these impacts in more detail.

Table ES-1. Summary of Anticipated Environmental Impacts by Alternative

Resource Area	Alternative 1: Proposed Action	Alternative 2: No Action Alternative
Land Use	No new construction would occur; therefore, no effects on land use plans or policies would be expected.	The No Action Alternative would result in continuation of existing land uses. No effects on land use would be expected.
Geology and Soils	Short- and long-term, minor, adverse effects on soils, primarily from the control of vegetation and use of herbicides would be expected. Erosion- and-sediment control plans and BMPs would be implemented to reduce the potential for adverse effects associated with erosion and sedimentation. No prime farmland soils exist within the region of analysis, therefore, no impacts on prime farmland soils would occur.	Short- and long-term, minor, direct and indirect, adverse effects on soils would be expected under this alternative. CBP would continue current maintenance and repair activities and tactical infrastructure would be maintained on an as-needed basis.
Vegetation	Short- and long-term, negligible to moderate, direct, adverse effects on terrestrial and aquatic vegetation would occur. BMPs would be used to avoid or minimize these effects. In-water maintenance and repair activities could result in direct and indirect impacts on aquatic plants and their habitats.	Short- and long-term, minor to moderate, direct, adverse effects on terrestrial and aquatic vegetation could occur from the No Action Alternative. In-water maintenance and repair activities could result in direct and indirect impacts on aquatic plants and their habitats.

Resource Area	Alternative 1: Proposed Action	Alternative 2: No Action Alternative
Terrestrial and Aquatic Wildlife Resources	Short- and long-term, negligible to minor, direct and indirect, adverse effects on terrestrial and aquatic species could occur due to habitat degradation. These activities would result in temporary noise effects and displacement of terrestrial species. Near- and in-water maintenance activities could result in direct and indirect impacts on aquatic species and their habitat from increases in erosion, turbidity, and sedimentation.	Short- and long-term, minor to moderate, direct and indirect, adverse effects on terrestrial and aquatic species could occur from the No Action Alternative. Adverse effects on terrestrial species could occur due to habitat degradation associated with vegetation-control activities. Near- and in-water maintenance activities could result in direct and indirect impacts on aquatic species and their habitat from increases in erosion, turbidity, and sedimentation.
Threatened and Endangered Species	Short- and long-term, negligible to minor, direct and indirect, adverse effects on terrestrial and aquatic threatened and endangered species would be expected. Appropriate BMPs would be implemented and adverse effects from the maintenance activities would be avoided or minimized	Short- and long-term, minor to moderate, direct and indirect, adverse effects on threatened and endangered species would be expected under this alternative. Tactical infrastructure would be maintained and repaired on an as-needed basis. There would be no centralized planning process for maintenance and repair. Therefore, maintenance and repair of tactical infrastructure would be performed only on resources in disrepair.
Hydrology and Groundwater	Short- to long-term, minor, adverse, and beneficial impacts on groundwater and hydrology would be expected. Vegetation control within the road setback might cause short- to long-term, negligible to minor, adverse impacts on groundwater and hydrology by increasing erosion into wetlands, surface waters, and other groundwater recharge areas. Herbicides would result in long-term, minor, direct, adverse effects on groundwater if spills were to occur.	Short- and long-term, minor to moderate, direct and indirect, adverse impacts on hydrology and groundwater would be expected. Degrading infrastructure, particularly eroding roads, might lead to increased sediments, nutrients, and contaminants in wetlands, streams, and other groundwater recharge areas, and blocked drainage structures could increase flood risk.
Surface Waters and Waters of the United States	Short- and long-term, negligible to minor, indirect, adverse impacts could occur on surface water resources from vegetation control and debris removal, and the grading of roadways, which could cause increased sedimentation into wetlands, arroyos, or other surface water or drainage features. BMPs would be applied to minimize sedimentation.	Short- and long-term, minor to major, direct and indirect, adverse impacts on surface waters might occur. Degrading infrastructure, particularly eroding roads, could lead to increased sediments, nutrients, and contaminants in wetlands, streams, arroyos, and other water-related features, and blocked drainage structures could increase flood risk.

Resource Area	Alternative 1: Proposed Action	Alternative 2: No Action Alternative
Floodplains	Short-term, negligible to minor, indirect, adverse impacts could occur on floodplain areas from vegetation control and debris removal, which could cause increased sedimentation into floodplains and drainage structures. Short-term, minor, adverse impacts would result from the introduction of fill material during grading. Long-term, minor, beneficial impacts on floodplains could occur by minimizing erosion of road material into floodplain areas.	Short- and long-term, minor to moderate, direct and indirect, adverse impacts could occur on floodplains. Degrading infrastructure, particularly eroding roads, might lead to increased sediments and other fill materials in the floodplain, and blocked drainage structures could impair flow, which could increase flood risk.
Air Quality	Air pollutant emissions would be generated as a result of grading, filling, compacting, trenching, and maintenance and repair activities, but these emissions would be temporary and would not be expected to generate any offsite effects. No significant effects on regional or local air quality would occur, and a negligible contribution towards statewide greenhouse gas inventories would be anticipated.	No direct or indirect adverse impacts would be expected on local or regional air quality from implementation of the No Action Alternative. CBP would continue current maintenance and repair activities and tactical infrastructure would be maintained on an as-needed basis.
Noise	Long-term, periodic, negligible to minor, adverse effects on the ambient noise environment would occur. Populations within 1,000 feet of the proposed maintenance and repair activities would have the potential to be exposed to a greater adverse effect than that described for the No Action Alternative.	Long-term, periodic, negligible to minor, adverse effects on the ambient noise environment would occur. CBP would continue current maintenance and repair activities and tactical infrastructure would be maintained on an as-needed basis.
Cultural Resources	There is the potential for long-term, minor, adverse effects on archaeological sites from the grading of roads that have not been previously graded. All other activities have negligible to no potential to impact cultural resources.	Negligible or no potential to impact cultural resources would be expected. There would be no Programmatic Agreement under the No Action Alternative. As a result, undertakings with the potential to cause effects on historic properties would follow the review and mitigation procedures set forth in Section 106 of the National Historic Preservation Act (NHPA). Unanticipated find procedures would be identical to those of the Proposed Action. Less ground-disturbing activities would take place and unanticipated finds would therefore be less likely.

Resource Area	Alternative 1: Proposed Action	Alternative 2: No Action Alternative
Roadways and Traffic	Short-term, negligible to minor, adverse effects on transportation would be expected from short-term roadway closures and detours while work is underway. Long-term, minor to moderate, beneficial effects on transportation would allow for faster, safer, and more efficient responses by the USBP to threats.	Most roadway repairs would be reactive to immediate issues affecting these roadways and would not address the long-term maintenance requirements. As-needed repairs would not be considered sustainable in quality because they would result in gradual degradation of these roadways.
Hazardous Materials	Long-term, negligible to minor, adverse impacts on hazardous substances, petroleum products, hazardous and petroleum wastes, and pesticides would be expected. Due to the nature and age of the tactical infrastructure, it is not anticipated to contain asbestos-containing materials (ACMs), lead-based paints (LBPs), polychlorinated biphenyls (PCBs), or solid waste, and therefore no impacts on these resources would be expected.	Long-term, negligible to minor, adverse impacts on solid waste would be expected due to the deterioration of tactical infrastructure over time. No impacts on hazardous substances, petroleum products, hazardous and petroleum wastes, pesticides, ACMs, LBPs, and PCBs would be expected. Due to the nature and age of the tactical infrastructure it is not anticipated to contain ACMs, LBPs, PCBs, or solid waste.
Socioeconomic Resources, Environmental Justice, and Protection of Children	Short-term, minor, beneficial effects would result from increases to payroll earnings and taxes and the purchase of materials required for maintenance and repair. Short- to long-term, indirect, beneficial impacts on the protection of children in the areas along the U.S./Mexico border would occur.	Under the No Action Alternative, there would be no change from the baseline conditions; therefore, no impacts would be expected.

Resource Area	Alternative 1: Proposed Action	Alternative 2: No Action Alternative
BLM Realty and Minerals	No adverse impacts on BLM Realty and Minerals programs would be expected under the Proposed Action. BLM does not anticipate that granting ROW for operation and maintenance of the proposed TIMR project would result in any negative impacts on mining claims, or authorized leases and ROWs, because maintenance of the existing roads does not conflict with any current mining claim, lease, or ROW use. Long-term, beneficial impacts on encumbrances on Public Land would be expected because physical access would be improved.	Under the No Action Alternative, ROW applications would not be granted for the BLM ROW avoidance areas. Maintenance and repair activities within the ROW avoidance areas would not be completed by CBP and would not follow the procedures described in the proposed work plan. Repairs performed on an as-needed basis would result in gradual degradation of these roadways. The No Action Alternative would result in greater impacts on ROW avoidance areas than the Proposed Action due to a reduction to physical access to these areas. Therefore, the No Action Alternative would result in short- and long-term impacts on ROW avoidance areas.
Sustainability and Greening	Negligible.	Negligible.
Aesthetics and Visual Resources	Negligible.	Negligible.
Climate Change	Negligible.	Negligible.
Human Health and Safety	Negligible.	Negligible.
Utilities and Infrastructure	Negligible.	Negligible.

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FINAL
ENVIRONMENTAL ASSESSMENT
ADDRESSING PROPOSED TACTICAL INFRASTRUCTURE MAINTENANCE AND REPAIR
ALONG THE U.S./MEXICO INTERNATIONAL BORDER

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1. INTRODUCTION

The Department of Homeland Security (DHS) and U.S. Customs and Border Protection (CBP) propose to maintain and repair certain existing tactical infrastructure within a corridor ranging from approximately 10 to 52 miles north along the U.S./Mexico international border in New Mexico. The tactical infrastructure proposed to be maintained and repaired consists of fences and gates, roads and bridges/crossovers, drainage structures and grates, lighting and ancillary power systems, and communications and surveillance tower components (including, but not limited to, Remote Video Surveillance System [RVSS] or Secure Border Initiative towers [SBIInet] towers, henceforth referred to as towers) along the U.S./Mexico international border. Although the majority of anticipated tactical infrastructure can be found within the geographic areas shown in **Figure 1-1**, the exact extent could change over time to accommodate CBP needs. The existing tactical infrastructure in New Mexico occurs in the U.S. Border Patrol (USBP) El Paso Sector.

The tactical infrastructure included in this analysis crosses multiple privately owned land parcels, and Federal and state lands managed by the Bureau of Land Management (BLM), the U.S. Forest Service (USFS) and the New Mexico State Land Office (NMSLO). The CBP Facilities Management and Engineering (FM&E) Office is responsible for maintenance and repair of tactical infrastructure (e.g., fences and gates, roads, lights, tower components, and drainage structures) to support CBP border security requirements.

This Environmental Assessment (EA) addresses the maintenance and repair of existing tactical infrastructure. However, the maintenance and repair of tactical infrastructure assets that are already covered in previous National Environmental Policy Act (NEPA) documents will not be included within the scope of this EA. This EA also does not address maintenance and repair of any tactical infrastructure on tribal lands in New Mexico. In addition, tactical infrastructure assets that are covered by a waiver issued by the Secretary of Homeland Security (the Secretary) are also excluded from the scope of this EA.

The Secretary's waiver authority is derived from Section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, as amended. Under Section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act, the U.S. Congress gave the Secretary the authority to waive such legal requirements that the Secretary deems necessary to ensure the expeditious construction of tactical infrastructure. Since 2005, the Secretary has issued five separate waivers: San Diego Border Infrastructure System waiver (70 Federal Register [FR] 55622), the Barry M. Goldwater Range waiver (72 FR 2535), the San Pedro National Riparian Conservation Area (72 FR 60870) waiver, and April 2008 waivers for construction of among other things, pedestrian and vehicular fence along the international border (73 FR 19077) (73 FR 19078). Although the Secretary's waivers meant that CBP no longer had any specific legal obligation under the laws that were included in the waivers, both DHS and CBP remained committed to responsible environmental stewardship. For example, CBP prepared Environmental Stewardship Plans (ESPs) in lieu of NEPA documents for the tactical infrastructure constructed under the April 2008 waivers.

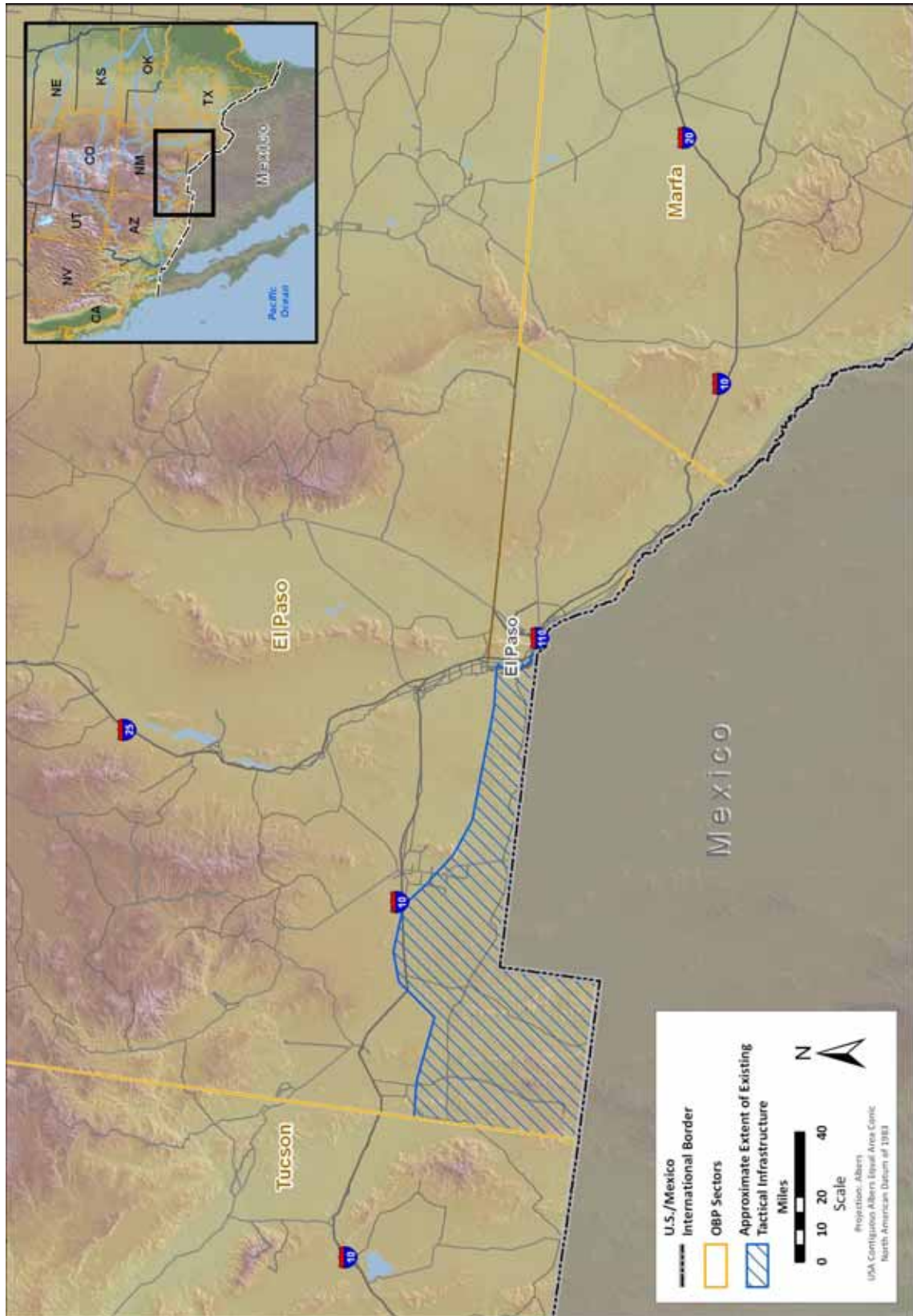


Figure 1-1. Region of Analysis for Proposed Tactical Infrastructure Maintenance and Repair Activities in New Mexico

In preparing the ESPs, CBP coordinated with various stakeholder groups, including state and local governments, Federal and state land managers and resource agencies, and the interested public. The ESPs analyzed the potential environmental impacts associated with the construction and maintenance of such tactical infrastructure and discussed mitigation measures that would be implemented by CBP.

In furtherance of the Secretary's commitment to environmental stewardship, CBP continues to work in a collaborative manner with local government, state, and Federal land managers and the interested public to identify environmentally sensitive resources and develop appropriate best management practices (BMPs) to avoid or minimize adverse impacts resulting from tactical infrastructure projects. This EA addresses the cumulative impacts of all maintenance and repair activities within the region of analysis including the tactical infrastructure analyzed in previous NEPA documents or ESPs. This comprehensive and integrated environmental impacts analysis of all tactical infrastructure assets within the region of analysis reflects CBP's environmental stewardship in better understanding the cumulative impacts and its commitments to minimize the potential negative impacts. This EA discusses tactical infrastructure maintenance and repair activities and their attributes that will enhance positive environmental benefits.

This EA is divided into six sections plus appendices. **Section 1** provides background information on USBP missions, identifies the purpose of and need for the Proposed Action, describes the area in which the Proposed Action would occur, and explains the public involvement process. **Section 2** provides a detailed description of the Proposed Action, alternatives considered, and the No Action Alternative. **Section 3** describes existing environmental conditions in the areas where the Proposed Action would occur, and identifies potential environmental impacts that could occur within each resource area under the alternatives evaluated in detail. **Section 4** discusses potential cumulative impacts and other impacts that might result from implementation of the Proposed Action, combined with foreseeable future actions. **Sections 5 and 6** provide a list of preparers and references for the EA.

1.1 USBP BACKGROUND

USBP has multiple missions (CBP 2010a), including the following:

- Apprehend terrorists and terrorist weapons illegally entering the United States
- Deter illegal entries through improved enforcement
- Detect, apprehend, and deter smugglers of humans, drugs, and other contraband.

USBP's new and traditional missions, referred to in the preceding list, are complementary.

USBP has nine administrative sectors along the U.S./Mexico international border within the states of California, Arizona, New Mexico, and Texas. The sectors are San Diego, El Centro, Yuma, Tucson, El Paso, Big Bend, Del Rio, Laredo, and Rio Grande Valley.

This EA examines the maintenance and repair of tactical infrastructure along the U.S./Mexico international border in New Mexico in the El Paso Sector.

1.2 PURPOSE AND NEED

The purpose of the Proposed Action is to ensure that the physical integrity of existing tactical infrastructure and associated supporting elements continue to perform as intended and assist the USBP in securing the U.S./Mexico international border in New Mexico. In many areas, tactical infrastructure is a critical element of border security, which assists in controlling and preventing illegal border intrusion. To achieve effective control of our nation's borders, CBP is developing the right combination of personnel, technology, and infrastructure; mobilizing and rapidly deploying highly trained USBP agents; placing tactical infrastructure strategically; and fostering partnerships with other law enforcement agencies.

The need for the Proposed Action is to ensure that the increased level of border security provided by existing tactical infrastructure is not compromised by impacts occurring through acts of sabotage, acts of nature, or a concession in integrity due to a lack of maintenance and repair. CBP must ensure that tactical infrastructure functions as it is intended, which assists CBP with the following mission requirements:

- Establishing substantial probability of apprehending terrorists and their weapons as they attempt to enter illegally between the Ports of Entry (POEs)
- Deterring illegal entries through improved enforcement
- Detecting, apprehending, and deterring smugglers of humans, drugs, and other contraband.

This EA will provide the necessary disclosure of environmental impacts under NEPA for two Federal agencies: CBP and the BLM. The BLM would utilize the analysis of this EA to develop a Finding of No Significant Impact (FONSI) and Decision Record, in accordance with Public Land regulation. All maintenance and repair work on BLM administered lands will be executed in accordance with the ROW stipulations developed by BLM and CBP; a copy of the ROW stipulations is included in this EA as **Appendix H**. The BLM purpose, as a multiple use agency, is to make public land and its resources available for use and development to meet National, regional, and local needs, consistent with national objectives, while simultaneously applying the principles of sustained yield governing the many resources the agency manages.

The BLM's purpose is to manage roads across Public Lands that are currently utilized by CBP to support the national security mission of the United States. The BLM's specific need is to issue right of way (ROW) grant for the construction, maintenance, operation, and termination of roads on public land.

The principles of sustained yield include safeguarding wildlife and their habitat, threatened species and their habitat, endangered species and their habitat, sensitive species and their habitat, water quality, soils, paleontological, archaeological, vegetation, and watershed functions. Goals and objectives for these resources were set forth in the Mimbres Resources Management Plan (December 1993). The need is to respond to an application submitted by CBP for the subject road segments under section 507 of the Federal Land Policy and Management Act (FLPMA).

Tactical infrastructure would be maintained to ensure USBP agent safety by preventing potential vehicular accidents by minimizing and eliminating hazardous driving conditions.

1.3 DECISIONS TO BE MADE

The BLM would decide whether to grant authorization of ROW serial number 128957 to authorize maintenance and repair, as described in the Proposed Action, of 50.45 miles of existing roadway on BLM-managed lands in Hidalgo and Luna Counties in New Mexico. CBP would decide whether to perform maintenance and repair, as described in the Proposed Action, on lands throughout New Mexico managed by Federal and state governments and private individuals, including the segments of road identified on BLM-managed lands.

1.4 FRAMEWORK FOR ANALYSIS

NEPA is a Federal statute requiring the identification and analysis of potential environmental impacts of proposed Federal actions before those actions are taken. The Council on Environmental Quality (CEQ) is the principal Federal agency responsible for the administration of NEPA. The CEQ regulations mandate that all Federal agencies use a systematic, interdisciplinary approach to environmental planning and the evaluation of actions that might affect the environment. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions.

The process for implementing NEPA is codified in 40 Code of Federal Regulations (CFR) 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, BLM NEPA guidance in 43 CFR subpart 2804.25(d) (1), *Public Lands: Interior* and DHS Directive 023-01 *Environmental Planning Program*, and CBP policies and procedures. The CEQ was established under NEPA to implement and oversee Federal policy in this process. CEQ regulations specify the following when preparing an EA:

- Briefly provide evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a FONSI
- Aid in an agency's compliance with NEPA when an EIS is unnecessary
- Facilitate preparation of an EIS when one is necessary.

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively.”

Within the framework of environmental impact analysis under NEPA, additional authorities that might be applicable include the Clean Air Act (CAA), Clean Water Act (CWA) (including a National Pollutant Discharge Elimination System [NPDES] storm water discharge permit and Section 404 permit), Section 10 of the Rivers and Harbors Act of 1899, Noise Control Act, Endangered Species Act (ESA), Migratory Bird Treaty Act, National Historic Preservation Act (NHPA), Archaeological Resources Protection Act, Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), and various Executive Orders (EOs). A summary of laws, regulations, and EOs that might be applicable to the Proposed Action is presented in **Appendix A**.

The Proposed Action conforms with decisions, objectives, and conditions identified in the BLM's Mimbres Resource Management Plan (RMP). The Mimbres RMP allows for granting ROWs, leases, and permits to qualified individuals, businesses, and government entities for the use of public land. This EA was prepared in accordance with the FLMPA of 1976.

1.5 PUBLIC INVOLVEMENT

Agency and public involvement in the NEPA process promotes open communication between the public and the government and enhances the decisionmaking process. All persons or organizations having a potential interest in the Proposed Action are encouraged to submit input into the decisionmaking process.

NEPA and implementing regulations from the CEQ and DHS direct agencies to make their EAs and EISs available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process.

Through the public involvement process, CBP notified relevant Federal, state, and local agencies of the Proposed Action and requested input on environmental concerns they might have regarding the Proposed Action. The public involvement process provides CBP with the opportunity to cooperate with and consider state and local views in its decision regarding implementing this Federal proposal. As part of the EA process, CBP has coordinated with agencies such as the U.S. Environmental Protection Agency (USEPA) Region 6, U.S. Fish and Wildlife Service (USFWS) Southwest Region, New Mexico Department of Game and Fish, New Mexico Historic Preservation Division (HPD), appropriate Native American Tribes and Nations, and local agencies. Agency responses will be incorporated into the analysis of potential environmental impacts. The following is a list of Federal and state agencies and stakeholder groups that will be coordinated with during the NEPA process.

- Federal Agencies
 - USEPA Region 6
 - USFWS Southwest Region
 - U.S. Army Corps of Engineers (USACE) Albuquerque District
 - BLM New Mexico State Office
 - BLM Las Cruces Field Office
 - United States Section, International Boundary and Water Commission.

- State Agencies
 - NMSLO
 - New Mexico Department of Game and Fish
 - New Mexico Department of Transportation
 - New Mexico Environment Department
 - New Mexico HPD.
- Stakeholders
 - Federally Recognized Native American Tribes and Nations.

A Notice of Availability (NOA) for the EA and draft FONSI was published in the *Deming Headlight*, *Las Cruces Sun-News*, and the *Carlsbad Current-Argus*. This was done to solicit comments on the Proposed Action and alternatives and involve the local community in the decisionmaking process. Comments were received from Federal, state, and local agencies and have been incorporated into the Final EA. Comment letters are included in **Appendix B**.

Hard copies of the Draft EA were made available at the following libraries: *Lordsburg-Hidalgo Library*, 208 East Third Street, Lordsburg, NM 88001; *Marshall Memorial Library*, 100 South Diamond Street, Deming, NM 88030; and *Thomas Brannigan Memorial Library*, 200 East Picacho Avenue, Las Cruces, NM 88001. Throughout the NEPA process, the public can obtain information concerning the status and progress of the EA via the project Web site at <http://www.cbp.gov/about/environmental-cultural-stewardship/nepa-documents/docs-review>.

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2. PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This section describes the Proposed Action and the alternatives considered. As discussed in **Section 1.3**, the NEPA process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a proposed action, which are defined in **Section 1.2**. CEQ regulations specify the inclusion of a No Action Alternative against which potential effects can be compared.

2.2 SCREENING CRITERIA TO DEVELOP THE ALTERNATIVES

Each alternative to the Proposed Action considered in the EA must be reasonable and meet CBP's purpose and need (as described in **Section 1.2**). Such alternatives must also meet essential technical, engineering, and economic threshold requirements to ensure that each is practical, environmentally sound, economically viable, and complies with governing standards and regulations. CBP uses an optimal mix of tactical infrastructure development, application of remote surveillance technologies, and deployment of USBP agents to achieve border security objectives. The following screening criteria were used to develop the Proposed Action and evaluate potential alternatives:

- ***Protecting Persistent Impedance Requirements.*** Tactical infrastructure must support CBP mission needs by its capability to hinder or delay individuals illegally crossing the U.S./Mexico international border in New Mexico, either on foot or by vehicle traffic. The continuous maintenance and repair of the fences and gates, roads and bridges/crossovers, drainage structures and grates, lighting and ancillary power systems, and communications and surveillance tower components are imperative to the safe and rapid response capabilities of USBP agents.
- ***Maintain Remote Surveillance Capability.*** Proposed maintenance and repair activities must ensure tower infrastructure sites are accessible to perform the appropriate maintenance and repair activities on an as-needed basis and ensure continued functionality of the supporting components, foundation footers/pads, perimeter fencing, tower structures, and designated work/storage areas.
- ***Minimize Potential Negative Environmental Impacts.*** Proposed maintenance and repair activities would be evaluated for their potential environmental impacts and BMPs would be planned or implemented in proportion to the risk in consultation with the appropriate regulatory and resources agencies. Particular management attention would be devoted to protecting the following sensitive environmental resources.
 - ***Threatened or Endangered Species and Critical Habitat.*** The maintenance and repair of tactical infrastructure should be conducted in such a manner as to have negligible to minor impacts on threatened or endangered species and their critical habitat. BMPs would be implemented so that a determination of No Effect, or at most, a determination of May Affect, but Not Likely to Adversely Affect, would be achieved. Any maintenance and repair activities that could not be mitigated to

a determination of May Affect, but Not Likely to Adversely Affect using BMPs may require separate Section 7 consultation. CBP has initiated consultation with the USFWS and a Biological Assessment is being prepared for maintenance and repair activities within New Mexico.

- *Wetlands and Floodplains.* The maintenance and repair of tactical infrastructure should be conducted in such a manner as to have negligible to minor impacts on wetlands, surface waters of the United States, and floodplain resources to the maximum extent practical. CBP is consulting with the USACE districts to minimize wetland and floodplain impacts and identify potential avoidance, minimization, and conservation measures.
- *Cultural and Historic Resources.* The maintenance and repair of tactical infrastructure should be conducted in such a manner as to have negligible impacts on cultural and historic resources to the maximum extent practical. CBP is in the process of consulting with the State Historic Preservation Officer (SHPO) to develop a Programmatic Agreement (PA). Under the Proposed Action, undertakings with the potential to cause effects on historic properties would be covered by a PA between CBP, the Advisory Council on Historic Properties (ACHP), the SHPO, Federal agencies and tribes. If the activity or project is not covered under the PA, CBP would be required to conduct the applicable Section 106 review for those activities that are not covered. If the EA and FONSI are issued prior to approval of the PA, CBP would be required to conduct the standard Section 106 review process for these activities until they are covered by an executed PA. Therefore, CBP is required to comply with Section 106 of the NHPA, as amended, and its implementing regulations (36 CFR 800) before conducting maintenance and repair activities.
- *BLM-designated Special Management Areas (SMA) and Areas of Critical Environmental Concern (ACEC).* The maintenance and repair of tactical infrastructure should be conducted to reduce adverse impacts on BLM-designated SMAs and ACECs to the maximum extent practical. In order to ensure the project is compliant with the BLM Mimbres RMP, CBP is coordinating with the BLM Las Cruces District Office LCDO to identify any BLM concerns related to SMAs and ACECs. SMAs within the Las Cruces District Office LCDO include two trails (including the southern portions of the Continental Divide Trail), four research natural areas, nine Wilderness Study Areas (WSAs), and a national natural landmark. ACECs are defined in the FLPMA as "...areas within the public land where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural system or processes, or to protect life and safety from natural hazards." Within the Action Area, there are a total of six ACECs. Additionally, an ACEC for the Chihuahua scurfspea is proceeding through the nomination process.

Section 2.3 presents Alternative 1: Proposed Action, **Section 2.4** presents Alternative 2: No Action Alternative, and **Section 2.5** discusses alternatives considered but eliminated from further detailed analysis.

2.3 ALTERNATIVE 1: PROPOSED ACTION

Under Alternative 1: Proposed Action, the scope of the tactical infrastructure maintenance and repair program would include reactive maintenance and repair activities (e.g., resolving damage from intentional sabotage or severe weather events) and preventive/scheduled maintenance and repair activities designed to ensure environmental sustainability (e.g., culvert replacement, drainage and grate cleaning, preventive soil erosion measures). All maintenance and repair activities would occur via a periodic work plan based on anticipated situations within the Sector and funding availability. Although centrally managed by FM&E, prioritization of projects based upon evolving local requirements within the Sector would determine maintenance and repair schedules. This alternative would allow for changes in tactical infrastructure maintenance and repair requirements. Maintenance and repair requirements could change over time based on changes in usage or location, but would not exceed the scope of this EA. If the scope of the EA is exceeded, new NEPA analysis would be required. Tactical infrastructure covered by the Secretary's waiver or prior NEPA analyses (e.g., boat ramps, staging areas) are not within the scope of the Proposed Action.

The USBP El Paso Sector along the U.S./Mexico international border in New Mexico has identified a need for tactical infrastructure maintenance and repair to ensure their continued utility in securing the border. All maintenance and repair activities would be executed in accordance with the ROW stipulations included in **Appendix H**, coordinated by the CBP FM&E Sector Coordinator, and managed by the Program Management Office's (PMO) Maintenance and Repair Supervisor. Maintenance and repair activities on BLM land would comply with the BLM Gold Book Standards, as required. Although the majority of anticipated tactical infrastructure can be found within the geographic areas shown in **Figure 1-1**, the exact extent could change over time to accommodate CBP needs.

2.3.1 Tactical Infrastructure Assets

CBP proposes to maintain and repair existing tactical infrastructure consisting of fences and gates, roads and bridges/crossovers, drainage structures and grates, lighting and ancillary power systems, and tower components not directly associated with the tactical infrastructure covered by the Secretary's waiver and prior NEPA documentation. Maintenance and repair standards for roads are shown in **Appendix C**. The following paragraphs describe the types of tactical infrastructure CBP proposes to maintain and repair.

Fences and Gates. Maintenance and repair of existing fences and gates would consist of welding metal fence components, replacing damaged or structurally compromised members, reinforcing or bracing foundations, repairing burrowing activities under fences and gates, repairing weather-related damages, and removing vegetation and accumulated debris. The Proposed Action would also include repairing or replacing gate-operating equipment (e.g., locks, opening/closing devices, motors, and power supplies). There are approximately 120 miles of fence on non-tribal lands in New Mexico. The fencing consists of primary border fencing and a

variety of perimeter security fencing to protect sensitive infrastructure. Approximately 5 percent of the total fences installed by CBP within the New Mexico region of analysis are not covered by a Secretary's waiver or previously analyzed and are, therefore, considered in this EA.

Currently, CBP has not identified fences and gates requiring maintenance on BLM-managed land. The majority of fences and gates to be repaired occur within the Roosevelt Reservation and are outside the oversight or control of Federal land managers.

Some earth moving could be necessary for fence and gate maintenance. To replace damaged or structurally compromised portions of fences and gates, heavy equipment might be needed for filling, compacting, and trenching. On-road haul trucks and cranes, or other such equipment could be required to replace heavy fence and gate parts. All necessary erosion-control BMPs (see **Appendix E**) would be adopted to ensure stabilization of the project areas.

Access Roads and Integrated Bridges/Crossovers. Maintenance and repair of access roads and bridges would consist of filling in potholes, regrading road surfaces, implementing improved water drainage measures (e.g., ensuring road crowns shed water and runoff flows to establishing drainage ditches, culverts, or other water-control features as needed to control runoff and prevent deterioration to existing infrastructure or surrounding land), applying soil stabilization agents, controlling vegetation and debris, and adding lost road surface material to reestablish intended surface elevation needed for adequate drainage.

Maintenance of the existing roads would be in accordance with proven maintenance and repair standards. Maintenance and repair activities on BLM land would comply with the BLM Gold Book Standards, as required. All of the road repair standards CBP would follow have been developed based on comprehensive engineering analysis, proven BMPs adopted by other Federal agencies, and mitigation measures derived from extensive consultation with both regulatory and resource agencies. These maintenance and repair standards are provided in **Appendix C**. Bridges would be inspected on a routine basis and their structural integrity maintained.

Currently, CBP has not identified bridges that require maintenance on BLM-managed lands. In the event that a bridge on BLM-managed lands requires maintenance, CBP would notify the BLM and seek concurrence for the maintenance and repair before executing any proposed work.

Earth moving could be necessary for access road and integrated bridge/crossover maintenance. Heavy equipment would be needed for activities such as grading, filling, and compacting. The majority of proposed maintenance and repair would occur on graded earth roads and two-track roads (see **Appendix C**). Because of their lack of formal construction design, these two roadway types are subject to the greatest deterioration if left unmaintained. When subjected to heavier traffic, rutting occurs, which, in turn, is exacerbated by runoff that further erodes roads. Unmanaged storm water flow also causes erosion to occur, washing out complete sections of road and, in many instances, making roads impassable.

Commercial grading equipment would be used to restore an adequate surface to graded earth roads. USBP sector personnel and contract support personnel well-versed in grading techniques would be employed for such activity. A poorly re-graded surface often results in rapid deterioration of the surface. The restored road would be slightly crowned and absent of windrows in the gutter line to avoid ponding and channeling within the road during rain events.

Any associated roadside drainage would be maintained to ensure that runoff is relieved from the road surface quickly and effectively without creating further erosion issues. The addition of material to these roads would be kept to the minimum needed to achieve the proposed objective. All necessary erosion-control BMPs (see **Appendix E**) would be adopted to ensure stabilization of the project areas.

Approximately 275 miles of the 550 miles of road that are used by CBP have previously been analyzed under NEPA or have been covered by a Secretary's waiver. Most of the 275 miles are within 25 miles of the U.S./Mexico international border in New Mexico. BLM will issue a standard 60-foot ROW for 50.45 miles of road with the understanding that maintenance and repair will be confined to the width of the existing road located within the 60-foot-wide ROW—CBP will not be able to expand the road footprint beyond its current limits. If future CBP needs identify that additional road segments require maintenance and repair on BLM property, CBP would apply for a ROW amendment to add the additional road segments. The ROW amendment would be subject to additional environmental evaluation in order to satisfy NEPA requirements. Additionally, if any future proposed maintenance and repair activities would occur outside the existing road footprint on BLM managed lands, CBP would coordinate with BLM prior to beginning maintenance and repair activities.

The exact number of miles of roads within New Mexico on non-BLM lands could change over time to accommodate CBP needs. Therefore, the number of miles of roads associated within the Proposed Action should be considered somewhat flexible and not constrained by a quantifiable number. Bridges would be inspected on a routine basis and their structural integrity maintained. Future actions, such as major changes to roadway networks and major upgrades to existing roadways, would require separate NEPA analysis.

Drainage Management Structures. Maintenance and repair of drainage systems would consist of cleaning blocked culverts and grates (e.g., cattle guards) of trash and general debris and repairing or replacing nonfunctional or damaged drainage structures when necessary. Maintenance and repair of existing drainage turnouts along the sides of existing dirt roads, a common feature in southern New Mexico ranch and range roads, would occur as needed to allow for continued unimpeded flow. Resizing and replacing or repairing culverts or flow structures would occur, as necessary, to maintain proper functionality; and riprap, gabions, and other erosion-control structures would be repaired, resized, or added to reduce erosion and improve water flow.

In addition, maintenance and repair of riprap and low-water crossings would occur when necessary to maintain proper functionality. Low-water crossings consist of riprap at waterway edges and articulated matting or similar hardened material in the middle. The function of the riprap is to protect the articulated matting from being washed away and enhances the stability and longevity of the materials. Maintenance and repair requirements would consist of restoring damaged or displaced ripraps. Articulated matting (or similar hardened material) would be restored, replaced, or strengthened to maintain its functionality. Built-up debris could also be removed to create a sustainable, efficient low-water crossing. All debris and trash removed from culverts and grates would be hauled away to an appropriate disposal facility. During the planning process for such activities, appropriate coordination with the USACE would occur and appropriate permits would be acquired if necessary.

Heavy equipment such as on-road haul trucks and cranes would be required for replacing culverts, low-water crossings, and riprap for the maintenance and repair of drainage structures. For in-water work, all necessary BMPs would be adopted to ensure stabilization of the project areas. Most work would be conducted from existing roads and other disturbed areas; however, heavy equipment might be needed adjacent to those roads to repair or replace drainage and erosion-control structures. In the unlikely event that off-footprint work would be required on BLM-managed lands as part of the project, CBP would provide ample pre-project notifications to BLM to ensure the maintenance activity is adequately addressed within the scope of this EA and to ensure that sufficient environmental protections exist for all resource categories.

No maintenance and repair work, movement of maintenance vehicles, or equipment staging would occur in BLM-designated WSAs.

The removal of any accumulated debris to create a sustainable, efficient low-water crossing could also occur. There are an estimated 150 drainage management structures associated with the tactical infrastructure to be maintained and repaired in the New Mexico region of analysis; 20 percent are not covered by a Secretary's waiver or previously analyzed and are, therefore, considered in this EA.

Vegetation Control to Maintain Road Visibility. Vegetation encroaching upon roads and bridges would be maintained to ensure visibility and to sustain safe driving conditions for USBP agents during travel. Control of vegetation would be achieved by trimming, mowing, and applying selective herbicides. In areas deemed too difficult to mow, such as under guardrails, within riprap, and immediately adjacent to bodies of water within the proposed setbacks, herbicides would be used if appropriate. Appropriate BMPs would be followed for all herbicide use (see **Appendix E**). Herbicides safe for aquatic use would be used within aquatic systems. Application of terrestrial and aquatic herbicide would be made with products approved by the USEPA and the relevant Federal land management agency, where appropriate. Certified USBP sector or contract support personnel would use all herbicides in accordance with label requirements. Herbicide use would be part of an integrated approach that uses minimal quantities of herbicide, and would not be applied in, or immediately adjacent to, BLM WSAs. Heavy equipment needed would include mowers, trimmers, and equipment necessary for mechanical grubbing. BMPs would be used to stabilize the work areas and avoid impacts on biological resources (see **Appendix E**).

CBP would conduct surveys for nesting migratory birds and nests if maintenance occurred during the nesting season (February 1 through September 1). Vegetation control would not occur in critical habitat of threatened or endangered species. If CBP determined that vegetation control must be conducted within critical habitat of threatened or endangered species, they would further consult with the USFWS.

Lighting and Ancillary Power Systems. The maintenance and repair of lighting and ancillary power systems would consist of replacing burned-out light bulbs, restoring or replacing damaged power lines or onsite power-generating systems (e.g., generators, fuel cells, wind turbine generators, and photovoltaic arrays), repairing and replacing of associated electrical components, and, where necessary, controlling vegetation and removing debris. Approximately 25 percent of CBP's approximately 150 lighting and ancillary power systems within the region of analysis are

not covered by a Secretary's waiver or previously analyzed and are, therefore, considered in this EA.

Communications and Surveillance Towers. Communications and surveillance towers and components are mounted on a combination of monopoles, water towers, radio towers, telephone poles, and buildings. The physical structures of the tower components would be repaired and maintained (e.g., painting or welding to maintain existing metal towers), as necessary. Painting towers on BLM land would be done in accordance with BLM-approved communication site plan stipulations. Heavy equipment potentially needed to maintain lighting and ancillary power systems includes lifts, track-hoes, backhoes, and flatbed trucks. Maintenance and repair of secondary power-generation systems would consist of replacing burned-out light bulbs, restoring and replacing damaged power lines, repairing and replacing associated electrical components, and, where necessary, controlling vegetation and removing debris. Between 10 and 15 of the total towers used by CBP in the New Mexico region of analysis are not covered by a Secretary's waiver or previously analyzed and are, therefore, considered in this EA under the Proposed Action. No water towers exist on BLM land.

Each of the towers has a small footprint, and none exceeds 10,000 square feet. For all water and radio towers, the total amount of disturbance would not exceed 4 acres. Roads to the towers are included in the road mileage previously discussed.

Equipment Storage. The maintenance and repair of the existing tactical infrastructure as previously described requires the use of various types of equipment and support vehicles. Such equipment could include graders, backhoes, tractor mowers, dump trucks, flatbed trucks, and pick-up trucks. When assigned to an activity, the equipment would be stored within the existing footprint of the maintenance and repair location or at a staging area previously designated for such purposes by CBP. All the staging areas, and, in turn, the activities occurring therein, that would be used by CBP as a part of the Proposed Action have either already been analyzed in previous NEPA documents or are covered by the Secretary's waiver. Requests for staging areas on BLM administered lands would require additional planning and coordination with BLM prior to use.

2.3.2 Location of Tactical Infrastructure to be Maintained and Repaired

The existing tactical infrastructure found along the U.S./Mexico international border in New Mexico cuts across multiple landownership categories including lands under CBP ownership, lands managed by other Federal agencies, tribal lands, and private property. CBP would develop a comprehensive protocol for coordinating the necessary maintenance and repair activities within the different types of landownership.

CBP-Owned Tactical Infrastructure: CBP would undertake necessary maintenance and repair activities to ensure the continuity of the intended functionality of the existing tactical infrastructure and to protect invested resources as responsible stewards of Federal resources entrusted to CBP.

Tactical Infrastructure Assets on Land Managed by Other State and Federal Agencies: These tactical infrastructure assets are located on lands managed by the USFS, BLM, and the NMSLO.

CBP would establish mutually agreed-upon processes for performing maintenance and repair activities on tactical infrastructure located on lands owned by these agencies. CBP is committed to work through the appropriate permit granting authority established within these agencies to ensure that CBP-proposed maintenance and repair activities would be accomplished in a manner that is mutually beneficial to all agencies. As an example of this commitment, CBP actively participates in the Borderland Management Task Force working committee to coordinate these activities on a regular basis.

The maintenance and repair of existing roads within the jurisdiction of BLM would occur within existing footprints, which consist of the current number and width of lanes, shoulders, medians, curvature, grades, clearances, side slopes and existing drains and their appurtenances. Any associated roadside drainage would be maintained to ensure that runoff is relieved from the road surface quickly and effectively without creating further erosion issues.

Tactical Infrastructure Assets on Tribal Land: As stated previously, the maintenance and repair of tactical infrastructure assets on tribal lands is not analyzed in this EA. For maintenance and repair of tactical infrastructure assets on tribal land, CBP would formally seek consultations with the representatives of federally recognized Native American tribes. Upon successful agreement with the tribes, appropriate environmental documentation would be prepared.

Tactical Infrastructure Assets on Private Land: CBP would conduct maintenance and repair activities on privately held properties in voluntary cooperation with private landowners. No maintenance and repair would occur without a consent agreement in place between CBP and cooperating landowners.

2.3.2.1 Tactical Infrastructure Mapped Within the Region of Analysis in New Mexico

The blue hatched area depicted on **Figure 1-1** is the geographic area where CBP tactical infrastructure would be found, and represents the limits of analysis for this EA. Additional detailed maps of the tactical infrastructure addressed in this EA along the U.S./Mexico international border in New Mexico are provided in **Appendix D**, which accompanies this EA as a digital video disc (DVD). In addition to displaying existing tactical infrastructure, the maps display ranges of threatened and endangered species within the region of analysis. The maps depict additional activities occurring within threatened and endangered species ranges that would require use of species-specific BMPs, as formally agreed upon in consultation with the USFWS, and that are discussed further in the Biological Assessment.

The maps delineate species ranges, designated critical habitat, extent of suitable habitat, and documented sightings of the species in the area. Special-use designations and land management agency practices are considered in maintenance and repair planning. As an example, no maintenance and repair activities would be permitted in WSAs. Coordination with land management agencies, Federal land managers, and the USFWS, if necessary, would occur and appropriate BMPs would be implemented. The maps presented in **Appendix D** are not intended to be used as an implementation tool for maintenance and repair activities, but instead represent a method to show the ranges of potential threatened and endangered species.

Depending on the number and nature of resources that could be impacted, a graduated series of BMPs would be identified to reduce impacts to less than significant levels. The BMPs are presented in **Appendix E** along with the affected resources. The combination of the informative maps and the relevant BMPs will provide CBP with a visual framework for applying appropriate maintenance and repair solutions in sensitive areas.

2.3.3 Maintenance and Repair Program

The Proposed Action would consist of both preventative and reactive maintenance. The types of maintenance employed as a part of the Proposed Action would vary by tactical infrastructure asset.

As part of the Proposed Action, fences and gates would be inspected on a routine basis to ensure gate mechanisms operate correctly and fence components are in good working condition. Maintenance and repair of fences and gates would occur as required. As part of preventative maintenance and repair of roads, the inspection, maintenance, and repair activity would occur approximately every 3 months and reactive maintenance and repair would occur following intentional sabotages or weather events. During maintenance and repair of roads, integrated bridges/crossovers would be inspected, maintained, and repaired, as required. Drainage management structures would be inspected regularly during the rainy season and preventative maintenance and repair would occur to ensure operability. After storm events, reactive maintenance and repair would occur to ensure the structures are clear of debris and blockages. Preventative maintenance and repair of light systems would occur approximately every 2 to 3 years and all lights would be replaced. Maintenance and repair of towers would occur on an as-needed basis following regular inspections. Maintenance and repair of ancillary power systems would occur according to manufacturer specifications. Maintenance and repair (including vegetation control) would occur twice a year and would be scheduled to avoid migratory bird nesting seasons, or surveys would be conducted to determine if bird nests are present that must be avoided.

Under the Proposed Action, centralized maintenance and repair planning would be conducted by FM&E. In addition, FM&E would have complete program management responsibility for implementing maintenance and repair activities. For example, FM&E would formulate standard design specifications, which would consider BMPs and the environmental conditions of the tactical infrastructure to determine the priority and type of maintenance and repair needed.

As a part of FM&E's centralized maintenance and repair planning, CBP interdisciplinary maintenance and repair technical staff, including environmental staff, would participate in reviewing and approving a maintenance and repair Work Plan. The process for developing the maintenance and repair Work Plan would involve the following steps:

- **Step 1.** USBP El Paso Sector and Border Patrol Facilities and Tactical Infrastructure field maintenance and repair representatives identify maintenance and repair needs.
- **Step 2.** A team of CBP PMO interdisciplinary subject matter experts, including environmental staff, would decide on the best technical approach for ensuring desired specifications and standards and implementing applicable BMPs.

- **Step 3.** The USBP El Paso sector BPFTI maintenance and repair PMs would develop a work plan of maintenance and repair activities for specified time intervals (e.g., quarterly, semi-annually, or some other time interval in accordance with the terms and condition of contracts and availability of funding). Coordination with appropriate landowners and regulatory agencies would occur on an as-needed basis. Portions of this step might be accomplished informally before Step 3.
- **Step 4.** A cost estimate for the proposed maintenance and repair Work Plan would be prepared and submitted to the CBP chain-of-command for approval. Maintenance and repair actions are prioritized in coordination with USBP Sector management.
- **Step 5.** Fully trained and qualified personnel (both CBP in-house and contractor personnel) would perform work Plan maintenance and repair activities and trained and experienced CBP personnel would monitor their work progress.
- **Step 6.** CBP representatives would review the completed maintenance and repair work and ensure it was completed to the prescribed specifications and standards and the corresponding BMPs were followed.
- **Step 7.** CBP and contractor personnel would provide suggestions for future Work Plans based on the execution and outcomes of tactical infrastructure maintenance and repair and would support the interdisciplinary technical team in developing improved maintenance and repair solutions in the future.

Appropriate environmental training is a prerequisite for personnel actively engaged in tactical infrastructure maintenance and repair. These personnel would receive ongoing environmental training appropriate to their role in tactical infrastructure maintenance and repair. This approach fully incorporates CBP's efforts to integrate the NEPA process with their Environmental Management System in accordance with CEQ guidance (CEQ 2007).

2.4 ALTERNATIVE 2: NO ACTION ALTERNATIVE

The No Action Alternative would maintain the status quo. It is not a proposal to eliminate maintenance and repair activities. Under the No Action Alternative, CBP would continue to perform the required maintenance and repair of tactical infrastructure; however, maintenance and repair would be conducted on an as-needed basis, using a largely reactive approach. There would be no centralized planning process for maintenance and repair. Rather, the El Paso Sector in New Mexico would request that FM&E conduct a particular maintenance and repair activity and FM&E would be responsible for executing the request. In addition, there would be no established design or performance specifications, which could mean that as-needed repairs are required more often and evaluation of potential environmental impacts would occur on a case-by-case basis.

Under the No Action Alternative, there would be no systematic approach to preventative maintenance. Thus, tactical infrastructure breakdowns that have already occurred or are imminent would likely be given the highest priority for maintenance and repair. Examples include the foundation of fencing eroding to the point of imminent failure, roads becoming impassable due to severe rutting, or uncontrolled vegetation growth impeding storm water drainage flow. Preventative maintenance and repair would be limited to those situations where a

USBP Sector identifies a potential trouble spot and makes a specific request for some type of preventative maintenance and repair.

The No Action Alternative would continue to meet minimum CBP mission needs, but the lack of a centralized planning effort, established performance specifications, and a preventative maintenance plan would make it far more difficult for CBP to prevent the gradual degradation of tactical infrastructure. In addition, it is possible that not all BMPs would be implemented during emergency maintenance and repair scenarios. The lack of coordinated environmental staff support and formalized planning under this alternative increases the potential for unintended delays in complying with NEPA, the ESA, and other environmental requirements. The No Action Alternative serves as a baseline against which an evaluation of the impacts of the Proposed Action can be made. **Table 2-1** provides an overview of the alternatives for analysis in the EA.

Table 2-1. Summary of Alternatives Identified

Management Approaches	Alternative 1: Proposed Action	Alternative 2: No Action Alternative
Maintenance and Repair Activities and Environmental Impacts	Preventative and reactive maintenance and repair activities to minimize environmental impacts.	Reactive maintenance and repair when infrastructure breaks down.
Design and Performance Specifications	Establish design specifications and a subsequent maintenance and repair approach.	None.
Maintenance and Repair Organizational Approach	Central maintenance and repair planning and decentralized execution. In-house environmental staff expertise used to minimize potential environmental impacts. Coordinated environmental planning to make most efficient use of staff resources and minimize delays in critical maintenance and repair actions.	Ad hoc and decentralized planning and execution without coordinated environmental staff support resulting in inefficiencies complying with NEPA and other environmental requirements.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DETAILED ANALYSIS

2.5.1 Upgrade All Existing Unpaved Roads to FC-2 All-Weather Roads

Under this alternative, all existing roads would be upgraded to the FC-2 (all-weather roads) classification. Adopting this alternative would be cost-prohibitive and cause significant environmental impacts. This alternative would greatly enhance CBP's capability to improve border security, but for the aforementioned reasons, this alternative was eliminated from further detailed study in the EA.

2.5.2 No Maintenance and Repair of Tactical Infrastructure

Under this alternative, tactical infrastructure would not be maintained or repaired. This alternative would allow tactical infrastructure to degrade until breakdown of the infrastructure occurred and the initial functional intent would no longer exist. This alternative would lead to the deterioration of tactical infrastructure over time, creating safety hazards, uncontrolled erosion and other associated environmental concerns, and the abandonment of foreign materials within an environmental setting. In addition, because this alternative would result in the degradation and disrepair of tactical infrastructure, it would not meet the purpose and need as stated in **Section 1.2** or comply with USBP mission objectives. For these reasons, this alternative was eliminated from further detailed analysis in the EA.

2.5.3 Maintenance and Repair Program Using Only Mandatory BMPs

Under this alternative, the scope of the tactical infrastructure maintenance and repair program would be the same as the Proposed Action, but only mandatory BMPs would be implemented in the planning and execution of maintenance and repair (i.e., BMPs developed by CBP to promote environmental stewardship would not be used [see **Appendix E**]). Work Plans for scheduled and reactive maintenance and repair would be formulated by analyzing the lowest cost and the minimum acceptable design standards and specifications. FM&E would still have program management responsibility for implementing maintenance and repair to design specifications; however, only mandatory BMPs would be factored into the maintenance and repair Work Plan or the life-cycle costs of maintaining and repairing tactical infrastructure. In addition, environmental planning would be limited to compliance with applicable minimum requirements. This alternative would not meet CBP's commitment to environmental stewardship and would not minimize potential negative environmental effects; therefore, this alternative was eliminated from further detailed analysis in the EA.

2.6 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

CBP has identified its Preferred Alternative as Alternative 1. Implementation of Alternative 1 would best meet CBP's purpose and need as described in **Section 1.2**. Alternative 1 is also preferred because it would be in line with the current tactical infrastructure maintenance and repair methodology covered by the Secretary's waiver and other NEPA documents.

3. AFFECTED ENVIRONMENT AND CONSEQUENCES

This section provides a characterization of the affected environment and an analysis of the potential direct and indirect effects each alternative would have on the affected environment. Each alternative was evaluated for its potential to affect physical, biological, and socioeconomic resources. Cumulative and other effects are discussed in **Section 4**. All potentially relevant resource areas were initially considered in this EA. Some were eliminated from detailed examination because of their inapplicability to this proposal. General descriptions of the eliminated resources and the basis for elimination are described in **Section 3.1**.

The following discussion elaborates on the nature of the characteristics that might relate to resources.

- *Short-term or long-term.* These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term effects are those that would occur only with respect to a particular activity or for a finite period or only during the time required for maintenance and repair activities. Long-term effects are those that are more likely to be persistent and chronic.
- *Direct or indirect.* A direct effect is caused by and occurs contemporaneously at or near the location of the action. An indirect effect is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct effect of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.
- *Negligible, minor, moderate, or major.* These relative terms are used to characterize the magnitude or intensity of an impact. Negligible effects are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate effect is readily apparent. A major effect is one that is severely adverse or exceptionally beneficial.
- *Adverse or beneficial.* An adverse effect is one having unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment. A single act might result in adverse effects on one environmental resource and beneficial effects on another resource.
- *Significance.* Significant effects are those that, in their context and due to their intensity (severity), meet the thresholds for significance set forth in CEQ regulations (40 CFR Part 1508.27).
- *Context.* The context of an effect can be localized or more widespread (e.g., regional).
- *Intensity.* The intensity of an effect is determined through consideration of several factors, including whether an alternative might have an adverse impact on the unique characteristics of an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Effects are also considered in terms of their potential for violation of Federal, state, or

local environmental law; their controversial nature; the degree of uncertainty or unknown effects, or unique or unknown risks; if there are precedent-setting effects; and their cumulative effects (see **Section 4**).

3.1 PRELIMINARY IMPACT SCOPING

This section presents the characteristics of the affected environment and an analysis of the potential direct and indirect impacts each alternative would have on the affected environment. Cumulative and other impacts are discussed in **Section 4**. All potentially relevant resource areas were initially considered in this EA. In accordance with NEPA, CEQ regulations, and DHS Directive 023-01, the following evaluation of environmental effects focuses on those resources and conditions potentially subject to effects, on potentially significant environmental issues deserving of study, and deemphasizes insignificant issues. Some environmental resources and issues that are often analyzed in an EA have been omitted from detailed analysis. The following provides the basis for such exclusions.

Aesthetics and Visual Resources

The Proposed Action would not have a major effect on aesthetics or visual resources, as existing infrastructure would be maintained or repaired and no additional infrastructure would be installed. Therefore, the appearance of tactical infrastructure would not change and no major effect on aesthetics and visual resources would be anticipated.

Climate Change

On September 22, 2009, the USEPA issued a final rule for mandatory greenhouse gas (GHG) reporting from large GHG emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate data on carbon dioxide (CO₂) and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of CO₂ equivalent per year. The first emissions report is due in 2011 for 2010 emissions. Although GHGs are not currently regulated under the CAA, the USEPA has clearly indicated that GHG emissions and climate change are issues that need to be considered in future planning. GHGs are produced by the burning of fossil fuels and through industrial and biological processes.

The maintenance and repair of tactical infrastructure would not have a major effect on GHG emissions or climate. Emissions and their impact on air quality are discussed in **Section 3.10**.

Human Health and Safety

Maintenance and repair site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. Occupational Safety and Health Administration (OSHA) and the USEPA issue standards that specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits with respect to workplace stressors.

Personnel are exposed to safety risks from the inherent dangers at any maintenance and repair site. Contractors would be required to establish and maintain safety programs at the maintenance and repair sites. The proposed maintenance and repair would not expose members of the general public to increased safety risks. Therefore, because the Proposed Action would not introduce new or unusual safety risks, and assuming appropriate protocols are followed and implemented, detailed examination of safety is not included in this EA.

Additionally, due to the remote location of the region of analysis, the likelihood of this project impacting the health and safety of humans other than USBP agents and contractors or USBP personnel performing the road repairs is extremely low. However, minor, beneficial impacts on safety could occur from public use of repaired roads.

All occupational safety standards and BMPs, as outlined in **Appendix E** of this document, would be implemented.

Sustainability and Greening

NEPA identifies the need to “encourage [the] productive and enjoyable harmony between man and his environment” as a primary purpose (42 United States Code [U.S.C.] § 4321). The traditional definition of sustainability calls for policies and strategies that meet society’s present needs without compromising the ability of future generations to meet their own needs.

A number of policies, statutes, EOs, and supplemental agency policies and guidance exist to shape the Federal government’s policies on sustainability. EO 13423 (January 24, 2007), *Strengthening Federal Environmental, Energy, and Transportation Management*, promotes environmental practices, including acquisition of bio-based, environmentally preferable, energy-efficient, water-efficient, and recycled-content products, and maintenance of cost-effective waste prevention and recycling programs in their facilities. EO 13514 (October 5, 2009), *Federal Leadership in Environmental, Energy, and Economic Performance*, sets sustainability goals for Federal agencies and focuses on making improvements in their environmental, energy, and economic performance. EO 13514 does not rescind or eliminate the requirements of EO 13423. Instead, it expands on the energy reduction and environmental performance requirements for Federal agencies identified in EO 13423 (FedCenter 2010). In addition to these EOs, DHS Directive 025-01, *Sustainable Practices for Environmental, Energy and Transportation Management*, establishes a policy to develop and implement sustainable practices programs to help ensure that operations and actions are carried out in an environmentally, economically, and fiscally sound manner.

Implementation of the Proposed Action for the maintenance and repair of tactical infrastructure would use negligible amounts of resources. The adaptive management process would further the use of CBP’s Environmental Management System in accordance with EO 13423, EO 13514, and DHS Directive 025-01. Therefore, beneficial effects on sustainability and greening would be expected.

Utilities and Infrastructure

The proposed maintenance and repair of tactical infrastructure along the U.S./Mexico international border in New Mexico would occur in remote areas distanced from nearby utilities.

USBP and its contractors would therefore not use existing utilities and infrastructure to complete maintenance and repair activities. Due to the remote location of the region of analysis, impacts on utilities and infrastructure would not be expected. Consequently, analysis of this resource area has been omitted from detailed analysis.

3.2 LAND USE

3.2.1 Definition of the Resource

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel of land. In many cases, land use descriptions are codified in local zoning laws. However, there is no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meaning of various land use descriptions, “labels,” and definitions vary among jurisdictions. Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic areas. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational.

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Compatibility among land uses fosters the societal interest of obtaining the highest and best uses of real property. Tools supporting land use planning include written master plans/management plans and zoning regulations. In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential effects on the proposed region of analysis and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use in the proposed region of analysis, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its permanence.

3.2.2 Affected Environment

The region of analysis is entirely within the El Paso Sector and is managed largely by the BLM, the NMSLO, and private individual as rangeland or agricultural area, with part of the area within the Federal government’s 60-foot Roosevelt Reservation.

The Roosevelt Reservation is within 60 feet of the international boundary between the United States and Mexico within the states of California, Arizona, and New Mexico. The reservation was set aside in 1907 by President Theodore Roosevelt as a protection against the smuggling of goods between the United States and Mexico. Land use for the Roosevelt Reservation is designated for border enforcement (CBP 2007b).

Pursuant to a 2006 Memorandum of Understanding (MOU) among DHS, U.S. Department of the Interior, and the U.S. Department of Agriculture regarding Cooperative National Security and Counterterrorism Efforts on Federal Lands along the United States Borders, the parties agreed that operation and construction within the 60-foot Roosevelt Reservation is consistent with the purpose of the reservation. However, the 2006 MOU did not specifically exempt CBP activities

within the Roosevelt Reservation from compliance within environmental laws. Accordingly, CBP activities that are not covered by a Secretary's waiver or addressed in a previous NEPA document are included within the scope of the Proposed Action.

Maintenance and repair activities within the portion of BLM-managed land within the region of analysis are guided by the Mimbres RMP and is in portions of Dona Ana, Luna, Grant, and Hidalgo counties. BLM land use practices in these areas are governed by the Mimbres RMP and are based on two broad principles, multiple use (management of various surface and subsurface resources in combination to best serve the needs of the American people) and sustained yield (the continued achievement and maintenance of a high level of annual or periodic output of various renewable resources associated with multiple use).

Development in the remainder of the region of analysis is sparse and accounts for only a small fraction of the land use within the region of analysis. There is a small amount of development near the Columbus POE. Farming exists in the western portion of the state where there are agricultural lands. Through pump irrigation, this area produces vegetable, cotton, and chili crops, and fallow lands are set aside for future crops. However, most of the cropland lies outside of or immediately adjacent to the region of analysis corridor (CBP 2007a, CBP 2007b).

3.2.3 Environmental Consequences

3.2.3.1 Alternative 1: Proposed Action

No new construction or change in land use would occur under the Proposed Action; therefore, no effects on land use plans or policies would be expected. The Proposed Action would result in the continuation of the existing land uses as repair and maintenance only would occur within the region of analysis. This alternative would be compatible with the existing land use categories in the tactical infrastructure maintenance and repair region of analysis and, therefore, would not result in any changes in land use.

3.2.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, tactical infrastructure maintenance and repair activities along the U.S./Mexico international border in New Mexico would continue and current maintenance activities and tactical infrastructure would be maintained on an as-needed basis. The No Action Alternative would result in continuation of existing land uses. No effects on land use would be expected as a result of the No Action Alternative.

3.3 GEOLOGY AND SOILS

3.3.1 Definition of the Resource

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, soils, and, where applicable, geologic hazards and paleontology. Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Geology is the

study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

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

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and that is also available for these uses. The intent of the FPPA is to minimize the extent that Federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses. The Natural Resources Conservation Service (NRCS) is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the Act (see 7 CFR Part 658, 5 July 1984).

3.3.2 Affected Environment

Regional Geology. Surface features in the eastern part of southern New Mexico are predominantly sand dunes composed of Quaternary alluvium (2.4 million years before present [BP] to recent), and lower Permian carbonates (260 to 251 million years BP) and mixed clastic sediments. The surface geology of the central and western parts of southern New Mexico is characterized by alternate Quaternary deposits and a varied age range of igneous intrusives, volcanoes, and mixed fragments of older rocks and carbonate sedimentary rocks (USACE 1994a).

The surficial materials were deposited on topographic low areas as other rock formations had been uplifted and fractured by the ongoing tectonism and extensive volcanism. Rocks and sediments exposed at the surface include scattered recent volcanics and faulted fragments of basement rock ranging in age from lower Cretaceous limestones (approximately 130 million years BP) to pre-Cambrian basement intrusives (as old as one billion years BP) (USACE 1994b).

Across Doña Ana, Luna, and Hidalgo counties, landforms are dominated by volcanic activity and, to a lesser degree, faulted igneous intrusive rocks. There are massive basalt flows west of the Rio Grande River and a mountain range of eroded pre-Cambrian metamorphics surrounded by younger ash flow tuffs south of the City of Deming. The southwestern corner of New Mexico is largely covered by volcanic flows of various compositions (USACE 1994b). Every major type of volcanic landform (including composite volcano, shield volcano, caldera, and cinder cones) occurs in New Mexico (USGS 2008). The valleys between volcanic mountains are narrow and relatively flat, often containing playa lakes (USACE 1994b).

The pre-Cambrian rocks are metamorphics with igneous rock intruding remnants of very old mountain cores that have been uplifted and eroded periodically. The Upper Paleozoic and Upper

Mesozoic rocks are mixed limestone and clastic sedimentary, with a variety of origins from deep marine to shoreline to riverine with terrace deposits along major rivers similar to the Rio Grande River. The Tertiary rocks overlying the Cretaceous sediments are thick sequences of intrusive and extrusive igneous rocks. Intermittent volcanism over the past 30 to 40 million years has resulted in widespread extrusive basaltic flows (USACE 1994b).

Topography. New Mexico's topography consists mainly of elevated plateaus (mesas), mountain ranges, canyons, valleys, and arroyos (typically dry streambeds) (WRCC undated). The U.S./Mexico international border in New Mexico lies within the Basin and Range and the Rio Grande Rift physiographic provinces (from west to east). The Basin and Range topography includes numerous roughly parallel fault-block mountain ranges trending north-south separated by nearly flat desert basins (U.S. Army 2001). The Rio Grande Rift physiographic province is a north-south trending zone of extension that bisects the State of New Mexico and reaches as far north as Leadville, Colorado, and as far south as west Texas. The Rio Grande Rift size results from the Colorado Plateau pulling away from the Southern High Plains physiographic province (NMBGMR 2008a). The course of the Rio Grande River is controlled by the rift.

Several major structural basins are found along the southern part of New Mexico. The wide, gentle, undisturbed Delaware Basin stretches across southeastern New Mexico and into Texas, underlying the relatively level Valley and Southern High Plains subprovinces. The characteristic landforms of the Delaware Basin, only sparsely represented throughout the study area, are broad lowlands, isolated plateaus, and terraced valleys along modern rivers (USACE 1994b). Many of the streams in the study area have no outlet to the ocean, so water collects in the broad basins, forming large lakes and playas during wet years (NMBGMR 2008a).

In general, terrain along the U.S./Mexico international border in New Mexico becomes more rugged towards the west, where elevation at Animas Peak (Hidalgo County) is 8,482 feet above mean sea level (msl). From west to east, the U.S./Mexico international border in New Mexico contains the Guadalupe Mountains associated with the Coronado National Park (parkland is not within the tactical infrastructure and maintenance region of analysis), the Animas Mountains, Whitewater Mountains, San Luis Mountains, and the Little and Big Hatchet Mountains. Hilo Peak is north of the Whitewater Mountains and Big Hatchet peak is north of Alamo Hueco, with peaks at 5,955 and 8,441 feet above msl, respectively. Within southeastern Hidalgo County, the Dog and Alamo Hueco mountains are also present, with Pierce Peak at an elevation of 6,159 feet above msl. Luna and Doña Ana counties are less rugged than Hidalgo County, but do have elevated terrain near the U.S./Mexico international border associated with the Cedar Mountain Range, Tres Hermanas, Florida Mountains, the East Portillo Mountains and a portion of the West Portillo mountains (NMDOT 2005).

Soils. Twenty-two soil associations occur within the limits of the study area. The soils of the study area are varied in texture and range from fine sands to clay loams. Of the 22 soil associations mapped, 10 have a low to moderate potential for erosion and 12 have a low to severe potential for erosion. Limitations to construction vary geographically depending upon the soil association(s) encountered (USACE 1994a). **Appendix F** presents the soils mapped within the tactical infrastructure and maintenance region of analysis.

The region of analysis is in three soil and water conservation districts: Hidalgo, Deming, and La Union (now Doña Ana). These districts, as authorized by the Soil and Water Conservation District Act (73-20-25 through 73-20-48 NMSA 1978), control and prevent soil erosion; prevent floodwater and sediment damage; promote conservation, development, and beneficial application and proper disposal of water; and conserve and develop natural resources to promote welfare of the public (NMDOA 2010).

Prime Farmland. Of the 22 soil associations mapped within the region of analysis, the Mimbres loam is considered to be a farmland of statewide importance. However, onsite investigation did not reveal evidence of active or past irrigation activities. The NRCS field office was contacted for support in preparation of an AD-1006 rating form; NRCS responded with a determination that FPPA does not apply to this soil (CBP 2007b).

Geologic Hazards. The tectonic setting for the region of analysis is the composite effect of many major episodes of uplift, igneous activity, and subsidence, dating from the pre-Cambrian (approximately one billion years BP) overlain by activity associated with the Rio Grande Rift of relatively recent times (30 to 40 million years BP). There is evidence of Paleozoic-aged block-faulting along both north-south and northwest-southeast axes in the form of major fault-bounded uplifted rocks that have exposed a variety of rock types at the surface and intervening sediment-filled areas of subsidence between faults. Activity along the Rio Grande Rift included mountain-building processes along the uplifted eastern margin and deep basin sedimentation in the down-dropped rocks. The rift parallels the eastern border of Doña Ana County and crosses into Mexico near the southeastern corner of the county. Areas near the rift continue to be occasionally unstable to the present day with respect to local faulting (USACE 1994b).

The 2008 New Mexico Seismic Hazard Map shows that the seismic hazard rating along the U.S./Mexico international border in New Mexico ranges from 6 to 16 percentage of the force of gravity, with the highest rating in the central part of the state near Santa Fe. The seismic hazard map indicates that there is the potential for minor to moderate damage from seismic activity (USGS 2000). Eleven faults are within 30 miles of the U.S./Mexico international border in New Mexico. The most recent major rupture of the faults occurred less than 130,000 years BP. Therefore, movement along faults in the region of analysis is unlikely to occur (USGS 2009).

Other geologic hazards that are present in New Mexico include debris flows, rockfalls, and landslides (NMBGMR 2008b). These hazards are exacerbated by heavy precipitation that induces sediment movement.

3.3.3 Environmental Consequences

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

Effects on geology and soils would be significant if they would alter the lithology (i.e., the character of a rock formation), stratigraphy (i.e., the layering of sedimentary rocks), and geological structures that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure, or function within the environment.

3.3.3.1 Alternative 1: Proposed Action

Regional Geology. No impacts on geology would be anticipated from implementing the Proposed Action.

Topography. Long-term, negligible, adverse impacts on topography would be anticipated from grading activities that would locally alter existing topography. Areas proposed for grading have been previously graded, and, therefore, impacts would be negligible.

Soils. Tactical infrastructure maintenance and repair activities along the U.S./Mexico international border in New Mexico would be expected to result in short- and long-term, minor, adverse effects on soils, primarily from the control of vegetation and use of herbicides. Control of vegetation would reduce overall water absorption by vegetation and decrease root structures within soils, increasing stormwater velocity and erosion and sedimentation potential. Erosion-and-sediment-control plans would be developed and implemented both during and following site development to contain soil and runoff on site, and would reduce potential for adverse effects associated with erosion and sedimentation and transport of sediments in runoff.

Roads classified as FC-3 (graded earth), FC-4 (two-track), and FC-5 (sand) would have the greatest potential for erosion. Grading activities (associated primarily with FC-3 and FC-5 roads) would result in short-term, minor, adverse impacts on soil resulting from erosion and sedimentation if compaction does not occur during or immediately after the grading process. However, maintenance of roads would reduce the effects incurred from negligence, such as rutting, washout, and long-term soil erosion. Grading activities in more rugged terrain could result in greater potential for soil erosion and sedimentation than in flat terrain increasing the need for immediate compaction. Therefore, more mountainous areas, such as western New Mexico, would be more susceptible to soil erosion and sedimentation during grading. Once grading activities have subsided, and soils have once again compacted under vehicle weight, soil erosion and sedimentation into nearby water bodies would be much less likely to occur. Proper crowning of roads and installation of ditches to manage stormwater runoff on FC-3 and FC-5 roads would also reduce the potential for soil erosion and sedimentation. Therefore, maintenance of roads would result in a long-term, beneficial impact on soils.

Any maintenance to towers would be anticipated to result in a short-term, negligible impact from erosion of soils due to potential ground disturbance for repairs or replacement of equipment. This would be a localized impact.

Short- to long-term, beneficial impact on soil could occur due to clearing blockages from drainage structures and low-water crossings where blockages have caused water ponding, which could result in soil erosion and sedimentation. In addition, erosion and downstream

sedimentation could occur where blocked drainage cause rerouting and creation of new drainage channels.

Herbicides could impact soil depending on the type of herbicide used. For example, glyphosate is a chemical found in commonly used herbicides. Glyphosate is absorbed strongly onto soil particles, with low potential to move through soil to contaminate groundwater. Microbes in the soil readily and completely degrade it even under low-temperature conditions. Therefore, the application of appropriate herbicides to soil could minimize the runoff and leaching of chemicals

As some chemicals do adsorb strongly to soil, the soil chemistry could be altered temporarily until the chemicals have adequately degraded from microbial action resulting in short-term, minor, direct, adverse impacts on soils. Short term, negligible impacts could occur after weedy vegetation has died but before other vegetation has become established. Soil could locally be more susceptible to erosion and sedimentation before preferable vegetation is established.

Timing of application contributes to the effectiveness of an herbicide on target plants and on non-target plants and features such as soil. Therefore, application of a highly soluble herbicide during a dry period presents a far different hazard to soil than during a rainy season. The same contrast occurs between clear versus rainy days, and calm versus windy days (Neary and Michael undated).

Prime Farmland. Although prime farmland soils exist within the tactical infrastructure and maintenance region of analysis, no impacts on these soils would be expected to occur because the maintenance and repair of tactical infrastructure would be confined to the existing footprints. Therefore, there would be no effects on state or Federal farmlands or farmland soils.

Geologic Hazards. Geological hazards are prevalent throughout the U.S./Mexico international border in the form of seismic events, landslides, debris flows, and rock falls. Continued maintenance of the tactical infrastructure would be beneficial to repair infrastructure and remove debris following a geological event.

BMPs would be implemented to minimize soil erosion and sedimentation. BMPs could include installing silt fencing and sediment traps, applying water to disturbed soil to control dust, and revegetating disturbed areas as soon as possible after disturbance, as appropriate (see **Appendix E**). Soil erosion- and sediment-control measures, such as silt fencing or curtains, would be implemented in areas where erosion and sedimentation are anticipated to result from maintenance and repair activities. Erosion- and sediment-control measures would be included in site plans to minimize long-term erosion and sediment production at each site. Use of storm water control measures that favor infiltration would minimize the potential for erosion and sediment production as a result of future storm events (see **Sections 3.7** and **3.8** for an evaluation of impacts on water resources). However, as much of the region of analysis along the U.S./Mexico international border is only sparsely vegetated, it is anticipated that control of vegetation would have a long-term, minor impact on soil erosion and sedimentation, specifically during storm events.

3.3.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, tactical infrastructure maintenance and repair activities along the U.S./Mexico international border in New Mexico would continue and current maintenance activities and tactical infrastructure would be maintained on an as-needed basis. There is a potential for short- and long-term, minor, direct and indirect, adverse impacts on soils due to soil disturbance from grading and other ground-disturbing maintenance activities. By completing maintenance and repair work on an as-needed basis, and not periodically as described in the Proposed Action, the potential exists for an increased impact on soils from emergency activities, such as repair of a road after washout. Therefore, it is possible that greater impacts would occur under the No Action Alternative than the Proposed Action because the potential for erosion and sedimentation would be greater since a proactive approach to maintenance and repair would not occur.

3.4 VEGETATION

3.4.1 Definition of the Resource

Vegetation resources include all plants that are found within the region of analysis. This section describes the affected environment for native and nonnative vegetation to support discussion of environmental consequences for vegetation. Vegetation analysis and descriptions were conducted using Bailey's multi-tiered classification of ecoregions contained in the *Descriptions of the Ecoregions of the United States* (Bailey 1995). Additionally, the USGS Gap Analysis Program Level 3 data and associated NatureServe descriptions of the ecological systems (USGS 2007, NatureServe 2010a) were used to describe the vegetation in the region of analysis.

An ecoregion contains geographically distinct environmental communities and conditions. Bailey's (1995) *Description of the Ecoregions of the United States* is based on several tiers of ecoregion classification. These include domains, divisions, and provinces. Domains are the largest geographic level of ecoregional classification and are generally defined by climate. Domains are split into divisions, which are defined according to climate and vegetation. Divisions are subsequently split into provinces that are typically defined by their major plant formations. Because ecoregions are defined by their shared biotic and abiotic characteristics, they represent practical units on which to base conservation planning (USFS 2010).

The USGS's Gap Analysis Program mapping of the United States was used to achieve a finer resolution of the vegetative communities within the region of analysis (USGS 2007). NatureServe (2010a) defines ecological systems as representing recurring groups of biological communities that are found in similar physical environments and are influenced by similar ecological processes such as fire or flooding. Ecological systems represent classification units that are readily identifiable by conservation and resource managers in the field. Ecological systems describe groups that are "taxonomically" broader than alliances and associations.

3.4.2 Affected Environment

The vegetation of southern New Mexico has been classified as a Tropical/Subtropical Desert Division (Bailey 1995). Within this division is the Chihuahuan Desert Province. The entire New Mexico region of analysis is encompassed by the Chihuahuan Desert Province.

The Chihuahuan Desert is primarily composed of undulating plains with elevations near 4,000 feet above msl, with somewhat isolated mountains that rise 2,000 to 5,000 feet above msl. Extensive arid grasslands cover most of the high plains of the province. A number of shrubs, most of them thorny, are also typical of the Chihuahuan Desert. They frequently grow in open stands, but sometimes form low, closed thickets.

Within the portion of the Chihuahuan Desert Province that is within the southwestern corner of the region of analysis are the Peloncillo-Animas Mountains. These ranges, also known as sky islands, compose part of the Madrean sky island archipelago, which has a mixture of species from the Nearctic and Neotropic regions and is world-renowned for its unique plant and animal diversity (Felger and Wilson 1995, DeBano et al. 1995).

There are approximately 37 ecological systems in the region of analysis (NatureServe 2010a). The eight largest of these systems account for more than 95 percent of the land cover and are summarized in **Table 3-1**. These ecological systems generally define the landscape and are described in the following paragraphs (NatureServe 2010a). Other ecological systems, including riparian woodland and shrubland and mixed-conifer and upper montane conifer-oak woodland, which are habitat for endangered species described in **Section 3.6**, are uncommon in the region of analysis. A table listing all ecological systems in the region is presented in **Appendix D**.

Apacherian–Chihuahuan Semi-Desert Grassland and Steppe. This ecological system is the most dominant system of the Chihuahuan Desert Province and composes more than 50 percent of the region of analysis. This system is composed of desert grassland, mixed shrub-succulent, or oak savanna that is typical of southwestern New Mexico, southeastern Arizona, and the Apacherian region of northern Mexico. It is found on gently sloping bajadas (lower slopes of mountains characterized by loose alluvial sediments and poor soil development) that support frequent fires throughout the sky islands and on mesas, foothills, and desert mountain slopes up to 5,479 feet above msl in elevation in the Chihuahuan Desert. It is characterized by many species of perennial grasses such as black grama (*Bouteloua eriopoda*), hairy grama (*Bouteloua hirsuta*), Chino grama (*Bouteloua ramosa*), sideoats grama (*Bouteloua curtipendula*), blue grama (*Bouteloua gracilis*), plains lovegrass (*Eragrostis intermedia*), bullgrass (*Muhlenbergia emersleyi*), bush muhly (*Muhlenbergia porteri*), curlyleaf muhly (*Muhlenbergia setifolia*), and James' galleta (*Pleuraphis jamesii*); and succulent species of agave (*Agathymus* spp.), sotol (*Dasyilirion* spp.), and yucca (*Yucca* spp.); short-shrub species of mimosa (*Mimosa* spp.), and quinine (*Parthenium* spp.); and tall-shrub/short-tree species of acacia (*Acacia* spp.), mesquite (*Prosopis* spp.), and various oaks (*Quercus* spp.) (NatureServe 2010a).

Chihuahuan Creosotebush, Mixed Desert, and Thorn Scrub. This ecological system, the second most dominant composing 21 percent of the region of analysis, is the common lower elevation desert scrub that occurs throughout much of the Chihuahuan Desert. Stands typically occur in flat to gently sloping desert basins and plains, extending up into the lower slopes of

Table 3-1. Ecological System Features Within the Region of Analysis

Ecological System	Percent of Region of Analysis	Location in Region of Analysis	Predominant Features
Apacherian-Chihuahuan Semi-Desert Grassland and Steppe	50	gently sloping bajadas	desert grassland, mixed shrub-succulent or oak savanna
Chihuahuan Creosotebush, Mixed Desert and Thorn Scrub	21	flat to gently sloping desert basins and plains, extending up into the lower slopes of mountains	moderate to sparse shrub layer frequently dominated by creosote bush
Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub	11	open desert scrub of vegetated coppice dunes and sandsheets	predominately honey mesquite or sand sagebrush
Madrean Encinal	5	foothills, canyons, bajadas (and plateaus) within the sky islands of southwestern New Mexico	woodlands, dominated by Madrean evergreen oaks
Apacherian – Chihuahuan Mesquite Upland Scrub	4	central to western portion of New Mexico	invasive upland shrublands
Madrean Pinyon-Juniper Woodland	2	foothills, mountains, and plateaus in southwestern New Mexico	pinyon and juniper trees
Chihuahuan Mixed Salt Desert Scrub	1	Chihuahuan Desert Province	extensive open-canopied shrublands
Chihuahuan Sandy Plains Semi-Desert Grassland	1	sandy plains and sandstone mesas	dry grasslands

mountains, which are characterized by loose sediment and poor soil development. The vegetation is characterized by a moderate to sparse shrub layer frequently dominated by creosote bush (*Larrea tridentata*) with tarbush (*Flourensia cernua*) also present. Scattered shrubs or succulents can also be present such as lechuguilla (*Agave lechuguilla*), mariola (*Parthenium incanum*), leatherwood (*Dirca palustris*), allthorn (*Castela erecta* ssp. *texana*), and yuccas. Additionally, tarbush is often present in silty basins. Shrub diversity is typically low because this ecological system lacks thornscrub and other mixed desert scrub species that are common on the gravelly mid to upper piedmont deposits. However, shrub diversity and cover can increase locally where soils are deeper and along minor drainages with occasional representatives of fourwing saltbush (*Atriplex canescens* var. *canescens*), snakeweed (*Gutierrezia sarothrae*), and honey mesquite (*Prosopis glandulosa*). Herbaceous cover is usually low and composed of grasses. Common species can include black grama, low woollygrass (*Dicanthelium acuminatum fasciculatum*), bush muhly, tobosagrass (*Pleuraphis mutica*), burrograss (*Scleropogon brevifolius*), and alkali sacaton (*Sporobolus airoides*) (NatureServe 2010a).

Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub. This system, which composes 11 percent of the region of analysis, includes the open desert scrub of vegetated coppice dunes and sandsheets found in the Chihuahuan Desert. Stands are usually dominated by honey mesquite or sand sagebrush (*Artemisia filifolia*) but also include fourwing saltbush, Torrey's jointfir (*Ephedra torreyana*), longleaf jointfir (*Ephedra trifurca*), frosted mint (*Poliomintha incana*), and little-leaf sumac (*Rhus michauxii*). Soaptree yucca (*Yucca elata*), snakeweed, black grama, and mesa dropseed (*Sporobolus flexuosus*) are also commonly present (NatureServe 2010a).

Madrean Encinal. This ecological system is within the western portion of the region of analysis and accounts for 5 percent of total land cover. This system typically occurs on foothills, canyons, bajadas, and plateaus within the sky islands of southwestern New Mexico. These woodlands are dominated by Madrean evergreen oaks. Lower elevation stands are typically open woodlands or savannas where they transition into desert grasslands, chaparral, or, in some cases, desertscrub. Common evergreen oak species include Arizona white oak (*Quercus alba*), Emory oak (*Quercus emoryi*), gray oak (*Quercus grisea*), and Mexican blue oak (*Quercus oblongifolia*). Chaparral species such as point-leaf manzanita (*Arctostaphylos pungens*), alderleaf mountain mahogany (*Cercocarpus montanus*), bitterbrushes (*Purshia* spp.), Wright's silktassel (*Garrya wrightii*), Sonoran scrub oak (*Quercus turbinella*), birchleaf buckthorn (*Frangula betulifolia*), or sumacs (*Rhus* spp.) can be present but do not dominate (NatureServe 2010a).

Apacherian-Chihuahuan Mesquite Upland Scrub. This system is in the central and western portions of the region of analysis and accounts for 4 percent of the region of analysis. It often occurs as invasive upland shrublands that are concentrated in the extensive desert grassland in the Chihuahuan Desert foothills, but also extends into the sky island region of the region of analysis. Mesquites and other deep-rooted shrubs exploit areas of deep-soil moisture that are unavailable to grasses and cacti. Vegetation is typically dominated by honey mesquite or velvet mesquite (*Prosopis velutina*) and succulents. Other desert scrub species that can also dominate include viscid acacia (*Acacia neovemica*), whitethorn acacia (*Acacia constricta*), one-seed juniper (*Juniperus monosperma*), or redberry juniper (*Juniperus coahuilensis*). Over the past 100 years, this system has expanded through conversion of desert grasslands resulting from drought, overgrazing by livestock, and decreases in fire frequency (NatureServe 2010a).

Madrean Pinyon-Juniper Woodland. This system, which composes almost 2 percent of the region of analysis, occurs on foothills, mountains, and plateaus in southwestern New Mexico, and is closely associated with the sky island archipelago. The soils of this system are generally dry and rocky. The presence of Mexican pinyon (*Pinus cembroides*), border pinyon (*Pinus discolor*), or other Madrean trees and shrubs is indicative of this woodland system. Redberry juniper, alligator juniper (*Juniperus deppeana*), Pinchot's juniper (*Juniperus pinchotii*), one-seed juniper, or pinyon pine (*Pinus edulis*) are common. Madrean oaks such as Arizona white oak, Emory oak, or gray oak can also be dominant. Ponderosa pine (*Pinus ponderosa*) is absent or sparse. If present, understory layers are variable and can be dominated by shrubs or grasses (NatureServe 2010a).

Chihuahuan Mixed Salt Desert Scrub. This ecological system is scattered throughout the Chihuahuan Desert Province of the region of analysis. It accounts for more than 1 percent of the

New Mexico region of analysis and includes extensive open-canopied shrublands in saline basins in the Chihuahuan Desert. Stands often occur on alluvial flats (sediment deposited by one or more rivers or streams) and around playas (dry lake basins). Substrates are generally fine-textured, saline soils. Vegetation is typically composed of one or more saltbush species such as four-wing saltbush, or mound saltbush (*Atriplex obovata*) with species of iodine bush (*Allenrolfea occidentalis*), tar bush, pickleweed (*Salicornia* spp.), seepweed (*Suaeda* spp.), or other salt-tolerant plants. Grass species can include alkali sacaton, galleta grass (*Pleuraphis* spp.), or saltgrass (*Distichlis spicata*) at varying densities (NatureServe 2010a).

Chihuahuan Sandy Plains Semi-Desert Grassland. This system occurs across the eastern portions of the region of analysis and composes 1 percent of the total area. These dry grasslands are found on sandy plains and sandstone mesas. The herbaceous layer is typically dominated by black grama and mesa dropseed with other characteristic Chihuahuan species. Other common species are Indian ricegrass (*Achnatherum hymenoides*), purple threeawn (*Aristida purpurea*), blue grama, New Mexico feathergrass (*Hesperostipa neomexicana*), sand muhly (*Muhlenbergia arenicola*), James' galleta, alkali sacaton, spike dropseed (*Sporobolus contractus*), and sand dropseed (*Sporobolus cryptandrus*). Typically, there are scattered desert shrubs and stem succulents present such as Torrey's jointfir (*Ephedra torreyana*), longleaf jointfir (*Ephedra trifurca*), tree cholla (*Opuntia imbricata*), banana yucca (*Yucca baccata*), soaptree yucca (*Yucca elata*), and Torrey's yucca (*Yucca torreyi*) that are characteristic of the Chihuahuan Desert (NatureServe 2010a).

3.4.3 Environmental Consequences

Effects on vegetation resources would be significant if the species or habitats are adversely affected over relatively large areas. Effects would also be considered significant if disturbances cause substantial or permanent reductions in population size or distribution of a species.

The significance of effects on vegetation is based on the following:

- The importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource
- The portion of the resource that would be affected relative to its occurrence in the region
- The sensitivity of the resource to proposed activities
- The duration of ecological ramifications.

3.4.3.1 Alternative 1: Proposed Action

Short- and long-term, negligible, direct and indirect, adverse effects on vegetation would occur from the Proposed Action due to vegetation removal, crushing, accidental spills, and temporary increases in turbidity and sedimentation. All maintenance and repair activities would occur within or adjacent to the existing footprint of tactical infrastructure.

Negligible to minor impacts on vegetation would occur from vegetation removal associated with vegetation control. Vegetation control would occur within existing footprints where vegetation is being maintained and outside of the existing footprints for road setbacks. Vegetation control

could include the selective removal of woody vegetation and could have the potential to result in conversion or degradation of habitat. Vegetation control could also result in habitat disturbance resulting in the establishment of different plant communities (including invasive species) in the controlled area.

Negligible to minor, direct adverse effects on vegetation, such as crushing, might occur when required vehicles and equipment access, park at, and maneuver around areas requiring maintenance. All maintenance activities are expected to occur within or adjacent to existing tactical infrastructure footprints; as such, these impacts would be negligible.

Degradation of plant communities would also occur if petroleum products or other hazardous materials were accidentally released during operation or storage of maintenance vehicles and other equipment. All regulatory requirements for handling and storage of fuels, oils, and other hazardous materials (such as the development of spill prevention plans) would be implemented.

Near- and in-water maintenance, such as bridge and road maintenance, and repair of damaged riprap, culverts, and other drainage structures and crossings, could result in direct and indirect impacts on aquatic plants and their habitat from increases in erosion, sedimentation, and turbidity. Impacts would include direct smothering of aquatic plants, degradation of habitat, and a decrease in sunlight. In addition, hazardous materials could be inadvertently released into aquatic habitat during maintenance and repair activities. These actions would temporarily degrade aquatic habitat and directly and indirectly affect aquatic plant species. However, maintenance and repair of roadways and of damaged riprap, culverts, and other drainage structures and crossings would reduce erosion, improve stream flow, and result in beneficial impacts on aquatic habitat and species. Under this alternative, a long-term, beneficial impact on erosion and sedimentation would occur from the periodic, scheduled inspections and maintenance of crossings and structures.

Adverse impacts on vegetation would be minimized by using appropriate BMPs (see **Appendix E**). The following are examples of BMPs that would be implemented with the Proposed Action to reduce impacts, as necessary:

- If vegetation must be removed, allow natural regeneration of native plants by cutting vegetation with hand tools, mowing, trimming, or using other removal methods that allow root systems to remain intact.
- Vegetation targeted for retention would be flagged to reduce the likelihood of being treated.
- The removal of mature trees providing shade or bank stabilization within the riparian area of any waterway during maintenance or repair activities would be avoided.
- A fire prevention and suppression plan would be developed and implemented for all maintenance and repair activities that require welding or otherwise have a risk of starting a wildfire.
- Herbicide and pesticide applications would occur under the supervision of a licensed applicator. A detailed log of the chemical used, amount applied, and specific location of application would be maintained.

- Control of riparian vegetation would not occur within 100 feet of aquatic habitats to provide a buffer area to protect the habitat from sedimentation.
- For all in-water work in streams, sediment barriers would be used to avoid downstream effects of turbidity and sedimentation.
- The perimeter of all new areas where vegetation control occurs would be clearly marked and disturbances would be confined to the marked areas.
- A fire prevention and suppression plan would be developed and implemented for all maintenance and repair activities that require welding or otherwise have a risk of starting a wildfire.

3.4.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, short- and long-term, minor to moderate, direct and indirect, adverse effects on vegetation would occur. CBP would continue current maintenance activities and tactical infrastructure would be maintained and repaired on an as-needed basis. There would be no centralized planning process for maintenance and repair, and, consequently, maintenance and repair of tactical infrastructure usually would be performed on resources that are in disrepair. Under this alternative, the lack of coordinated environmental staff support and centralized planning would result in the potential for unintended delays in complying with NEPA, the ESA, and other environmental requirements, which could lead to the eventual degradation of tactical infrastructure. Maintenance and repair under this alternative would result in impacts on vegetation, such as conversion and degradation of habitat and plant communities from vegetation removal; establishment of different plant communities (including invasive species); accidental release of petroleum products or other hazardous materials; trampling and crushing of vegetation while accessing the sites; and increased erosion, turbidity, and sedimentation, including the burial of aquatic plants. Under this alternative, vegetation-control activities would be conducted under a separate NEPA process.

By completing maintenance and repair work on an as-needed basis, the potential exists for increased impacts on vegetation. Without a centralized planning process, maintenance and repair specifications would not be established and standardized BMPs would not be implemented. For example, without a standardized BMP requiring that the footprint of the maintenance area be flagged or marked, vegetation immediately adjacent to the maintenance footprint could be impacted if maintenance activities went beyond that footprint. Thus, some vegetation adjacent to tactical infrastructure could be degraded or destroyed. Therefore, it is possible that greater impacts would occur under the No Action Alternative than the Proposed Action, as the potential for habitat disturbances would be greater due to a lack of a proactive approach to maintenance and repair.

3.5 TERRESTRIAL AND AQUATIC WILDLIFE RESOURCES

3.5.1 Definition of the Resource

This section provides a description of the wildlife and aquatic resources expected to occur within the region of analysis. Terrestrial wildlife resources include native or naturalized terrestrial animals and the habitats in which they exist. Aquatic wildlife resources include native or

naturalized aquatic animals and the habitats in which they exist. Species addressed in this section include those that are not listed as threatened or endangered by the Federal government. Federal threatened and endangered species are addressed in **Section 3.6**. Species listed by the state of New Mexico as sensitive, threatened or endangered, along with species listed by the BLM as sensitive, are addressed in **Appendix G**.

3.5.2 Affected Environment

Terrestrial Wildlife. An abundance of high-quality habitat for wildlife currently exists within the region of analysis. This vast area is capable of supporting hundreds of wildlife species, including mammals, birds, reptiles, and amphibians.

Mammals typically associated with the semidesert grasslands and plains grasslands of southwestern New Mexico include large-hoofed mammals such as southern mule deer (*Odocoileus hemionus fuliginatus*) and collared peccary (*Pecari tajacu*). Additional mammals include the black-tailed jackrabbit (*Lepus californicus*); spotted ground squirrel (*Spermophilus spilosoma*); hispid pocket mouse (*Perognathus hispidus*); Ord's, banner-tailed, and Merriam's kangaroo rats (*Dipodomys ordii*, *D. spectabilis*, and *D. merriami*); southern grasshopper mouse (*Onychomys torridus*); white-footed mouse (*Peromyscus leucopus*); and cotton rats (*Sigmodon hispidus*, *S. fluviventer*). Carnivores that might be encountered in the area include the coyote (*Canis latrans*) and badger (*Taxidea taxus*). Mammalian fauna associated with the Madrean sky island archipelago of southwestern New Mexico include the mountain lion (*Puma concolor*), white-nosed coati (*Nasua narica*), white-tailed deer (*Odocoileus virginianus*), Bailey's pocket mouse (*Chaetodipus baileyi*), yellow-nosed cotton rat (*Sigmodon ochrognathus*), and southern pocket gopher (*Thomomys umbrinus*). Mammals typical of Chihuahuan Desert scrub communities of south-central New Mexico include desert pocket gopher (*Geomys arenarius*), Botta's pocket gopher (*Thomomys bottae*), southern grasshopper mouse, Chihuahuan pocket mouse (*Chaetodipus eremicus*), desert shrew (*Notiosorex crawfordi*), and desert cottontail (*Sylvilagus audubonii*) (Brown 1994).

Birds common in the semidesert grasslands and plains grasslands of southwestern New Mexico include the mourning dove (*Zenaida macroura*), phainopepla (*Phainopepla nitens*), Swainson's hawk (*Buteo swainsoni*), greater roadrunner (*Geococcyx californianus*), burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), loggerhead shrike (*Lanius ludovicianus*), rufous-crowned sparrow (*Aimophila ruficeps*), western kingbird (*Tyrannus verticalis*), turkey vulture (*Cathartes aura*), black-tailed gnatcatcher (*Poliophtila melanura*), eastern meadowlark (*Sturnella magna*), cactus wren (*Campylorhynchus brunneicapillus*), and ash-throated flycatcher (*Myiarchus cinerascens*). Characteristic bird species of the Chihuahuan Desert scrub communities include the mourning dove, roadrunner, lesser nighthawk (*Chordeiles acutipennis*), Scott's oriole (*Icterus parisorum*), cactus wren, curve-billed thrasher (*Toxostoma curirostre*), and black-throated sparrow (*Amphispiza bilineata*) (Brown 1994). Bird species common to Madrean sky island archipelago include the band-tailed pigeon (*Columba fasciata*), Mexican jay (*Aphelocoma ultramarina*), black-throated gray warbler (*Dendroica nigrescens*), whiskered screech owl (*Otus trichopsis*), Abert's towhee (*Pipilo aberti*), curve-billed thrasher, bridled titmouse (*Parus wollweberi*), and bushtit (*Psaltiriparus minimus*) (Brown 1994).

Common species of amphibians and reptiles associated with the semidesert grasslands and plains grasslands include the ornate box turtle (*Terrapene ornata*), western hognose snake (*Heterodon nasicus*), western hooknose snake (*Gyalopion canum*), western rattlesnake (*Crotalus viridis*), desert grassland whiptail (*Cnemidophorus uniparens*), western green toad (*Bufo debilis*), and plains spadefoot (*Spea bombifrons*). Reptiles and amphibians associated with Madrean sky island archipelago include the rock rattlesnake (*Crotalus lepidus*), New Mexico ridge-nosed rattlesnake (*C. willardi obscurus*), green rat snake (*Elaphe triapsis*), bunchgrass lizard (*Sceloporus scalaris*), short-horned lizard (*Phrynosoma douglasii*), mountain skink (*Eumeces callicephalus*), red-spotted toad (*Bufo punctatus*), and Chiricahua leopard frog (*Rana chiricahuensis*). Reptiles and amphibians frequently associated with Chihuahuan Desert scrub communities include the roundtail horned lizard (*Phrynosoma modestum*), desert spiny lizard (*Sceloporus magister*), Couch's spadefoot (*Scaphiopus couchii*), red-spotted toad, striped whipsnake (*Masticophis taeniatus*), coachwhip (*M. flagellum*), and the western diamondback rattlesnake (*Crotalus atrox*) (Brown 1994, Degenhardt et al. 1996).

Aquatic Wildlife. Major river drainages in the region of analysis (going from west to east) include the, Gila, Mimbres, and Rio Grande (see **Section 3.8** for a description of surface water resources). Sixty-six species of native fish are known from New Mexico, although 11 are considered extirpated (Propst 1999). Common fish of the Rio Grande system include the red shiner (*Cyprinella lutrensis*), fathead minnow (*Pimephales promelas*), blue catfish (*Ictalurus furcatus*), and bluegill (*Lepomis macrochirus*). Only three fish species were native to the Mimbres River basin, including the beautiful shiner (*Cyprinella formosa*) which is considered extirpated (USFWS 1994a). The Rio Grande sucker (*Catostomus plebeius*) is common throughout the Mimbres River.

3.5.3 Environmental Consequences

Effects on wildlife and aquatic resources would be significant if the species or habitats are adversely affected over relatively large areas. Effects would also be considered significant if disturbances cause substantial or permanent reductions in population size or distribution of a species.

The significance of effects on wildlife is based on the following:

- The importance (i.e., legal commercial, recreational, ecological, or scientific) of the resource
- The portion of the resource that would be affected relative to its occurrence in the region
- The sensitivity of the resource to proposed activities
- The duration of ecological ramifications.

3.5.3.1 Alternative 1: Proposed Action

Short- and long-term, negligible, direct and indirect, adverse effects on wildlife would occur from the Proposed Action. All maintenance and repair activities would occur within or adjacent to the existing tactical infrastructure footprints. As such, maintenance and repair of tactical

infrastructure would result in temporary, negligible degradation of wildlife habitat and a small amount of permanent habitat loss.

Mechanical vegetation control, such as mowing and trimming, would likely cause larger mammals, reptiles, and birds, including breeding migratory birds, to relocate temporarily. Individuals of smaller, less-mobile species could inadvertently be harmed or killed by vegetation control activities. Vegetation control activities would occur within existing footprints of CBP tactical infrastructure, including roads. As such, most of the impacts on wildlife from vegetation control activities would be temporary. Vegetation control activities could include the selective removal of woody vegetation and could have the potential to result in conversion or degradation of habitat. In addition to the direct disturbance of habitat associated with vegetation removal, including the selective removal of woody plants, this activity could result in the establishment of invasive species in the controlled area. Adverse impacts on wildlife associated with vegetation control activities would be minimized by using appropriate BMPs (see **Appendix E**). Vegetation control activities would be kept to a minimum and would be temporary and intermittent in nature, reducing long-term impacts to wildlife habitat.

Localized degradation of habitat would also occur if petroleum products or other hazardous materials are accidentally released during operation or storage of maintenance vehicles and other equipment. All regulatory requirements for handling and storage of fuels, oils, and other hazardous materials (such as the development of spill prevention plans) would be implemented. Thus, habitat degradation resulting from accidental releases of hazardous materials would be negligible.

Some wildlife might be killed or injured during ground-disturbing activities or during transportation of equipment and personnel. Most ground-disturbing activities would occur within and adjacent to previously disturbed sites; therefore, the number of animals killed or injured during planned activities would be less than what would occur when new areas are disturbed. However, burrowing animals, such as the rodents and reptiles, could be impacted.

Near- and in-water bridge, road, and drainage structure maintenance and repair activities could result in direct and indirect impacts on aquatic species and their habitat from increases in erosion, sedimentation, and turbidity. Sedimentation can reduce the quantity and quality of spawning areas and influence stream productivity and food supply (e.g., aquatic insects) for both aquatic and terrestrial species. In addition, hazardous materials could be inadvertently released into aquatic habitat during maintenance and repair activities. These actions would temporarily degrade aquatic habitat and directly and indirectly affect aquatic species. BMPs would be implemented to minimize sedimentation and reduce the risk of the release of hazardous materials into aquatic systems (e.g., control of riparian vegetation would be avoided when possible to provide a buffer area to protect aquatic habitat from sedimentation). As a result of implementing these control measures, sedimentation and associated adverse effects on aquatic species would be negligible. In addition, road maintenance, repair of damaged riprap, culverts, and other drainage structures and crossings would reduce erosion, improve stream flow, and result in beneficial impacts on aquatic habitat and species. Under this alternative, a long-term, beneficial impact on erosion and sedimentation would occur from the periodic, scheduled inspections and maintenance of crossings and structures.

Temporary displacement of mobile wildlife from noise, night lighting, and other disturbances associated with the Proposed Action could occur more often than under the No Action Alternative because maintenance would be scheduled at regular intervals. However, BMPs would be implemented to minimize these adverse effects (e.g., if lights must be used at night, they would be limited to a maximum of 1.5 foot-candles and downshielded to avoid affecting bat species, such as the cave myotis).

Executive Order 13186 directs federal agencies to take actions to implement the Migratory Bird Treaty Act and contribute to the conservation and management of migratory birds and their habitats. BLM and USFWS entered into a MOU in 2010 to implement the Order. In the MOU, BLM agreed to evaluate at the project level, the effects of proposed actions on migratory birds focusing on Birds of Conservation Concern, priority habitats, and key risk factors. When conducting maintenance and repair activities on BLM land, CBP would be a partner to the MOU between BLM and USFWS. If measurable negative effects to migratory bird populations are identified, CBP is to implement measures to reduce take. As a result, while impacts to migratory birds could occur, the Proposed Action will not impact migratory birds at the species level.

Additionally, adverse impacts would be minimized by using appropriate BMPs (see **Appendix E**). The following are examples of BMPs that would be implemented with the Proposed Action to reduce impacts:

- Appropriately time vegetation control to avoid the migration, breeding, and nesting timeframe of migratory birds (February 1 through September 1). Herbicide treatments could occur throughout the year. When initial mechanical and chemical vegetation control must be implemented during February 1 through September 1, a survey for nesting migratory birds would be conducted immediately prior to the start of activities. If an active nest is found, a buffer zone would be established around the nest and no activities would occur within that zone until nestlings have fledged and abandoned the nest. For most nesting migratory birds a 35-foot buffer zone would be implemented. For state listed species and BLM sensitive species CBP will implement larger buffers, as appropriate.
- Ensure temporary light poles and other pole-like structures used for maintenance activities have anti-perch devices to discourage roosting by birds.
- Minimize animal collisions during maintenance and repair activities by not exceeding construction speed limits of 35 miles per hour (mph) on major unpaved roads (i.e., graded with ditches on both sides) and 25 mph on all other unpaved roads. During periods of decreased visibility (e.g., night, poor weather, curves), do not exceed speeds of 25 mph.
- To prevent entrapment of wildlife species, ensure excavated, steep-walled holes or trenches are either completely covered by plywood or metal caps at the close of each work day or provided with one or more escape ramps (at no greater than 1,000-foot intervals and sloped less than 45 degrees) constructed of earth fill or wooden planks.
- Each morning before the start of maintenance activities and before such holes or trenches are filled, ensure they are thoroughly inspected for trapped animals. Ensure that any animals discovered are allowed to escape voluntarily (by escape ramps or temporary

structures), without harassment, before maintenance activities resume; or are removed from the trench or hole by a qualified person and allowed to escape unimpeded.

3.5.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, CBP would continue current maintenance activities and short- and long-term, minor to moderate, direct and indirect, adverse effects on terrestrial and aquatic wildlife would occur. Tactical infrastructure would be maintained and repaired on an as-needed basis. There would be no centralized planning process for maintenance and repair, and, consequently, maintenance and repair of tactical infrastructure would usually be performed only on resources that are in disrepair. Under this alternative, the lack of coordinated environmental staff support and centralized planning would result in that would lead to the eventual degradation of tactical infrastructure. The No Action Alternative would result in greater impacts on wildlife than the Proposed Action because maintenance and repair activities would be reactionary. Under this alternative, impacts on wildlife, such as displacement of wildlife; habitat conversion and degradation from vegetation removal and the accidental release of petroleum products; crushing of smaller, less-mobile species resulting in death or injury; and disturbance from noise effects, night lighting, and temporary displacement of terrestrial species, would be expected.

By completing maintenance and repair work on an as-needed basis, the potential exists for increased impacts on wildlife species. Without a centralized planning process, maintenance and repair specifications would not be established and standardized BMPs might not be implemented (e.g., without a standardized BMP requiring that the footprint of the maintenance area be flagged or marked, wildlife habitat immediately adjacent to the maintenance footprint could be impacted if maintenance activities went beyond the footprint). In addition, maintenance and repair activities planned on an ad hoc basis without uniform application of centralized standards would likely lead to inconsistent outcomes and greater risk to environmental resources such as wildlife. For example, it might not allow the implementation of BMPs that require scheduling preventative maintenance around important seasons, such as the growing or active season when sensitive species might be vulnerable. Thus, some wildlife species and their habitat adjacent to tactical infrastructure could be degraded or destroyed. Therefore, it is possible that greater impacts would occur under the No Action Alternative than the Proposed Action, as the potential for habitat disturbances would be greater due to the lack of a proactive approach to maintenance and repair.

3.6 THREATENED AND ENDANGERED SPECIES

3.6.1 Definition of the Resource

Species listed as threatened or endangered under the ESA (i.e., federally listed species) that have the potential to be affected by implementation of the Proposed Action or No Action Alternative are discussed in this section. NatureServe elemental occurrence data were used to determine the presence of species within the region of analysis. An elemental occurrence is defined by NatureServe as an area of land or water where a species or natural community is or was present and has conservation value (NatureServe 2010b). These occurrence data require that a species is in appropriate habitat, at the appropriate time of the year, and is naturally occurring (NatureServe

2010b). This section presents those Federal-listed species that are known to occur or have the potential to occur within the region of analysis.

3.6.2 Affected Environment

The agencies that have primary responsibility for the conservation of plant and animal species in New Mexico are the USFWS and New Mexico Department of Game and Fish (NMDGF) of the New Mexico Energy, Minerals, and Natural Resources Department. These agencies maintain lists of plant and animal species that have been classified, or are potential candidates for classification, as threatened or endangered in the State of New Mexico. Listed species for Hidalgo, Grant, Doña Ana, and Luna counties were obtained through USFWS (New Mexico field office). Data on species' occurrences and distributions were obtained from NatureServe (NatureServe 2010a), and NMDGF Biota Information System of New Mexico (NMDGF 2010). Seven threatened and endangered species have the potential to occur in the region of analysis and to be affected by the Proposed Action (see **Table 3-2**).

Table 3-2. Federally Listed Species Known to Occur within the Region of Analysis

Common Name	Scientific Name	Listing Status
AMPHIBIANS AND REPTILES		
Chiricahua leopard frog	<i>Lithobates chiricahuensis</i>	Threatened, critical habitat
New Mexico ridge-nosed rattlesnake	<i>Crotalus willardi obscurus</i>	Threatened, critical habitat
BIRDS		
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	Endangered, 10 (j)*
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered, proposed critical habitat
MAMMALS		
Jaguar	<i>Panthera onca</i>	Endangered
Mexican long-nosed bat	<i>Leptonycteris nivalis</i>	Endangered
Lesser long-nosed bat	<i>Leptonycteris yerbabuenae</i>	Endangered

*Note: The northern aplomado falcon in New Mexico is an experimental population listed under section 10(j) of the ESA.

An additional 11 threatened or endangered species occur within the counties along the U.S./Mexico international border in New Mexico. These species would not be affected by the Proposed Action because they do not occur along the U.S./Mexico international border where tactical infrastructure is located, or because no activities would be conducted within or near habitat used by these species along or near the U.S./Mexico international border. These species include the Sneed pincushion cactus (*Coryphantha sneedii* var. *sneedii*), beautiful shiner (*Cyprinella formosa*), Chihuahua chub (*Gila nigrescens*), Gila chub (*Gila intermedia*), Gila topminnow (*Poeciliopsis occidentalis*), Gila trout (*Oncorhynchus gilae*), Rio Grande silvery minnow (*Hybognathus amarus*), loach minnow (*Tiagroga cobitis*), spikedace (*Meda fulgida*),

least tern (interior population) (*Sterna antillarum*), and black-footed ferret (*Mustela nigripes*), and are not discussed further.

3.6.2.1 Terrestrial Threatened and Endangered Species

New Mexico Ridge-Nosed Rattlesnake. This species is a small (12 to 24 inches), montane, grayish-brown rattlesnake with a distinct ridge on the tip of its snout. The diet of the New Mexico ridge-nosed rattlesnake consists of a broad range of prey including small mammals, birds, lizards, arthropods, and other snakes. Reproduction and birthing periods generally occur between early August and mid-October, with the majority of births occurring in mid-September. This species is active during periods of moderate temperatures, both daily and seasonally. New Mexico ridge-nosed rattlesnakes are active from April to October. The greatest periods of activity coincide with the rainy season in the Animas Mountains (i.e., July to September) (USFWS 1985).

The New Mexico ridge-nosed rattlesnake occurs in three remaining mountain populations within the Madrean Archipelago: Animas (New Mexico), Peloncillo (New Mexico and Arizona), and Sierra San Luis (Mexico). Throughout these three ranges, the species is most commonly found in pine-oak or scrub-oak forests between 5,600 to 9,000 feet in elevation. Within these habitats, cool canyon bottoms with shaded rock outcrops or talus slopes are favored micro-habitats (Davis 2008). Deep, narrow canyons that provide cool, mesic conditions relative to surrounding habitats are especially important for the persistence of this species in its arid northern range (USFWS 1985). The distribution of this rattlesnake in the Animas Mountains is limited to four canyons (Bear, Indian, Spring, and West Fork) and their associated sideslopes. Data from an 18-year mark/recapture study indicated the Animas Mountain population contained approximately 530 individuals (Davis 2008). The Peloncillo population is thought to be much smaller with less than 30 specimens known (NMDGF 2008). NatureServe data indicate there are eight records of elemental occurrences of New Mexico ridge-nosed rattlesnakes in the region of analysis. These occurred within the boundaries of the Guadalupe Spring and Animas Peak USGS topographic quadrangle maps (NatureServe 2010a). The most recent record of an elemental occurrence in the region of analysis was in 1994 (NatureServe 2010a).

Natural threats to the New Mexico ridge-nosed rattlesnake include predation, starvation, and pathogenic-related diseases that remain poorly understood (USFWS 1985). Other threats, more important to the decline in population numbers, include over-collecting by the pet trade and the alteration of habitat by fire suppression, climate change, grazing, mining, and development (USFWS 1985).

Critical habitat has been designated for New Mexico ridge-nosed rattlesnake (43 FR 34476-34480); and occurs within the region of analysis. Critical habitat for the New Mexico ridge-nosed rattlesnake was designated in Bear, Spring, and Indian canyons in the Animas Mountains of Hidalgo County between 6,200 and 8,500 feet (43 FR 34479).

Mexican Spotted Owl. The Mexican spotted owl has large, dark eyes, an overall dark to chestnut brown coloring, whitish spots on the head and neck, and white mottling on the abdomen and breast (USFWS 1995). The Mexican spotted owl inhabits canyon and forest habitats across its range and is frequently associated with mature mixed-conifer, pine-oak, and riparian forests.

Owls are usually found in areas with some type of water source such as perennial streams, creeks, and springs. Home range calculations for a single owl average 1,600 acres, while a mating pair's home range averages 2,000 acres (USFWS 2004). Mexican spotted owls use a variety of habitats for foraging, including multi-layered forests with many potential patches. In areas within Arizona and New Mexico, forests used for roosting and nesting often contain mature or old-growth stands with complex structure. The breeding period for Mexican spotted owls is March to June (USFWS 1995).

The range of the Mexican spotted owl extends from the southern Rocky Mountains in Colorado and the Colorado Plateau in southern Utah southward through Arizona, New Mexico, and far western Texas, through the Sierra Madre Occidental and Oriental, to the mountains at the southern end of the Mexican Plateau. About 91 percent of known Mexican spotted owls existing in the United States between 1990 and 1993 occurred on land administered by the USFS (USFWS 1995). This species has been documented in all New Mexico counties except Curry, De Baca, Guadalupe, Harding, Lea, Quay, Roosevelt, and Union, which compose the eastern part of the state, and Luna County, which is situated in southern New Mexico (BLM 2007). This species is known to occur in the vicinity of Gray Ranch in the Animas Mountains, Hidalgo County (NatureServe 2010a, NMDGF 2010). Within the region of analysis, NatureServe provides records for approximately four elemental occurrences of the Mexican spotted owl within USGS topographic quadrangle maps Animas Peak and Clanton Draw (NatureServe 2010a). The most recent record of an elemental occurrence in the Action Area was in 1994 (NatureServe 2010a).

The primary threats to the Mexican spotted owl are even-aged timber harvest and the threat of catastrophic wildfire. Additional threats include development from oil, gas, and mining, and recreation (USFWS 1995).

Critical habitat for the Mexican spotted owl was amended on September 30, 2004, and includes 8.6 million acres in Arizona, Colorado, New Mexico, and Utah on Federal lands (69 FR 53182-53298). No portion of designated critical habitat occurs within the region of analysis.

Northern Aplomado Falcon. The northern aplomado falcon (*Falco femoralis septentrionalis*) is a medium-sized falcon, approximately 14 to 18 inches in length with a wingspan of 31 to 40 inches. Northern aplomado falcons occur in open terrain with scattered trees or shrubs. Nesting habitat includes shrubs and trees, in particular the soap tree yucca, that is greater than or equal to 5 feet in height. Historically, in the United States, this species was found along yucca-covered sand ridges on coastal prairies, riparian woodlands in open grasslands, and in desert grasslands that contained scattered mesquites and yucca (USFWS 1990).

The range of this species once extended from Trans-Pecos Texas, southern New Mexico, and southeastern Arizona to Chiapas and the northern Yucatan along the gulf coast of Mexico, and along the Pacific slope of Central America north of Nicaragua. In New Mexico, the historic range included grasslands and desert regions along the New Mexico/Mexico international border and north into the Rio Grande valley (USFWS 1990; Meyer and Williams 2005), and included all four counties within the Action Area. Natural recolonization from a population in Mexico was detected in Southern New Mexico in the 1990s; nesting was reported in Luna County in

2001; and numerous reports of northern aplomado falcons, including nesting pairs, have since been documented in southern New Mexico (Meyer and Williams 2005; NMDGF 2012).

In 2006, the Peregrine Fund, in cooperation with Federal and state agencies, initiated an effort to release captive-reared aplomado falcons into southern New Mexico as part of the non-essential experimental population designated in 2005. From 2006 to 2011, over 300 birds were released into southern New Mexico. Only a small number of released falcons were detected at or near release sites, indicating high mortality or dispersal rates. In 2013, the Peregrine Fund announced that it was discontinuing release efforts in New Mexico (NMDGF 2014).

This species is threatened by long-term drought, continued replacement of grassland communities with shrubs in Chihuahua Desert grasslands, large-scale conversion of grasslands to agriculture, and the increased presence of the great-homed owl (*Bubo virginianus*), which preys upon the aplomado falcon (USFWS 1990; 70 FR 6819). In contrast to these current threats, aplomado falcons appear to be relatively tolerant of human presence (DOD and USFWS 2007).

Southwestern Willow Flycatcher. The southwestern willow flycatcher is a small bird, typically less than 6 inches in length, with conspicuous light-colored wing bars (USFWS 2002b). This subspecies is one of four currently recognized willow flycatcher subspecies found in the United States. The southwestern willow flycatcher is strongly associated with riparian habitats, nesting along rivers, streams, or other wetlands that often include willow, cottonwood (*Populus* sp.), box elder, and saltcedar (*Tamarix chinensis*). In New Mexico, Russian olive (*Elaeagnus angustifolia*) is a major habitat component at high-elevation breeding sites. The breeding period for this species is April to September (USFWS 2002b).

The southwestern willow flycatcher breeding range extends from southern and central California to Arizona, southwestern New Mexico, southeastern Utah, and southern Nevada. Migrating southwestern willow flycatchers occur statewide in New Mexico (NMDGF 2010) and use a wider array of forest and shrub habitats than their breeding and wintering habitats, although riparian vegetation is thought to be preferred (Sogge et al. 1997). The southwestern willow flycatcher is currently known from the following drainages within New Mexico: Rio Grande, Gila, San Juan, upper Canadian, Zuni, San Francisco, and Mimbres (NMDGF 2008). In 2010, surveys were conducted for this species in 11 restoration sites along the Rio Grande River in Sierra and Dona Ana counties, New Mexico. A single restoration site, the Nemexus Siphon site, was within the Action Area. This site contained suitable habitat for this species; however, no individuals were observed at this location (TRC 2010). NatureServe data indicate there is a single record of elemental occurrence in the region of analysis. That record is from an observation along the Rio Grande River north of El Paso within the boundary of the Smeltertown USGS topographic quadrangle map in 1946 (NatureServe 2010a).

This species is threatened by the loss and modification of habitat from dams and reservoirs, diversions and groundwater pumping, livestock grazing, recreation, fire, agricultural development, urbanization, and introduction of exotic species (USFWS 2002b). In addition, increased irrigated agriculture and livestock grazing have aided brown-headed cowbird (*Molothrus ater*) populations that, in turn, impact the southwestern willow flycatcher by parasitizing their nests. This subspecies currently occurs in small, fragmented subpopulations, which increases the risk of local extirpation (NatureServe 2010b).

USFWS has completed a final rule (78 FR 343) designating 1,227 stream miles and 84,569 hectares of southwestern willow flycatcher critical habitat, across several counties in New Mexico, Arizona, California, Utah, and Colorado. No portion of the final critical habitat occurs within the region of analysis.

Lesser long-nosed bat. The lesser long-nosed bat is a yellow-brown or cinnamon-gray bat, with a total head and body measurement of approximately 3 inches. The tongue measures approximately the same length as the body. This species also has a small nose leaf (USFWS 2001). Habitat for the species includes mainly desert scrub in the United States portion of its range. In Mexico, the species occurs in high elevation pine-oak and ponderosa pine forests with an altitudinal range of 1,600 to 11,500 feet. Within the United States, this species forages at night on nectar and pollen from columnar cacti and agaves with branched flower clusters (USFWS 2001). Considerable evidence exists for the interdependence of *Leptonycteris* bat species and certain agaves and cacti (USFWS 2001). During daylight, lesser long-nosed bats roost in caves or abandoned mines.

The species historically ranged from central Arizona and southwestern New Mexico through much of Mexico and into El Salvador (USFWS 2001). In New Mexico, this species is known to occur from the Animas, Peloncillo, and Big Hatchet mountains and adjacent valleys within southern Hidalgo County. Within the region of analysis the following roost sites have been documented, all within Hidalgo County: one roost site from the Peloncillo Mountains on the Arizona/New Mexico border; one roost site in the Big Hatchet Mountains; and two roosts in the Animas Mountains (USFWS 2007a, NMDGF 2008).

The decline of long-nosed bat populations is partially attributable to the excessive harvest of agaves in Mexico; the collection of saguaro and organ pipe cactus in the United States; and the conversion of habitat for agricultural uses, livestock grazing, woodcutting, and other development. These bats are particularly vulnerable to environmental stressors because many individuals use only a small number of communal roosts (USFWS 2001). In general, the overall number of lesser long-nosed bats has been stable or increasing in both the United States and Mexico (USFWS 2007a).

Mexican Long-Nosed Bat. The Mexican long-nosed bat (also known as the greater long-nosed bat) is a medium-sized bat, 3 to 4 inches long, that has a moderately long snout with a small triangular nose leaf at the tip. The species is colonial and usually roosts in caves and mines during the daytime. Occasionally, old buildings or sheds serve as night roosts for bats resting between feeding bouts. The use of roosts is driven by the availability of seasonally dependent forage opportunities. The Mexican long-nosed bat feeds on nectar and pollen of agave and cactus flowers, and sometimes soft fruit (USFWS 1994b). Agaves are currently the only known food source used by long-nosed bats in New Mexico (NMDGF 2008). Individual bats can travel as far as 25 miles per night between roosting and foraging areas (USFWS 1994b). In New Mexico, Mexican long-nosed bats use upper desert scrub and pine-oak woodlands in or near mountainous areas (NMDGF 2008).

The Mexican long-nosed bat is known from mid to high elevations (1,500 to 9,300 feet) throughout its range, which includes northern and central Mexico, southwestern Texas, and southwestern New Mexico (USFWS 1994b). In New Mexico, this species is known from Grant

and Hidalgo counties, where it has been captured in the Animas, Peloncillo, and Big Hatchet mountain ranges and associated valleys. Mexican long-nosed bats are present in New Mexico from mid-July to mid-October, as this period coincides with peak availability of flowering agave in the region (NMDGF 2008). Population estimates for the Mexican long-nosed bat are difficult to obtain due to the general lack of information on the species (USFWS 1994b). More than 5,000 long-nosed bats, consisting of both Mexican and lesser long-nosed bats, were counted in September 2005 at the Big Hatchet roost (NMDGF 2008). NatureServe data indicate there is one record of elemental occurrence of the Mexican long-nosed bat within the region of analysis. This occurred within the boundary of the Center Peak USGS topographic quadrangle map in 2003 (NatureServe 2010a).

Modification or destruction of roost sites and foraging habitat are probably the major threats. Other threats include pesticides, competition for roosts and nectar, natural catastrophes, disease, and predation (USFWS 1994b).

Jaguar. The jaguar is the largest species of cat native to the western hemisphere. It has a cinnamon-buff color with many black spots and a muscular, deep-chested body with relatively short, massive limbs. Its weight ranges widely from 90 to 300 pounds and its length is typically 7 feet from head to tail tip (USFWS 2000). Throughout their range, this species is most abundant near water in savannahs and forests in regions with a warm tropical climate, and is rarely found in extensive arid areas. However, jaguars have been documented in arid areas, including thornscrub, desertscrub, lowland desert, mesquite grassland, Madrean oak woodland, and pine-oak woodland communities of northwestern Mexico and the southwestern United States. Little is known about habitat preferences of jaguars in the northern reaches of their range. Jaguars hunt a wide variety of prey throughout their range, but are likely sustained by javelina (*Tayassu tajacu*) and mule deer (*Odocoileus hemionus*) in the southwestern United States (Seymour 1989). Factors that are thought to improve habitat suitability include low human density, proximity to water, abundant prey, and rugged terrain (Menke and Hayes 2003). Although jaguar detections over the past 15 years have primarily occurred in Madrean oak woodland communities, jaguars have also been documented in open mesquite grasslands and desert scrub/grasslands on the desert valley floor (McCain and Childs 2008).

The historic range of the jaguar included California, Arizona, New Mexico, and possibly Louisiana, south through Texas and into central South America. The current range includes central Mexico and into central South America as far south as northern Argentina. There are no known breeding populations in the United States (USFWS 2000). Although the greatest abundance of jaguars occurs in tropical environments of Mexico, the range of northern populations extends into southeastern Arizona and southwestern New Mexico. Individuals observed in Arizona and New Mexico are generally considered non-resident, young, dispersing transients. From 1996 to 2011, five, and possibly six, male jaguars have been reported in the United States (USFWS 2012). One adult male was observed and photographed on March 7, 1996, in the Peloncillo Mountains in New Mexico near the Arizona border. In February 2006, an adult male jaguar was observed and photographed in the Animas Mountains in Hidalgo County, New Mexico. The other observations were in Arizona. There are only three known records of females with cubs in the United States, the most recent occurring in 1919. The last report of a female jaguar in the United States was 1963 (McCain and Childs 2008). NatureServe data indicate there is one record of elemental occurrence of the jaguar in the region of analysis. This

occurred in 1996 within the boundary of the Skelton Canyon USGS topographic quadrangle map (NatureServe 2010a).

Habitat loss, fragmentation, and modification have contributed to jaguar population declines throughout much of the species' range. Roads can have direct impacts on jaguars and their habitat, including road-kill, disturbance, habitat fragmentation, change in prey numbers or distribution, and facilitating access for illegal hunting (McCain and Childs 2008).

3.6.2.2 Aquatic Threatened and Endangered Species

Chiricahua Leopard Frog. The Chiricahua leopard frog has a distinctive pattern on the rear of the thigh consisting of small, raised, cream-colored spots or tubercles on a dark background and often green coloration on the head and back (USFWS 2007b). The Chiricahua leopard frog is known to occur in cienegas, pools, livestock tanks, lakes, reservoirs, streams, and rivers at elevations of 13,300 to 8,900 feet (USFWS 2008). The species requires permanent or semi-permanent pools for breeding. The breeding season varies depending on elevation. At higher elevations (above 5,900 feet), the breeding season occurs between May and October, while at lower, warmer elevations (below 5,900 feet), the breeding season occurs from March through June (USFWS 2007b, Degenhardt et al. 1996). Overall frog abundance reaches its peak in August and September with the transformation of tadpoles to sub-adults, and is lowest from December through March (Degenhardt et al. 1996).

The Chiricahua leopard frog occurs in central and southeastern Arizona, west-central and southwestern New Mexico, and northeastern Sonora and western Chihuahua, Mexico. The range of the species is split into two geographically isolated populations. The northern populations are along the Mogollon Rim in Arizona and east into the mountains of west-central New Mexico. The southern populations are in southeastern Arizona, southwestern New Mexico, and Mexico. Previous research had suggested these two populations might be distinct; however, more recent work provides no evidence of multiple taxa within what is now considered to be the Chiricahua leopard frog (USFWS 2011). In New Mexico, the majority of populations occur north of Interstate- (I)-10 within the Gila and San Francisco basins. In 2007, there were 30 to 35 populations remaining in New Mexico, with less than 10 occurring south of I-10 (USFWS 2008). Chiricahua leopard frog populations are known from Grant and Hidalgo counties, specifically within the Animas Valley, Cloverdale, and Playas Lake hydrological areas (NatureServe 2010a, NMDGF 2010). This species could occur in and around cattle ponds and holding tanks throughout the southwestern corner of Hidalgo County, including sites in the region of analysis. NatureServe data indicate there are 17 records of elemental occurrences of the Chiricahua leopard frog in the region of analysis. These occurred within the boundaries of the Whitewater Mountains, Lang Canyon, Hilo Peak, Fitzpatrick's, Sentinel Butte, Guadalupe Spring, Clanton Draw, Center Peak, and Animas Peak USGS topographic quadrangle maps (NatureServe 2010a). The most recent record of an elemental occurrence in the region of analysis was in 1999 (NatureServe 2010a).

Threats to the Chiricahua leopard frog include predation and possibly competition by nonnative species, especially American bullfrogs, fish, and crayfish. Additional threats include the fungal disease chytridiomycosis, drought, degradation, and loss of habitat as a result of water diversions

and groundwater pumping, livestock management, catastrophic wildfire, mining, and development (USFWS 2007b).

The USFWS designated 39 critical habitat units within eight Recovery Units for the Chiricahua leopard frog in March 2012 (77 FR 16324–16424). One of the proposed critical habitat units, Peloncillo Mountains Recovery Unit, is within the region of analysis, composing 366 acres.

3.6.3 Environmental Consequences

The significance of effects on threatened and endangered species is based on the following:

- Permanent loss of occupied, critical, or other suitable habitat
- Temporary loss of critical habitat that adversely affects recolonization by threatened or endangered benthic resources
- Take (as defined under the ESA) of a threatened or endangered species.

3.6.3.1 Alternative 1: Proposed Action

In general, short- and long-term, direct and indirect effects on terrestrial and aquatic threatened and endangered species from the Proposed Action would be negligible. Adverse impacts on threatened and endangered species would be avoided and minimized by using appropriate BMPs (see **Appendix E**).

As justified in more detail as follows, CBP concludes that implementation of the Proposed Action would not adversely affect any threatened and endangered species or subspecies found within the region of analysis. In addition, CBP concludes that the Proposed Action would not adversely affect any critical habitat that occurs there. These determinations were based in part on the following factors.

- The Proposed Action involves the maintenance and repair of existing tactical infrastructure. Those activities would be conducted within and adjacent to the footprint of that infrastructure.
- CBP would use a centralized maintenance and repair planning process to ensure that program activities are appropriately planned and implemented.
- CBP would implement design standards and BMPs to avoid harming or harassing protected species and to minimize other direct and indirect adverse effects.
- When appropriate, surveys would be conducted prior to implementing maintenance and repair activities such as vegetation control within critical habitat or other suitable habitat.
- The program would result in no or very minor habitat degradation. Any additional direct and indirect impacts on threatened and endangered species would be negligible; therefore, any contribution to the cumulative adverse effects of future non-Federal activities in the region would be insignificant.

- CBP would seek approval or additional consultation from the USFWS for activities that have the potential to adversely affect protected species or adversely modify their critical habitat.

CBP has begun consultation with USFWS under Section 7 of the ESA regarding potential effects on listed species and designated critical habitat. Potential direct and indirect effects on federally listed species presented in this EA are based on currently available data. Once consultation has been completed, determinations from the USFWS would be addressed, as appropriate, in this EA.

Terrestrial Threatened and Endangered Species

New Mexico Ridge-Nosed Rattlesnake. Short-term, direct effects on the New Mexico ridge-nosed rattlesnake would be negligible. Potential direct impacts on this species include the risk of direct injury and mortality from maintenance activities. This species is limited to a very small area within the project area, and maintenance and repair within that area would be limited to within and immediately adjacent to existing tactical infrastructure. BMPs designed to minimize or avoid impacts on New Mexico ridge-nosed rattlesnakes would be implemented and the potential for effects would be discountable and any effects that might occur would be negligible. Maintenance and repair vehicles would not exceed a speed of 15 to 20 mph during periods of elevated roaming and foraging activities from July through August within defined New Mexico ridge-nosed rattlesnake occupied habitat, critical habitat, and suitable habitat (i.e., pine-oak woodlands at high elevations of 5,500 to 9,000 feet) in the Peloncillo and Animas mountains. If maintenance and repair activities cannot be avoided within the activity period, maintenance and repair vehicles would not exceed a speed of 15 to 20 mph during periods of elevated roaming and foraging activities from July through August within defined New Mexico ridge-nosed rattlesnake habitat.

Implementation of the Proposed Action would not result in direct, indirect, or cumulative effects that would appreciably diminish the value of primary consistent elements (PCEs) that are essential to conservation of the New Mexico ridge-nosed rattlesnake within this critical habitat unit. All maintenance and repair activities within critical habitat would occur within and immediately adjacent to the footprint of existing tactical infrastructure, and BMPs designed to avoid impacts on critical habitat of this species would be implemented. For example, all vegetation control activities should avoid suitable habitat, areas of known occurrences, and designated critical habitat for threatened and endangered species. If vegetation control is required within suitable habitat, areas of known occurrence, or designated critical habitat, a qualified biologist would conduct a survey for any potential threatened and endangered species and any PCEs that have been identified for that species. If a threatened or endangered species or PCE is observed within the project area, then further consultation with USFWS would be required; thus, implementation of the Proposed Action in New Mexico would have no effect on critical habitat of this species.

Avian Species. Short- and long-term, direct effects on the threatened and endangered avian species, including the Mexican spotted owl, northern aplomado falcon, and southwestern willow flycatcher, would be negligible. Potential direct impacts on threatened and endangered avian species include noise disturbances from increased human presence, injury or mortality from

collisions with maintenance vehicles, and habitat degradation from vegetation removal. As described in **Section 2.3**, maintenance and repair activities would occur infrequently. For example, inspections and routine maintenance of access roads would occur up to four times per year, and routine maintenance of other tactical infrastructure would occur less often. These maintenance activities would include trips by vehicles ranging in size from pickup trucks to heavy equipment such as dump trucks and road graders. Noise effects associated with maintenance activities are expected to occur at any given location for one to a few days in duration.

Noise levels from pickup trucks are anticipated to be similar to noise levels of most vehicles currently using the roadways. Noise levels from multiple pieces of heavy equipment, such as backhoes, construction trucks, and front-end loaders, are anticipated to increase ambient sound levels temporarily. The distance and levels at which noise is likely to disturb avian species is dependent on the sensitivity of individual species. For example, Delaney et al. (1999) indicated that spotted owls can be affected less by nearby, nonthreatening activity than other raptors. Spotted owls can be flushed from nests at noise levels greater than 46 A-weighted decibels (dBA) from ground-based activities. However, flush response decreases with distance. No flush response was detected at a distance of 250 feet or greater from the source during the non-nesting season and 2,690 feet or greater from the source during nesting season. Although not statistically significant, spotted owls were less likely to flush later in the season. While this could be an indication of experience or habituation to the noise, it could not be differentiated from other factors such as seasonal influences.

Noise and visual disturbance associated with maintenance and repair activities could disrupt breeding and foraging behaviors of threatened and endangered avian species. For example, such disturbances could cause adult Mexican spotted owls to flush from roosts, but is unlikely to result in adults leaving a nest. Because all maintenance activities would be conducted within or immediately adjacent to existing tactical infrastructure, and based on Delaney et al. (1999), it is likely that any nest within the audible range of maintenance and repair activities for existing tactical infrastructure would be occupied by owls and other avian species that are habituated to noise. In addition, BMPs would be implemented to avoid impacts during the nesting season. No maintenance and repair activities would be conducted within areas classified as protected activity centers of Mexican spotted owls during the nesting season.

Maintenance and repair activities could increase the potential for direct injury and mortality of threatened and endangered avian species. In general, birds are highly mobile and flush or relocate in response to disturbances and the potential for direct injury or mortality is negligible. There are species and seasonal periods when birds are more susceptible to collisions. With the exception of Mexican spotted owl protected activity centers, there might be occasions when maintenance and repair activities would be required within threatened and endangered avian species suitable and designated critical habitat during the nesting season. If maintenance and repair activities are necessary within these habitats during the nesting season, a qualified biologist would conduct a survey for threatened and endangered birds prior to initiating maintenance activities. If a threatened or endangered bird is present, a qualified biologist would survey for nests approximately once per week within 1,300 feet for Mexican spotted owl or 500 feet for southwestern willow flycatchers within the maintenance area for the duration of the activity. If an active nest is found, no maintenance would be conducted within 1,300 feet (for

Mexican spotted owl) or 300 feet (for southwestern willow flycatcher) of the nest until the young have fledged. In addition, all maintenance vehicles would be limited to a maximum speed of 35 mph on major unpaved roads (i.e., graded with ditches on both sides) and 25 mph on all other unpaved roads. Based on these considerations, the potential for injury to threatened and endangered avian species from striking a CBP maintenance vehicle is extremely unlikely.

Removal of vegetation could affect threatened and endangered avian species by reducing suitability of habitat if enough vegetation is removed so that it fragments the habitat and alters its structure. Vegetation removal would be limited to the minimum necessary to maintain drivable access roads and to maintain the functionality of other tactical infrastructure. This limited vegetation control would be conducted outside of the nesting season. In addition, shrubs or trees that fit the criteria for nesting substrate for the northern aplomado falcon will not be removed or disturbed.

There is no critical habitat designated for threatened and endangered avian species within or near the project area; therefore, the Proposed Action would have no effect on critical habitat for this species.

Jaguar. Short- and long-term, direct and indirect effects on jaguar would be negligible. Potential direct impacts on jaguar include the risk of direct injury and mortality from maintenance vehicles accessing tactical infrastructure and changes in behavior resulting from noise and other disturbances associated with human presence during maintenance and repair activities. Occurrences of jaguar in New Mexico are extremely rare. Between 1996 and 2007 there were only four jaguars observed in New Mexico and Arizona combined (USFWS 2007c).

Maintenance and repair activities would occur within or immediately adjacent to existing tactical infrastructure, and would result in no measureable degradation, modification, or habitat fragmentation of undisturbed areas where jaguar potentially occur. The presence of maintenance crews and equipment, and associated noise, could cause jaguar to move away from an area or otherwise modify their behavior. Because most repair and maintenance activities would be completed within an area in less than 1 day, and almost all would be completed within a few days, any displacement or other associated adverse effects would be temporary and minor. Additionally, because jaguars are so rare in the project area, the potential for an individual jaguar to encounter maintenance activities is extremely unlikely to occur.

Lesser Long-nosed and Mexican Long-Nosed Bat. Short- and long-term, direct effects on long-nosed bats from removal of forage plants (agave) or potential disturbances caused by maintenance and repair activities in close proximity to occupied roosts would be negligible. The potential direct impacts on these species include disruption of normal roosting and foraging behavior due to noise and lighting associated with maintenance and repair activities, and degradation of foraging habitat from vegetation removal. Based on the implementation of BMPs designed to avoid or reduce impacts on long-nosed bats, these impacts would be extremely unlikely to occur.

Noise from daytime maintenance activities could disturb bats roosting near the maintenance area. The distance at which noise is likely to disturb roosting bats is dependent on the sensitivity of the bat species and the type of roost structure. Because long-nosed bats roost in caves and

abandoned mine shafts, and CBP would not conduct maintenance activities within or at the entrance to caves or mineshafts, noise from daytime maintenance activities would not disturb roosting bats.

Maintenance activities that occur at night have the potential to interfere with a bat's ability to locate and find food (Schaub et al. 2008), and bats might avoid areas where maintenance noise is present. Maintenance and security lighting have the potential to impact bat behavior, altering commuting routes to foraging habitat (Stone et al. 2009). However, work at night within 5 miles of any known roost sites of long-nosed bats would be minimized from mid-April through mid-September. If night lighting is unavoidable, light would shine directly onto the work area to ensure worker safety and efficiency, and light would not exceed 1.5 foot-candles in long-nosed bat habitat.

Considerable evidence exists for the interdependence of *Leptonycteris* bat species and certain agaves and cacti (USFWS 2001). To avoid affecting the availability of these important forage species, removal of these plants within the range of long-nosed bats would be limited to the minimum necessary amount to maintain drivable access roads and functionality of other tactical infrastructure. Prior to conducting any maintenance or repair activity outside of the existing disturbed footprint of tactical infrastructure within the range of these species, a qualified biologist would conduct a survey to identify and flag all agave to be avoided. In addition, CBP would comply with all requirements of land management agencies for the protection and replacement of agave.

Aquatic Threatened and Endangered Species

Chiricahua Leopard Frog. Short-term, direct and indirect effects on Chiricahua leopard frogs would be negligible to minor. Potential direct impacts on this species include habitat degradation and the risk of direct injury or mortality from maintenance activities. Potential indirect impacts on this species include increased sedimentation, introduction of nonnative invasive species, and the spread of the fungal disease chytridiomycosis. Based on the implementation of BMPs designed to avoid or reduce impacts on Chiricahua leopard frogs, these impacts would be extremely unlikely to occur.

Maintenance of roads, culverts, and low water points would occur within or immediately adjacent to existing tactical infrastructure. To avoid affecting habitat for this species, in-water work (e.g., clearing, repairing, and replacing culverts) within critical or other suitable habitat of this species will occur during period of low or no flow. In addition, that work would be designed and implemented so that the hydrology of streams, ponds, and other habitat is not altered. By conducting in-water maintenance and repair activities during periods of low flow and ensuring that the hydrology of their habitat is not altered, maintenance and repair work would have negligible to minor, direct, adverse effects on the habitat of Chiricahua leopard frogs. Conducting work during periods of low flow and monitoring for the presence of this species during maintenance activities would reduce but not eliminate the possibility that Chiricahua leopard frogs would be harmed during maintenance and repair activities.

Direct injury, mortality, or behavioral changes could occur if adult Chiricahua leopard frogs disperse into areas being maintained or repaired. To minimize the possibility that Chiricahua

leopard frogs are harmed, in-water work within Chiricahua leopard frog critical habitat would be conducted during the active season (May through September) so that frogs can escape to the best of their ability. A qualified biologist would monitor ground-disturbing maintenance activities and use of heavy equipment to be conducted in vegetated or undisturbed areas. Monitoring would occur prior to and during activities located within one mile overland of critical habitat, 3 miles downstream of that habitat along ephemeral drainages, and 5 miles downstream of that habitat along perennial streams. If a frog is found in the project area and is in danger of being harmed, work would cease in the area until either the qualified biological monitor can safely move the individual to a nearby location or the frog moves away on its own.

By conducting in-water maintenance and repair activities during specific periods and ensuring that the hydrology of their habitat is not altered, maintenance and repair work would have negligible to minor, direct, adverse effects on the habitat of Chiricahua leopard frogs. Conducting work during those periods and monitoring for the presence of these species during maintenance activities would reduce but not eliminate the possibility that Chiricahua leopard frogs would be harmed during maintenance and repair activities.

Predation by nonnative species including catfish (*Ictalurus* spp.), American bullfrogs (*Lithobates catesbeianus*), and others has been identified as one of the primary threats to the Chiricahua leopard frog. In addition, population declines and extirpation of amphibian populations associated with chytridiomycosis have been documented in New Mexico (USFWS 2007b). Maintenance activities that occur in areas where nonnative invasive species and chytridiomycosis are known to occur can provide a catalyst for the spread and introduction of these into sensitive, less-disturbed areas. To prevent the spread of amphibian diseases among drainages via water or mud on maintenance vehicles and equipment, all maintenance work within Chiricahua leopard frog critical habitat shall conform to amphibian disease prevention protocols as described in the recovery plans for these species (USFWS 2002a, 2007b). Equipment would either be disinfected between uses at different sites or rinsed and air dried.

Maintenance activities could alter the quality of surface water within the maintenance area and downstream. However, impacts on water quality would be localized and temporary and BMPs would be implemented to reduce sedimentation and runoff from roads and other infrastructure and minimize other potential indirect effects on this species. Control of riparian vegetation would not occur within 100 feet of aquatic habitats to provide a buffer area to protect the habitat from sedimentation. To minimize impacts from habitat degradation due to sedimentation and a reduction of water quality and quantity, a site-specific Storm Water Pollution Prevention Plan and a spill protection plan would be prepared and regulatory approval would be sought as required, for maintenance and repair activities that could result in sedimentation and that occur within 0.3 mile of suitable habitat in the range of this species. This would include, but is not limited to, placing straw bale type sediment traps at the inlet of ponds or stock tanks and upstream of drainages known to be occupied by the species or within critical habitat of the species. General BMPs listed in **Appendix E** to protect water resources would also be implemented.

By implementing BMPs to reduce sedimentation and other indirect effects on amphibian habitat, avoiding the spread of nonnative invasive species and the fungal disease chytridiomycosis, and

conducting regularly scheduled inspection and maintenance, the potential for adverse indirect effects on Chiricahua leopard frogs would be negligible.

Critical habitat for the Chiricahua leopard frog has been designated for 39 units, one of which is within the region of analysis. This unit includes several tanks, pools, ponds, and dispersal habitat such as perennial, ephemeral, or intermittent drainages. Proposed critical habitat extends for 20 feet beyond the high water line or boundary of the riparian and upland vegetation of each pond, tank, or spring, and also extends 328 feet upstream of that aquatic habitat. Proposed critical habitat also extends 328 feet on either side of most drainages included as dispersal or other habitat.

The Proposed Action would not result in direct, indirect, or cumulative effects that would appreciably diminish the value of PCEs within this critical habitat unit, or any other Chiricahua leopard frog habitat that could be designated as critical. Most program activities within critical habitat would occur within the footprint of existing tactical infrastructure, and BMPs designed to avoid impacts on critical habitat of this species would be implemented. For example, any in-water work (e.g., clearing, repairing, and replacing culverts) within critical or other suitable habitat of this species will occur during periods of low or no flow. In addition, that work would be designed and implemented so that the hydrology of streams, ponds, and other habitat is not altered. Riparian vegetation within 100 feet of critical habitat would not be controlled, use of herbicides within critical habitat would not occur without approval from the USFWS, and vegetation control would not occur in critical habitat without further consultation with USFWS. Use of herbicides within critical habitat would not be allowed unless approved by the USFWS.

3.6.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, CBP would continue current maintenance activities and short- and long-term, minor to moderate, direct and indirect, adverse effects on threatened and endangered species would occur. Tactical infrastructure would be maintained and repaired on an as-needed basis. There would be no centralized planning process for maintenance and repair. Therefore, maintenance and repair of tactical infrastructure would be performed only on resources in disrepair. The lack of coordinated environmental staff support and formalized planning under this alternative increases the potential for unintended delays in complying with NEPA, the ESA, and other environmental requirements. Implementation of this alternative would result in impacts on threatened and endangered species, including conversion and degradation of habitat from vegetation removal, displacement of wildlife; including threatened and endangered wildlife; accidental release of petroleum products or other hazardous materials; incidental trampling and crushing while accessing the sites; and increased erosion, turbidity, and sedimentation. Under this alternative, vegetation control activities would be conducted under a separate NEPA process.

By completing maintenance and repair work on an as-needed basis, the potential exists for increased impacts on threatened and endangered species. Without a centralized planning process, maintenance and repair specifications would not be established and standardized BMPs might not be implemented. For example, without a standardized BMP requiring that the footprint of the maintenance area be flagged or marked, habitat for threatened and endangered species immediately adjacent to the maintenance footprint could be impacted if maintenance

activities went beyond the footprint. In addition, without a centralized planning process, there would be no way to determine if threatened and endangered species or their habitat occurred within the maintenance area, and there would be no mechanism to determine if species-specific BMPs would be required for maintenance and repair activities. Thus, some threatened and endangered species and habitat adjacent to tactical infrastructure could be degraded or destroyed. Therefore, it is possible that greater impacts would occur under the No Action Alternative than the Proposed Action, as the potential for habitat disturbances would be greater due to a lack of a proactive approach to maintenance and repair.

3.7 HYDROLOGY AND GROUNDWATER

3.7.1 Definition of the Resource

Evaluation of hydrology requires a study of the occurrence, distribution, and movement of water, and its relationship with the environment. Many factors affect the hydrology of a region, including natural precipitation and evaporation rates and outside influences such as groundwater withdrawals. Groundwater is a subsurface hydrologic resource that can recharge, or be recharged by, surface water. It is used for drinking, irrigation, and industrial processes. Groundwater typically can be described in terms of its depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations.

3.7.2 Affected Environment

Climate and hydrology. Two ecoregions are found in the region of analysis, the Madrean Archipelago Ecoregion and the Chihuahuan Deserts Ecoregion. The Madrean Archipelago Ecoregion is also known as the Sky Islands (USEPA 2007, USGS 2010a.) This area has dramatic gradients in topography, temperature, and precipitation, ranging from hot, semiarid plains at lower elevations, to a cool, wet, climate at higher elevations. The Madrean Archipelago Ecoregion also has a biannual precipitation regime, characterized by winter rainfall and summer thunderstorms (USGS 2010a). It is influenced by monsoons from the south, with 10 to 20 inches of rainfall a year, and annual evaporation rates of approximately 80 to 110 inches with 0.2 to 5 inches of runoff (USGS 1995a, Griffith et al. 2006).

The Chihuahua Desert Ecoregion differs from other hot deserts, such as the Sonoran, because it is located at higher elevations and has summer dominated rainfall as opposed to a biannual precipitation regime. It has broad basins and valleys, with isolated mesas and mountains (USGS 2010b). Some areas of the Chihuahua are the hottest and most arid regions in the state, with low available moisture and high evapotranspiration rates, while at higher elevations there is somewhat higher annual precipitation (Griffith et al. 2006). The Chihuahuan Desert might have 0 to 20 inches of rainfall yearly, but averages 10 inches, primarily from summer rains, with 0 to 1 inches of runoff and 80 to 110 inches of evaporation annually (USGS 1995b, USGS 2010b).

Groundwater. The aquifers in the region of analysis are part of the Rio Grande aquifer system. This system consists of a network of hydraulically interconnected aquifers in basin-fill deposits located along the Rio Grande Valley and nearby valleys (USGS 1995b). Recharge primarily originates from rainfall or snowmelt in the mountainous areas around the basins, which percolates downward through streambeds or porous rock formations. Precipitation that falls in

the valleys is generally lost to evaporation and transpiration, and little water percolates to a depth sufficient to recharge the aquifers. Irrigation-return is an important component of recharge in agricultural areas, although most of the irrigation water originated in the Rio Grande River or aquifer to begin with. Groundwater discharges from the system include evapotranspiration, withdrawal from wells and drains, discharge to stream, and underflow, although pumping wells are the primary means of discharge. In the southern part of the Rio Grande aquifer system, precipitation ranges from 14 to less than 4 inches per year, and potential evaporation ranges from 80 to more than 100 inches per year (USGS 1995b).

Approximately 90 percent of the population of New Mexico relies on groundwater for drinking water. Water quality is typically considered good, although there are incidents of point source and nonpoint source contamination. There are also areas where natural contaminants such as uranium, radon, and fluoride have entered domestic water supplies, and the water must be treated before use (NMED 2010a).

Several groundwater basins are traversed by the region of analysis, the largest being the Mimbres Basin and the Lower Rio Grande Basin (NMSE 2010). The Mimbres Basin has an area of 5,090 square miles, and includes the watershed of its only perennial stream, the Mimbres River (Hawley et al. 2000). The Mimbres Basin is within an extensively developed area, and water demands include municipal, industrial, and agricultural uses. Groundwater recharge occurs from perennial and intermittent streams, deep percolation of precipitation, and by mountain front recharge. Smaller amounts of recharge to the Mimbres Basin system are contributed by precipitation-runoff from the Cooke's Range and the Florida Mountains. Total dissolved solids are the lowest in the northern half of the Mimbres Basin and increase to the south, with the highest levels in the portion of the basin across the border in Mexico. The groundwater has low alkali hazard and medium salinity hazard for irrigation purposes in the northern part of the basin, but both the alkali and salinity hazards increase in the southern Mimbres Basin (Hawley et al. 2000). Earth fissuring and land subsidence has occurred in several locations in the basin, and it is thought to be associated with excessive groundwater withdrawal (Contaldo 1991). The Lower Rio Grande Basin is in one of New Mexico's principal agricultural regions, but there is extensive population growth also occurring in urban areas within this basin. Additionally, local crops that are currently grown, such as pecans, require more water per acre than historical crops such as cotton, leading to an increased demand for water. There are approximately seven wastewater treatment plants in the Lower Rio Grande Basin (NMSE 2006). The primary groundwater quality issue in the Lower Rio Grande Basin is increased salinity, which reduces potable water supplies, deteriorates soil quality, and leads to smaller crop yields (NMED 2010b).

3.7.3 Environmental Consequences

The Proposed Action would be considered to cause a significant adverse impact on hydrology or groundwater if it were to affect water quality substantially; reduce water availability or supply to existing users substantially; threaten or damage hydrologic characteristics; or violate established Federal, state, or local laws and regulations.

3.7.3.1 Alternative 1: Proposed Action

Climate and hydrology. No impacts on climate and hydrology with respect to the ecoregions or precipitation regime would be anticipated. Climate and hydrologic cycles are large-scale processes that affect local areas; however, a significant contribution of GHG emissions or alteration to the existing topography, vegetation, or precipitation regime would be required to modify climate or hydrology.

Groundwater. Short-term, negligible to minor, indirect, adverse impacts could occur on groundwater from vegetation control and debris removal, which could cause the deposition of fill materials or increased erosion into groundwater recharge areas. Long-term, negligible to minor, indirect, beneficial impacts on groundwater could occur from a decrease in erosion because roadways would be properly maintained, which would reduce the effects incurred from negligence, such as washout and long-term sedimentation. No adverse impacts on groundwater would be expected from the use of existing approved equipment storage areas.

No impacts on groundwater would be expected from maintenance and repair of existing FC-1 (paved) and FC-2 (all-weather) roads if standard BMPs, such as spill prevention measures, erosion and sediment controls, and proper equipment maintenance are implemented (see **Appendix E**). Maintenance and repair of FC-3 (graded earth) and FC-4 (two-track) roads could lead to short-term, minor, adverse impacts on groundwater during maintenance and repair activities because grading and other ground-disturbing activities would result in erosion and sedimentation. In addition, maintenance and repair of FC-4 roads could require the removal of vegetation and rock, which could alter the flow of water and percolation of precipitation into the ground, resulting in a long-term, negligible to minor, adverse impact on groundwater recharge.

Long-term, minor, beneficial impacts on groundwater would occur through properly maintained roads, which would reduce the effects incurred from neglected maintenance, such as washout and long-term sedimentation.

Along graded earth and sand roads, rutting can occur, which is exacerbated by rain events that erode the surface further. Unmanaged storm water flow also causes general erosion to occur, washing out complete sections of road and, in many instances, making roads impassable. Maintenance and repair of the existing roads would have short- and long-term, minor to moderate, beneficial impacts on groundwater by minimizing erosion of potentially contaminated (e.g., oils, metals) road material into groundwater recharge areas. Improper maintenance could result in short-term, negligible to minor, direct and indirect, adverse impacts on groundwater by increasing erosion or introducing fill material into groundwater recharge areas. A poorly regraded surface quite often results in rapid deterioration of the surface. The graded earthen roads should be slightly crowned and absent of windrows in the gutter line to avoid ponding and channeling within the road during rain events. Grading with the use of commercial grading equipment is proposed to restore an adequate surface to FC-3 (graded earth) roads. USBP sector personnel and contract support personnel well versed in grading techniques would be employed for such activity. The addition of material to these roads to achieve the proposed objective would be kept to a minimum. Any associated roadside drainage would be maintained to ensure that runoff is relieved from the road surface quickly and effectively without creating further erosion issues. Maintenance and repair of the existing road tactical infrastructure would be in

accordance with proven maintenance and repair standards. All necessary erosion-control BMPs would be adopted to ensure stabilization of the project areas. All of the standards CBP is adopting are developed based on comprehensive engineering analysis, proven BMPs adopted by other Federal agencies, and mitigation measures derived from extensive consultation with both regulatory and resource agencies.

Control of vegetation within the road setback could result in short- to long-term, negligible to minor adverse impacts on groundwater by increasing erosion into groundwater recharge areas. In areas deemed too difficult to mow, such as under guardrails, within riprap, and immediately adjacent to bodies of water within the proposed setbacks, the use of herbicides might occur. It is proposed that terrestrial and aquatic herbicide applications would occur with products approved by the USEPA and relevant Federal land management agency, where appropriate. The use of herbicides has the potential for long-term, minor, direct, adverse effects on groundwater if spills were to occur. All use of herbicides would be performed in accordance with label requirements by certified USBP sector or contract support personnel, and would not be applied in, or immediately adjacent to, BLM WSAs. Herbicide use would follow an integrated approach that uses the least intensive approach first and only progresses in intensity if necessary.

3.7.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, short- and long-term, minor to moderate, direct and indirect, adverse impacts on hydrology and groundwater would be anticipated because preventative measures would not be implemented to manage maintenance and repair prior to these activities becoming dire. Therefore, degrading infrastructure, particularly eroding roads, might lead to increased sediments, nutrients, and contaminants in wetlands, streams, and other groundwater recharge areas, and blocked drainage structures could increase flood risk. Impacts on hydrology and groundwater under the No Action Alternative would be anticipated to be greater than impacts for the Proposed Action. The potential for the introduction of contaminants in groundwater recharge areas could be greater under the No Action Alternative if BMPs cannot be implemented during ad hoc/emergency repair activities. Changes in hydrology from clogged drainage structures could occur, which could reduce the potential for groundwater recharge in the area.

3.8 SURFACE WATERS AND WATERS OF THE UNITED STATES

3.8.1 Definition of the Resource

Surface water resources generally consist of wetlands, lakes, rivers, and streams. All of these surface water components contribute to the economic, ecological, recreational, and human health of a community.

Waters of the United States are defined within the CWA, and jurisdiction is addressed by the USEPA and the USACE. These agencies assert jurisdiction over traditional navigable waters and their relatively permanent tributaries, and the wetlands that are adjacent to these waters (USEPA 2010a).

The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States (USEPA 2010b), with the objective of restoration and maintenance of chemical, physical, and biological integrity of the Nation's waters (USEPA 2010a). To achieve this objective several goals were enacted, including (1) eliminate discharge of pollutants into navigable waters by 1985; (2) achieve water quality that provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water by 1983; (3) prohibit the discharge of toxic pollutants in toxic amounts; (4) provide Federal financial assistance to construct publicly owned waste treatment works; (5) develop and implement the national policy that areawide waste treatment management planning processes ensure adequate control of sources of pollutants in each state; (6) enforce the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into navigable waters, waters of the contiguous zone, and the oceans; and (7) establish the national policy that programs be developed and implemented in an expeditious manner to enable the goals to be met through the control of both point and nonpoint sources of pollution.

The USACE regulates the discharge of dredged and fill material (e.g., concrete, riprap, soil, cement block, gravel, sand) into waters of the United States including adjacent wetlands under Section 404 of the CWA (USEPA 2010b) and work on structures in or affecting navigable waters of the United States under Section 10 of the Rivers and Harbors Act of 1899 (USEPA 2010c).

Wetlands and riparian habitats are ecologically important communities that provide many benefits for people, and fish and wildlife. They provide key habitat for a wide array of plant and animal species, including resident and migrating birds, amphibian and fish species, mammals, and insects. Vegetation production and diversity are usually very high in and around these sites, with many plant species adapted only to these unique environments. In addition, wetlands and riparian zones provide a variety of hydrologic functions vital to ecosystem integrity. They protect and improve water quality by storing floodwaters, recharging groundwater, and filtering out nutrients and chemicals (USEPA 2001a). Development and conversion of wetlands and riparian zones affects wildlife diversity, carrying capacity, and hydrologic regime. More than 220 million acres of wetlands are estimated to have existed in the lower 48 states in the 1600s. More than half of those wetland acres have been drained or converted to other uses, with the most impacts occurring in the 1950s to 1970s. Approximately 60,000 acres of wetlands are still lost annually, primarily from conversion for agriculture and other development purposes (USEPA 2001b).

Wetlands are a protected resource under EO 11990, *Protection of Wetlands*, issued in 1977 "to avoid to the extent possible the short- and long-term, adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative." Wetlands have been defined by agencies responsible for their management. The term "wetland," used herein, is defined using USACE conventions. The USACE has jurisdiction to protect wetlands under Section 404 of the CWA using the following definition:

...areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do

support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3[b]).

Three diagnostic characteristics must be met to classify an area a wetland: (1) more than 50 percent of the dominant vegetation species present must be classified as obligate (species that are found greater than 99 percent of the time in wetlands), facultative wetland (species that are found 67 to 99 percent of the time in wetlands), or facultative (species that are found 34 to 66 percent of the time in wetlands); (2) the soils must be classified as hydric; and (3) the area is either permanently or seasonally inundated, or saturated to the surface at some time during the growing season of the prevalent vegetation (USACE 1987).

Wetlands are protected as a subset of “the waters of the United States” under Section 404 of the CWA. The term “waters of the United States” has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats, including wetlands. Section 404 of the CWA authorizes the USACE to issue permits for the discharge of dredged or fill materials into the waters of the United States, including wetlands. In addition, Section 404 of the CWA also grants states with sufficient resources the right to assume these responsibilities. Section 401 of the CWA gives the state board and regional boards the authority to regulate through water quality certification any proposed federally permitted activity that could result in a discharge to water bodies, including wetlands. The state may issue certification, with or without conditions, or deny certification for activities that might result in a discharge to water bodies (USEPA 2010b).

3.8.2 Affected Environment

3.8.2.1 Surface Waters

The watersheds in southern New Mexico within the region of analysis include the following from west to east: San Bernardino Valley, Cloverdale, Playas Lake, Mimbres, El Paso-Las Cruces, Tularosa Valley, Salt Basin, Upper Pecos-Black, Lower Pecos-Red Bluff Reservoir, and Landreth-Monument Draws (USEPA 2012a). A synopsis of each watershed is provided in **Table 3-3**.

3.8.2.2 Wetlands

Wetlands cover less than one percent of New Mexico, with most wetlands in the eastern and northern areas. The state has lost about one-third of its original wetlands, primarily due to agricultural conversion, irrigation diversions, overgrazing, and urbanization. Mining, clear cutting, road construction, water regulation, and invasive plants have also contributed to wetland loss (USGS 1996).

The wetlands in the region of analysis occur primarily within riparian zones associated with the Rio Grande and Mimbres rivers. Playa lakes, springs, cienegas, and arroyos are found throughout the region (USACE 1994b). Playa lakes are seasonally flooded depressions in alkali flats, and are considered lacustrine or lake-like habitats. Springs and seeps are found along the major rivers, and cienegas are wet flats or valleys formed by multiple springs, and are found in the southeast and south-central regions.

Table 3-3. Watersheds within the Region of Analysis

Watershed	HUC	Size	Major Waterbodies	On USEPA 303 (d) list?	TMDLs Established?
San Bernardino Valley	15080302	426 square miles	Black Draw	No	No
Cloverdale	15080303	462 square miles	No major waterbodies, contains smaller streams such as Cloverdale Creek	No	No
Playas Lake	13030201	1,580 square miles	No major waterbodies, contains playa lakes	No	No
Mimbres	13030202	4,500 square miles	Mimbres River	Yes. Impaired for fecal coliforms, eutrophication, and elevated temperatures for the Mimbres River. Eutrophication, low dissolved oxygen, and mercury for the Bear Canyon Reservoir	No
El Paso-Las Cruces	13030102	2,392 square miles	Rio Grande River	Yes. Impaired for <i>E. Coli</i> .	No
Tularosa Valley	13050003	6,750 square miles	Three Rivers	Yes. Impaired for <i>E. Coli</i> .	No
Salt Basin	13050004	2,400 square miles	Sacramento River	No	No
Upper Pecos-Black	13060011	4,397 square miles	Pecos River	Yes. Impaired for boron, dissolved oxygen, and PCBs in fish tissue	No
Lower Pecos-Red Bluff Reservoir	13070001	4,422 square miles	Pecos River	Yes. Impaired for boron, dissolved oxygen, and PCBs in fish tissue	No
Landreth-Monument Draws	13070007	4,293 square miles	No major waterbodies, mostly perennial streams	No	No

Sources: USGS 2010c, USEPA 2010d, NRCS undated a, TSHA 2011, NRCS 2011, NRCS undated b

Key: HUC = Hydrologic Unit Code

Cienegas can be palustrine forested or palustrine emergent, which includes various small plants that grow up and out of the water. Palustrine habitats are small permanent or intermittent water bodies that are less than 20 acres in size, which can include marshes, swamps, bogs, and fens. Dewatering, channelization, and land conversion, particularly in the Rio Grande area, have greatly reduced the area of some of these wetland habitats. Water tables have been lowered and areas that were formerly perennial have become ephemeral or nonexistent (NMDGF 2006).

3.8.3 Environmental Consequences

3.8.3.1 Alternative 1: Proposed Action

Short-term, negligible to moderate, indirect, adverse impacts could occur from vegetation control and debris removal and bridge repair, which could cause the deposition of fill materials or increased sedimentation into wetlands, arroyos, or other surface water or drainage features. However, maintenance and repair of tactical infrastructure would be conducted in such a manner as to have negligible impacts on wetlands, waters, and floodplain resources to the maximum extent practical. Erosion-control BMPs would be adopted to maintain runoff on site and would minimize the potential for adverse effects on downstream water quality. Pertinent local, state, and Federal permits would be obtained for any work, including work that could occur in jurisdictional drainages, waterways, or wetlands. CBP is consulting with the USACE Albuquerque District to minimize wetland impacts and identify potential avoidance, minimization, and conservation measures. Maintenance and repair of the existing road tactical infrastructure would be in accordance with proven maintenance and repair standards. All of the standards CBP would adopt are developed based on comprehensive engineering analysis, proven BMPs adopted by other Federal agencies, and mitigation measures derived from extensive consultation with both regulatory and resource agencies. No impacts on surface water resources would be expected from maintenance and repair of lighting and electrical systems, or towers.

Maintenance of FC-3 (graded earth), FC-4 (two-track), and FC-5 (sand) roads would minimize erosion and deposition of potentially contaminated (e.g., oils, metals) road material into wetlands, surface waters, arroyos, and other drainage features. When subjected to heavier traffic, rutting occurs, which in turn is exacerbated by rain events that further erode the surface. Unmanaged storm water flow also causes general erosion to occur, washing out complete sections of road and in many instances making roads impassable. The roads are slightly crowned and absent of windrows in the gutter line to avoid ponding and channeling within the road during rain events. Grading with the use of commercial grading equipment is proposed to restore an adequate surface. USBP sector personnel and contract support personnel well versed in grading techniques would be employed for such activity. The addition of material to these roads to achieve the proposed objective would be kept to a minimum. Any associated roadside drainage would be maintained to ensure that runoff is relieved from the road surface quickly and effectively without creating further erosion issues.

In addition, bridges would be inspected on a routine basis and their structural integrity maintained. Short-term, minor to moderate, adverse impacts would occur on surface water resources from bridge maintenance and repair, depending on the extent of required work.

Mowing and vegetation control within the road setback could result in increased erosion into wetlands, surface waters, arroyos, and other drainage areas. In areas deemed too difficult to mow, such as under guardrails, within riprap, and immediately adjacent to bodies of water within the proposed setbacks, the use of herbicides might occur. It is proposed that terrestrial and aquatic herbicide applications would be made with products approved by the USEPA and relevant Federal land management agency (where appropriate). The use of herbicides would result in long-term, minor, direct, adverse effects on surface water resources, if spills were to occur. All use of herbicides would be performed in accordance with label requirements by certified USBP sector or contract support personnel, and would not be applied in, or immediately adjacent to, BLM WSAs. Herbicide use would follow an integrated approach that uses the least intensive approach first and only progresses in intensity, if necessary.

3.8.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there is a potential for short- and long-term, minor to major, direct and indirect adverse impacts on surface waters. The No Action Alternative would result in greater impacts on surface waters than the Proposed Action because a proactive approach to maintenance and repair would not occur, and therefore, reactive maintenance and repair activities would occur when a problem has arisen. For example, degrading infrastructure, particularly eroding roads, could lead to increased sediments, nutrients, and contaminants in wetlands, streams, arroyos, and other water-related features, and blocked drainage structures could increase flood risk. In addition, it is likely that not all BMPs would be implemented during emergency repair activities, which could result in adverse impacts on surface waters.

3.9 FLOODPLAINS

3.9.1 Definition of the Resource

Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters that are periodically inundated. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and support of a diversity of plants and animals. Floodplains provide a broad area to spread out and temporarily store floodwaters. This reduces flood peaks and velocities and the potential for erosion. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body (FEMA 1994). Floodplains are subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year (FEMA 1994). Certain facilities inherently pose too great a risk to be in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety. EO 11988, *Floodplain Management*, requires Federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of appropriate FEMA Flood Insurance Rate Maps, which contain enough general information to determine the relationship of the project area to

nearby floodplains. EO 11988 directs Federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative. Where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with EO 11988 outlined in the FEMA document *Further Advice on EO 11988 Floodplain Management*.

3.9.2 Affected Environment

Much of the region of analysis is unmapped by FEMA, but several unnamed draws and washes, Wamels Draw, and the Rio Grande River are shown as having 100-year floodplains (FEMA 2010).

3.9.3 Environmental Consequences

3.9.3.1 Alternative 1: Proposed Action

Short-term, negligible to minor, indirect, adverse impacts and short- and long-term, minor, direct, beneficial impacts on floodplains would be anticipated from implementing the Proposed Action. Short-term, negligible to minor, indirect impacts could occur on floodplain areas from vegetation control and debris removal, which could cause increased sedimentation into floodplains and drainage structures. However, clearing blocked drainage structures of debris and fill materials would result in short- and long-term, direct and indirect, beneficial impacts on floodplains by improving conveyance of floodwaters. BMPs would also be implemented to minimize impacts on floodplains. No adverse impacts on floodplains from maintenance of bridges, lighting and electrical systems, towers, or the use of existing approved equipment storage areas would be expected because maintenance of these systems would not lead to an increase in sedimentation or erosion.

No impacts on floodplains would be expected from routine repair and maintenance of existing FC-1 (paved) and FC-2 (all-weather) roads if standard BMPs are implemented and any necessary local, state, or Federal permitting requirements are met. The majority of proposed maintenance and repair activities are planned for FC-3 (graded earth) and FC-4 (two-track) roads. Because of their lack of formal construction design, FC-3 (graded earth) and FC-4 (two-track) roadways are subject to the greatest deterioration if left unmaintained.

Proper maintenance of existing FC-3 (graded earth) and FC-5 (sand) roads would have short- and long-term, minor to moderate, beneficial impacts on floodplains by minimizing erosion of road material into floodplain areas. When subjected to heavier traffic, rutting occurs, which is exacerbated by rain events that further erode the surface. Unmanaged storm water flow also causes general erosion to occur, washing out complete sections of road and in many instances making roads impassable. The road should be slightly crowned and absent of windrows in the gutter line to avoid ponding and channeling within the road during rain events. Grading with the use of commercial grading equipment is proposed to restore an adequate surface to FC-3 (graded earth) roads. USBP sector personnel and contract support personnel well versed in grading techniques would be employed for such activity. The addition of material to these roads to achieve the proposed objective would be kept to a minimum. Any associated roadside drainage would be maintained to ensure that runoff is relieved from the road surface quickly and effectively without creating further erosion issues.

Proper maintenance of existing FC-4 (two-track) roads would have short- and long-term, minor, direct, beneficial impacts on floodplains by minimizing erosion of road material into floodplain areas. Installation of culverts could cause long-term, minor, direct, adverse impacts on floodplains by creating restrictions to water flow and potentially increasing flood risk. Proper sizing of culverts would reduce this potential impact. Two-track roads have no crown, and generally do not have any improved drainage features or ditches, although culverts and low water crossings could be installed where continuous erosion issues occur. Installation of properly sized culverts and cleaning blocked drainage structures could have short- and long-term, direct and indirect, beneficial impacts by decreasing restrictions and improving conveyance of floodwaters.

Controlling vegetation within the road setback could result in short- to long-term, negligible to minor, adverse impacts on floodplains by increasing erosion into floodplain areas. In areas deemed too difficult to mow, such as under guardrails, within riprap, and immediately adjacent to bodies of water within the proposed setbacks, the use of herbicides could occur. Terrestrial and aquatic herbicide applications would be made with products approved by the USEPA and relevant Federal land management agency (where appropriate). All use of herbicides would be performed in accordance with label requirements by certified USBP sector or contract support personnel, and would not be applied in, or immediately adjacent to, BLM WSAs. Herbicide use would follow an integrated approach that uses the least intensive approach first and only progresses in intensity if necessary. Short-term, negligible to minor, adverse impacts on floodplains would be expected from the use of herbicides, as the decrease in vegetation in the floodplain could allow for easier conveyance of floodwaters within the floodplain and increase the velocity and volume of storm water flow until native vegetation has been reestablished. Impacts on herbicides on water quality are discussed in **Section 3.8**.

All necessary erosion-control BMPs (see **Appendix E**) would be adopted to ensure stabilization of the project areas. Pertinent local, state, and Federal permits would be obtained for any work, including work that occurs in floodplains. The maintenance and repair of tactical infrastructure would be conducted in such a manner as to have negligible impacts on floodplains to the maximum extent practical. CBP is consulting with the USACE Albuquerque District to minimize floodplain impacts and identify potential avoidance, minimization, and conservation measures. Maintenance and repair of the existing road tactical infrastructure would be in accordance with proven maintenance and repair standards. All of the standards CBP is adopting are developed based on comprehensive engineering analysis, proven BMPs adopted by other Federal agencies, and mitigation measures derived from extensive consultation with both regulatory and resource agencies.

3.9.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there is a potential for short- and long-term, minor to moderate, direct and indirect, adverse impacts on floodplains. Degrading infrastructure, particularly eroding roads, could lead to increased sediments and other fill materials in the floodplain, and blocked drainage structures impair flow, which could increase flood risk. This approach would result in greater impacts on floodplains than the Proposed Action because a proactive approach to maintenance and repair would not occur. Reactive maintenance and repair activities would be coordinated once an issue arises. For example, instead of clearing blocked drainage structures periodically of debris, the drainage structures could be cleared when flooding

occurs and it becomes a necessity to maintain the structure. Thus, structures generally not impacted by floodwaters could be affected under the No Action Alternative if the blockage of the drainage structure is not detected or attended to in a timely manner. The No Action Alternative does not guarantee that all BMPs would be implemented during emergency repair activities.

3.10 AIR QUALITY

3.10.1 Definition of the Resource

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

Ambient Air Quality Standards. Under the CAA, the USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O₃), which is measured as volatile organic compounds (VOCs) and nitrogen oxides (NO_x); carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM₁₀] and particulate matter equal to or less than 2.5 microns in diameter [PM_{2.5}]), and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. **Table 3-4** presents the USEPA NAAQS.

Attainment Versus Nonattainment and General Conformity. The USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either “attainment,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

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

Table 3-4. National Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Standard	Secondary Standard
		Federal	
CO	8-hour ⁽¹⁾	9 ppm (10 mg/m ³)	None
	1-hour ⁽¹⁾	35 ppm (40 mg/m ³)	None
Pb	Rolling 3-Month Average ⁽²⁾	0.15 µg/m ³ ⁽³⁾	Same as Primary
NO ₂	Annual ⁽⁴⁾	53 ppb ⁽⁵⁾	Same as Primary
	1-hour ⁽⁶⁾	100 ppb	None
PM ₁₀	24-hour ⁽⁷⁾	150 µg/m ³	Same as Primary
PM _{2.5}	Annual ⁽⁸⁾	12 µg/m ³	15 µg/m ³
	24-hour ⁽⁶⁾	35 µg/m ³	Same as Primary
O ₃	8-hour ⁽⁹⁾	0.075 ppm ⁽¹⁰⁾	Same as Primary
SO ₂	1-hour ⁽¹¹⁾	75 ppb ⁽¹²⁾	None
	3-hour	None	0.5 ppm

Source: USEPA 2012b

Notes: Parenthetical values are approximate equivalent concentrations.

1. Not to be exceeded more than once per year.
2. Not to be exceeded.
3. Final rule signed October 15, 2008. The 1978 standard for Pb (1.5 µg/m³ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved. The USEPA designated areas for the new 2008 standard on 8 November 2011.
4. Annual mean.
5. The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of cleaner comparison to the 1-hour standard.
6. 98th percentile, averaged over 3 years.
7. Not to be exceeded more than once per year on average over 3 years.
8. Annual mean, averaged over 3 years.
9. Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
10. Final rule signed 12 March 2008. The 1997 O₃ standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, USEPA revoked the 1-hour O₃ standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard (“anti-backsliding”). The 1-hour O₃ standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.
11. 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
12. Final rule signed on 2 June 2010. The 1971 annual (0.3 ppm) and 24-hour (0.14 ppm) SO₂ standards were revoked in that same rulemaking. However, these standards remain in effect until 1 year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Key: ppm = parts per million; ppb = parts per billion; mg/m³ = milligrams per cubic meter; µg/m³ = micrograms per cubic meter; SO₂ = sulfur dioxide

Federal Prevention of Significant Deterioration. Federal Prevention of Significant Deterioration (PSD) regulations apply in attainment areas to a major stationary source, (i.e., source with the potential to emit of 250 tons per year [tpy] of any regulated pollutant) and significant modifications to major stationary source, (e.g., change that adds 10 to 40 tpy to the

major stationary source's potential to emit depending on the pollutant). Additional PSD major source and significant modification thresholds apply for GHGs, as discussed below. PSD permitting can also apply to a proposed project if all three of the following conditions exist:

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

Title V and Other CAA Requirements. Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A Title V major stationary source has the potential to emit regulated air pollutants and hazardous air pollutants (HAPs) at levels equal to or greater than Major Source Thresholds. Major Source Thresholds vary depending on the attainment status of an ACQR. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality.

Section 112 of the CAA lists HAPs and identifies stationary source categories that are subject to emissions control or work practice requirements. Section 111 of the CAA lists stationary source categories that are subject to new source performance standards if the applicable equipment is constructed, reconstructed, or modified after specified dates.

Greenhouse Gas Emissions. GHGs are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most common GHGs emitted from human activities include CO₂, methane, and nitrous oxide. GHGs are mainly produced by the burning of fossil fuels and through industrial and biological processes. On September 22, 2009, the USEPA issued a final rule for mandatory GHG reporting from large GHG emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate data on CO₂ and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of CO₂ equivalent emissions per year but excludes mobile source emissions. The regulation of GHG emissions under the PSD and Title V permitting programs was initiated by a USEPA rulemaking issued on June 3, 2010 known as the GHG Tailoring Rule (75 FR 31514). GHG emissions thresholds for the permitting of stationary sources are an increase of 75,000 tpy of CO₂ for a new source or a modification of an existing minor source. The 100,000 tpy of CO₂ threshold defines a major GHG source for both construction (PSD) and operating (Title V) permitting, respectively.

EO 13514 was signed in October 2009 and requires agencies to set goals for reducing GHG emissions. One requirement within EO 13514 is the development and implementation of an agency Strategic Sustainability Performance Plan (SSPP) that prioritizes agency actions based on lifecycle return on investment. Each SSPP is required to identify, among other things, "agency activities, policies, plans, procedures, and practices" and "specific agency goals, a schedule,

milestones, and approaches for achieving results, and quantifiable metrics” relevant to the implementation of EO 13514. The DHS’s SSPP was originally released to the public in June 2010 and is updated annually. This implementation plan describes specific actions that the DHS will take to achieve its individual GHG reduction targets, reduce long-term costs, and meet the full range of goals of the EO. All SSPPs segregate GHG emissions into three categories: Scope 1, Scope 2, and Scope 3 emissions. Scope 1 GHG emissions are those directly occurring from sources that are owned or managed by the agency. Scope 2 emissions are indirect emissions generated in the production of electricity, heat, or steam purchased by the agency. Scope 3 emissions are other indirect GHG emissions that result from agency activities but from sources that are not owned or directly managed by the agency. The GHG goals in the DHS SSPP include reducing Scope 1 and Scope 2 GHG emissions by 25.3 percent by 2020, relative to Fiscal Year (FY) 2008 emissions, and reducing Scope 3 GHGs by 7.2 percent by 2020, relative to FY 2008 emissions.

3.10.2 Affected Environment

The tactical infrastructure along the U.S./Mexico international border in New Mexico is within two AQCRs. Grant, Hidalgo, and Luna counties are within the New Mexico-Southern Border Intrastate AQCR. Doña Ana, Otero, and Sierra counties are within the El Paso-Las Cruces-Alamogordo Interstate AQCR. Otero and Sierra counties are outside of the region of analysis. In addition, the El Paso-Las Cruces-Alamogordo Interstate AQCR includes El Paso and Hudspeth counties, Texas. **Table 3-5** shows the county, state, AQCR, and attainment status for the region of analysis.

Table 3-5. Air Quality Control Regions and Attainment Status by Sector

County	AQCR	Attainment Status
Grant; Hidalgo; Luna	New Mexico-Southern Border Intrastate	Unclassifiable/Attainment for all criteria pollutants
Doña Ana; Otero; Sierra	El Paso-Las Cruces-Alamogordo Interstate	Marginal nonattainment for O ₃ (1-hour standard) in portions of Doña Ana County Moderate nonattainment for PM ₁₀ in Doña Ana County Unclassifiable/Attainment for all other criteria pollutants

Sources: USEPA 2010f, USEPA 2010e

The New Mexico Environmental Department (NMED) oversees the implementation of the Federal CAA in the State of New Mexico. The air quality in Doña Ana has been characterized by the USEPA as a Federal moderate nonattainment area for PM₁₀. The El Paso-Las Cruces-Alamogordo Interstate AQCR has been designated by the USEPA as unclassified/attainment for all other criteria pollutants. The New Mexico-Southern Border Intrastate AQCR has been designated by the USEPA as unclassified/attainment for all criteria pollutants (USEPA 2010f, USEPA 2010e).

3.10.3 Environmental Consequences

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

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Exceed any Evaluation Criteria established by an SIP or permit limitations/requirements
- Emissions representing an increase of 100 tpy for any attainment criteria pollutant (NO_x, VOCs, CO, PM₁₀, PM_{2.5}, and sulfur dioxide [SO₂]), unless the proposed activity qualifies for an exemption under the Federal General Conformity Rule.

Although the 100 tpy threshold is not a regulatory driven threshold, it is being applied as a conservative measure of significance in attainment areas. The rationale for this conservative threshold is that it is consistent with the highest General Conformity *de minimis* levels for nonattainment areas and maintenance areas. In addition, it is consistent with Federal stationary source major source thresholds for Title V permitting which formed the basis for the nonattainment *de minimis* levels.

Effects on air quality in NAAQS “nonattainment” areas are considered significant if the net changes in project-related pollutant emissions result in any of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Increase the frequency or severity of a violation of any ambient air quality standard
- Delay the attainment of any standard or other milestone contained in the SIP or permit limitations.

The Federal *de minimis* threshold emissions rates were established by the USEPA in the General Conformity Rule to focus analysis requirements on those Federal actions with the potential to substantially affect air quality. **Table 3-6** presents these thresholds, by regulated pollutant. As shown in **Table 3-6**, *de minimis* thresholds vary depending on the severity of the nonattainment area classification.

With respect to the General Conformity Rule, effects on air quality would be considered significant if the proposed Federal action would result in an increase of a nonattainment or maintenance area’s emissions inventory above the *de minimis* threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been redesignated as a maintenance area. Certain Federal actions are exempt under 40 CFR 93.153(c) from a general conformity determination.

In addition to the *de minimis* emissions thresholds, Federal PSD regulations define air pollutant emissions to be significant if the source is within 10 kilometers of any Class I area, and

stationary source emissions would cause an increase in the concentration of any regulated pollutant in the Class I area of $1 \mu\text{g}/\text{m}^3$ or more (40 CFR 52.21[b][23][iii]).

3.10.3.1 Alternative 1: Proposed Action

The Proposed Action would only generate temporary air pollutant emissions. The maintenance and repair activities associated with the Proposed Action would generate air pollutant emissions because of grading, filling, compacting, trenching, and other maintenance and repair activities, but these emissions would be temporary and would not be expected to generate any offsite effects. The Proposed Action would not result in a net increase in personnel or commuter vehicles. Therefore, the emissions associated with the Proposed Action from existing personnel and commuter vehicles would not result in an adverse impact on local or regional air quality.

Table 3-6. Conformity *de minimis* Emissions Thresholds

Pollutant	Status	Classification	<i>de minimis</i> Limit (tpy)
O ₃ (measured as NO _x or VOCs)	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO _x)
		All others	100
	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO _x)
		Outside ozone transport region	100
CO	Nonattainment/ maintenance	All	100
PM ₁₀	Nonattainment/ maintenance	Serious	70
		Moderate	100
		Not Applicable	100
PM _{2.5} (measured directly, as SO ₂ , or as NO _x)	Nonattainment/ maintenance	All	100
SO ₂	Nonattainment/ maintenance	All	100
NO _x	Nonattainment/ maintenance	All	100

Source: 40 CFR 93.153

Maintenance and repair activities would result in short-term emissions of criteria pollutants as combustion products from construction equipment. Emissions of all criteria pollutants would result from construction activities including combustion of fuels from on-road haul trucks transporting materials and construction commuter emissions.

Fugitive dust emissions would be greatest during initial site-preparation activities and would vary from day to day depending on the type of maintenance and repair, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from

maintenance and repair activities is proportional to the area of land being worked and the level of activity.

Appropriate BMPs and mitigation measures would be adopted to reduce fugitive dust and other emissions to the greatest extent possible (see **Appendix E**). All of the standards developed are based on comprehensive engineering analysis, proven BMPs adopted by other Federal agencies, and mitigation measures derived from extensive consultation with both regulatory and resource agencies.

For the purpose of analysis in this EA, the total mileage of roadways currently used by CBP was obtained to estimate air emissions associated with the Proposed Action. The exact road mileage maintained and repaired by CBP within New Mexico could change over time to accommodate CBP needs (e.g., illegal border activity has shifted to another area requiring USBP agents to use different roadways). Therefore, the miles of roads associated with the Proposed Action should be considered somewhat flexible and not constrained by a quantifiable number. It is estimated that every 3 months approximately 5 percent of roadways analyzed in this EA would be graded, for a total of 20 percent of roadways graded annually. All other portions of the tactical infrastructure analyzed in this EA would require other routine maintenance and repair activities such as filling potholes, vegetative management, soil stabilization measures, and minor repairs. **Table 3-7** describes the approximate mileage and acreage that would be graded annually in the El Paso Sector.

Table 3-7. Approximate Tactical Infrastructure Maintenance and Repair Area That Would Be Graded Annually In the El Paso Sector in New Mexico

Sector	Total Sector Road Mileage	Mileage Under Consideration in this EA	Mileage Included in Air Quality Analysis	Area Included in Air Quality Analysis (acres)
El Paso	520	200	55	133

Assumptions:

1. Only 20 percent of all mileage considered in this EA would be graded. The remaining portions would only include other routine maintenance and repair activities.
2. Area of land disturbance considered in this air quality analysis assumes the width of disturbance would be 20 feet multiplied by the length.

Note: El Paso Sector Example: Mileage Included in Air Quality Analysis 55 miles x 5,280 feet/mile x 20 feet wide/ 43,560 ft²/acre = 133.33 acres

Under the General Conformity rule, a number of different Federal activities are exempt. The exemption under 40 CFR 93.153(c)(iv) of the General Conformity rules states, “routine maintenance and repair activities, including repair and maintenance of administrative sites, roads, trails, and facilities” are exempt from General Conformity. All proposed activities associated with the Proposed Action would include routine maintenance and repair activities and are considered to be exempt under the General Conformity rule. If any future actions would require constructing new road networks, significant upgrades to existing roadways, expanding roads or drainages, or installing new mission-support equipment, these actions would require separate NEPA analysis.

Within the El Paso-Las Cruces-Alamogordo Interstate AQCR, Doña Ana County has been characterized by the USEPA as a Federal moderate nonattainment area for PM₁₀; (USEPA 2010f, USEPA 2010g), General Conformity Rule requirements are applicable to those activities not qualifying for exemption. The Proposed Action would generate emissions well below *de minimis* levels for all criteria pollutants. All emissions would be short-term. In addition, activities planned would qualify for exemption under the General Conformity Rule. Therefore, the maintenance and repair activities associated with the Proposed Action would not have major effects on regional or local air quality.

Greenhouse Gas Emissions

The Proposed Action would contribute directly to emissions of GHGs from the combustion of fossil fuels from maintenance and repair activities and commuting of support personnel. CO₂ accounts for 92 percent of all GHG emissions; electric utilities are the primary source of anthropogenic CO₂, followed by transportation.

The U.S. Energy Information Administration (EIA) estimates that in 2008, gross CO₂ emissions in the State of New Mexico were 56.2 million metric tons of CO₂ equivalents (EIA 2010). Planned annual maintenance and repair activities would emit approximately 226.8 metric tons of CO₂. Total annual CO₂ emissions from the Proposed Action would be 0.0004 percent of the New Mexico state CO₂ emissions. Therefore, the Proposed Action would represent a negligible contribution towards statewide GHG inventories.

3.10.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, tactical infrastructure maintenance and repair activities along the U.S./Mexico international border in New Mexico would continue. Tactical infrastructure would be maintained and repaired on an as-needed basis and short- and long-term, negligible to minor, adverse impacts on air quality would be anticipated from emissions associated with combustion of fossil fuels, particulate matter, and fugitive dust emissions. The No Action Alternative would be expected to result in greater impacts on air quality than the Proposed Action because a proactive approach to maintenance and repair would not occur, and reactive maintenance could entail a more spatially and temporally concentrated use of construction equipment. In addition, the No Action Alternative does not guarantee that all BMPs would be implemented during emergency repair activities, such as the wetting of soil to minimize fugitive dust emissions.

3.11 NOISE

3.11.1 Definition of the Resource

Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain on a rooftop. Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory effect. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. It can be readily identifiable or

generally nondescript. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. How an individual responds to the sound source will determine if the sound is viewed as music to one's ears or as annoying noise. Affected receptors are specific (e.g., schools, churches, or hospitals) or broad (e.g., nature preserves or designated districts) areas in which occasional or persistent sensitivity to noise above ambient levels exists.

Noise Metrics and Regulations. Although human response to noise varies, measurements can be calculated with instruments that record instantaneous sound levels in decibels. A-weighted decibel (dBA) is used to characterize sound levels that can be sensed by the human ear. "A-weighted" denotes the adjustment of the frequency range to what the average human ear can sense when experiencing an audible event. The threshold of audibility is generally within the range of 10 to 25 dBA for normal hearing. The threshold of pain occurs at the upper boundary of audibility, which is normally in the region of 135 dBA (USEPA 1981a). **Table 3-8** compares common sounds and shows how they rank in terms of the effects on hearing. As shown, a whisper is normally 30 dBA and considered to be very quiet while an air conditioning unit 20 feet away is considered an intrusive noise at 60 dBA. Noise levels can become annoying at 80 dBA and very annoying at 90 dBA. To the human ear, each 10 dBA increase seems twice as loud (USEPA 1981b).

Table 3-8. Sound Levels and Human Response

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

Source: USEPA 1981b, *HDR extrapolation

Under the Noise Control Act of 1972, OSHA established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed to is 115 dBA and exposure to this level must not exceed 15 minutes within an 8-hour period. The standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that would reduce sound levels to acceptable limits.

Construction Sound Levels. Maintenance and repair work can cause an increase in sound that is well above the ambient level. A variety of sounds are emitted from loaders, trucks, saws, and other work equipment. **Table 3-9** lists noise levels associated with common types of equipment.

Table 3-9. Predicted Noise Levels for Maintenance and Repair Equipment

Equipment	Predicted Noise Level at 50 feet (dBA)
Bulldozer	80
Grader	80–93
Truck	83–94
Roller	73–75
Backhoe	72–93
Jackhammer	81–98
Concrete mixer	74–88
Welding generator	71–82
Paver	86–88

Source: USEPA 1971

3.11.2 Affected Environment

The land within the region of analysis is characterized by desert and mountain landscapes. Property uses along the U.S./Mexico international border include public lands, national forest, and farm/ranch land. The proposed maintenance and repair of tactical infrastructure is adjacent to both urban/mixed use areas and rural/undeveloped areas. The areas north of the U.S./Mexico international border are largely rural/undeveloped areas. Prominent sources of noise in these areas are most likely from vehicle traffic and agricultural equipment. The closest populations on the United States side of the U.S./Mexico international border is the City Sunland Park.

In addition to vehicle and industry noise, natural sources of noise also occur within the region of analysis. In New Mexico, natural noises include sounds generated by high winds, weather conditions such as thunder and rain, and water flows. In addition, wildlife such as avian species, amphibians, and insects are a source of natural noise within the region of analysis. The areas south of the region of analysis in Mexico include the cities of Puerto Palomas and Puerto de Anapra, which are urban/mixed use areas. Prominent sources of noise in these areas are most likely from vehicle traffic and local industry. The closest populations in Mexico are approximately 50 feet from the region of analysis. Areas outside of the urban centers in Mexico are largely rural/undeveloped. Prominent sources of noise in these areas are most likely from vehicle traffic and agricultural equipment.

3.11.3 Environmental Consequences

Noise impact analyses typically evaluate potential changes to the existing noise environment that would result from implementation of a proposed action. Potential changes in the acoustical environment can be beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels or reduce the ambient sound level), negligible (i.e., if the total number

of sensitive receptors exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased sound exposure to unacceptable noise levels or ultimately increase the ambient sound level). Projected noise effects were evaluated qualitatively for the alternatives considered.

3.11.3.1 Alternative 1: Proposed Action

Maintenance and repair of tactical infrastructure would occur sporadically along the U.S./Mexico international border. Long-term, periodic, negligible to minor, adverse effects on the ambient noise environment would occur.

The specific noise levels and effects would vary depending on the location, type, and quantity of maintenance or repair being performed, and the distance from the source of the noise to sensitive populations. Maintenance and repair activities usually involve the use of more than one piece of equipment simultaneously (e.g., paver and haul truck). To predict how maintenance and repair activities would impact populations, noise from probable maintenance and repair activities was estimated. The cumulative noise from a paver and haul truck was estimated to determine the total impact of noise from maintenance and repair activities at a given distance. As stated in **Section 3.11.2**, the nearest populations vary depending on location; however, the majority of area considered in this EA is sparsely populated or uninhabited. Examples of expected cumulative maintenance and repair noise during daytime hours at specified distances are shown in **Table 3-10**. These sound levels were predicted at 50, 300, 500, 1,000, and 3,000 feet from the source of the noise.

Table 3-10. Predicted Noise Levels from Maintenance and Repair Activities

Distance from Noise Source	Predicted Noise Level
50 feet	92 dBA
300 feet	76 dBA
500 feet	72 dBA
1,000 feet	66 dBA
3,000 feet	56 dBA

The noise from equipment used for maintenance and repair activities would be localized, short-term, and intermittent during machinery operations. The proposed maintenance and repair activities would be expected to result in noise levels comparable to those indicated in **Table 3-10**. Noise levels of up to 92 dBA would occur in the areas where maintenance and repair activities were occurring for the duration of those activities during normal working hours (i.e., approximately 7:00 a.m. to 5:00 p.m., depending on local ordinances).

3.11.3.2 Alternative 2: No Action Alternative

Impacts on noise from the No Action Alternative would be similar to those described for the Proposed Action (see **Section 3.11.3.1**); however, it can be reasonably anticipated that the maintenance and repair activities would occur less frequently, and in fewer locations along the

U.S./Mexico international border in New Mexico. For this reason, populations within 1,000 feet of the proposed maintenance and repair activities would have the potential to experience less of a long-term, adverse effect than that described for the Proposed Action. However, short-term impacts on noise from implementing the No Action Alternative could be greater than the Proposed Action because it is possible that the reactive activities would occur on a larger scale (e.g., filling a pothole versus paving a road). Therefore, short-term impacts on noise from implementing the No Action Alternative would be expected to be greater than the Proposed Action, but long-term impacts would be less than the Proposed Action.

3.12 CULTURAL RESOURCES

3.12.1 Definition of the Resource

“Cultural resources” is an umbrella term for many heritage-related resources defined in several Federal laws and EOs, including the NHPA, the Archeological and Historic Preservation Act, the American Indian Religious Freedom Act, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act (NAGPRA). The NHPA focuses on cultural resources such as prehistoric and historic sites, buildings and structures, districts, or other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other reasons. Such resources might provide insight into the cultural practices of previous civilizations or retain cultural and religious significance to modern groups. Resources judged important under criteria established in the NHPA are considered eligible for listing in the National Register of Historic Places (NRHP). These resources are termed “historic properties” and are protected under the NHPA.

NAGPRA requires consultation with culturally affiliated Native American tribes for the disposition of Native American human remains, burial goods, and cultural items recovered from federally owned or managed lands. Typically, cultural resources are subdivided into archaeological sites (prehistoric or historic sites containing physical evidence of human activity but no standing structures); architectural sites (buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); and sites of traditional, religious, or cultural significance to Native American tribes.

Archaeological resources comprise areas where human activity has measurably altered the earth or deposits of physical remains are found (i.e., artifacts). Architectural resources include standing buildings, bridges, dams, and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to warrant consideration for the NRHP. More recent structures, such as Cold War-era resources, might warrant protection if they are of exceptional importance or have the potential to gain significance in the future. Resources of traditional, religious, or cultural significance to Native American tribes can include archaeological resources, sacred sites, structures, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that Native Americans consider essential for the preservation of their traditional culture.

3.12.2 Affected Environment

3.12.2.1 Regional Prehistory

The time during which the New World was first inhabited by humans is known as the Paleo-Indian Period. The earliest well-established occupations in North America are associated with fluted projectile points and date to around 10,000 B.C. In the western United States, Paleo-Indians are believed to have been highly mobile big game hunters. The Paleo-Indian Period is followed by the Archaic Period (c. 8500 B.C.–A.D. 200) (Cordell 1984, Fagan 2005). These periods are characterized by a shift to broad-spectrum hunting and gathering, including the exploitation of wild plants and small mammals. The Archaic Period is also characterized by the introduction of ground stone tools to process plants and the spread of the atlatl, or spearthrower, which extended the distance and velocity that a spear could be thrown.

The late prehistoric period is characterized by ceramic production, horticulture or agriculture, and increased sedentism. Archaeologists recognize three major and two minor cultural traditions in the Southwest at this time (Cordell 1984). One of these traditions extends near or across the U.S./Mexico international border in New Mexico. The Mogollon tradition (250 B.C.–A.D. 1450) extends from southeast Arizona across southern New Mexico and into the westernmost portion of Texas. It is characterized by red and brown scraped-and-polished pottery, equal dependence on hunting and agriculture, round pithouse and rectangular dwellings, large ceremonial structures formally similar to houses, and inhumation. Several regional variants are recognized, including the Mimbres of southwest New Mexico, who are well-known for the black-on-white pottery that they decorated with figurative designs (Fagan 2005).

3.12.2.2 Regional History

New Mexico was first explored during Coronado's 1540 to 1542 expedition. In 1598, New Mexico was declared a province of New Spain and the first colony of San Juan de Caballeros was established. Santa Fe was founded 10 years later.

On September 27, 1821, Spain recognized the independence of Mexico. This new country included what is today California, Arizona, New Mexico, and Texas. The Treaty of Guadalupe Hidalgo, which was signed on February 2, 1848, ended the Mexican-American War of 1846 to 1848. The treaty ceded California and much of modern-day Arizona and New Mexico to the United States. The remaining, southernmost portions of modern-day Arizona and New Mexico were ceded to the United States under the Gadsden Purchase, which was ratified by the Senate on April 25, 1854. The modern U.S./Mexico international border was fully established at this time. New Mexico became the 47th state on January 6, 1912.

3.12.2.3 Known Cultural Resources

In May 2010, HDR prepared a "Summary of Cultural Resources Management Reports from the Construction of Tactical Infrastructure, U.S.-Mexico International Border, California, Arizona, New Mexico, and Texas" (Church and Hokanson 2010). According to this study, 979.1 miles have been surveyed for cultural resources along the U.S./Mexico international border. A total of

458 archaeological sites, 164 historic structures, and 1 historic district were identified during these surveys.

A total of 233.1 miles was surveyed for cultural resources along the New Mexico border as part of the Joint Task Force Six program. Another 90 miles of fence and roads and 21.2 acres of construction staging area were surveyed as part of the Vehicle Fence 300 and Pedestrian Fence 225 programs. A total of 323.1 miles has, therefore, been surveyed to date along the New Mexico border. These surveys identified 202 cultural resources, 10 of which are border monuments. Data recovery or extensive subsurface testing was conducted at 12 sites.

3.12.3 Environmental Consequences

Adverse effects on cultural resources can include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or that alter its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

Ground-disturbing activities associated with the implementation of the Proposed Action constitute the most relevant potential impacts on cultural resources.

3.12.3.1 Alternative 1: Proposed Action

Under the Proposed Action, ground-disturbing activities would be confined to the existing footprint of the tactical infrastructure. As a result, most of these activities have negligible or no potential to impact cultural resources. The exception is the grading of roads that have not been previously graded. This activity has the potential to have long-term, minor, adverse impacts on archaeological sites that intersect the roads. Consultation with the New Mexico SHPO would take place prior to the grading of roads that have not been previously graded. Archaeological surveys of these roads may be required prior to ground-disturbing activities. If previously documented or newly discovered archaeological sites intersect the roads, mitigation measures (including avoidance of the sites) would be implemented. The Proposed Action would therefore have minor, adverse effects on cultural resources.

Maintenance and repair activities under the Proposed Action would be covered by a PA between CBP, ACHP, SHPOs, and Federal agencies and/or federally recognized tribes that own or manage land along the U.S./Mexico international border. The specific activities covered by the agreement would be defined in the PA. According to a draft of the PA, which is being developed in consultation with the potential signatories listed above, CBP is required to determine if all of the actions within the scope of an activity or project are included in the terms and conditions set forth in the PA. If so, CBP is required to document this determination in the project file. CBP can then proceed with the activity or project without further Section 106 review. If the activity or project is not composed entirely of the actions listed in the PA, CBP would be required to follow the standard Section 106 review process for the activities that are not listed. In other words, CBP is required to comply with Section 106 of the NHPA of 1966, as amended, and its

implementing regulations (36 CFR 800) before conducting maintenance and repair activities. The standard Section 106 review process also would be followed prior to execution of the PA. After the PA has been executed, standard Section 106 review would be followed prior to any maintenance and repair activities occurring on the land of agencies that are not signatories to the PA.

The potential exists for the unanticipated discovery of cultural resources or human remains during the maintenance and repair of tactical infrastructure. Consequently, CBP would develop appropriate measures that detail crew member responsibilities for reporting in the event of a discovery during maintenance and repair activities. These measures would also include mitigation procedures to be implemented in the event of a significant unanticipated find. If human remains are discovered, CBP would adhere to the stipulations of Public Resources Code Section 5097.98 and Health and Safety Code 7050 and stop work within 50 feet of the discovery. CBP would then contact the county coroner and a professional archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology or history to determine the significance of the discovery. If appropriate, CBP would also adhere to NAGPRA and its implementing regulations (43 CFR 19). Depending on the recommendations of the coroner or the archaeologist, CBP would consult with the county to establish additional mitigation procedures. Potential mitigation procedures for unanticipated discoveries include avoidance, documentation, excavation, and curation. As a result, potential impacts on cultural resources discovered during the maintenance and repair of tactical infrastructure would be minor.

3.12.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, maintenance and repair would take place on an ad hoc basis. There would be no systematic program to maintain and repair tactical infrastructure. As a result, tactical infrastructure could degrade to the point that emergency repairs would be required, which could result in ground-disturbing activities outside the existing footprint of the tactical infrastructure. Ground-disturbing activities outside of the existing footprint could disturb previously unidentified cultural resources. The No Action Alternative therefore has the potential to impact historic properties and have an adverse effect on cultural resources. The No Action Alternative does not guarantee that BMPs would be implemented during emergency repair activities.

Under the No Action Agreement, maintenance and repair activities would be covered by a PA as described in **Section 3.12.3.1**. Unanticipated find procedures under the No Action Alternative would be identical to those of the Proposed Action.

3.13 ROADWAYS AND TRAFFIC

3.13.1 Definition of the Resource

The transportation resource is defined as the system of roadways and highways that are within or near the region of analysis and could reasonably be affected by the Proposed Action. Traffic relates to changes in the number of vehicles on roadways and highways because of the Proposed Action.

3.13.2 Affected Environment

The region of analysis contains a mixture of primary, secondary, and tertiary roadways. The primary roadway in this region is New Mexico State Highway- (NM) 9, which extends along the U.S./Mexico international border from the Arizona/New Mexico state line to Santa Theresa, New Mexico. Smaller intersecting roadways include NM-11 at Columbus, NM-81 at Hachita, and NM-338 at Animas. Numerous paved and unpaved tertiary roadways are present throughout much of the region.

The majority of roadways within the Proposed Action are classified as FC-3 (graded earth) and FC-4 (two-track) roadways (see **Appendix C** for detailed definitions) and extend across mostly undeveloped property. Due to the remoteness of the region, very little public traffic is present, and the USBP is the primary user of these roadways.

The primary function of the roadways proposed for maintenance and repair is to support USBP efforts to limit illegal border intrusion. Most of these roads extend across undeveloped land and the vast majority of vehicles to traverse these roads are USBP vehicles. Very little public traffic is present.

Common issues with the roadways proposed for maintenance and repair include flooding, erosion, and the overgrowth of vegetation. Improper management of storm water can cause water to pond at low-points and create flooding deep enough to obstruct vehicles. Improper management of storm water can also cause erosion that leads to potholes and washouts. Over long periods, erosion can wash out entire sections of roadway and in many instances make roads impassable. Vegetative growth can encroach into the roadways creating obstructions and visual impairments.

3.13.3 Environmental Consequences

Impacts on transportation are evaluated by how well existing roadways can accommodate changes in traffic. Adverse effects would occur if drivers experience high delays because the Proposed Action altered traffic patterns beyond existing lane capacity or resulted in the closures or detours of roadways.

3.13.3.1 Alternative 1: Proposed Action

Short-term, negligible to minor, adverse effects on transportation would be expected from the Proposed Action due to short-term, local increases in traffic from vehicles conducting maintenance and repair activities. Long-term, minor to moderate, beneficial effects on transportation would be expected by improving the condition of the roadways. Traffic impacts would be most notable closer to the location of a given maintenance and repair activity and less noticeable farther away. Highways such as NM-9 and other State of New Mexico highways would experience no noticeable change in traffic volume. A slight increase in traffic volume on the smaller, single-lane roadways might be noticeable but would affect very few people due to the remoteness of the region. Due to the limited number of vehicles anticipated to be needed for the maintenance and repair activities, impacts on traffic volume would be negligible to minor.

The tactical infrastructure maintenance and repair activities focusing on the roadways themselves would likely cause short-term roadway closures and detours while work is underway. Because most of the roadways proposed for maintenance and repair are used solely by USBP, the public would not be impacted by these roadway closures or detours. The roadway closures and detours would be temporary, so USBP personnel accessing the tactical infrastructure would experience only minor disruptions. In addition, maintenance and repair activities would be spread over time and scattered across the region of analysis. As such, all short-term effects on transportation would be expected to be limited.

Long-term, minor to moderate, beneficial effects on transportation would be expected. Roadway maintenance and repair would be prioritized and this would lessen the potential for the gradual degradation of the roadways by conducting thoughtful regional-scale, preventative maintenance rather than only making small-scale, reactionary repairs as is currently done. The Proposed Action would prevent the roadways from falling into disrepair and improve the condition of those roadways that have already fallen into disrepair.

It is possible that the Proposed Action would result in increased public use of access roads. For areas already authorized for unrestricted public access, improving road maintenance would result in a long-term, beneficial effect. For protected areas, such as wilderness areas, road maintenance would be coordinated with the land management agency to ensure that any potential for increased public use would be consistent with the agency's policies. Repairs to the roads used by USBP would allow for faster, safer, and more efficient responses by the USBP to threats. Better quality roads would lessen the wear-and-tear on USBP vehicles and minimize the potential for blown tires, damaged vehicle components, and stuck vehicles. Repairs to these roadways would not increase the amount of long-term traffic because patrols by the USBP would not increase in frequency and most of the roads proposed for maintenance and repair are not used by the public.

3.13.3.2 Alternative 2: No Action Alternative

The No Action Alternative would result in the continuation of the existing CBP roadway maintenance and repair procedures as described in **Section 3.13.2**. The roadways proposed by CBP for maintenance and repair under the No Action Alternative would continue to be repaired on an as-needed basis. As such, most roadway repairs would be reactive to immediate issues affecting these roadways and would not address long-term preventative maintenance requirements. Repairs performed on an as-needed basis would not be considered sustainable in quality because it would result in gradual degradation of these roadways. The No Action Alternative would result in greater impacts on roadways and traffic than the Proposed Action. The No Action Alternative could entail larger and longer disruptions in the flow of traffic due to reactionary maintenance and repair activities that potentially require greater attention than those associated with a preventative maintenance plan. Conversely, the periodic maintenance and repair activities as discussed under the Proposed Action would result in more occurrences of minor roadwork, which would be anticipated to result in a shorter disruption to the flow of traffic. Therefore, the No Action Alternative would result in greater short-term, and fewer long-term impacts on roadways and traffic when compared to the Proposed Action.

3.14 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

3.14.1 Definition of the Resource

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

A hazardous substance, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. §9601(14)), is defined as “(A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33; (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title; (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Resource Conservation and RCRA, as amended, (42 U.S.C. §6921); (D) any toxic pollutant listed under section 1317(a) of Title 33; (E) any HAPs listed under section 112 of the CAA (42 U.S.C. §7412); and (F) any imminently hazardous chemical substance or mixture which the Administrator of USEPA has taken action pursuant to section 2606 of Title 15.” The term hazardous substance does not include petroleum products.

Hazardous wastes are defined by RCRA at 42 U.S.C. §6903(5), as amended by the Hazardous and Solid Waste Amendments, as “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.” Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR Part 273.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include ACM, PCBs, and LBP. The USEPA is given authority to regulate these special hazard substances by TSCA Title 15 U.S.C. Chapter 53. USEPA has established regulations regarding asbestos abatement and worker safety under 40 CFR Part 763 with additional regulation concerning emissions (40 CFR Part 61). Whether from lead abatement or other activities, depending on the quantity or concentration, the disposal of the LBP waste is potentially regulated by the RCRA at 40 CFR 260. The disposal of PCBs is addressed in 40 CFR Parts 750 and 761.

Pesticides are regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1947 (40 CFR Parts 150–189). In 1972, Congress enacted the Federal Environmental Pesticide Control Act, which amended FIFRA by specifying methods and standards of control in greater detail. Subsequent amendments have clarified the duties and responsibilities of the USEPA. These regulations stipulate the USEPA must regulate all pesticides that are sold and distributed in the United States. The term “pesticides” includes pesticides, herbicides,

rodenticides, antimicrobial products, biopesticides, and other substances used to control a wide variety of pests.

EO 12088, *Federal Compliance with Pollution Control Standards*, as amended, directs Federal agencies to (1) comply with “applicable pollution control standards,” in the prevention, control, and abatement of environmental pollution; and (2) consult with the USEPA, state, interstate, and local agencies concerning the best techniques and methods available for the prevention, control, and abatement of environmental pollution.

Evaluation of hazardous materials and wastes focuses on the storage, transport, handling, and use of pesticides, herbicides, petroleum products, fuels, solvents, and other hazardous substances. Evaluation also extends to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on the type of soil, topography, and water resources.

Solid waste management primarily relates to the availability of landfills to support a population’s residential, commercial, and industrial needs. Alternative means of waste disposal include waste-to-energy programs and incineration. In some localities, landfills are designed specifically for, and limited to, disposal of construction and demolition debris. Recycling programs for various waste categories (e.g., glass, metals, papers, asphalt, and concrete) reduce reliance on landfills for disposal.

3.14.2 Affected Environment

The management of hazardous substances, petroleum products, hazardous and petroleum wastes, pesticides, solid waste, ACMs, LBP, and PCBs is regulated by Federal and state agencies. Each state has its own regulatory agency and associated regulations. The state agencies either adopt the Federal regulations or have their own regulations that are more restrictive than the Federal regulations. The following sections address the regulatory agencies and existing conditions of these materials.

Likewise, the Federal government and state agencies also have regulations for the handling, disposal, and remediation of special hazards; however, the nature and age of the tactical infrastructure is such that the handling or disposal of these materials is unlikely for the activities associated with the Proposed Action.

Hazardous Substances, Petroleum Products, and Hazardous and Petroleum Wastes. The NMED, Hazardous Waste Bureau’s mission is to provide regulatory oversight and technical guidance to New Mexico hazardous waste generators and treatment, storage, and disposal facilities as required by the New Mexico Hazardous Waste Act of 1978 and regulations promulgated under the Act. NMED is authorized by the USEPA to regulate and enforce the provisions of RCRA. Additional responsibilities of NMED are to inspect work sites and industrial facilities to ensure they meet environmental laws and protect public and employee health and safety. NMED also administers a pollution prevention program and a storage tank program.

USBP or its contractors currently store, transport, handle, use, generate, and dispose of various types and quantities of hazardous substances, petroleum products, and hazardous and petroleum wastes as a result of conducting tactical infrastructure maintenance and repair activities on an as-needed basis. These materials are used for or generated directly from the maintenance and repair activities, and the operation and maintenance of the equipment necessary for maintaining and repairing the tactical infrastructure. The primary hazardous substances and petroleum products likely include materials such as lead-acid batteries, motor oil, antifreeze, paint and paint thinners, cleaners, hydraulic oils, lubricants, and liquid fuels (diesel and gasoline). The hazardous substances, petroleum products, and hazardous and petroleum wastes are stored at various USBP or contractor maintenance shops and managed in accordance with hazardous materials standard operating procedures (SOPs). The hazardous and petroleum wastes are recycled or disposed of offsite in accordance with Federal, state, and local regulations.

There are several public and private storage areas, facilities, maintenance areas, and other operations that store, transport, handle, use, generate, and dispose of various types and quantities of hazardous substances, petroleum products, and hazardous and petroleum wastes within and near the New Mexico tactical infrastructure area.

None of the USBP stations within the New Mexico tactical infrastructure area are listed in the USEPA RCRA Info database (USEPA 2011a).

There are no National Priorities List sites within the New Mexico tactical infrastructure area (USEPA 1971). A Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) site is known to exist in New Mexico tactical infrastructure area (CBP 2008). The CERCLIS site is El Paso County/Doña Ana County Metals. This site is defined by a 3-mile radius from the boundary of New Mexico, Texas, and Chihuahua, Mexico. The pollutants of concern are primarily heavy metals; however, sampling and clean-up activities have centered on lead and arsenic. The El Paso County/Doña Ana County Metals site has been evaluated for listing on the National Priorities List; however, due to voluntary and mandatory clean-up efforts the listing process has been temporarily put on hold (USEPA 2011b). Additionally, multiple hazardous waste sites are known to exist within and near the New Mexico tactical infrastructure area (CBP 2008).

Pesticides. The New Mexico Department of Agriculture is the responsible agency for the oversight of pesticide production, use, and worker and sensitive population's safety. The main duties performed by the New Mexico Department of Agriculture are to register and license pesticide companies or products in accordance with Federal and state laws, enforce pesticide use compliance, and ensure that people are protected.

USBP or its contractors currently use small quantities of herbicides for vegetation control in the New Mexico tactical infrastructure area. The herbicides are stored at various USBP or contractor maintenance shops and applied by certified personnel in accordance with label requirements.

The New Mexico tactical infrastructure area is not known to have extensive agricultural areas and is therefore unlikely to have large volumes of pesticide storage and application.

Asbestos-Containing Materials. Asbestos is regulated by the USEPA under the CAA; TSCA; and CERCLA. USEPA has established that any material containing more than 1 percent asbestos by weight is considered an ACM. Friable ACM is any material containing more than 1 percent asbestos, and that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM is any ACM that does not meet the criteria for friable ACM.

Based on the nature and age of the tactical infrastructure proposed for maintenance and repair, it is not anticipated to contain asbestos. Additionally, the equipment used to maintain and repair the tactical infrastructure is not likely to contain asbestos.

Lead-Based Paint. The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X) regulates the use and disposal of LBP on Federal facilities. Federal agencies are required to comply with applicable Federal, state, and local laws relating to LBP activities and hazards. The use of most LBP was banned in 1978.

The tactical infrastructure proposed for maintenance and repair was constructed after 1978 and, therefore, is not anticipated to contain LBP. Additionally, the equipment used to maintain and repair the tactical infrastructure is not likely to contain LBP.

Polychlorinated Biphenyls. PCBs are a group of chemical mixtures used as insulators in electrical equipment such as transformers and fluorescent light ballasts. Federal regulations govern items containing 50 to 499 parts per million (ppm) PCBs. Chemicals classified as PCBs were widely manufactured and used in the United States throughout the 1950s and 1960s. PCB-containing oil is typically found in older electrical transformers and light fixtures (ballasts).

Based on the nature and age of the tactical infrastructure, it is not anticipated to contain PCBs. Additionally, the equipment used to maintain and repair the tactical infrastructure is not likely to contain PCBs. PCBs might be found in the electrical transformers within the tactical infrastructure areas, but maintenance and repair activities are not expected to disturb electrical transformers.

Solid Wastes. New Mexico's recycling and waste management programs are run by the Environment Department's Solid Waste Bureau. Solid waste disposal facilities are shared for Hidalgo and Grand Counties and operated by the Southwest Solid Waste Authority. The City of Deming manages solid waste in Luna County. Luna County has also received funds to begin a recycling program for the county in cooperation with the City of Deming. Solid waste facilities in Doña Ana County are operated by the South Central Solid Waste Authority.

USBP or its contractors generate, store, transport, and dispose of various types and quantities of solid wastes from maintenance and repair activities on an as-needed basis. The solid waste generally consists of vegetation (e.g., tree trimmings) and construction materials (e.g., damaged infrastructure). They are temporarily stored at various USBP or contractor maintenance shops prior to offsite recycling or disposal in accordance with Federal, state, and local regulations.

There are several public and private storage areas, facilities, maintenance areas, and other operations that generate, store, transport, and dispose of solid wastes within and near the region of analysis.

3.14.3 Environmental Consequences

Impacts on hazardous materials management would be considered significant if a proposed action resulted in worker, resident, or visitor exposure to these materials above established limits. Impacts on hazardous materials management would be considered significant if the Federal action resulted in noncompliance with applicable Federal and respective state regulations, or increased the amounts generated or procured beyond current CBP hazardous materials management procedures and capacities.

An effect on solid waste management would be significant if the Proposed Action exceeded existing capacity or resulted in a long-term interruption of waste management, a violation of a permit condition, or a violation of an approved plan for that utility.

3.14.3.1 Alternative 1: Proposed Action

Long-term, negligible to minor, adverse impacts on hazardous substances, petroleum products, and hazardous and petroleum wastes, and pesticides would be expected from implementation of the Proposed Action. Maintenance vehicles containing hazardous substances and petroleum products would be deployed more frequently, than the No Action Alternative, increasing the probability of a spill or release. Prior to pesticide application, the NMED would be consulted for the appropriate permits or instruction on the quantity and approved application techniques.

No impacts on ACMs, LBP, or PCBs would be expected from implementation of the Proposed Action. As stated in **Section 3.14.2**, none of these substances would be expected to be present due to the nature and age of the tactical infrastructure. If maintenance and repair activities require disturbing a known or encountered solid waste landfill, the NMED would be consulted prior to disturbance to significantly reduce or eliminate any potential exposure to ACM, LBP, or PCBs that might be in the landfill.

No impacts on solid waste would be expected from implementation of the Proposed Action. The volumes of solid waste produced during the maintenance and repair activities would be negligible and are not anticipated to increase.

3.14.3.2 Alternative 2: No Action Alternative

Long-term, negligible to minor, adverse impacts on solid waste would be expected due to potentially greater generation. The No Action Alternative is reactive in nature and could eventually result in greater deterioration of tactical infrastructure over time due to lack of preventative maintenance, which could result in more frequent maintenance and repair of tactical infrastructure. This could create greater volumes of solid waste.

No impacts on hazardous substances, petroleum products, hazardous and petroleum wastes, or pesticides would be expected from the implementation of the No Action Alternative. The No Action Alternative would result in the continuation of the existing storage, transport, handling, use, generation, and disposal of hazardous substances, petroleum products, hazardous and petroleum wastes, and pesticides as described in **Section 3.14.2**. The tactical infrastructure would continue to be maintained and repaired on an as-needed basis. There would be no new chemicals or toxic substances used or stored. Prior to pesticide application, the respective state

agency should be consulted for the appropriate permits or instruction on the quantity and approved application techniques.

No impacts on ACMs, LBP, or PCBs would be expected from implementation of the No Action Alternative. As stated in **Section 3.14.2**, due to the nature and age of the tactical infrastructure it is not anticipated to contain ACMs, LBP, or PCBs. If maintenance and repair activities require disturbance of a known or encountered solid waste landfill, the respective state regulatory agency would be consulted prior to disturbance to significantly reduce or eliminate any potential exposure to ACMs, LBP, or PCBs that might be in the landfill. The No Action Alternative does not guarantee that all BMPs would be implemented during emergency repair activities. Therefore, the No Action Alternative would result in greater impacts associated with hazardous materials and wastes than the Proposed Action.

3.15 SOCIOECONOMIC RESOURCES, ENVIRONMENTAL JUSTICE, AND PROTECTION OF CHILDREN

3.15.1 Definition of the Resource

Socioeconomic Resources. Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. Factors that describe the socioeconomic environment represent a composite of several interrelated and nonrelated factors. There are several factors that can be used as indicators of economic conditions for a geographic area, such as median household income, employment and unemployment rates, percentage of residents living below the poverty level, and employment by business sector. Data on employment can identify gross numbers of employees, employment by industry or trade and unemployment trends. Data on household income in a region can be used to compare the before and after effects of any jobs created or lost as a result of a proposed action. Data on industrial, commercial, and other sectors of the economy provide baseline information about the economic health of a region. After the project, the same data can be gathered again to analyze any impacts from the proposed action to the economic health of the region.

Environmental Justice. EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued on February 11, 1994, by President Clinton, and pertains to environmental justice issues and relates to various socioeconomic groups and the health effects that could be imposed on them. This EO requires that Federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. The EO was created to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action.

Protection of Children. EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, states that each Federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children;

and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.”

3.15.2 Affected Environment

The geographical area in which a majority of the socioeconomic, environmental justice, and protection of children effects for the alternatives might occur is defined as the region of influence (ROI). The ROI is considered a primary impact area because it could receive direct and indirect socioeconomic impacts from the proposed maintenance and repair of tactical infrastructure. The ROI for this EA is composed of the counties along the U.S./Mexico international border in New Mexico: Doña Ana County, Grant County, Hidalgo County, and Luna County. Data and analysis pertaining to housing, schools, and community services within the ROI is excluded from the socioeconomic analysis as the alternatives would not likely result in drastic increases or decreases in demographics or employment characteristics. Subsequently, impacts on the housing market, schools, or community services would not be expected under the proposed alternatives. Therefore, analysis of the housing market, schools, or community services is omitted further from this section.

Socioeconomic Resources

The socioeconomic baseline conditions are presented using three spatial levels: (1) county-level data for the ROI and the counties along the U.S./Mexico international border in New Mexico, (2) state-level data for New Mexico and (3) national-level data. County-level data are included in the analysis to provide a baseline condition. Data for New Mexico and the United States are included for comparative purposes.

Demographic Characteristics. The southwestern region of the United States has been characterized by robust population growth over the past 20 years. During the period from 1990 to 2010, the population in New Mexico increased 30 percent, with 400,000 additional people reported in 2010. The United States’ population increased 21 percent from 1990 to 2010. New Mexico has four counties along 180 miles of the U.S./Mexico international border: Doña Ana, Grant, Hidalgo, and Luna. Growth in these four counties ranged from rates greater than New Mexico’s growth rates from 1990 to 2009, with 46 percent in Doña Ana County and 48 percent in Luna County, to less than the growth rate in New Mexico, with 7 percent in Grant County and negative 16 percent in Hidalgo County. In Hidalgo County the population decreased from approximately 5,900 people in 1990 to 5,000 people in 2009. Conversely the population in Doña Ana County increased from 135,000 in 1990 to 198,000 in 2009 (U.S. Census Bureau 1990, U.S. Census Bureau 2009). Complete population data for the four counties and New Mexico are displayed in **Table 3-11**.

Employment Characteristics. The largest percentage of people employed by industry in New Mexico and the United States is the educational services, and health care and social assistance industry. The second largest industry is the retail trade industry accounting for 11 to 12 percent of all those employed in New Mexico and the United States. The agriculture, forestry, fishing and hunting, and mining industry is the smallest industry by percentage of those employed in the United States (1.8 percent). The smallest industry by percentage of those employed in New Mexico (2.0 percent) is the information industry. The educational services, and health care and

Table 3-11. Population Estimates within the ROI, 1990, 2000 and 2010

Geographic Area	1990	2000	2010	Percent Change		
				1990 to 2000	2000 to 2010	1990 to 2010
Doña Ana County	135,510	174,682	197,819	29%	13%	46%
Grant County	27,676	31,002	29,723	12%	-4%	7%
Hidalgo County	5,958	5,932	5,001	0%	-16%	-16%
Luna County	18,110	25,016	26,724	38%	7%	48%
New Mexico	1,515,069	1,819,046	1,964,860	20%	8%	30%
United States	248,709,873	281,421,906	301,461,533	13%	7%	21%

Sources: U.S. Census Bureau 1990, U.S. Census Bureau 2000, U.S. Census Bureau 2009

social assistance industry employs the largest number of people by percentage when compared to other industries in Doña Ana, Grant, Hidalgo, and Luna counties. In Doña Ana and Grant counties, 28 percent and 32 percent respectively are employed in the educational services, and health care and social assistance industry; percentages which are larger than New Mexico's 23 percent (U.S. Census Bureau 2009). **Table 3-12** contains data for New Mexico and the United States for all 13 industries as defined by the U.S. Census Bureau.

Figure 3-1 displays unemployment data for New Mexico and the United States. From 1990 to 2000, New Mexico and the United States follow a similar trend. From 2004 to 2009, the unemployment rate in New Mexico was less or similar to the unemployment rate for the United States. The highest annual unemployment rates occurred in 2009. In New Mexico, the lowest unemployment rate was 3.5 percent in 2007. In the United States the annual unemployment rate was lowest in 2000, at 4.0 percent (BLS 2010).

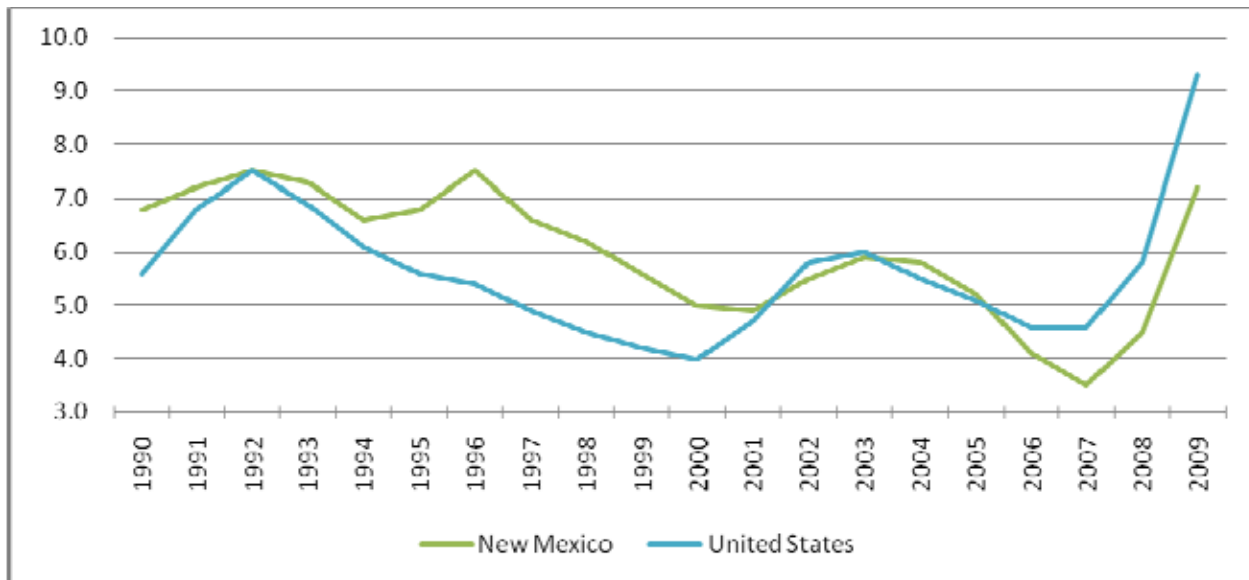
Environmental Justice and Protection of Children

Racial, Ethnic, and Youth Population Characteristics. The southwestern United States contains a large Hispanic or Latino population. The elevated Hispanic or Latino populations in New Mexico (45 percent) are much larger when compared to the United States (15 percent). The American Indian/Alaskan Native population accounts for 9 percent in New Mexico, compared to less than 1 percent for the entire United States. The Black or African American population within New Mexico was less by percentage when compared to the United States. The percentage of the population younger than 18 years of age in the United States was estimated at 25 percent. In New Mexico the percentage of the population younger than 18 years of age is 26 percent (U.S. Census Bureau 2009). The four counties along the U.S./Mexico international border in New Mexico contain Hispanic or Latino populations that were either similar or greater by percentage of the total population when compared to New Mexico. For example, Grant County contains a Hispanic or Latino population of 48 percent, slightly greater than the Hispanic or Latino population in New Mexico, which is 45 percent. In contrast, Doña Ana County contains a Hispanic or Latino population accounting for 65 percent of the total population. In Hidalgo

Table 3-12. Employment by Industry in New Mexico and the United States by Percentage, 2009

Industry	New Mexico	United States
Population 16 years and over in labor force	571,238	94,056,060
Agriculture, forestry, fishing and hunting, and mining	4.1	1.8
Construction	8.8	7.4
Manufacturing	5.4	11.2
Wholesale trade	2.4	3.2
Retail trade	11.7	11.5
Transportation and warehousing, and utilities	4.5	5.1
Information	2.0	2.4
Finance and insurance, and real estate and rental and leasing	5.2	7.1
Professional, scientific, and management, and administrative and waste management services	10.8	10.3
Educational services, and health care and social assistance	22.8	21.5
Arts, entertainment, and recreation, and accommodation and food services	10.3	8.8
Other services, except public administration	4.8	4.8
Public administration	7.2	4.7

Source: U.S. Census Bureau 2009

**Figure 3-1. Annual Unemployment Rates for New Mexico and the United States, 1990 to 2009**

County, the Hispanic or Latino population is 55 percent, and in Luna County it is 60 percent (see **Table 3-13**). The youth population in both Doña Ana County and Luna County accounted for 28 percent of the population compared to 26 percent in Hidalgo County 22 percent in Grant County, and 25 percent for New Mexico overall (U.S. Census Bureau 2009).

Low-income and Poverty Characteristics. The overall poverty rate and family poverty rate in the United States are 14 percent and 10 percent respectively. In New Mexico, the overall poverty rate is 18 percent and the family poverty rate is 14 percent, which is higher than the United States average. The median household income in the United States is approximately \$51,400, greater than New Mexico's median household income which is \$42,700.

Table 3-13. Racial and Ethnic Characteristics for Border Counties in New Mexico, 2009

Race and Ethnicity	Doña Ana County	Grant County	Hidalgo County	Luna County	New Mexico	United States
Total Population	197,819	29,723	5,001	26,724	1,964,860	301,461,533
Percent of population younger than 18	27.8	21.8	26.3	27.9	25.7	24.6
White	30.7	48.7	42.2	37.0	41.6	65.8
Black or African American	1.7	0.4	0.7	0.6	2.0	12.1
American Indian & Alaska Native	0.9	1.2	0.3	0.3	8.7	0.7
Asian	0.9	0.5	0.0	0.3	1.3	4.3
Native Pacific Islander	0.0	0.0	0.0	0.0	0.0	0.1
Some Other Race	0.2	0.	0.0	0.0	0.2	0.2
Two or More Races	0.8	1.0	1.6	1.4	1.4	1.6
Hispanic or Latino	64.8	48.0	55.3	60.3	44.8	15.1

Source: U.S. Census Bureau 2009

Poverty rates in the four New Mexico counties along the U.S./Mexico international border vary from a low of 15 percent in Grant County to a high of 33 percent in Luna County. The family poverty rates followed a similar trend, with the lowest family poverty rates reported in Grant County at 11 percent, and the highest family poverty rates in Luna County at 28 percent. The overall poverty rate in Doña Ana County was 25 percent, and in Hidalgo County the rate was 21 percent. The family poverty rate for the same counties was 20 percent and 19 percent respectively. These poverty rates are elevated in comparison to New Mexico's overall poverty rate of 18 percent and family poverty rate of 14 percent. The lowest median household income is in Luna County at \$26,600, compared to \$42,700 for New Mexico (U.S. Census Bureau 2009). See **Table 3-14** for poverty rates for New Mexico.

Table 3-14. Poverty Rates and Median Household Income for the Counties within New Mexico

Geographic Area	Overall Poverty Rate	Family Poverty Rate	Median Income
Doña Ana County	24.6	20.4	\$35,544
Grant County	15.0	11.4	\$35,896
Hidalgo County	20.8	19.0	\$39,020
Luna County	33.4	28.1	\$26,661
New Mexico	18.1	13.7	\$42,742
United States	13.5	9.9	\$51,425

Source: U.S. Census Bureau 2009

3.15.3 Environmental Consequences

Socioeconomic Resources. Project-related expenditures are assessed in terms of direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts can vary greatly, depending on the location of a proposed action. For example, implementation of an action that creates ten employment positions might go unnoticed in an urban area, but could have considerable impacts in a rural region. If potential socioeconomic changes were to result in substantial shifts in population trends or a decrease in regional spending or earning patterns, those effects would be considered adverse. A proposed action could have a significant effect with respect to the socioeconomic conditions in the surrounding ROI if the following were to occur:

- Change the local business volume, employment, personal income, or population that exceeds the ROI's historical annual change
- Disproportionately impact minority populations or low-income populations.

Environmental Justice and the Protection of Children. Ethnicity and poverty data are examined for the counties along the U.S./Mexico international border in New Mexico to determine if a low-income or minority populations could be disproportionately affected by the Proposed Action.

3.15.3.1 Alternative 1: Proposed Action

Socioeconomic Resources. Maintenance and repair of tactical infrastructure under the Proposed Action would have short-term, minor, direct and indirect, beneficial impacts on socioeconomic, demographics, and employment through increased employment and the purchase of goods and services. Direct impacts on employment and the procurement of material supplies would be minor and short-term and would not overburden the available supply. No permanent changes to the CBP workforce would be expected as a result of this alternative.

Short-term, minor increases in population might occur during times of maintenance and repair. It is assumed that many of the workers needed for this alternative would be drawn from the

regional workforce and would not require the permanent relocation of workers from outside the area. The construction industry would be able to meet the demand for workers adequately. The short-term nature and scale of the maintenance and repair projects would not induce indirect population growth in the region.

Materials for maintenance and repair could be sourced locally and local contractors could be used. In addition, many of the workers needed for the maintenance and repair activities would likely be employed within the regional construction industry. Incremental gains to the construction industry might occur to fulfill an increased demand for workers. Each job created by implementation of the Proposed Action would generate additional revenue and could create additional jobs within companies that supply goods and services. The project would not likely create any long-term employment in the region.

Direct, beneficial impacts would result from increases to payroll earnings and taxes and the purchase of materials required. Indirect, beneficial impacts would result from increases in expenditures on goods and services. No permanent or long-term impacts on employment, population, personal income, poverty levels, or other demographic or employment indicators would be expected from the Proposed Action.

Environmental Justice and the Protection of Children. Much of the tactical infrastructure that would be maintained as a part of the Proposed Action runs through or adjacent to many rural settlements, small towns, and neighborhoods within larger cities. Property owners and residents might be affected by visual intrusion, noise, and temporary disruptions during maintenance activities.

The proposed maintenance and repair of tactical infrastructure would have short- to long-term, indirect, beneficial impacts on protection of children in the areas along the U.S./Mexico international border. The maintenance and repair of tactical infrastructure would allow USBP agents to perform their mission. As a result, the Proposed Action would indirectly help to deter cross-border violators in the immediate area, which in turn could prevent drug smugglers, terrorists, and terrorist weapons from entering the surrounding area.

3.15.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no change from the baseline conditions. Overall maintenance requirements for tactical infrastructure along the U.S./Mexico international border would not be addressed and the tactical infrastructure would not be considered sustainable in quality, resulting in gradual degradation. If the No Action Alternative was implemented, short-term local employment benefits from the purchase of maintenance and repair materials and a temporary increase in maintenance jobs would not occur. Furthermore, money from maintenance and repair payrolls that would circulate throughout the local economies would also not occur. The Proposed Action would result in greater benefits to socioeconomics than the No Action Alternative because maintenance and repair work would occur on a periodic basis, providing a more stable source of income for workers and the local economy.

3.16 BLM REALTY AND MINERALS

3.16.1 Definition of the Resource

The BLM, through the Realty and Minerals programs, is responsible for administering authorizations and claims including (but not limited to) rights-of-way (ROWs), permits, mining claims, and leases. BLM Authorizations and claims are site-specific decisions that must be administered in accordance with Federal Regulations found at 43 CFR 2800, 43 CFR 2900, and 43 CFR 3000. Public Lands open to authorizations and claims are limited to areas that have not otherwise been identified in a resource management plan (RMP) as being closed, ROW avoidance, or ROW exclusion.

Established exclusion/avoidance areas are intended to protect the area's special and sensitive resource values and limit or restrict development. Issuance of ROW within an RMP avoidance area is allowable when no feasible alternative route is available, and as long as the ROW does not interfere with the purpose of the avoidance area.

ROWs and permits are non-exclusive/non-possessory authorizations, meaning BLM may grant overlapping non-conflicting authorizations. Mining claims are possessory claims to extract minerals; BLM may authorize ROWs across mining claims staked after July 15, 1955. Leases, as relates to the proposed action, are administered under the minerals division of BLM, but ROWs within lease boundaries may be authorized as long as the surface use ROW does not interfere with development of the sub-surface mineral estate.

3.16.2 Affected Environment

The Proposed Action does not occur within any ROW exclusion area; however, it would traverse approximately 25 miles of Big Hatchet and Peloncillo Bighorn Sheep ROW avoidance areas (see **Figure 3-2**), approximately 1.25 miles of Continental Trail ROW avoidance area (see **Figure 3-3**), and would intersect several ROWs and oil/gas leased parcels (see **Table 3-15**). As part of the decision making process, BLM would notify the holders whose authorizations occur within or adjacent to the area of potential effect prior to maintenance and repair activities.

3.16.3 Environmental Consequences

3.16.3.1 Alternative 1: Proposed Action

No adverse impacts on BLM Realty and Minerals programs would be expected under the Proposed Action. BLM does not anticipate that granting ROW for operation and maintenance of the proposed TIMR project would result in any negative impacts on mining claims, or authorized leases and ROWs, because maintenance of the existing roads does not conflict with any current mining claim, lease, or ROW use. Long-term, beneficial impacts on encumbrances on Public Land would be expected because physical access would be improved.

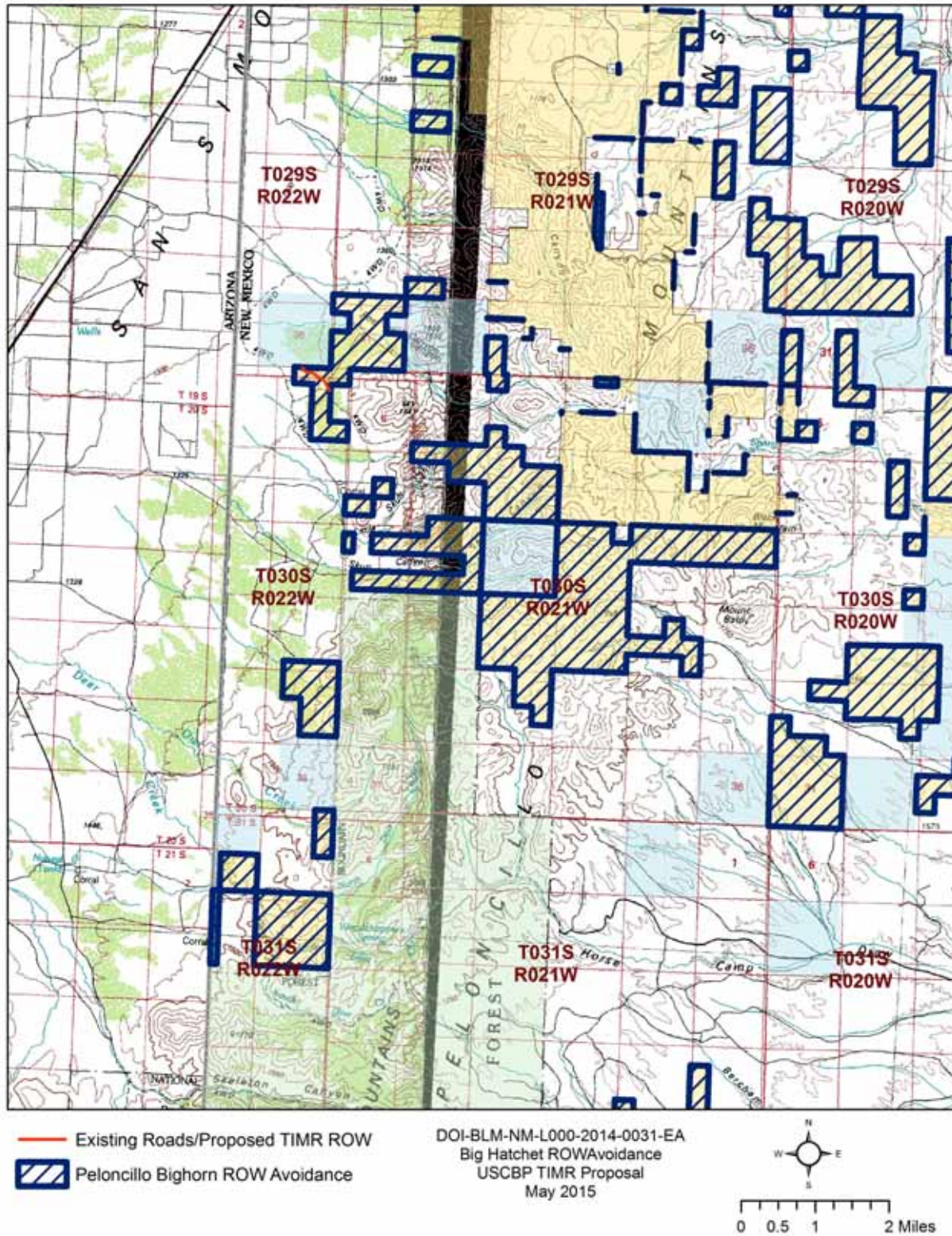


Figure 3-2. Peloncillo Bighorn Sheep ROW avoidance area within the Proposed Action

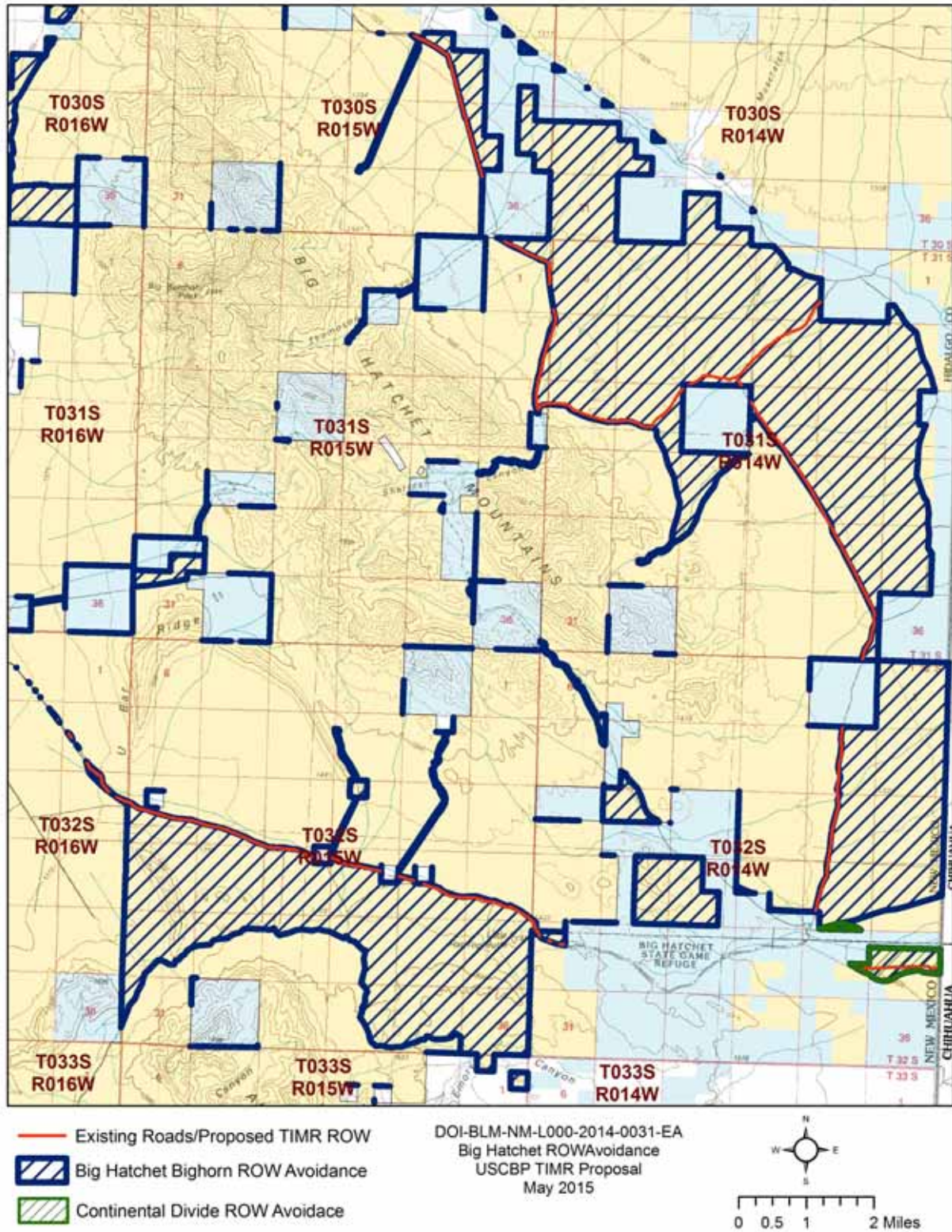


Figure 3-3. Big Hatchet and Continental Trail ROW avoidance areas within the Proposed Action

Table 3-15. Descriptions of Other Recent Tactical Infrastructure in New Mexico

Authorization Serial Number	Description (Holder)	Type	Affected Location Legal Description
NMNM 052983	Luna County	RS-2477 Road	T.27S., R.10W., sec 31, SW $\frac{1}{4}$ NE $\frac{1}{4}$.
NMLC 0057346	El Paso Natural Gas Co.	Oil/Gas Pipeline	T.24S., R.12W., sec. 30, S $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$; sec. 33, lots 6, 9, and 10, S $\frac{1}{2}$ SE $\frac{1}{4}$.
NMNM 0027944	El Paso Natural Gas Co.	Electric Transmission Line	T.24S., R.12W., sec. 30, NE $\frac{1}{4}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$; sec. 31, NE $\frac{1}{4}$ NE $\frac{1}{4}$; sec. 33, lots 6, 9, and 10, S $\frac{1}{2}$ SE $\frac{1}{4}$.
NMNM 127593	Valley Telephone Coop.	Fiber Optic Facility	T.29S., R.13W., sec. 17, lots 2 and 4.
NMNM 128839	R&R Royalty, Ltd.	Oil/Gas Lease	T. 29S., R.14W., sec. 20, SW $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$.
NMNM 128840	R&R Royalty, Ltd.	Oil/Gas Lease	T.29S., R.14W., sec. 22, S $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$.
n/a	Continental Divide Trail	ROW Avoidance	T.32S., R.14W., sec. 25, S $\frac{1}{2}$; sec. 26, NE $\frac{1}{4}$ SE $\frac{1}{4}$.

Source: BLM 2015

The Mimbres RMP conformant would grant the proposed ROW within the Peloncillo and Big Hatchet Bighorn ROW avoidance area, and the Continental Divide National Scenic Trail ROW avoidance areas because the Proposed Action would be issued for existing roads, and those roads would not be improved beyond their existing footprint.

3.16.3.2 Alternative 2: No Action Alternative

Under the No Action Alternative, ROW applications would not be granted for the BLM ROW avoidance areas. Maintenance and repair activities within the ROW avoidance areas would not be completed by CBP and would not follow the procedures described in the proposed work plan. As such, most roadway repairs within the ROW avoidance areas would be reactive to immediate issues affecting these roadways and would not address long-term preventative maintenance requirements. Repairs performed on an as-needed basis would not be considered sustainable in quality because it would result in gradual degradation of these roadways. The No Action Alternative would result in greater impacts on ROW avoidance areas than the Proposed Action due to a reduction to physical access to these areas. Therefore, the No Action Alternative would result in greater short-term, and fewer long-term impacts on ROW avoidance areas when compared to the Proposed Action.

4. CUMULATIVE AND OTHER ADVERSE IMPACTS

Cumulative impacts can result from individually minor but collectively significant past present and foreseeable future actions. For the purposes of the analysis in this section, consideration was given to cumulative impacts of all CBP maintenance and repair of tactical infrastructure activities including maintenance and repair activities addressed under this EA, under previous NEPA documents and activities which were covered by a Secretary's waiver. In this instance, the type of activity that is at issue in this EA—the maintenance and repair of tactical infrastructure—is unique to CBP. Thus, these activities are unlikely to be subjected to the compounding activity of other entities, particularly when they take place, as they often do, in isolated areas and on an infrequent basis. To that same end, where maintenance of roads occurs, it is complimentary to and or in lieu of maintenance performed by others. The geographic scope of the analysis varies by resource area.

4.1 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE PROJECTS IDENTIFIED WITH THE POTENTIAL FOR CUMULATIVE EFFECTS

Past, Present and Foreseeable Future Actions

Past and present actions are those CBP maintenance and repair actions that occurred within the geographic scope of cumulative effects prior to the development of this EA or are concurrently being undertaken by way of a Secretary's waiver or separate NEPA. Past actions have shaped the current environmental conditions in close proximity (i.e., within several miles) to existing tactical infrastructure. Therefore, the effects of identified past actions are now part of the existing environment, and are generally included in the affected environment described in **Section 3**. Present actions consist of the current ad hoc, as needed approach to the maintenance and repair of existing tactical infrastructure and future actions would consist of the maintenance and repair of all current tactical infrastructure including tactical infrastructure analyzed in this EA.

Additionally, it is reasonable to assume consideration of the maintenance and repair activities for future additional tactical infrastructure, including pedestrian and vehicle fence, roads, bridges, lighting, and other types of infrastructure mentioned in this EA, will be required in the El Paso Sector along the U.S./Mexico international border to address future border security needs.

Cumulative Tactical Infrastructure in New Mexico

As discussed in **Section 1** of this EA, CBP constructed a substantial amount of tactical infrastructure along the U.S./Mexico international border under the Secretary's waiver. CBP prepared ESPs to analyze the potential environmental impacts associated with construction and maintenance of tactical infrastructure covered by the waiver. Tactical infrastructure has also been constructed that was not covered under the waiver but was analyzed in other NEPA documents. **Table 4-1** summarizes recently constructed and existing tactical infrastructure within the USBP El Paso Sector.

Table 4-1. Descriptions of Other Recent Tactical Infrastructure in New Mexico

State	Description of Tactical Infrastructure Covered under Recent Waiver
New Mexico	<p>Total of approximately 85 miles of primary pedestrian and vehicle fence and 75 miles of roads:</p> <ul style="list-style-type: none"> • <i>HV-1, HV-2, HV-3.</i> 16.3 miles of vehicle fence and 19.8 miles of roads, within the Roosevelt Reservation west of Antelope Wells POE in Hidalgo County, New Mexico.¹ • <i>HV-4.</i> 6 miles of vehicle fence within the Roosevelt Reservation east and west of Antelope Wells POE in Hidalgo County, New Mexico.² • <i>JV-1, JV-2, JV-3.</i> 40 miles of vehicle fence and 8 miles of roads, within the Roosevelt Reservation west of the Santa Teresa POE in Luna and Doña Ana counties, New Mexico.¹ • <i>J-1, J-2, J3.</i> 8 miles of pedestrian fence. • <i>Other.</i> 6 miles of pedestrian fence, 16.5 miles of vehicle fence (Segments IV-2/IV-4B), 12 miles of lights, 2 miles of patrol road, 44 miles of drag road, and other ancillary infrastructure along the southern boundary of Luna County, New Mexico.^{1, 2, 3}
Texas	<p>Total of approximately 57 miles of primary pedestrian fence and permanent lights:</p> <ul style="list-style-type: none"> • <i>K-1B.</i> 0.63 miles of primary pedestrian fence and associated maintenance road along the eastern side of the canal in El Paso County, Texas.⁶ • <i>K-2A.</i> 9.6 miles of primary pedestrian fence along the flood-control levee and irrigation canals near Modesto-Gomez Park in El Paso, Texas.⁴ • <i>K-2B.</i> 2.4 miles of primary pedestrian fence between the flood-control levee and the Rio Grande near Rio Bosque Park in El Paso County, Texas.⁴ • <i>K-2C.</i> 6.9 miles of primary pedestrian fence and permanent lights on the south side of the canal in El Paso County, Texas.⁴ • <i>K-2D.</i> 9.4 miles of primary pedestrian fence between the canal and the levee with two bridge locations, and permanent lights in El Paso County, Texas.⁴ • <i>K-3.</i> 9.1 miles of primary pedestrian fence and permanent lights between the canal and the levee extending east of the Fabens POE in El Paso County, Texas.⁴ • <i>K-4.</i> 13.5 miles of primary pedestrian fence are planned near the Fabens POE in El Paso and Hudspeth counties, Texas.^{5 *} • <i>K-5.</i> 5.1 miles of primary pedestrian fence extending from west of the Fort Hancock POE to the Diablo Arroyo east of the Fort Hancock POE in Hudspeth County, Texas.⁴

Sources: 1. CBP 2010b, 2. CBP 2007a, 3. CBP 2007b, 4. CBP 2010c, 5. CBP 2008, 6. CBP 2011

Note: *Segment K-4 (Texas) has not yet been constructed, but it is included in the project total and considered in this cumulative effects analysis because it is a reasonably foreseeable future project. Additionally, construction of bridges and permanent lights are also planned.

This cumulative effects analysis focuses on all assets associated with the maintenance and repair of tactical infrastructure, because they are most relevant to the Proposed Action and are, therefore, the type of activities that are most likely to lead to additive or cumulative effects. Cumulative, long-term effects that would be expected as a result of maintenance and repair of the tactical infrastructure along the U.S./Mexico international border in New Mexico are identified and discussed in detail in this section. Segments K-2, K-3, K-4, and K-5 are within the State of Texas but included in this cumulative effects analysis because they are within the USBP El Paso Sector area of operation. Most construction activities have already occurred, so adverse effects

identified as a result of construction activities are not discussed unless some unique aspect of that project segment warrants further discussion. As noted in **Table 4-1**, Segment K-4 (Texas) has not yet been constructed (less than 14 miles of pedestrian fence).

The maintenance and repair activities analyzed in this cumulative impacts analysis would be the same as those described in **Section 2.3** of this EA.

4.2 CUMULATIVE ANALYSIS BY RESOURCE AREA

This section presents the resource-specific impacts related to the past, present, and reasonably foreseeable actions previously discussed in **Section 4.1**.

4.2.1 Alternative 1: Proposed Action

Implementation of the Alternative 1: Proposed Action is CBP's preferred alternative, which would result in maintenance and repair activities occurring via a periodic work plan. Maintenance and repair activities would be implemented based on prioritization and funding within the Sector. For the purpose of this analysis, it is assumed that all CBP tactical infrastructure—that is, tactical infrastructure within the scope of Proposed Action, tactical infrastructure covered by the Secretary's waiver and previous NEPA analysis, and future CBP tactical infrastructure—would be maintained via a periodic work plan. Implementation of the Proposed Action would not be expected to contribute to significant adverse cumulative effects.

4.2.2 Land Use

Most areas in the region of analysis along the U.S./Mexico international border in New Mexico are remote and contain agricultural, Federal, recreational, and open space land uses, many of which are managed or protected by the Federal government. The maintenance and repair of tactical infrastructure would have no effect on land use plans or policies. Maintenance and repair activities involve work on existing infrastructure, so there would be no change in long-term land uses. Cumulatively, the Proposed Action and other tactical infrastructure maintenance and repair activities would not contribute to adverse effects on land use.

4.2.3 Geology and Soils

The potential for effects on geology and soils is limited to areas where ground disturbance would occur within the region of analyses. As noted, all CBP tactical infrastructure would be subjected to centralized maintenance and repair planning. As a part of the centralized maintenance and repair planning, CBP's interdisciplinary maintenance and repair technical staff, including environmental staff, would participate in reviewing and approving a maintenance and repair work plan for all tactical infrastructure. The adoption of appropriate BMPs and proposed schedule for maintenance would ensure that erosion would be minimized and erosion-creating activities well dispersed throughout the region avoiding any pockets of intense activity. Cumulatively, this approach reduces the impacts of any ad hoc approach applied to past maintenance and repair activities and ensures future potential erosion is well-managed. Consequently, the maintenance and repair of past, present, and foreseeable future construction activity would be expected to result in short-term, minor, adverse effects that are localized to the

areas where ground disturbance has occurred. Use of herbicides could also result in localized short-term and long-term, adverse effects due to increased erosion and sedimentation from a decrease in vegetative cover but would be minor in nature due to adherence to the work plan. Long-term, beneficial effects would be expected from stabilization of roadways and drainage structures throughout the region of analysis. In the event that multiple maintenance and repair activities or any ground-disturbing activities were occurring simultaneously and in proximity, minor, short-term and negligible long-term, adverse, cumulative effects could occur.

4.2.4 Vegetation

Minor to moderate effects on native species vegetation and habitat and introductions of nonnative species are observable from past and present development and land use. In addition, indirect, adverse impacts and direct take of habitat occurred during construction of pedestrian and vehicle fence. Selective maintenance and repair activities would be expected to result in generally negligible to minor adverse effects on terrestrial and aquatic vegetation. All CBP tactical infrastructure would be a component of the selective maintenance and repair centralized work plan. Under the work plan, BMPs would ensure impacts on vegetation including the introduction of nonnative species would be minimized, and consequently the cumulative effects on vegetation resources would be considered negligible to minor.

4.2.5 Terrestrial and Aquatic Wildlife Resources

Minor to moderate effects on wildlife species have occurred from the additive effects of past and present actions, though there is quality habitat in the region of analysis to support wildlife. The Proposed Action does not involve new development activities, and effects on wildlife and aquatic species are limited to the existing footprint and immediately surrounding areas. Maintenance and repair activities would be expected to result in generally negligible to minor, adverse effects on wildlife and aquatic species. Operation of heavy equipment would generate temporary noise and could displace wildlife species. Under the work plan, which would cover all CBP tactical infrastructure in the region of analyses, BMPs would ensure impacts on terrestrial and aquatic wildlife resources (including migratory birds) would be minimized and therefore the cumulative impacts on terrestrial and aquatic wildlife resources would also be considered to be negligible to minor.

4.2.6 Threatened and Endangered Species

As discussed in **Section 3.6**, CBP has begun consultation with USFWS under Section 7 of the ESA regarding potential effects on listed species and designated critical habitat. Potential direct and indirect effects on federally listed species presented in this EA are based on currently available data. A separate effects analysis is developed under NEPA, but parallels impact determinations made for the Section 7 consultation process.

The designation of threatened or endangered implies that past activities have had major adverse effects on these species. Threatened and endangered species are commonly protected because their historic range and habitat have been reduced and will only support a small number of individuals. Some species have declined for natural reasons, but declines are commonly exacerbated or accelerated by anthropogenic influences. Anthropogenic influences that have

contributed to reduced range and habitat availability and reduced populations include agriculture, livestock grazing, urban development and road construction, overcollection, trampling and off-road vehicle use, hydrologic modifications, and altered fire regimes. Once natural vegetation and habitat are disturbed, introduced species can colonize more readily and out-compete native species. Some species occupy specific niches, so even minor alterations are not well-tolerated.

There are seven federally listed threatened or endangered species that are known to occur within the region of analysis. **Section 3.6** presents detailed discussions for each of these species. Cumulatively, present and future activities are likely to continue to affect threatened and endangered species. Potential threats include habitat loss from urbanization and road construction, trampling of protected plants, corridor fragmentation, and noise from increasingly urban areas. The ESA will continue to protect threatened and endangered species with the goal of recovery.

The Proposed Action would be expected to have negligible effects on threatened or endangered species that have been identified as potentially occurring in the region of analysis. Tactical infrastructure that was included under a Secretary's waiver or previous NEPA documentation was constructed under the supervision of biological monitors to ensure that BMPs and approved mitigation measures were followed for the protection of threatened and endangered species. No direct, adverse effects or takes on threatened and endangered species were identified in the Environmental Stewardship Summary Reports during construction of pedestrian and vehicle fence along the U.S./Mexico international border. Cumulatively, the Proposed Action and other tactical infrastructure maintenance and repair activities would be expected to have negligible contributions to adverse effects on threatened and endangered species.

4.2.7 Hydrology and Groundwater

Water quality and quantity of aquifers in the region of analysis have historically been affected adversely by surrounding land uses and water withdrawals. The Proposed Action does not involve new development activities; negligible to minor, indirect, adverse effects could occur on hydrology and groundwater systems from the maintenance and repair of roadways and drainage management structures. Cumulatively, effects on hydrology and groundwater from the maintenance and repair of tactical infrastructure would also be negligible to minor.

4.2.8 Surface Waters and Waters of the United States

Surface water quality of subwatersheds within the region of analysis has historically been significantly affected by various inputs including urban, agricultural and livestock runoff, and septic, wastewater, and industrial discharges. Some surface water bodies are consequently on USEPA's 303(d) list of impaired waters, as discussed in **Section 3.8** (USEPA 2010d). Historically significant wetland losses have resulted from draining, dredging, filling, leveling, and flooding for agricultural and urban development. Due to the arid climate, less than 1 percent of the land area in New Mexico contains wetlands; historically, more than one-third of original New Mexico wetlands have been modified or drained (USGS 1996).

The Proposed Action does not involve new development activities, but negligible to minor, indirect, adverse effects could occur on surface waters from the maintenance and repair of

roadways and drainage management structures. Under the work plan, which as noted will include all CBP tactical infrastructure, BMPs would ensure impacts on surface water and wetlands are minimized. Cumulatively, effects on surface waters and waters of the United States from the maintenance and repair of tactical infrastructure would be negligible to minor in the short term but with the consistent observance of the work plan could result in long term minor beneficial impacts on surface water quality.

4.2.9 Floodplains

Floodplain resources can be adversely impacted by development, increases in impervious areas, loss of vegetation, hydrological changes, and soil compaction. Historically, natural floodplains have been permanently altered by development activities and the construction of canals and reservoirs. The Proposed Action does not involve new development activities and would have no direct effects on floodplains. Vegetation control and debris removal could result in increased sedimentation into floodplains and drainage structures, but this would be a negligible indirect effect. Maintenance of other existing tactical infrastructure would be expected to have similar effects on floodplains as those described in this EA (see **Section 3.9.3**). Cumulatively, effects on floodplains from the maintenance and repair of tactical infrastructure would be negligible.

4.2.10 Air Quality

The USBP El Paso Sector operates within an AQCR that is in nonattainment for CO and PM₁₀. The Proposed Action would have short-term, minor, localized, adverse effects on air quality during maintenance and repair activities. Other construction and ground-disturbing activities could result in cumulative, adverse effects if there are multiple projects occurring at the same time and in the same vicinity within the region of analysis. The adoption of appropriate BMPs and proposed schedule for maintenance under a centralized work plan would ensure that dust creation would be minimized and dust-creating activities would be well dispersed throughout the region avoiding any pockets of intense activity. Moreover, because all CBP tactical infrastructure would be maintained via the work plan, it would be more likely, relative to the No Action Alternative, that BMPs will be incorporated into maintenance activities. Consequently, cumulative effects on local and regional air quality from the maintenance and repair of tactical infrastructure would be minor.

4.2.11 Noise

Cumulative effects on the noise environment occur when a project has noise emissions that are noticeably loud or that raise ambient noise levels. New noise sources are generally more noticeable in areas that have lower ambient noise levels. Cumulative effects on noise could occur where multiple projects are occurring at the same time and in the same vicinity because noise attenuates over distance.

The Proposed Action would have short-term, minor, localized, adverse effects as a result of the operation of heavy machinery to maintain and repair tactical infrastructure. Maintenance and repair of tactical infrastructure in remote areas would be distant from most other substantial noise-generating activities, so there is little potential for cumulative effects. Increased noise from the operation of machinery could combine with existing noise sources or other

construction-type activities to produce a temporary cumulative effect on noise-sensitive receptors. The combined noise of several projects occurring simultaneously in proximity might be heard over a greater distance, but effects would be short-term and localized. Under the centralized work plan, the adoption of appropriate BMPs and proposed schedule for maintenance would ensure that noise would be minimized and noise-creating activities would be well dispersed throughout the region avoiding any pockets of intense activity. Consequently, existing noise sources would continue to dominate the noise environment and, cumulatively, effects on the noise environment from the maintenance and repair of all tactical infrastructure would be negligible to minor.

4.2.12 Cultural Resources

Historically, long-term, major, adverse effects on cultural resources have likely occurred from the destruction or alteration of resources before their significance was realized. The Proposed Action involves maintenance and repair of tactical infrastructure along existing corridors and roadways. Tactical infrastructure construction for those projects identified in **Table 4-1** was performed under the supervision of cultural resources specialists to ensure known cultural resources would be protected and that any unanticipated discoveries would be identified and coordinated with the appropriate Federal, state, or tribal parties. CBP prepared detailed cultural resources reports and surveyed areas prior to construction, and ground-breaking activities were subsequently monitored. No effects on cultural resources were identified in the Environmental Stewardship Summary Reports for construction of pedestrian and vehicle fence along the U.S./Mexico international border because cultural resources were appropriately identified and mitigated prior to construction. The cumulative effects on cultural resources from the maintenance and repair of past present and foreseeable future tactical infrastructure projects when considered in conjunction with the Proposed Action would be negligible since all activity would occur within previously disturbed or environmentally cleared footprints.

4.2.13 Roadways and Traffic

Most of the region of analysis is remote; there are fewer and smaller roadways servicing remote areas. States and localities maintain or improve roadways as needed to service the population. This occurs more frequently and intensely in populated areas than in remote areas. The roadways affected by the Proposed Action are primarily unpaved roadways classified as FC-3 (graded earth) or FC-4 (two-track) (see **Appendix C**) that are not commonly used by the general public. Maintenance of other existing tactical infrastructure would be expected to have similar effects on roadways and traffic as those described in this EA (see **Section 3.13.3**). Cumulatively, effects on roadways and traffic from the maintenance and repair of tactical infrastructure would be negligible.

4.2.14 Hazardous Materials and Waste Management

Past development activities and land uses have resulted in multiple hazardous waste sites in the region of analysis. As discussed in **Section 3.14**, Federal and state regulations govern the storage, transportation, handling, use, generation, and disposal of hazardous substances, petroleum products, and hazardous and petroleum wastes. Some of the region of analysis is

heavily agricultural, so herbicides and pesticides are used and stored. Pesticide sales and use are also regulated.

The Proposed Action and other tactical infrastructure maintenance and repair activities would use small amounts of hazardous materials. Quantities of hazardous materials for individual projects would be relatively small, contained to areas associated with construction sites, and handled in accordance with all Federal and New Mexico laws and regulations. Localized, adverse effects could occur in the event of a spill, but the potential for cumulative, adverse effects is negligible. Cumulatively, effects on hazardous materials and waste management from the maintenance and repair of tactical infrastructure would be negligible.

4.2.15 Socioeconomic Resources, Environmental Justice, and Protection of Children

The populations of Luna and Doña Ana counties have almost doubled over the past two decades. The Proposed Action would provide only minor, short-term, beneficial effects while maintenance and repair activities are occurring and would have little potential for cumulative effects on socioeconomic resources. Maintenance and repair activities of tactical infrastructure, including the Proposed Action and other projects identified in **Table 4-1**, would result in long-term, beneficial cumulative effects by allowing USBP agents to patrol border areas effectively. This would be considered cumulatively beneficial for the safety of all residents, including children, in the southern border area.

4.2.16 Alternative 2: No Action Alternative

The No Action Alternative (Alternative 2) would result in reactive maintenance and repair of tactical infrastructure within 25 miles of the U.S./Mexico international border in New Mexico. As discussed in **Section 3**, generally, the No Action Alternative would be expected to have a greater potential for adverse effects than the Proposed Action on soils, vegetation, terrestrial and aquatic wildlife, threatened and endangered species, groundwater, surface water and waters of the United States, floodplains, air quality, noise, cultural resources, roadways and traffic, hazardous materials and waste management, and socioeconomic resources. Under the No Action Alternative, maintenance and repair work would be completed on an as-needed basis without a centralized planning process that establishes maintenance and repair specifications and standardizes BMPs. The lack of a centralized planning effort would make it far more difficult for CBP to prevent the gradual degradation of all tactical infrastructure. This gradual degradation of past, present, and foreseeable future tactical infrastructure projects when considered in conjunction with the No Action Alternative could result in adverse impacts on resources well beyond the intended footprint of proposed maintenance and repair. Degraded roads and associated drainage features could lead to more adverse offsite erosion and sedimentation with an unintended increase in impacts on associated water quality and species habitat. There is a greater potential for emergency repairs when BMPs might not be implemented. Under such conditions, there is also a greater likelihood of repair activities occurring beyond the proposed footprint with a corresponding potential to adversely affect cultural resources and species habitat that have not been previously surveyed. Maintenance and repair activities could also be more sporadic under the No Action Alternative, which would be more adverse on socioeconomic resources than the Proposed Action. Effects on land use under the No Action Alternative would be the same as effects under the Proposed Action.

Cumulative effects on soils, vegetation, terrestrial and aquatic wildlife, threatened and endangered species, groundwater, surface water and waters of the United States, floodplains, air quality, noise, cultural resources, roadways and traffic, hazardous materials and waste management, and socioeconomics under the No Action Alternative would be expected to be more adverse than those discussed under the Proposed Action. Cumulative effects on land use would be essentially the same as those discussed under the Proposed Action. Implementation of the No Action Alternative would not however be expected to contribute to significant adverse, cumulative effects when considered with other recently completed or planned future projects in the region of analysis.

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APPENDIX A

Applicable Laws and Executive Orders



APPENDIX A

Applicable Laws and Executive Orders

Table A-1. Applicable Laws and Executive Orders ¹

Title, Citation	Summary
Archaeological and Historical Preservation Act, 16 U.S.C. 469	Protects and preserves historical and archaeological data. Requires Federal agencies to identify and recover data from archaeological sites threatened by a proposed action(s).
Clean Air Act, 42 U.S.C. 7401–7671q, as amended	Establishes Federal standards for air pollutants. Prevents significant deterioration in areas of the country where air quality fails to meet Federal standards.
Clean Water Act, 33 U.S.C. 1251–1387 (also known as the Federal Water Pollution Control Act)	Comprehensively restores and maintains the chemical, physical, and biological integrity of the nation’s waters. Implemented and enforced by the U.S. Environmental Protection Agency (USEPA).
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601–9675 (also known as “Superfund”)	Provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and cleanup of inactive hazardous substance disposal sites. Establishes a fund financed by hazardous waste generators to support cleanup and response actions.
Endangered Species Act of 1973, 16 U.S.C. 1531–1543, as amended	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Prohibits Federal action that jeopardizes the continued existence of endangered or threatened species. Requires consultation with U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries and a biological assessment when such species are present in an area affected by Federal government activities.
Fish and Wildlife Coordination Act, 16 U.S.C. 661–667e, as amended	Authorizes the Secretaries of the Interior and Commerce to provide assistance to and cooperate with Federal and state agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. The 1946 amendments require consultation with the USFWS and the state fish and wildlife agencies involving any waterbodies that are proposed or authorized, permitted, or licensed to be impounded, diverted, or otherwise controlled or modified by any agency under a Federal permit or license.
Migratory Bird Treaty Act, 16 U.S.C. 703–712	Implements various treaties for protecting migratory birds; the taking, killing, or possession of migratory birds is unlawful.
National Environmental Policy Act of 1969, 42 U.S.C. 4321–4370e, as amended	Requires Federal agencies to use a systematic approach when assessing environmental impacts of government activities. Proposes an interdisciplinary approach in a decisionmaking process designed to identify unacceptable or unnecessary impacts to the environment.

Title, Citation	Summary
National Historic Preservation Act, 16 U.S.C. 470–470x-6	Requires Federal agencies to consider the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object eligible for inclusion, or listed in the National Register of Historic Places (NRHP). Provides for the nomination, identification (through NRHP listing), and protection of significant historical and cultural properties.
Noise Control Act of 1972, 42 U.S.C. 4901–4918	Establishes a national policy to promote an environment free from noise that jeopardizes health and welfare. Authorizes the establishment of Federal noise emissions standards and provides relevant information to the public.
Occupational Safety and Health Act of 1970, 29 U.S.C. 651–678	Establishes standards to protect workers, including standards on industrial safety, noise, and health standards.
Resource Conservation and Recovery Act, 42 U.S.C. 6901–6992k	Establishes requirements for safely managing and disposing of solid and hazardous waste and underground storage tanks.
Executive Order (EO) 12372, <i>Intergovernmental Review of Federal Programs</i> , July 14, 1982, 47 FR 30959 (6/16/82), as supplemented	Requires Federal agencies to consult with state and local governments when proposed Federal financial assistance or direct Federal development impacts interstate metropolitan urban centers or other interstate areas.
EO 12898, <i>Environmental Justice</i> , February 11, 1994, 59 FR 7629 (2/16/94), as amended	Requires certain Federal agencies, to the greatest extent practicable permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.
EO 13423, <i>Strengthening Federal Environmental, Energy, and Transportation Management</i> , January 24, 2007, 72 FR 3919 (January 26, 2007)	Requires the head of each Federal agency to implement sustainable practices for energy efficiency, greenhouse gas emissions avoidance or reduction, and petroleum products use reduction; renewable energy, including bioenergy; water conservation; acquisition; pollution and waste prevention and recycling; reduction or elimination of acquisition and use of toxic or hazardous chemicals; high performance construction, lease, operation, and maintenance of buildings; vehicle fleet management; and electronic equipment. Requires more widespread use of Environmental Management Systems as the framework with which to manage and continually improve these sustainable practices.

Title, Citation	Summary
EO 13514, <i>Federal Leadership in Environmental, Energy, and Economic Performance</i> , October 5, 2009, 74 FR 52117 (October 8, 2009)	Directs Federal agencies to improve water use efficiency and management; implement high performance sustainable Federal building design, construction, operation, and management; and advance regional and local integrated planning by identifying and analyzing impacts from energy usage and alternative energy sources. EO 13514 also directs Federal agencies to prepare and implement a Strategic Sustainability Performance Plan to manage its greenhouse gas (GHG) emissions, water use, pollution prevention, regional development and transportation planning, and sustainable building design; and promote sustainability in its acquisition of goods and services. Section 2(g) requires new construction, major renovation, or repair and alteration of buildings to comply with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings.
EO 13175, <i>Consultation and Coordination with Indian Tribal Governments</i> , November 6, 2000, 65 FR 67249 (11/09/00)	Requires Federal agencies to establish an accountable process that ensures meaningful and timely input from tribal officials in developing policies that have tribal implications.
EO 13186, <i>Responsibilities of Federal Agencies to Protect Migratory Birds</i> , January 10, 2001, 66 FR 3853 (1/17/01)	Requires each agency to ensure that environmental analyses of Federal actions (required by the National Environmental Policy Act or other established environmental review processes) evaluate the effects of actions and agency plans on migratory birds, emphasizing species of concern. Agencies must support the conservation intent of migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities, and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
EO 11593, <i>Protection and Enhancement of the Cultural Environment</i> , May 13, 1971, 36 FR 8921 (5/15/71)	Requires all Federal agencies to locate, identify, and record all cultural resources, including significant archeological, historical, or architectural sites.

Note:

1. This table only reflects those laws and EOs that might reasonably be expected to apply to the Proposed Action and alternatives addressed in this EA.

Other laws and Executive Orders potentially relevant to this EA include, but are not limited to, the following:

- American Indian Religious Freedom Act, 42 U.S.C. 1996, et seq.
- Antiquities Act, 16 U.S.C. 433, et seq.; Archeological Resources Protection Act, 16 U.S.C. 470 aa-ll, et seq.
- Architectural Barriers Act, 42 U.S.C. 4151, et seq.
- Community Environmental Response Facilitation Act, 42 U.S.C. 9620, et seq.
- Department of Transportation Act, Public Law (P.L.) 89-670, 49 U.S.C. 303, Section 4(f), et seq.

- Emergency Planning and Community Right-to-Know Act, 42 U.S.C. 11001–11050, et seq.
- Environmental Quality Improvement Act, P.L. 98-581, 42 U.S.C. 4371, et seq.
- Farmlands Protection Policy Act, P.L. 97-98, 7 U.S.C. 4201, et seq.
- Federal Insecticide, Fungicide, and Rodenticide Act, P.L. 86-139, 7 U.S.C. 135, et seq.
- Federal Records Act, 44 U.S.C. 2101-3324, et seq.
- Fish and Wildlife Act of 1956, P.L. 85-888, 16 U.S.C. 742, et seq.
- Flood Disaster Protection Act, 42 U.S.C. 4001, et seq.
- Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001, et seq.
- Pollution Prevention Act of 1990, 42 U.S.C. 13101-13109, et seq.
- Safe Drinking Water Act, P.L. 93-523, 42 U.S.C. 201, et seq.
- Toxic Substances Control Act, 7 U.S.C. 136, et seq.
- Wild and Scenic Rivers Act, P.L. 90-542, 16 U.S.C. 1271, et seq.
- EO 12114, dated January 9, 1979, *Environmental Effects Abroad of Major Federal Actions*, 44 FR 1957
- EO 12088, dated October 13, 1978, *Federal Compliance with Pollution Control Standards*, 43 FR 47707, as amended by EO 12580, dated January 23, 1987, and revoked (in part) by EO 13148, dated April 21, 2000
- EO 13132, dated August 4, 1999, *Federalism*, 64 FR 43255
- EO 11988, dated May 24, 1977, *Floodplain Management and Protection*, 42 FR 26951, as amended by EO 12148, dated July 20, 1979, 44 FR 43239
- EO 13007, dated May 24, 1996, *Historic Sites Act*, 16 U.S.C. 46, et seq.; Indian Sacred Sites, 61 FR 26771
- EO 12372, dated July 14, 1982, *Intergovernmental Review of Federal Programs*, 47 FR 30959, as amended by EO 12416, April 8, 1983, 48 FR 15587; supplemented by EO 13132, August 4, 1999, 64 FR 43255
- EO 13112, dated February 3, 1999, *Invasive Species*, 64 FR 6183, as amended by EO 13286, February 28, 2003, 68 FR 10619
- EO 11514, dated March 5, 1970, *Protection and Enhancement of Environmental Quality*, 35 FR 4247, as amended by EO 11541, July 1, 1970, 35 FR 10737 and EO 11991, May 24, 1977, 42 FR 26967
- EO 13045, dated April 21, 1997, *Protection of Children from Environmental Health and Safety Risks*, 62 FR 19885, as amended by EO 13229, October 9, 2001, 66 FR 52013 and EO 13296, April 18, 2003, 68 FR 19931
- EO 11990, dated May 24, 1977, *Protection of Wetlands*, 42 FR 26961, as amended by EO 12608, September 9, 1987, 52 FR 34617.

APPENDIX B

Public Involvement and Agency Coordination



APPENDIX B

Public Involvement and Agency Coordination

Interested Party List

Copies of the Coordination Letter and Draft EA were sent to the following agencies and interested parties during the Draft EA public review period:

Federal Agency Contacts

Mr. William Childress
Superintendent
U.S. Bureau of Land Management

Mr. Wally Murphy
Field Supervisor
U.S. Fish and Wildlife Service
New Mexico Ecological Services Field
Office

Mr. John Blevins
Division Director
U.S. EPA Region 6

Mr. Daniel Malanchuk
Chief Regulatory Branch
U.S. Army Corps of Engineers
Albuquerque District

Mr. Jose A. Nunez
Principal Engineer
International Boundary and Water
Commission

State Agency Contacts

Mr. Aubrey Dunn
Commissioner of Public Lands
New Mexico State Land Office

Dr. Jeff Papas
State Historic Preservation Officer and
Director
New Mexico State Land Office

Mr. Robert Sivinski
Forestry and Resource Conservation
Division
New Mexico Energy, Minerals, and Natural
Resources Department

Dr. Matt Wunder
Chief, Conservation Services Divisions
New Mexico Department of Game and Fish

Environmental Impact Review Coordinator
New Mexico Environment Department

Local Agency Contact

Mr. Bob Hill
County Manager
Hidalgo County

Charlene Webb
County Manager
Grant County

Mr. Charles Jackson
County Manager
Luna County

Ms. Julia T. Brown, ESQ
County Manager
Dona Ana County

Tribal Agency Contact

Mr. Mark Altaha
Tribal Historic Preservation Officer
White Mountain Apache Tribe

Mr. Brian Jones
Cultural Preservation Officer
Fort Sill Apache Tribe

Mr. Jimmy Arterberry
Historic Preservation Officer
Comanche Nation

Honorable Mark Chino
President
Mescalero Apache Tribal Council

Chairman Ronald “Dawes” Twohatchet
Chairman
Kiowa Tribe of Oklahom

Comment Letter from White Mountain Apache Tribe



White Mountain Apache Tribe

Office of Historic Preservation

PO Box 1032

Fort Apache, AZ 85926

Ph: (928) 338-3033 Fax: (928) 338-6055

To: Paul Enriquez, Environmental Branch Chief Border Patrol Facilities
Date: March 26, 2015
Re: Proposed Tactical Infrastructure Maintenance/Repair along the United States
Mexico International Border in New Mexico

.....
The White Mountain Apache Tribe Historic Preservation Office appreciates receiving information on the proposed project, March 16, 2015. In regards to this, please attend to the following 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.***

N/A - 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 ethno-historic study and interviews with Apache Elders. The tribe's ***Cultural Heritage Resource Director Mr. Ramon Riley*** may be contacted at (928) 338-3033 for further information should this become necessary.

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

We have received and reviewed information regarding the U.S. Customs and Border Protection proposal to maintain and repair existing tactical infrastructure along the U.S./Mexico international border in New Mexico, and we have determine the proposed plans will ***not have an impact*** on the White Mountain Apache tribe's (WMAT) historic and/or traditional cultural properties. Regardless, any/all ground disturbing activities should be monitored ***if*** there are reasons to believe that there are human remains and/or funerary objects are present, and if such remains and/or objects are encountered they shall be treated with respect and handled accordingly until such remains are repatriated to the affiliated tribe.

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

Sincerely,

Mark T. Altaha -THPO

White Mountain Apache Tribe
Historic Preservation Office

Comment Letter from New Mexico Environmental Department



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

State of New Mexico **ENVIRONMENT DEPARTMENT**

Office of the Secretary

5500 San Antonio Drive, NE
Albuquerque, NM 87109
Telephone (505) 222-9500 Fax (505) 222-9510
www.nmenv.state.nm.us



RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

March 30, 2015

U.S. Customs and Border Protection
Mr. Paul Enriquez
Environmental Branch Chief
Border Patrol Facilities and Tactical Infrastructure Program Management Office
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

e-mail: nm.timr.ea@cbp.dhs.gov

RE: NM TIMR EA, c/o Joseph Zidron
NMED EIR #5265

Messrs. Enriquez and Zidron:

Your letter regarding the above named project was received by the New Mexico Environment Department (NMED) and was sent to various bureaus for review. Comments on the Environmental Assessment (EA) and Draft Finding of No Significant Impact for the proposed maintenance and repair of existing tactical infrastructure along the international border in New Mexico are provided by the Air Quality, Ground Water Quality, and Surface Water Quality Bureaus.

The U.S. Customs and Border Protection are proposing to repair and maintain tactical infrastructure including fences, gates, roads, bridges, and drainages along the U.S./Mexico international border in New Mexico.

Air Quality Bureau

The Air Quality Bureau (AQB) concurs with the statements in the EA regarding air quality impacts and use of best management practices (BMPs). The following comments emphasize the importance of using BMPs to minimize potential impacts and address the use of properly permitted and licensed contractors.

The Counties in the proposed project area are currently in attainment for all of the New Mexico and National Ambient Air Quality Standards. However, the AQB has recorded exceedances of the standard for particulate matter (PM₁₀ & PM_{2.5}) in Doña Ana and Luna Counties in the past. In lieu of a nonattainment designation, a Natural Events Action Plan (NEAP) for Doña Ana County has been prepared and approved by the U.S. Environmental Protection Agency. As part

of the NEAP, local governments adopted dust control ordinances and appropriate controls and reclamation measures must be implemented for any soil disturbing activities.

All asphalt, concrete, quarrying, crushing, and screening facilities contracted in conjunction with the proposed project must have current and proper air quality permits. Potential emissions from any diesel generator sets should be calculated assuming continuous operation to determine whether a construction permit is required. For more information on air quality permitting and modeling requirements, please refer to 20.2.72 NMAC.

This project will temporarily impact air quality as a result of fugitive dust and equipment exhaust emissions generated during construction and will impact air quality in the area. However, with the appropriate dust control measures in place, the increased levels should be minimal. The project, as proposed, is not anticipated to result in nonattainment of the New Mexico or National Ambient Air Quality Standards or contribute negatively to air quality on a long-term basis.

Groundwater Quality Control Bureau

Ground Water Quality Bureau (GWQB) staff reviewed the above-referenced project focusing specifically on the potential effect to ground water resources in the area.

The project is not expected to have any adverse impacts on ground water quality in the area of construction. However, implementation of the project may involve the use of heavy equipment thereby leading to a possibility of contaminant releases (e.g., fuel, hydraulic fluid, etc.) associated with equipment malfunctions. The GWQB advises all parties involved in the project to be aware of notification requirements for accidental discharges contained in 20.6.2.1203 NMAC. Compliance with the notification and response requirements will further ensure the protection of ground water quality in the vicinity of the project.

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

Surface Water Quality Bureau

The U.S. Environmental Protection Agency (USEPA) requires National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) coverage for storm water discharges from construction activities (such as clearing, grading, excavating, and stockpiling) that disturb (or re-disturb) one or more acres, or smaller sites that are part of a larger common plan of development. The total area of disturbed soil for the roadway and the area where the material removed is placed are included in total disturbed soil footprint.

Prior to discharging storm water, construction operators must obtain coverage under an NPDES permit. Among other things, this permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for the site, including support and staging areas, and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This

permit also requires that permanent stabilization measures (re-vegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters.

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

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

The CGP was re-issued effective February 16, 2012. The CGP, NOI, deadlines for submitting an NOI, Fact Sheet, and Federal Register notice is available at:
<http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>

Clean Water Act, Section 404 USACE/Section 401 Certification

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

Section 404 of the Clean Water Act requires approval from the U.S. Army Corp of Engineers (USACE) prior to discharging dredged or fill material into waters of the United States (U.S.). Any person, firm, or agency (including Federal, state, tribal and local governmental agencies) planning to work in waters of the United States should first contact the USACE regarding the need to obtain a permit from the Regulatory Division. Failure to receive and implement proper permit coverage would be a violation of the Clean Water Act.

More information on the §404 permitting process, including applicability of Nationwide Permits, mitigation requirements, requirements for certification for any discharges on state, private or tribal land, can be obtained from the USACE at:

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

NMED Surface Water Quality Bureau Watershed Protection Section coordinates the state's §401 certification of §404 dredged/fill material permits with the USACE. In response to the §404

Draft EA, Proposed Tactical Infrastructure Maintenance and Repair
U.S./Mexico International Border in New Mexico
NMED EIR # 5265
March 30, 2015
4 | P a g e

reissued nationwide permits on April 13, 2012, a Conditional §401 Certification for discharges to State of New Mexico surface water has been issued and is available at the following web site:

<ftp://ftp.nmenv.state.nm.us/www/swqb/WPS/401-404/NWPCertificationNotice04-13-2012.pdf>.

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

If you have any questions please contact me at (505) 222-9552 or by email at thomas.skibitski@state.nm.us

Sincerely,

Thomas Skibitski

Digitally signed by Thomas Skibitski
DN: cn=Thomas Skibitski, ou=New Mexico
Environment Department, ou=DOE Oversight Bureau,
email=thomas.skibitski@state.nm.us, c=US
Date: 2015.03.30 11:50:29 -0600

Thomas Skibitski

Environmental Impact Review Coordinator
NMED File Number: EIR #5265

Cc: (by email): nm.timr.ea@cbp.dhs.gov

Comment Letter from IBWC



INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO

April 8, 2015

Mr. Joseph Zidron
U.S. Customs and Border Protection
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

Subject: Review of Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) Addressing Proposed Tactical Infrastructure Maintenance and Repair Along the U.S./Mexico International Border in New Mexico

Dear Mr. Zidron:

The International Boundary and Water Commission, United States Section (USIBWC) has reviewed Customs and Border Patrol's *Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) Addressing Proposed Tactical Infrastructure Maintenance and Repair Along the U.S./Mexico International Border in New Mexico*. The Proposed Action in the EA/FONSI is for repair and maintenance of infrastructure including fences and gates; access roads and integrated bridges/crossovers; drainage management structures; vegetation control to maintain road visibility; lighting and ancillary power systems; communications and surveillance towers; and equipment storage. The EA/FONSI does not propose any new construction. The USIBWC has the following comments on the Draft EA/FONSI, for your consideration.

- 1) In section 3.12.2.3 Known Cultural Resources, the EA mentions that 10 border monuments were surveyed as cultural resources. The EA should discuss, possibly in this section or other appropriate section, that the USIBWC has a duty to access, maintain, and utilize the international boundary monuments along the U.S./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.
- 2) Although the EA does not propose to construct any new drainage structures, the repair and maintenance of existing drainage structures should be accomplished in a manner that does not change historic surface runoff characteristics at the international border. If drainage flows will be altered as a result of repair and maintenance, the USIBWC will need to review the construction drawings and hydrological or hydraulic studies for the structures prior to work commencing.

The Commons, Building C, Suite 100 • 4171 N. Mesa Street • El Paso, Texas 79902-1441
(915) 832-4764 • Fax: (915) 832-4166 • <http://www.ibwc.gov>

- 3) USIBWC notes, as stated in the EA, that many of the infrastructure projects, such as fences and gates, are within the 60-foot Roosevelt Reservation, a 1907 Presidential Proclamation reserving a 60-foot wide strip of land parallel with and adjacent to the international boundary on all lands which were not already patented to the boundary line through New Mexico, Arizona, and California. The provisions of the 1907 Presidential declaration for the 60-foot wide strip adjacent to the international boundary should be observed.

The USIBWC appreciates the opportunity to provide comments on the Draft EA/FONSI. Please continue to keep the USIBWC informed of the progress of this project and other projects impacting the U.S./Mexico international boundary.

Sincerely,



Gilbert G. Anaya
Division Chief
Environmental Management Division

cc: NM.TIMR.EA@cbp.dhs.gov

Concurrence Letter from USFWS



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New Mexico Ecological Services Field Office
2105 Osuna Road NE
Albuquerque, New Mexico 87113
Telephone 505-346-2525 Fax 505-346-2542
www.fws.gov/southwest/es/newmexico/



April 30, 2015

Consultation # 02ENNM00-2015-I-0253

Paul Enriquez, Environmental Branch Chief
Border Patrol Facilities and Tactical Infrastructure
Program Management Office
U.S. Customs and Border Protection
1300 Pennsylvania Avenue NW
Washington, D.C. 20229

Dear Mr. Enriquez:

Thank you for your March 2015 biological assessment (assessment) for the proposed Tactical Infrastructure Maintenance and Repair along the U.S./Mexico International Border (TIMR) Project in New Mexico. The Department of Homeland Security and U.S. Customs and Border Protection (CBP) propose to maintain and repair certain existing tactical infrastructure along the international border in New Mexico. The existing tactical infrastructure to be maintained and repaired consists of fences, gates, roads, bridges, crossovers, drainage structures, grates, lighting, ancillary power systems, and communication and surveillance tower components, including, but not limited to, remote video surveillance system and secure border initiative towers.

The action area for this assessment includes all of the areas within a corridor ranging from approximately 10 to 52 miles north along the U.S./Mexico international border in the El Paso Sector of the U.S. Border Patrol in New Mexico. To accommodate changes in missions, requests from landowners and managers, and other changing situations, additional existing tactical infrastructure within the action area may be maintained under this project in the future. Any such tactical infrastructure will be maintained and repaired as described in this assessment. Tactical infrastructure assets covered by a waiver issued by the Secretary of Homeland Security have been excluded from the scope of this assessment.

Seven listed species and designated critical habitat for three of these species occur within the action area and may be affected by the TIMR Project. CBP has determined this project "may affect, but is not likely to adversely affect" the threatened Chiricahua leopard frog (*Lithobates chiricahuensis*), threatened New Mexico ridge-nosed rattlesnake (*Crotalus willardi obscurus*), threatened Mexican spotted owl (*Strix occidentalis lucida*), endangered Southwestern willow flycatcher (*Empidonax traillii extimus*), endangered Jaguar (*Panthera onca*), endangered lesser long-nosed bat (*Leptonycteris yerbabuenae*), and the endangered Mexican long-nosed bat (*Leptonycteris nivalis*). CBP has also determined this project would not jeopardize the continued

Paul Enriquez, Environmental Branch Chief

existence of the nonessential experimental population of the northern aplomado falcon (*Falco femoralis septentrionalis*). Additionally, CBP determined the TIMR Project “may affect, but is not likely to adversely affect” critical habitat for the jaguar and New Mexico ridge-nosed rattlesnake.

These determinations are based on the nature of the proposed action, location of the proposed action relative to suitable or critical habitat for these species, and general and species-specific best management practices (BMPs) that are part of the proposed action to minimize or avoid potential harm to listed species and critical habitat. Project components supporting these determinations include the following:

- The TIMR Project involves the maintenance and repair of existing tactical infrastructure. All activities would be conducted within and immediately adjacent to the footprint of existing infrastructure. Separate section 7 consultation under the Endangered Species Act would be conducted for any changes to roadway networks and upgrades of existing roadways, such as paving of previously unpaved roads or widening of existing roads.
- CBP would use a centralized planning process to ensure that all project activities are appropriately planned and implemented.
- CBP would implement general and species-specific design standards and BMPs designed in coordination with the U.S. Fish and Wildlife Service (Service) to avoid directly harming or harassing listed species and minimize other direct and indirect effects.
- Protocol surveys would be conducted prior to implementing maintenance and repair activities when appropriate based on occupied or suitable habitat for threatened and endangered species.
- The project would result in no or very minor habitat degradation and have few other direct and indirect impacts on threatened and endangered species. Vegetation trimming would be restricted to the minimum necessary to maintain drivable access roads and maintain the functionality of tactical infrastructure and would not occur in critical habitat of threatened or endangered species.
- If the above conditions are not met, CBP would seek additional consultation from the Service for activities that have the potential to adversely affect listed species or adversely affect their critical habitat.
- Equipment and support vehicles would be stored within the existing footprint of the maintenance and repair location or at a staging area previously designated for such purposes by CBP. All such staging areas are either covered by the Secretarial waiver or previous section 7 consultation. Requests for staging areas on land administered by the

Paul Enriquez, Environmental Branch Chief

Bureau of Land Management (BLM) would require additional planning and coordination with BLM prior to use.

- CBP would provide an annual report to the New Mexico Ecological Services Field Office (NMESFO) within 3 months of the end of the calendar year to document all project activities that took place within the range of listed species. The report will include conservation measures and BMPs that were implemented and any federally listed species observed at or near project sites.

The Service concurs that the proposed TIMR Project “may affect, but is not likely to adversely affect” the species and critical habitat listed above. This concludes section 7 consultation regarding the proposed action. If monitoring or other information results in modification or the inability to complete all aspects of the proposed action, consultation should be reinitiated. Please contact the Service if: 1) Future surveys detect listed, proposed or candidate species in habitats where they have not been previously observed; 2) the proposed action changes or new information reveals effects of the proposal to listed species that have not been considered in this analysis; or 3) a new species is listed or critical habitat designated that may be affected by the action.

Thank you for your concern for endangered species and New Mexico’s wildlife habitats and your comprehensive coordination with the NMESFO on this project. If you have any questions about this letter, please contact Dr. Patricia Zenone of my staff at the letterhead address or at (505) 761-4718.

Sincerely,

ERIC HEIN

for Wally Murphy
Field Supervisor

cc:

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division,
Santa Fe, New Mexico
Joseph Zidron, U.S. Customs and Border Protection, Laguna Niguel, California

APPENDIX C

Tactical Infrastructure Classifications and Maintenance and Repair Standards



APPENDIX C

Tactical Infrastructure Classifications and Maintenance and Repair Standards

Introduction

The tactical infrastructure will be maintained in accordance with proven maintenance and repair standards. All of the standards CBP is adopting are developed based on comprehensive engineering analysis, proven BMPs adopted by other Federal agencies, and mitigation measures derived from extensive consultation with both regulatory and resources agencies. Below is a description of tactical infrastructure classifications and maintenance and repair standards.

Road Classification

CBP has developed a road classification system whereby roads are maintained to specific standards dependent upon their classification. Under the CBP classification system, five standards for roads have been developed:

- *FC-1 Paved Road* – Paved, all-weather road constructed of any material. Road is two lane with a total road width of 24 feet (see **Figures C-1 and C-2**).
- *FC-2 All-Weather Road* – Unpaved, all-weather road consisting of a surface of imported aggregate material such as milled bituminous material or processed stone and gravel. Road is two-lane with a total road width of 24 feet (see **Figures C-3 and C-4**).
- *FC-3 Graded Earth Road* – Unpaved road constructed of graded, native material. Road is two-lane with a total road width of 20 feet (see **Figures C-5 and C-6**).
- *FC-4 Two-Track Road* – Unpaved road on natural ground consisting of a single lane with an overall road width of 10 feet (see **Figures C-7 and C-8**).
- *FC-5 Sand Road* – Unpaved, sand road consisting of natural ground conditions, two lanes, and an overall road width of 16 to 18 feet (see **Figures C-9 and C-10**).

Road Maintenance and Repair

The maintenance and repair of FC-1 and FC-2 roads within state, county, or municipal government's purview is completed by their transportation departments. Maintenance and repair of FC-1 and FC-2 roads located on Federal land are maintained in coordination and performed where necessary by agreement with the appropriate Federal agency. In general, CBP would adhere to approved standards for road maintenance applicable to the appropriate land manager, which have been tried and proven over many years and in a variety of environmental conditions.

Some of the tactical infrastructure on Federal lands (e.g., BLM, USFS) is covered by the Secretary's waiver and is the responsibility of CBP to maintain and repair. In the few instances where CBP is required to maintain FC-1 and FC-2 roads, maintenance and repair would be restricted to minor resurfacing to address potholes in paved surfaces and rutting and raveling in all-weather roads. Minor work to shoulder areas of these roads would also be required to maintain the integrity of the road surfaces and road beds.



Figure C-1. FC-1 Paved Road (Photograph)

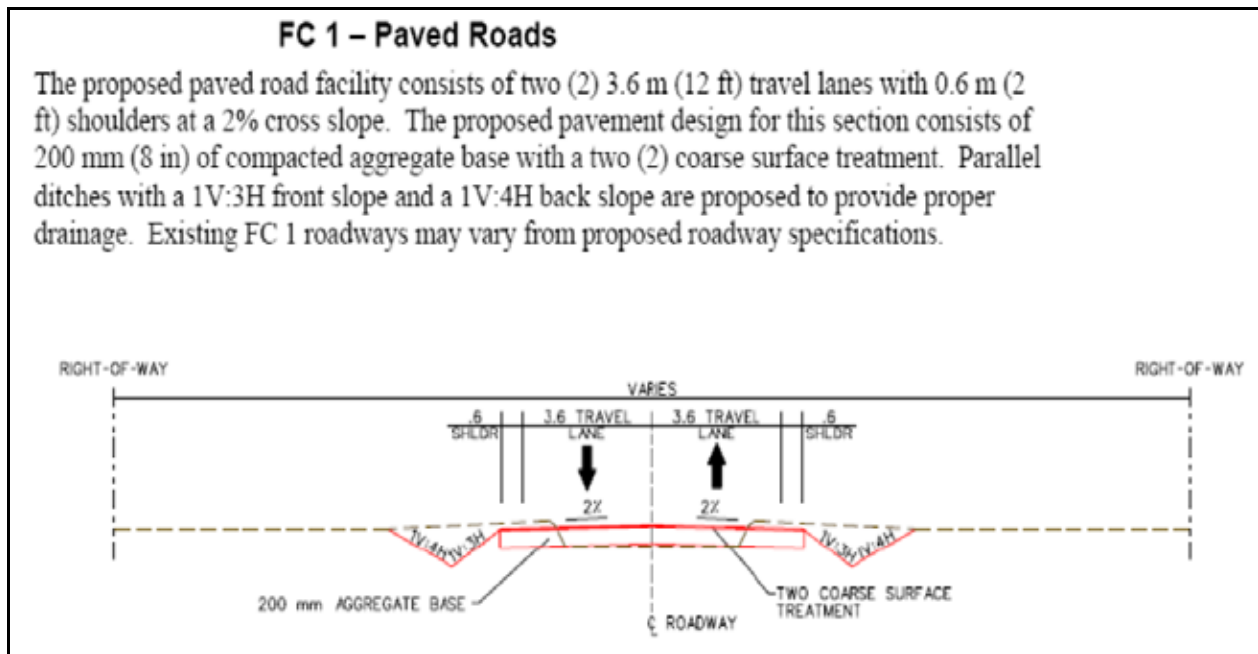


Figure C-2. FC-1 Paved Road (Diagram)



Figure C-3. FC-2 All-Weather Road (Photograph)

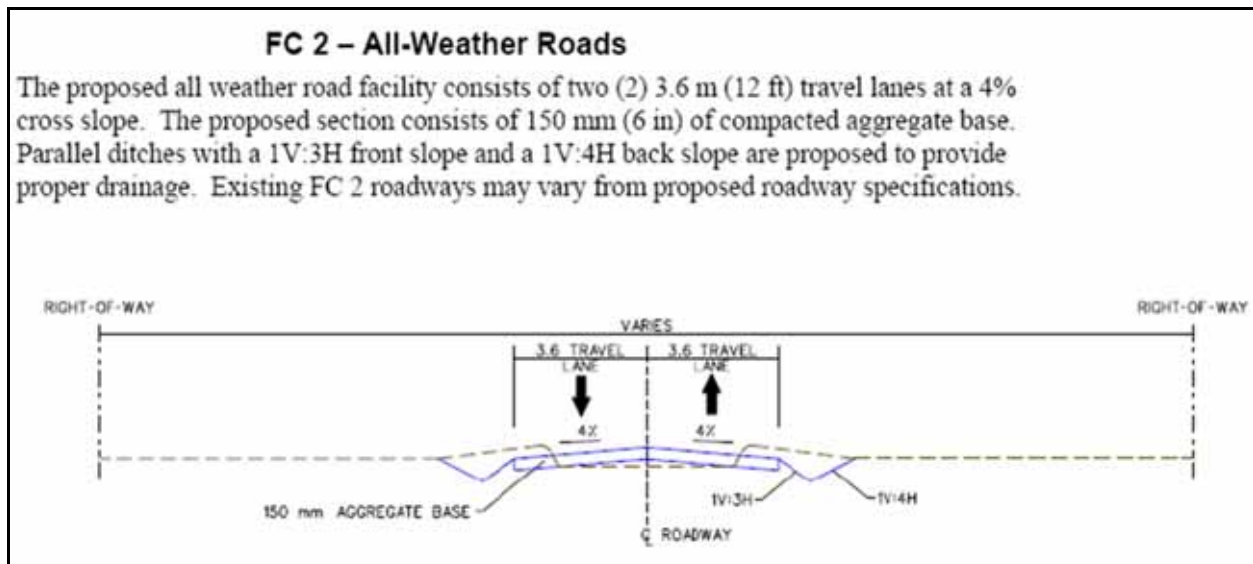


Figure C-4. FC-2 All-Weather Road (Diagram)



Figure C-5. FC-3 Graded Earth Road (Photograph)

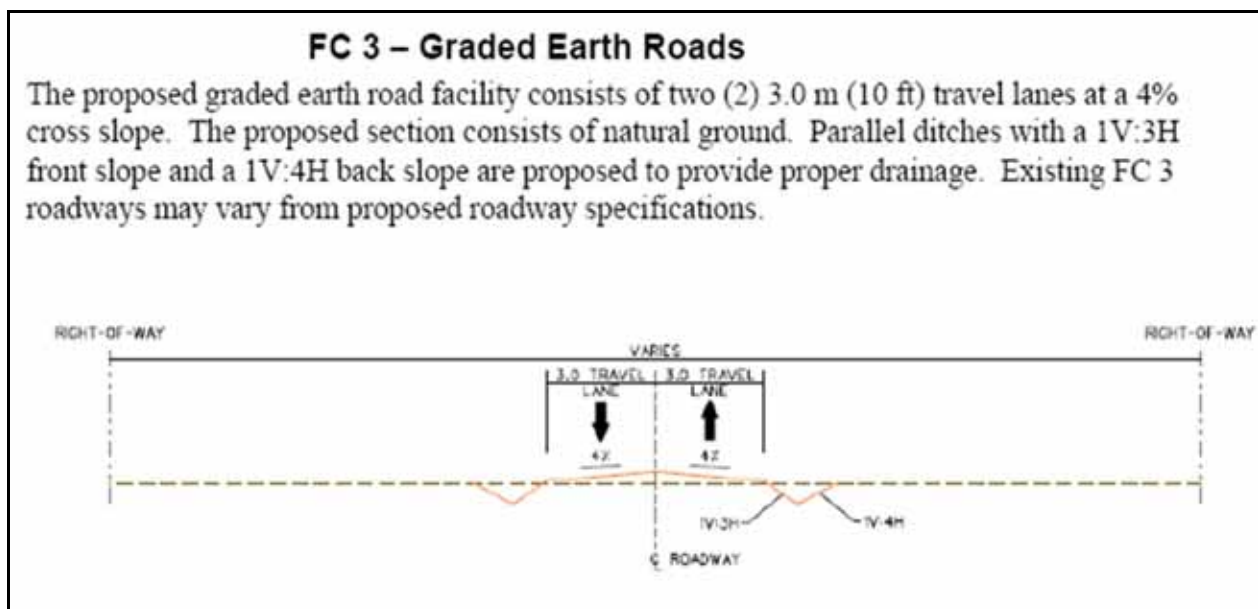


Figure C-6. FC-3 Graded Road (Diagram)



Figure C-7. FC-4 Two-Track Road (Photograph)

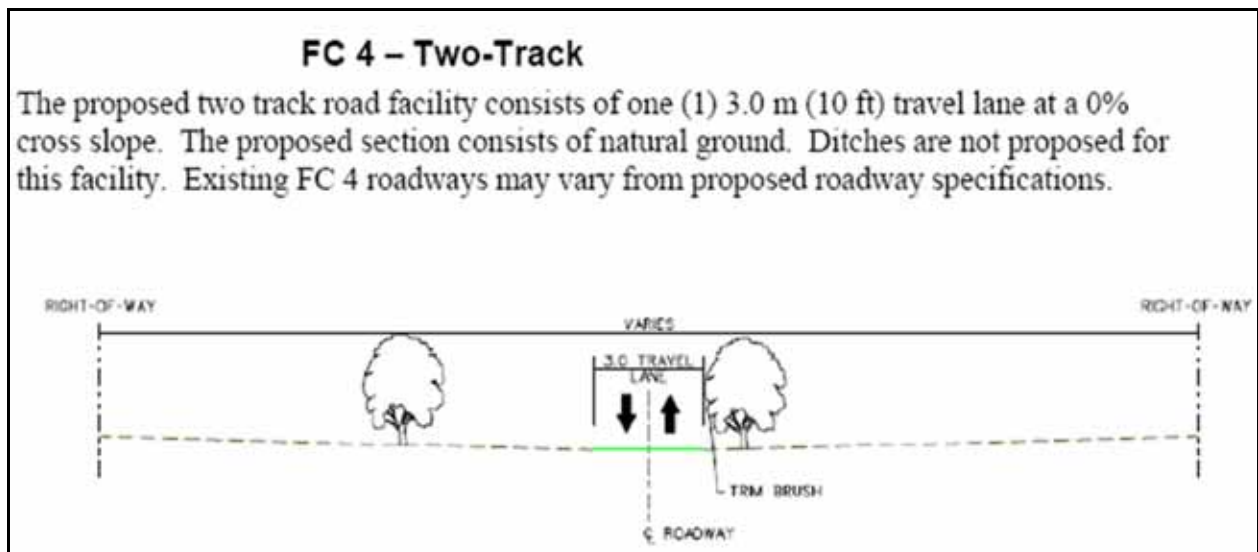


Figure C-8. FC-4 Two-Track Road (Diagram)



Figure C-9. FC-5 Sand Road (Photograph)

FC5 – Sand Road

The proposed sand road consists of 16-18 feet travel lane at a 0% cross slope. The proposed section consist of natural ground – no foundation base. Drainage ditches are not proposed for this type road. Existing FC-5 roadways may vary from proposed roadway specifications,



Figure C-10. FC-5 Sand Road (Diagram)

The majority of proposed maintenance and repair is planned for FC-3 and FC-4 roads. Because of their lack of formal construction design, FC-3 and FC-4 roadways are subject to the greatest deterioration if left unmaintained. When subjected to heavier traffic, rutting occurs, which in turn is exacerbated by rain events that further erode the surface. Unmanaged storm water flow also causes general erosion to occur, washing out complete sections of road and in many instances making roads impassable.

Grading with the use of commercial grading equipment (see **Figure C-11**) is proposed to restore an adequate surface to FC-3 roads. USBP sector personnel and contract support personnel well versed in grading techniques would be employed for such activities. A poorly regraded surface quite often results in rapid deterioration of the surface. The restored road should be slightly crowned and absent of windrows in the gutter line to avoid ponding and channeling within the road during rain events. Any associated roadside drainage would be maintained to ensure that runoff is relieved from the road surface quickly and effectively without creating further erosion issues.



Figure C-11. Standard Grading Equipment

The frequency of maintenance would depend on usage and weather conditions (e.g., heavy rain seasons could require an increase in maintenance and repair). Maintenance and repair activities would include inspections to determine surface irregularities (e.g., potholes, washout), then grading, compacting, and reshaping of the road would occur generally using onsite soils as necessary. The addition of material to these roads to achieve the proposed objective would be kept to a minimum, but may be necessary to fill depressions or to grade the surface of the road

back up to match shoulder grades. Roads could occasionally need to be scarified, have aggregate added, and the surface recompact. It is recommended that these roads be inspected and, if necessary, maintained every six months and after major storm events. Debris and sedimentation removal from low water crossings, culverts, and ditches to minimize flooding, water diversion, and erosion would also occur every six months and after major storm events. All necessary erosion-control BMPs would be adopted to ensure stabilization of the project areas (see **Appendix E**).

As the two track name implies, FC-4 roads consist of two parallel tracks created by the loss of vegetation where the tires contact and compact the earth; between which may lay a strip of low-growth vegetation. These roads receive very little maintenance consisting primarily of occasional brush and boulder clearing, and possibly but much less frequently grading with small tractor mounted box blades. Two-track roads have no crown, and generally do not have any improved drainage features or ditches, although culverts and low water crossings may be installed where continuous erosion issues occur.

Most FC-5 roads are associated with fence infrastructure that has been covered by the Secretary's waiver or previous NEPA documentation and therefore dismissed from further discussion. There are, however, some FC-5 roads that provide access to infrastructure that are not covered by the Secretary's waiver or previous NEPA documentation and will be examined throughout this EA. Activities to maintain FC-5 roads would be similar to those described above for FC-3 roads.

APPENDIX D

Detailed Maps of the
Tactical Infrastructure
Maintenance and
Repair Region of Analysis



APPENDIX D

Detailed Maps of the Tactical Infrastructure Maintenance and Repair Region of Analysis

There are approximately 37 ecological systems in the region of analysis (see **Table D-1**). The ecological systems that generally define and compose 95 percent of the landscape within the region of analysis are described below. These ecological systems were extracted from NatureServe Explorer (NatureServe 2010).

Additionally, links are provided here for supplementary detailed maps of the tactical infrastructure along the U.S./Mexico international border in New Mexico (see Map Index on page **D-3**). In addition to displaying existing tactical infrastructure, the maps display the ranges of threatened and endangered species within the region of analysis. The maps depict additional activities occurring within the range of threatened and endangered species that would require use of species-specific BMPs, as formally agreed upon during consultation with the USFWS and further discussed in the Biological Assessment. Depending on the number and nature of resources that could be impacted, a graduated series of BMPs would be identified to reduce impacts to less than significant levels. The BMPs are presented in **Appendix E** along with the affected resources.

The maps delineate ranges, including designated critical habitat, extent of suitable habitat, and documented sightings of the species in the area. Wilderness or other special-use designations and land management agency practices are considered in maintenance and repair planning. Coordination with land management agencies, Federal land managers, and the USFWS, if necessary, would occur and appropriate BMPs would be implemented. The maps presented are not intended to be used as an implementation tool for maintenance and repair activities, but instead represent a method to show the range of potential threatened and endangered species.

Depending on the number and nature of resources that could be impacted, a graduated series of BMPs would be identified to reduce impacts to less than significant levels. The BMPs are presented in Appendix E along with the affected resources. The combination of the informative maps and the relevant BMPs are intended to provide CBP with a visual framework to assist in applying appropriate maintenance and repair solutions in sensitive areas. Descriptions of BLM and state-listed rare, threatened, and endangered species, their habitat, and impact determinations are outlined in **Table D-2**.

Table D-1. Ecological Systems within the Region of Analysis

Ecological Systems
Apacherian-Chihuahuan Semi-Desert Grassland and Steppe*
Chihuahuan Creosotebush, Mixed Desert and Thorn Scrub*
Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub*
Madrean Encinal*
Apacherian-Chihuahuan Mesquite Upland Scrub*
Madrean Pinyon-Juniper Woodland*
Chihuahuan Mixed Salt Desert Scrub*
Chihuahuan Sandy Plains Semi-Desert Grassland*
Cultivated Cropland
North American Warm Desert Active and Stabilized Dune
Mogollon Chaparral
Madrean Juniper Savanna
North American Warm Desert Pavement
Chihuahuan Succulent Desert Scrub
Recently Burned
North American Warm Desert Bedrock Cliff and Outcrop
Developed, High Intensity
North American Warm Desert Lower Montane Riparian Woodland and Shrubland
North American Warm Desert Volcanic Rockland
Developed, Low Intensity
Madrean Pine-Oak Forest and Woodland
Inter-Mountain Basins Semi-Desert Shrub Steppe
Madrean Upper Montane Conifer-Oak Forest and Woodland
North American Warm Desert Wash
Chihuahuan Gypsophilous Grassland and Steppe
North American Warm Desert Playa
North American Warm Desert Riparian Woodland and Shrubland
North American Warm Desert Riparian Mesquite Bosque
No Data
Open Water (Fresh)
Southern Rocky Mountain Pinyon-Juniper Woodland
Rocky Mountain Aspen Forest and Woodland
Rocky Mountain Cliff, Canyon and Massive Bedrock
North American Arid West Emergent Marsh
Rocky Mountain Lower Montane-Foothill Shrubland
Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland
Sonoran Paloverde-Mixed Cacti Desert Scrub

Note: * Ecological systems that generally define and compose 95 percent of the landscape within the New Mexico region of analysis.

Map Index for New Mexico Threatened and Endangered Species

Seven threatened and endangered species have the potential to occur in the region of analysis and could be affected by the Proposed Action. The ranges of threatened and endangered species within the region of analysis are detailed in the maps linked below. ***Click on the species names provided below to view the range map for that species.***

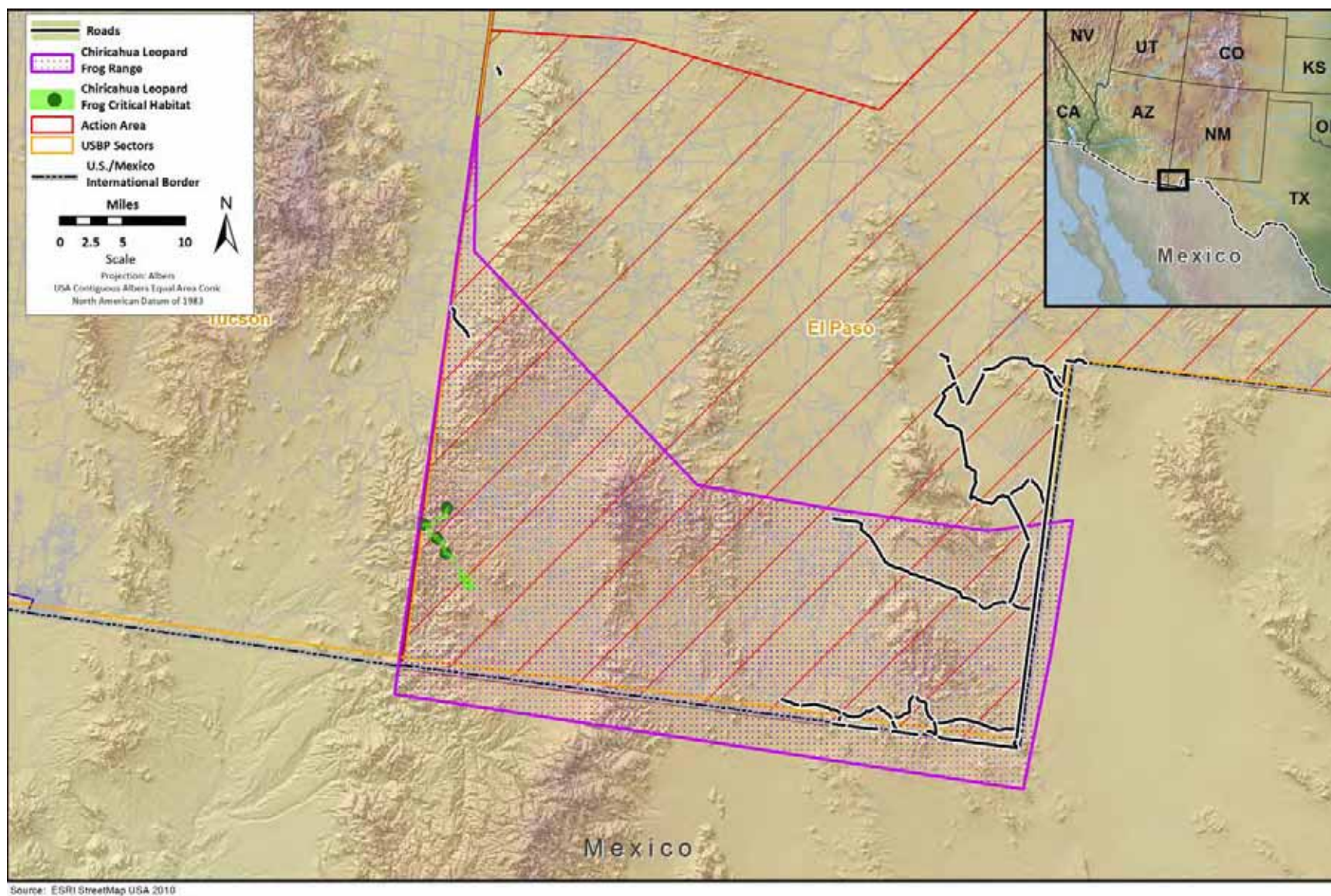
Aquatic Threatened and Endangered Species:

- ***Chiricahua leopard frog***

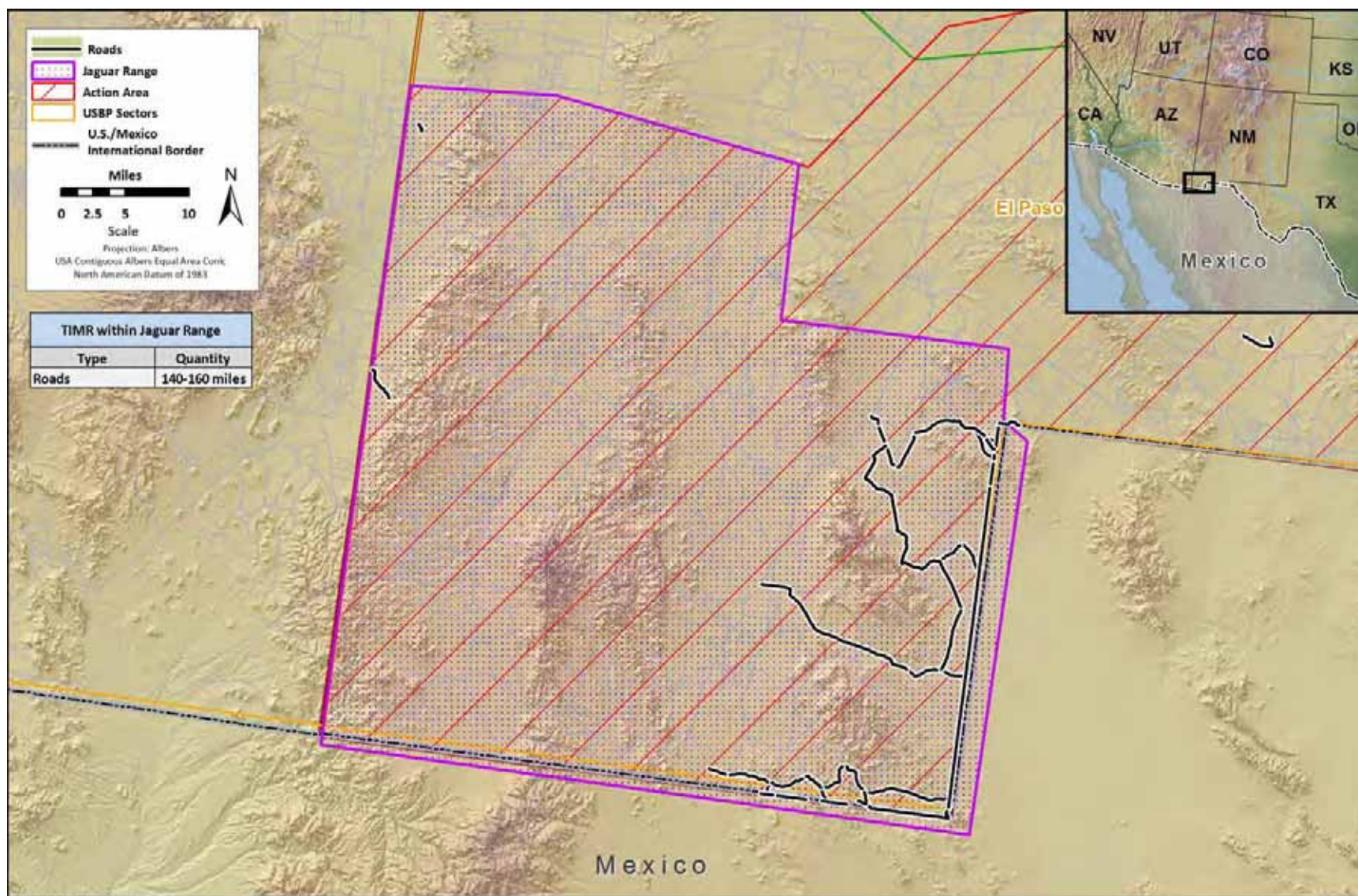
Terrestrial Threatened and Endangered Species:

- ***Jaguar***
- ***Lesser long-nosed bat***
- ***Mexican long-nosed bat***
- ***Mexican spotted owl***
- ***New Mexico ridge-nosed rattlesnake***
- ***Northern aplomado falcon***
- ***Southwestern willow flycatcher***

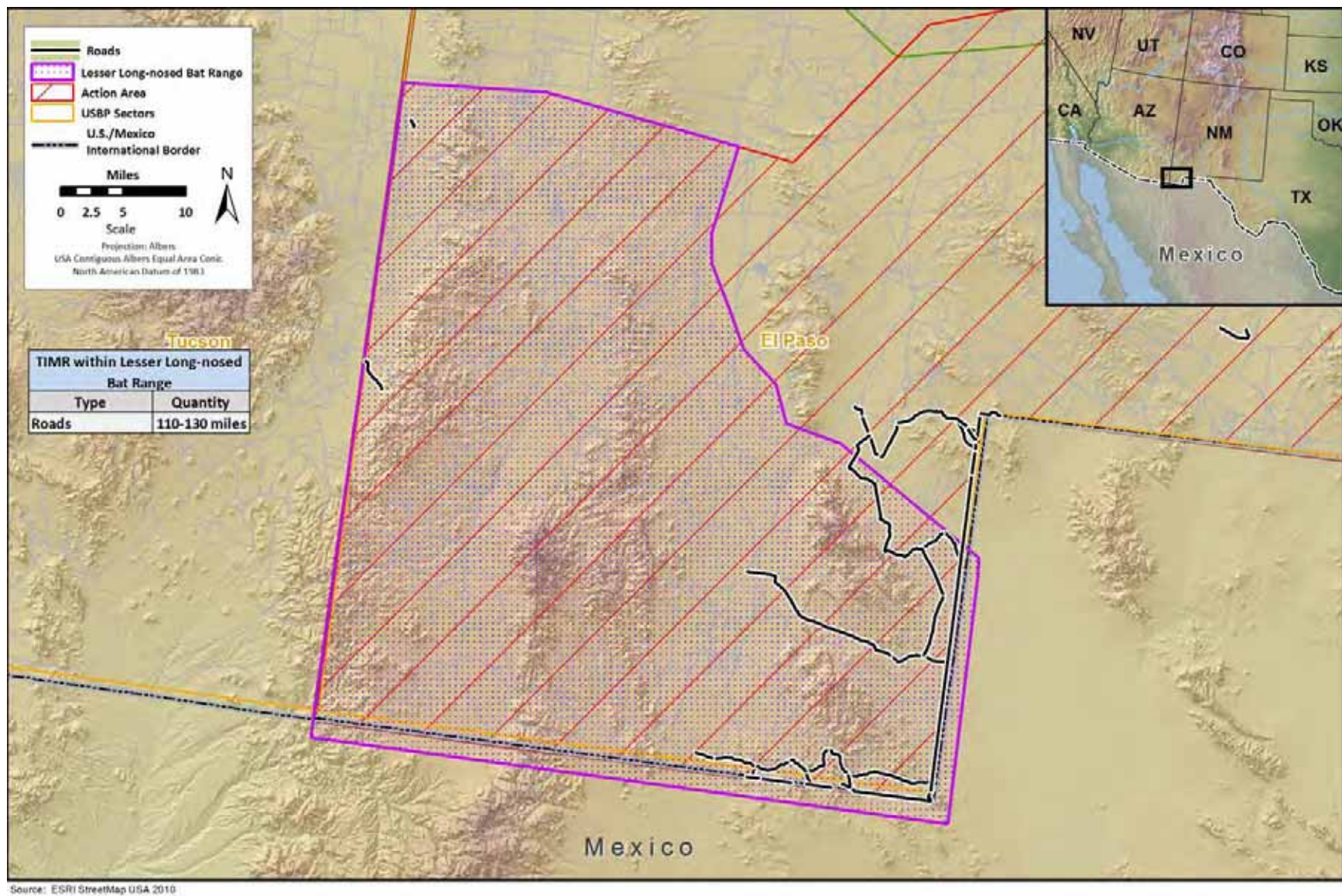
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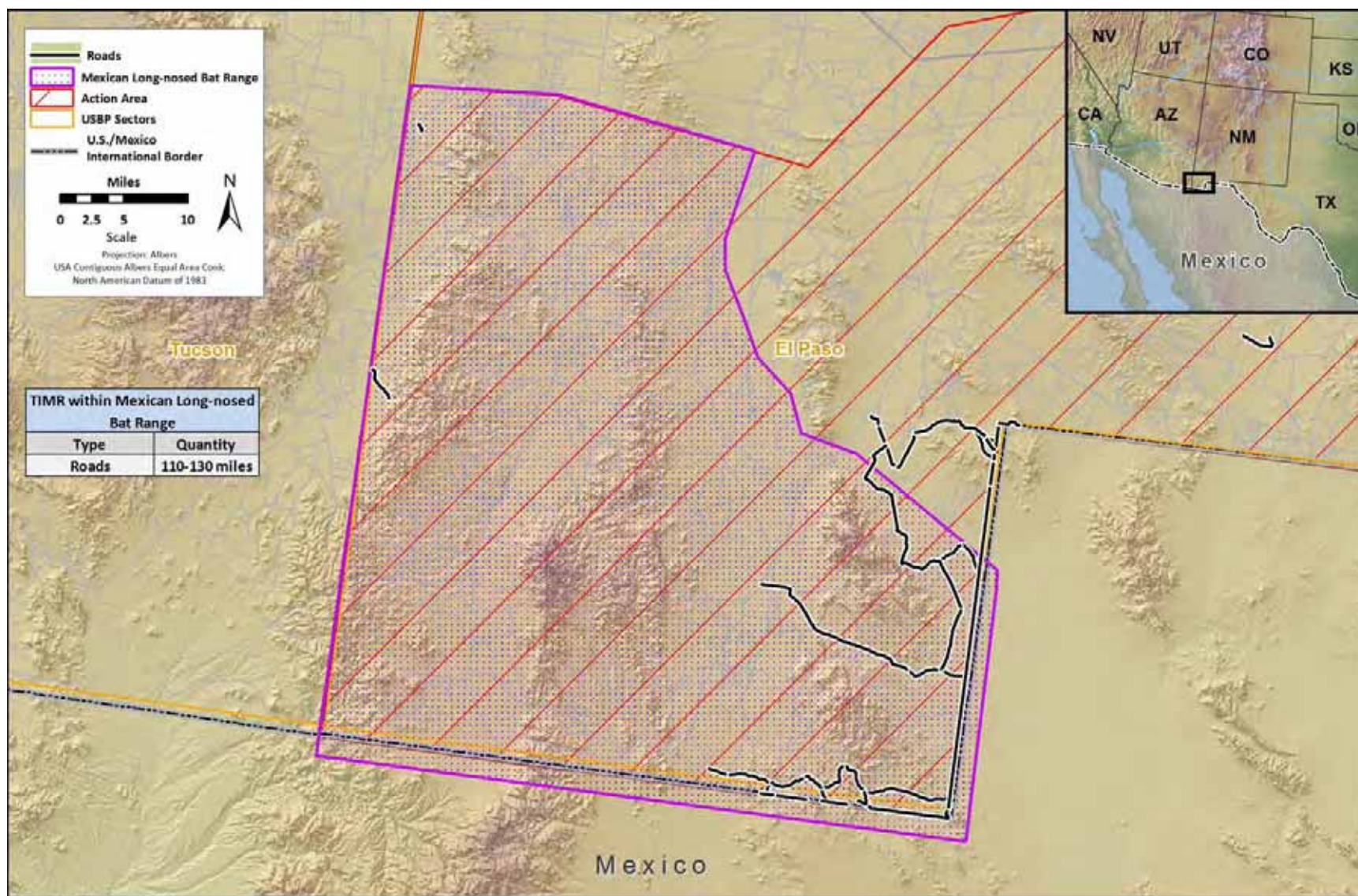


Source: ESRI StreetMap USA 2010

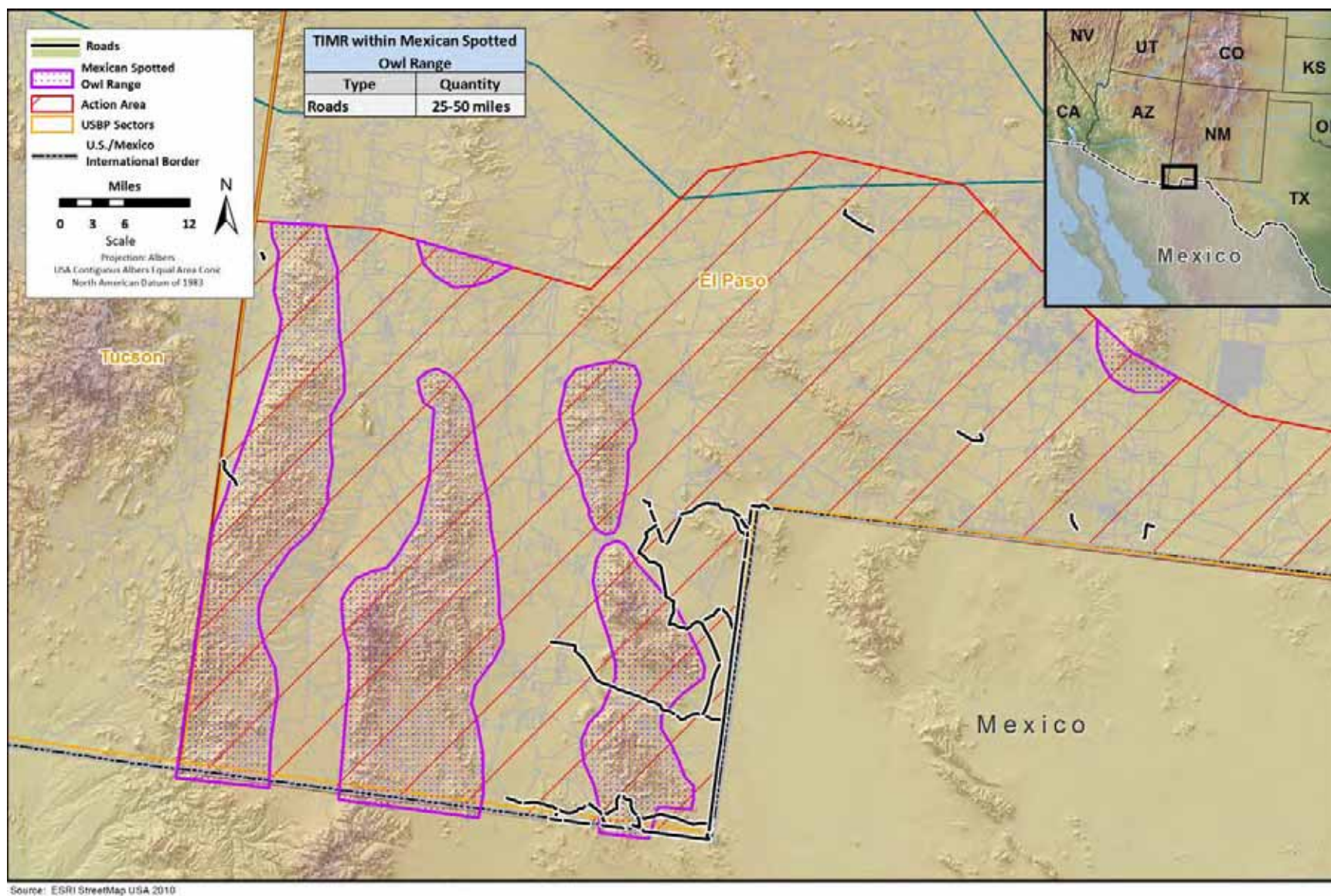


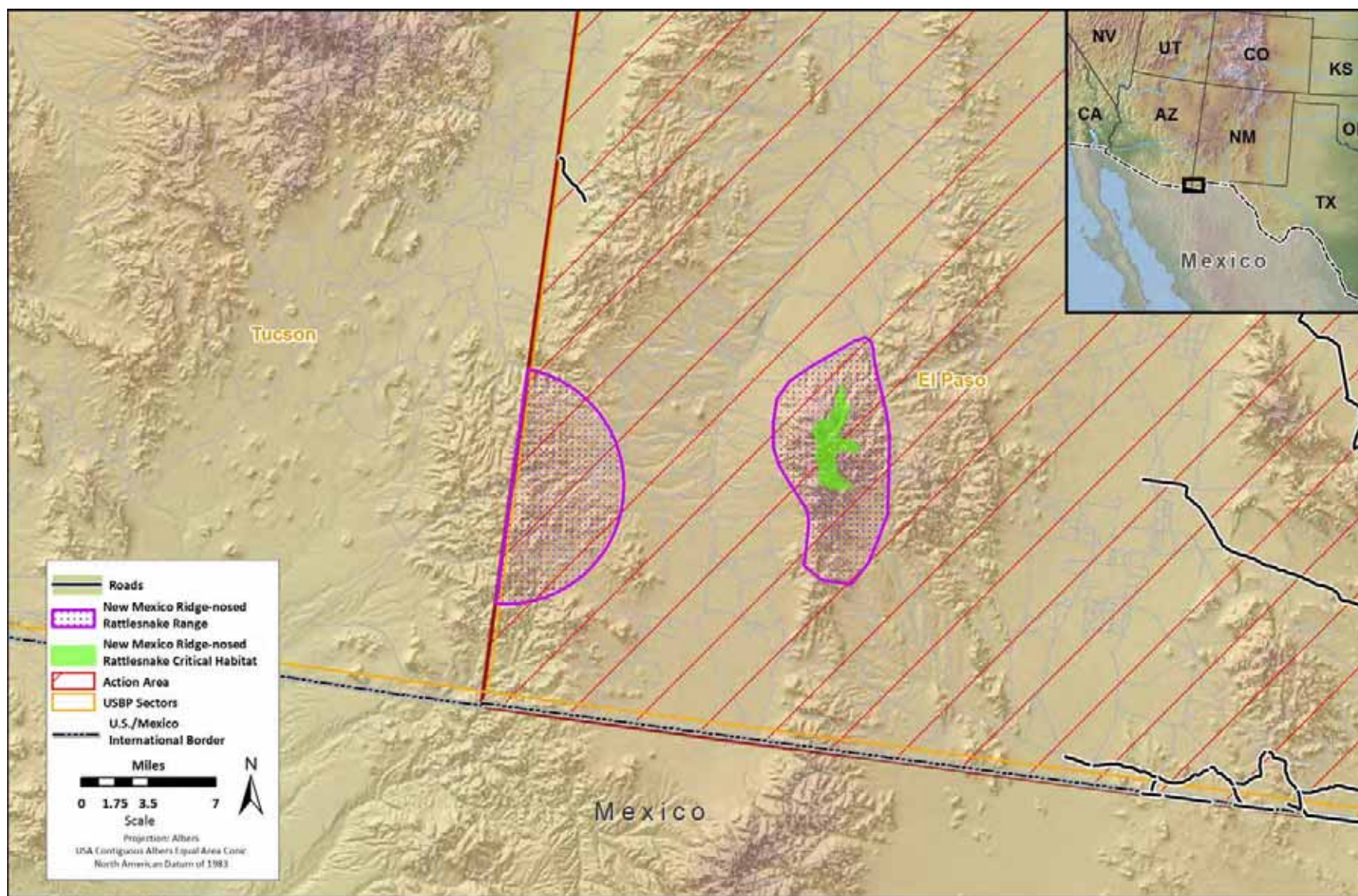
Source: ESRI StreetMap USA 2010



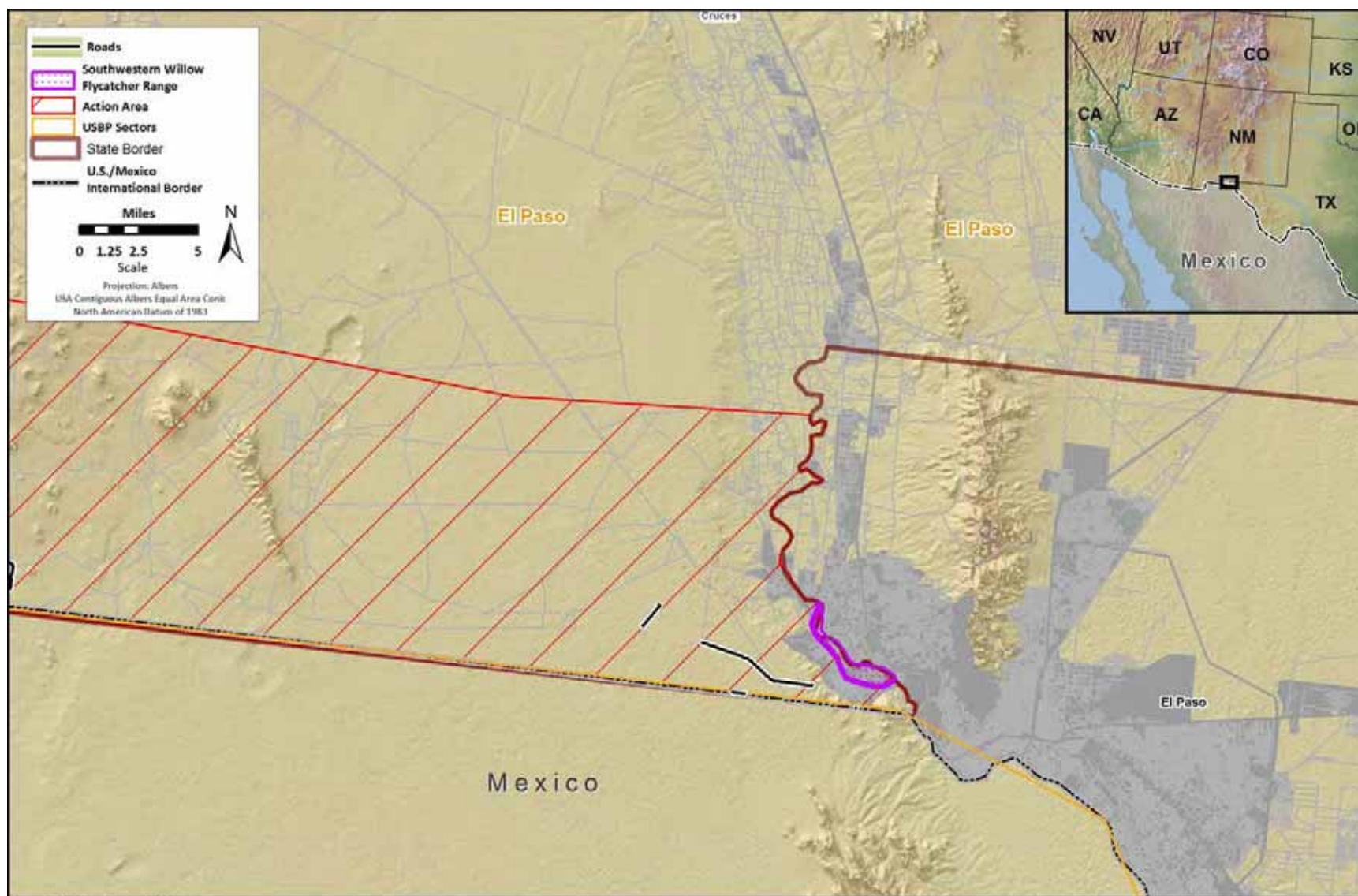


Source: ESRI StreetMap USA 2010

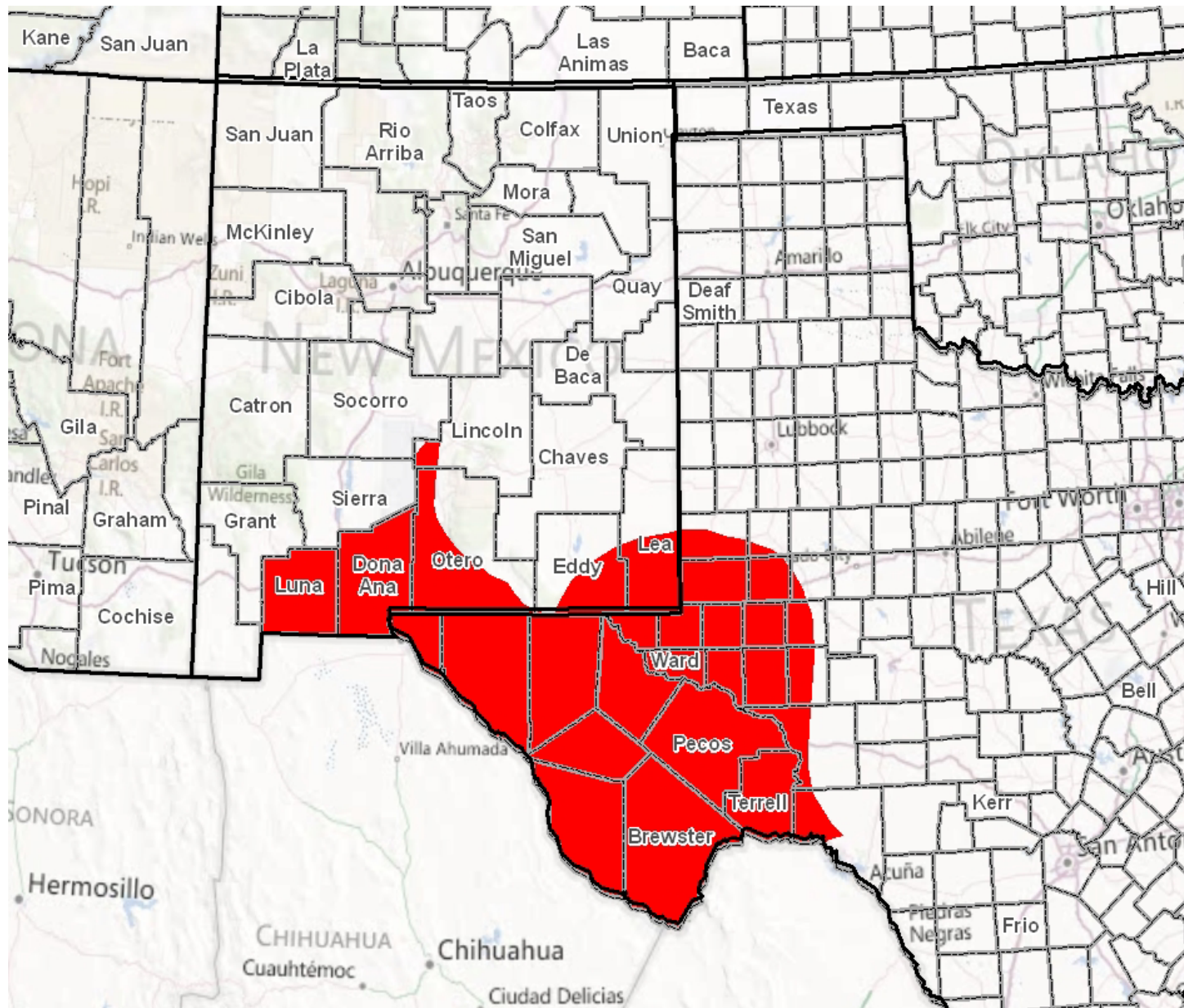




Source: ESRI StreetMap USA 2010



Source: ESRI StreetMap USA 2010



APPENDIX E

Best Management Practices



APPENDIX E

Best Management Practices

The following best management practices (BMPs) will be implemented for the Project. As described in **Section 1.2** of the Biological Assessment associated with this EA, U.S. Customs and Border Protection (CBP) will use an established planning and work development process to identify the BMPs that must be implemented. To identify species-specific BMPs that must be implemented, CBP environmental subject matter experts (SMEs) will identify which species potentially occur in the geographic location associated with maintenance and repair activity using information such as that shown in **Appendix D**. They will then consider other available sources of information, such as prior survey data, aerial photographs, site visits, and previously developed environmental documentation, to evaluate whether suitable habitat for threatened and endangered species could occur at each project location. The CBP environmental SME will also determine if a survey conducted by a qualified biologist is required prior to maintenance and repair activities to determine if habitat is present or required by a BMP. If necessary, the CBP environmental SMEs will hold further consultation with the U.S. Fish and Wildlife Service (USFWS) to clarify any compliance requirements.

Land Use

1. CBP will notify all land managers at least 5 days in advance of any scheduled maintenance and repair activities on their lands.

Geology and Soil Resources

1. Silt fencing and floating silt curtains should be installed and maintained to prevent movement of soil and sediment and to minimize turbidity increases in water.
2. Implement routine road maintenance practices to avoid making wind rows with the soil once grading activities are complete and use any excess soil on site to raise and shape the road surface.
3. Only apply soil-binding agents during the late summer/early fall months to avoid impacts on federally listed species. Do not apply soil-binding agents in or near (within 100 feet) surface waters (e.g., wetlands, perennial streams, intermittent streams, washes). Only apply soil-binding agents to areas that lack any vegetation.
4. Obtain materials such as gravel, topsoil, or fill from existing developed or previously used sources that are compatible with the project area and are from legally permitted sites. Do not use materials from undisturbed areas adjacent to the project area.

Vegetation

1. Herbicide and pesticide applications must be made under the supervision of a licensed applicator. A log of the chemical used, amount used, and specific location must be maintained.
2. If mechanical methods are used to remove invasive plants, the entire plant should be removed and placed in a disposal area. If herbicides are used, the plants would be left in

place. All chemical applications on federally managed land must be used in coordination with the Federal land manager. Training to identify nonnative invasive plants would be provided for CBP personnel or contractors, as necessary.

3. If the tactical infrastructure maintenance and repair activities would take place on a Federal agency's land, the appropriate agency's herbicide policy, if it exists, must be followed for vegetation control. Contractors applying herbicides must verify that the appropriate agency's policy is being followed. This information should be requested from the Contracting Officer's Representative (COR).
4. New guidance from the USEPA on herbicide application in riparian areas is imminent. Check with COTR on the status of these regulations prior to applying herbicide in such areas.
5. Coordinate with the CBP environmental SME to determine if the maintenance activities occur in a highly sensitive area or an area that poses an unacceptable risk of transmitting diseases and invasive species. If it is determined that maintenance activities occur in such an area, follow the CBP cleaning protocol.
6. A fire prevention and suppression plan will be developed and implemented for all maintenance and repair activities that require welding or otherwise have a risk of starting a wildfire.
7. Identify fill material, sandbags, hay bales, and mulch brought in from outside the project area by its source location. Use sources that are sterile or weed-free.
8. Avoid the removal of mature trees providing shade or bank stabilization within the riparian area of any waterway during maintenance or repair activities.
9. If vegetation must be removed, allow natural regeneration of native plants by cutting vegetation with hand tools, mowing, trimming, or using other removal methods that allow root systems to remain intact.
10. Vegetation targeted for retention would be flagged for avoidance to reduce the likelihood of being treated.
11. Periodic inspections of tactical infrastructure by the CBP SME would be conducted to evaluate and document conditions, including erosion and to ensure that prescriptions are followed and performed in the appropriate community types. As necessary, maintenance will be scheduled to minimize erosion and correct other adverse conditions.

Wildlife

1. If hollow bollards are necessary, cover hollow bollards (i.e., those that will be filled with a reinforcing material such as concrete) to prevent wildlife from entrapment. Deploy covers (and ensure they remain fully functioning) from the time the posts or hollow bollards arrive on the site and are unloaded, until they are filled with reinforcing material.
2. Ensure temporary light poles and other pole-like structures used for maintenance activities have anti-perch devices to discourage roosting by birds.
3. Minimize animal collisions during maintenance and repair activities by not exceeding construction speed limits of 35 miles per hour (mph) on major unpaved roads (i.e., graded

with ditches on both sides) and 25 mph on all other unpaved roads. During periods of decreased visibility (e.g., night, poor weather, curves), do not exceed speeds of 25 mph.

4. Do not permit pets owned or under the care of the contractor or sector personnel inside the project boundaries, adjacent native habitats, or other associated work areas.
5. To prevent entrapment of wildlife species, ensure excavated, steep-walled holes or trenches are either completely covered by plywood or metal caps at the close of each work day or provided with one or more escape ramps (at no greater than 1,000-foot intervals and sloped less than 45 degrees) constructed of earth fill or wooden planks.
6. Each morning before the start of maintenance activities and before such holes or trenches are filled, ensure they are thoroughly inspected for trapped animals. Ensure that any animals discovered are allowed to escape voluntarily (by escape ramps or temporary structures), without harassment, before maintenance activities resume; or are removed from the trench or hole by a qualified person and allowed to escape unimpeded.

Threatened and Endangered Species and Other Protected Species

General BMPs

1. Coordinate with COR or CBP environmental SME to determine which threatened and endangered species could occur in the vicinity of maintenance activities. In areas where there are no threatened and endangered or other species concerns, the personnel performing the maintenance activity are responsible for monitoring the implementation of general maintenance and repair BMPs to avoid impacts on the environment.
2. To protect individuals of listed species within the project area, suspend work in the immediate vicinity of the individual until it moves out of harm's way on its own, or enlist a qualified specialist (individuals or agency personnel with a permit to handle the species) to relocate the animal to a nearby safe location in accordance with accepted species-handling protocols.
3. Develop and implement a training Project to inform TIMR maintenance personnel of the listed species that occur within the Project area, penalties for violation of state or Federal laws, implementation of included conservation actions/BMPS, and reporting requirements.
4. Check visible space underneath all vehicles and heavy equipment for listed species and other wildlife prior to moving vehicles and equipment at the beginning of each workday and after vehicles have sat idle for more than 15 minutes.
5. Coordinate with the CBP environmental SME to determine if the maintenance activities occur in a highly sensitive area or an area that poses an unacceptable risk of transmitting diseases and invasive species. If it is determined that maintenance activities occur in such an area, follow the CBP cleaning protocol.

Migratory Bird BMPs

1. Initial mechanical and chemical vegetation control and subsequent mechanical vegetation control should be timed to avoid the migration, breeding, and nesting timeframe of migratory birds (February 1 through September 1). Herbicide retreatments could occur

throughout the year. When initial mechanical and chemical vegetation control must be implemented during February 1 through September 1, a survey for nesting migratory birds will be conducted immediately prior to the start of activities. If an active nest is found, a buffer zone will be established around the nest and no activities will occur within that zone until nestlings have fledged and abandoned the nest.

2. A survey for migratory birds will also be conducted prior to all other maintenance and repair activities to be implemented during the nesting period in areas where migratory birds might be nesting.
3. If maintenance is scheduled during the migratory bird nesting season, take steps to prevent migratory birds from establishing nests in the potential impact area. These steps could include covering equipment and structures, and use of various excluders (e.g., noise). Birds can be harassed to prevent them from nesting on the site. Once a nest is established, they cannot be harassed until all young have fledged and left the nest site. If nesting birds are found during the supplemental survey, defer intrusive maintenance activities until the birds have left the nest. Confirmation that all young have fledged should be made by qualified personnel.

Species-Specific BMPs

AMPHIBIANS AND REPTILES

Chiricahua Leopard Frog (*Lithobates chiricahuensis*)

1. Prior to any work within critical habitat of this species, CBP will consult with USFWS personnel at the New Mexico Ecological Services Office.
2. Prior to any activities within suitable habitat; including the dispersal range (1, 3, or 5 miles depending on persistence of water in the aquatic system) of the species, protocol level surveys will be conducted. If Chiricahua leopard frogs are detected, CBP will consult with USFWS personnel at the New Mexico Ecological Services Office. If Chiricahua leopard frogs are not detected during protocol level surveys, CBP will proceed without further coordination with USFWS.

New Mexico Ridge-nosed Rattlesnake (*Crotalus willardi obscurus*)

1. Maintenance vehicles would not exceed a speed of 15 to 20 mph during periods of elevated roaming and foraging activities from July through August within New Mexico ridge-nosed rattlesnake-occupied habitat, designated critical habitat, and suitable habitat (pine-oak woodlands at high elevations of 5,500 to 9,000 feet within the Animas and Peloncillos mountains).

BIRDS

Mexican Spotted Owl (*Strix occidentalis lucida*), Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

1. No maintenance and repair activities will be conducted within areas classified as protected activity centers of Mexican spotted owls during the nesting season. CBP will coordinate with the USFWS to update known locations of Mexican spotted owl on an annual basis.

2. Vegetation control in suitable habitat of threatened or endangered bird species (see **Table E-1** for a description of suitable habitat and nesting season for each species) will be limited to the minimum necessary to maintain drivable access roads and to maintain the functionality of other tactical infrastructure. This limited vegetation control will be conducted outside of the nesting season (see **Table E-1**). This restriction does not apply to areas where protocol surveys have been conducted and it has been determined that the area is not occupied and does not contain PCE.
3. For all other maintenance activities to be conducted within suitable habitat of a threatened or endangered bird species during the nesting season (see **Table E-1**), the following avoidance measures will apply. A qualified biologist will conduct a survey for threatened and endangered birds prior to initiating maintenance activities. If a threatened or endangered bird is present, a qualified biologist will survey for nests approximately once per week within 1,300 feet (Mexican spotted owl) or 500 feet (all other species) of the maintenance area for the duration of the activity. If an active nest is found, no maintenance will be conducted within 1,300 feet (Mexican spotted owl) or 300 feet (all other species) of the nest until the young have fledged.

Northern Aplomado Falcon (*Falco femoralis septentrionalis*)

1. CBP will coordinate with the USFWS to update known locations of northern aplomado falcon occupied habitat and nest sites on an annual basis.
2. Surveys for territorial falcons and their nests will be conducted prior to maintenance work to be implemented during the nesting season of northern aplomado falcons (date to date) within areas known or suspected to be occupied by this species. Surveys be conducted by qualified individuals in accordance with protocols that are recognized by the Service and/or the New Mexico Department of Game and Fish.
3. No maintenance activities will be conducted within two miles of active nests of northern aplomado falcons.
4. Northern aplomado falcons use nests constructed by other birds, mainly corvids such as ravens. Therefore, large nests constructed of sticks will be removed from towers and other infrastructure located within potential habitat for this species only when it is essential to do so to maintain the functionality of the infrastructure. Similarly, removal of agave with such nests will be avoided unless essential to maintaining drivable access roads and to maintain the functionality of other tactical infrastructure.
5. 2 miles to occupied aplomado falcon habitat, should be conducted during daylight hours to avoid noise and lighting issues. If construction or maintenance work activities must continue at night, all lights should be shielded to direct light only onto the work site, the minimum wattage needed should be used, and the number of lights should be minimized. Noise levels for day or night construction and maintenance should be minimized. All generators should an attached muffler or other noise-abatement equipment in accordance with industry standards.

Table E-1. Threatened and Endangered Bird Species Suitable Habitat and Nesting Season

Common Name	Suitable Habitat	Nesting Season
Mexican spotted owl	Closed-canopy forests [riparian, mixed conifer, pine-oak, and pinyon juniper woodland] and steep, narrow, entrenched, rocky canyons and cliffs within Mexican spotted owl protected activity centers	Mar 1–Jun 30
Northern aplomado falcon	Desert scrub, desert grasslands, and woodlands and coastal prairies of southern Texas	January 1 – June 30
Southwestern willow flycatcher	Dense riparian habitat along streams, rivers, lakesides, and other wetland	Mar 15–Sep 15

MAMMALS

Lesser Long-nosed Bat (*Leptonycteris yerbabuenae*) and Mexican Long-Nosed Bat (*Leptonycteris nivalis*)

1. CBP will coordinate with the USFWS to update known locations of Lesser long-nosed bat roost locations on an annual basis.
2. Removal of agave will be limited to the minimum necessary to maintain drivable access roads and to maintain the functionality of other tactical infrastructure. Prior to conducting any maintenance or repair activity outside of the existing disturbed footprint of tactical infrastructure within the range of this species, a qualified biologist will conduct a survey to identify and flag all agave to be avoided.
3. No maintenance and repair activities will be conducted between July through September within 0.5 miles of any important lesser long-nosed or Mexican long-nosed bat roost identified and agreed upon by the USFWS and CBP.
4. For maintenance and repair activities that will take place greater than 0.5 miles and less than 5 miles of important lesser long-nosed bat roost, limit activities to daylight hours only from July through mid-September to avoid effects to bats in bat roosts. If night lighting is unavoidable: (1) minimize the number of lights used; (2) place lights on poles pointed down toward the ground, with shields on lights to prevent light from going up into sky, or out laterally into landscape; and (3) selectively place lights so they are directed away from native vegetation.

Water Resources

1. The environmental SME must be consulted to validate the need for site-specific storm water pollution prevention plans (SWPPPs), spill protection plans, and regulatory approvals. Site-specific SWPPPs and spill protection plans would be prepared and regulatory approval sought, if necessary, in cases of highly sensitive work sites and large scopes of work that pose a significant risk. Where a site-specific SWPPP is not necessary, the personnel performing the maintenance would comply with a generic SWPPP and spill protection plan that covers most routine maintenance and repair

activities. Prior to arrival on the work site, key personnel would understand correct implementation of these BMPs and their responsibility to address deficiencies.

2. The environmental SME will provide locations that have the potential for wetlands or other waters of the United States. If no current existing U.S. Army Corps of Engineers (USACE) jurisdictional determination is available, a delineation will be conducted and jurisdictional determination will be obtained from the USACE. Prior to conducting any activities that would require filling of wetlands and other waters of the United States, all Federal and state Clean Water Act (CWA) Section 404 individual or applicable nationwide permits and 401 and other applicable permits will be obtained.
3. Prepare and implement an SWPPP prior to applicable maintenance activities (greater than 1 acre of exposed dirt or as required by property manager). Implement BMPs described in the SWPPP to reduce erosion. Consider areas with highly erodible soils when planning the maintenance activities and incorporate measures such as waddles, aggregate materials, and wetting compounds in the erosion-control BMPs.
4. Coordinate with the environmental SME to determine which maintenance activities occur within the 100-year floodplain. Maintenance activities within the 100-year floodplain would be conducted in a manner consistent with Executive Order 11988 and other applicable regulations.
5. All maintenance contractors and personnel would review the CBP-approved spill protection plan and implement it during maintenance and repair activities.
6. Contact the environmental SME to coordinate with waterway permitting agencies when performing work below the ordinary high water mark.
7. Wastewater from pressure washing must be collected. A ground pit or sump can be used to collect the wastewater. Wastewater from pressure washing must not be discharged into any surface water.
8. If soaps or detergents are used, the wastewater and solids must be pumped/cleaned out and disposed of in an approved facility. If no soaps or detergents are used, the wastewater must first be filtered or screened to remove solids before being allowed to flow off site. Detergents and cleaning solutions must not be oversprayed into or discharged into surface waters.
9. If the surrounding area has dense, herbaceous cover (primarily grasses) and there are no listed plant species or habitat for such, the wastewater (with or without detergent) could be discharged directly to the grassy area without collection or filtering as long as it is well dispersed and all the wastewater can percolate into the grass and soil. If wastewater runs off the grassy area, it must be filtered.
10. Prevent runoff from entering drainages or storm drains by placing fabric filters, sand bag enclosures, or other capture devices around the work area. Empty or clean out the capture device at the end of each day and properly dispose of the wastes.
11. Avoid contaminating natural aquatic and wetland systems with runoff by limiting all equipment maintenance, staging, laydown, and dispensing hazardous liquids (e.g., fuel and oil) to designated upland areas.

12. Avoid contamination of ground and surface waters by storing concrete wash water, and any water that has been contaminated (e.g., with construction materials, oils, equipment residue) in closed containers onsite until removed for disposal. In upland areas, storage tanks must be on-ground containers.
13. Avoid contamination of ground and surface waters by ensuring that water tankers that convey untreated surface water do not discard unused water where it has the potential to enter any aquatic or wetland habitat.
14. Cease work during heavy rains and do not resume work until conditions are suitable for the movement of equipment and materials.
15. Uncured concrete should not be allowed to enter the water.
16. Work should be done from the top of the bank or a floating barge, when practicable. Heavy equipment use within the active flowing channel should be avoided.
17. Floating dock components containing foam must be encapsulated to prevent the introduction of foam particles into the water.
18. For all in-water work in streams, sediment barriers would be used to avoid downstream effects of turbidity and sedimentation.
19. Do not pressure wash more than the area to be painted or treated (e.g., for graffiti removal) each day.
20. If the purpose of cleaning is for graffiti removal, spot clean, steam clean or scrape dirty areas rather than pressure washing entire sections of fence or levee wall.
21. Operate pressure-washing equipment according to manufacturer's recommendations.
22. Except for emergency repairs required to protect human life, limit work within drainages to dry periods to reduce effects on downstream water quality.
23. Rip-rap should be placed on a layer of geotextile fabric to prevent underlying sediment from being washed out through the openings of the rip-rap.
24. Rip-rap should be keyed into the wash/streambed to ensure its stability and effectiveness.

Air Quality

1. Good modern practices for earth moving/excavating activities would be implemented. These include using approved dust suppressants or adhesive soil stabilizers, paving, covering, landscaping, continuous wetting, or detouring maintenance and repair areas, barring access to maintenance and repair areas, or other acceptable means of reducing significant amounts of airborne dust. All Federal, state, county, and local ordinance would be adhered to during maintenance and repair of tactical infrastructure.

Noise

1. Follow all Occupational Safety and Health Administration requirements with respect to construction noise impacts. Ensure all motorized equipment possess properly working mufflers and are kept properly tuned to reduce backfires. Ensure all motorized generators

will be in baffle boxes (a sound-resistant box that is placed over or around a generator), have an attached muffler, or use other noise-abatement methods in accordance with industry standards. For activities involving heavy equipment, seasonal restrictions might be required to avoid impacts on threatened or endangered species in areas where these species or their potential habitat occur. See species-specific BMPs.

Cultural Resources

1. If Native American human remains are discovered during maintenance and repair of tactical infrastructure CBP would consult with culturally affiliated tribes and the New Mexico Office of Historic Preservation regarding their management and disposition in compliance with Native American Graves Protection and Repatriation Act.
2. Obtain all pertinent training materials for cultural resources for the areas where maintenance and repair activities would occur. Prior to arrival on the work site, ensure key personnel are aware of the cultural resources potentially occurring in the project area and understand the proper BMPs to implement should cultural resources be encountered in the project area.

Roadways and Traffic

1. Access maintenance sites using designated, existing roads. Do not allow any off-road vehicular travel outside those areas. Ensure all parking is in designated disturbed areas. For longer-term projects, mark designated travel corridors with easily observed removable or biodegradable markers.
2. All contractors and maintenance personnel would operate within the designed/approved construction corridor.

Hazardous Materials and Waste Management

1. Where hazardous and regulated materials are handled, workers should collect and store all fuels, waste oils, and solvents in clearly labeled closed tanks and 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.
2. All paints and cleaning materials should be approved by the appropriate land manager.
3. Use a ground cloth or an oversized tub for paint mixing and tool cleaning. Properly dispose of the wastes.
4. Enclose spray-painting operations with tarps or other means to minimize wind drift and to contain overspray.
5. Clean paintbrushes and tools covered with water-based paints in sinks plumbed to a sanitary sewer or in portable containers that can be dumped into sanitary sewer drains. Never clean such tools in a natural drainage or over a storm drain.
6. Brushes and tools covered with non-water-based paints, finishes, thinners, solvents, or other materials must be cleaned over a tub or container and the cleaning wastes disposed of or recycled at an approved facility. Never clean such tools in a natural drainage or over a storm drain.

7. If maintenance activities would continue at night, direct shielded light only onto the area required for worker safety and productivity. Lights would not exceed 1.5-foot candles within the lit area.
8. Implement proper and routine maintenance of all vehicles and other maintenance equipment such that emissions are within the design standards of all maintenance equipment.
9. Use water-based paints instead of oil-based paints. Look for the words “Latex” or “Cleanup with water” on the label. Do not rinse into natural drainages (e.g., creeks, irrigation canals, wetlands) or storm drains.
10. Do not use paints more than 15 years old. They could contain toxic levels of lead.
11. Use ground or drop cloths underneath painting, scraping, sandblasting, and graffiti removal work. Properly dispose of the waste and scraps collected on the drop cloth.
12. Minimize site disturbance and avoid attracting predators by promptly removing waste materials, wrappers, and debris from the site. Any waste that must remain on site more than 12 hours should be properly stored in closed containers until disposal.

Socioeconomic Resources, Environmental Justice, and Protection of Children

No BMPs were identified for socioeconomic resources, environmental justice, or the protection of children.

APPENDIX F

Soils Mapped within the
Tactical Infrastructure
Maintenance and Repair
Region of Analysis



APPENDIX F

Soils Mapped within the Tactical Infrastructure Maintenance and Repair Region of Analysis

Table F-1. Soil Properties of Soils Mapped within the Region of Analysis

Map Unit Name	Counties	Erosion Potential	Farmland Classification	Permeability
Akela-Rock Outcrop-Aftaden	Doña Ana	Moderate	None	Moderate to moderately rapid
Rock Outcrop-Motoqua	Doña Ana	Moderate	None	Slow
Rock Outcrop-Torriothers	Doña Ana	Moderate	None	Slow
Rough Broken Land-Rockland-Lehmans	Luna, Hidalgo	Moderate	None	Slow
Bluepoint-Onite	Luna	Moderate	None	Moderately rapid to rapid
Rock Land	Doña Ana	Moderate	None	Slow
Tres Hermanos-Upton-Nickel	Luna, Hidalgo	Slight to moderate	None	Slow to moderately slow
Eba	Luna	Moderate	None	Slow
Harrisburg-Simona-Wink	Doña Ana	Low to high	None	Moderately rapid
Nickel-Upton	Doña Ana	Slight	None	Moderately slow to moderate
Aladdin	Doña Ana	Moderate	None	Moderately rapid
Bluepoint	Doña Ana	Slight	None	Rapid
Pintura-Berino-Simona	Luna	Moderate to severe	None	Rapid
Eba-Cloverdale-Eicks	Hidalgo	Slight to moderate	None	Very slow to slow
Mohave-Stellar-Forrest	Luna, Hidalgo	Slight to moderate	None	Slow to moderately slow
Pintura-Wink	Doña Ana	High	None	Moderately rapid to rapid
Pajarito-Onite-Pintura	Doña Ana	High	None	Moderately rapid to rapid
Hondale-Mimbres-Bluepoint	Luna	Slight to severe	None	Slow to moderately slow
Mimbres	Luna	Slight	Farmland soil of Statewide Importance	Moderately slow
Mimbres-Verhalen	Luna	Slight	None	Slow

Map Unit Name	Counties	Erosion Potential	Farmland Classification	Permeability
Graham	Hidalgo	Severe	None	Slow
Tencee-Nickel	Doña Ana	Slight to severe	None	Moderate
Mimbres-Stellar	Doña Ana	Slight	None	Moderately slow
Yesum	Doña Ana	Slight to severe	None	Moderate
Yesum-Hollom	Doña Ana	Slight to severe	None	Moderate
Glendale-Harkey	Doña Ana	Moderate to high	None	Moderately slow to moderate
Verhalen-Glendale-Mimbres	Hidalgo	Slight	None	Slow to moderately slow
Hondale-Playas	Hidalgo	Slight to moderate	None	Very slow
Cacique-Cruces	Doña Ana	Slight to moderate	None	Moderate
Berino-Doña Ana	Doña Ana	Moderate	None	Moderate
Caliza-Bluepoint-Yturbide	Doña Ana	High	None	Moderately rapid to rapid
Mohave-Stellar	Luna	Slight to moderate	None	Slow to moderately slow
Sonita-Yturbide-Hap	Hidalgo	Moderate to severe	None	Moderate to moderately rapid
Duneland-Doña Ana	Doña Ana	High	None	Moderate
Marcial-Ubar	Doña Ana	Moderate	None	Slow
Mimbres-Glendale	Doña Ana	Moderate	None	Moderately slow
Sonoita-Pinaleno-Aladdin	Doña Ana	Moderate to severe	None	Moderate

Sources: USACE 1994b, CBP 2007b

APPENDIX G

Determination of Effects for State
Listed Sensitive, Threatened, and
Endangered Species and BLM
Listed Sensitive Species
That Occur Within
Doña Ana, Grant, Hidalgo, and
Luna Counties, New Mexico



APPENDIX G

Determination of Effects for State Listed Sensitive, Threatened, and Endangered Species and BLM Listed Sensitive Species That Occur Within Doña Ana, Grant, Hidalgo, and Luna Counties, New Mexico.

Table G-1. Determination of Effects for State Listed Sensitive (S), Threatened (T), and Endangered (E) Species and BLM Listed Sensitive (S) Species

Species	State Status	BLM Status	Habitat	Range	Determination
AMPHIBIANS					
Arizona toad <i>Anaxyrus microscaphus</i>	S	S	Gila National Forest and Rancho del Rio.	Grant and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts
Chiricahua leopard frog <i>Lithobates chiricahuensis</i>	S	-	Gila, San Francisco, Tularosa, and Blue Rivers; the Gila National Forest, Patterson Lake and the Guadalupe and Animas mountains.	Grant, Hidalgo, and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts
Great Plains narrowmouth toad <i>Gastrophryne olivacea</i>	E	-	South-central Luna County in the vicinity of Hermanas along Highway 9.	Luna County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts
Lowland leopard frog <i>Lithobates yavapaiensis</i>	E	S	Along rocky stream courses in the Coronado and Gila National Forests.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts
Sonoran Desert toad <i>Incilius alvarius</i>	T	-	Along the Arizona border (northward to the vicinity of Rodeo) and eastward locally to near Animas and southeast of the Animas Mountains in lower Deer Creek.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
BIRDS					
Abert's towhee <i>Melospiza aberti</i>	T	-	Lower Gila Valley, San Simon Cienega in Hidalgo County, and Mogollon Creek in Grant County.	Hidalgo and Grant counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
BIRDS (continued)					
Aplomado falcon <i>Falco femoralis</i>	E	-	Grasslands interspersed with mesquite, cactus, and yucca.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Arctic peregrine falcon <i>Falco peregrinus tundrius</i>	T	-	Potential migrant in riparian woodlands and mountainous areas.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Arizona grasshopper sparrow <i>Ammodramus savannarum ammolegus</i>	E	S	Well-developed grasslands in the southern Animas and western Playas valleys.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Bald eagle <i>Haliaeetus leucocephalus</i>	T	S	Forested areas in close proximity to large rivers, lakes, and reservoirs.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Baird's sparrow <i>Ammodramus bairdii</i>	T	S	Desert grasslands.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Bell's vireo <i>Vireo bellii</i>	T	S	Dense shrubland or woodland along lowland stream courses characterized by willow, mesquite, and seepwillow.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Bendire's thrasher <i>Toxostoma bendirei</i>	-	S	Typically inhabits sparse desert shrubland & open woodland with scattered shrubs.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Black swift <i>Cypseloides niger</i>	S	-	Jemez Falls	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
BIRDS (continued)					
Boreal owl <i>Aegolius funereus</i>	T	-	High elevation, mature and old-growth spruce-fir forests.	Doña Ana	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Broad-billed hummingbird <i>Cynanthus latirostris</i>	T	-	Hackberry thickets in Guadalupe Canyon in Hidalgo County. Vagrants occur elsewhere in residential/developed areas near the Rio Grande and Pecos Basins.	Doña Ana, Hidalgo, and Grant counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Brown pelican <i>Pelecanus occidentalis</i>	E	-	Large lakes or along major rivers, including the San Juan, Gila, Rio Grande, and Pecos drainages.	Doña Ana, Grant, and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Botteri's sparrow <i>Peucaea botterii</i>	S	-	Gray Ranch in stands of well developed giant sacaton.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Buff-collared nightjar <i>Antrostomus ridgwayi</i>	E	-	Guadalupe Canyon in Hidalgo County and Doña Ana Mountains in Doña Ana County.	Doña Ana, Grant, and Hidalgo counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Chestnut-collared longspur <i>Calcarius ornatus</i>	-	S	A native prairie specialist. Winters in grasslands, deserts & plateaus dominated by low grasses and forbs, where most vegetation is <0.5 m high. Dominant plants include grama grasses, dropseed, bluestems & needlegrass. In Chihuahuan desert, scattered soaptree yucca & low shrubs.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Common black-hawk <i>Buteogallus anthracinus</i>	T	-	Mature riparian forest stands in close proximity to perennial streams	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
BIRDS (continued)					
Common ground-dove <i>Columbina passerina</i>	E	-	Desert shrublands (dominated by mesquite, yucca, and cactus) and in riparian and wooded lowland areas.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Costa's hummingbird <i>Calypte costae</i>	T	-	Guadalupe Canyon in Hidalgo County.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Elegant trogon <i>Trogon elegans</i>	E	-	Riparian habitats in canyons in the Animas and Peloncillo mountains.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Gila woodpecker	T	-	Gila Valley (northeast to Mogollon Creek in Grant County) and in Guadalupe Canyon (Hidalgo County).	Hidalgo and Grant counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Gould's wild turkey <i>Meleagris gallopavo mexicana</i>	T	-	Peloncillo, Animas, and San Luis mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Gray vireo <i>Vireo vicinior</i>	T	-	Desert scrub/rocky slopes and juniper savannahs near the Rio Grande and Pecos Basins	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Least tern <i>Sternula antillarum</i>	E	-	Flat, sandy areas relatively devoid of vegetation.	Doña Ana,	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Loggerhead shrike <i>Lanius ludovicianus</i>	S	-	Desert scrub/rocky slopes and juniper savannahs in montane regions.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
BIRDS (continued)					
Lucifer hummingbird <i>Calothorax lucifer</i>	T	-	Peloncillo Mountains	Grant, Hidalgo, and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Mexican spotted owl <i>Strix occidentalis lucida</i>	S	-	Mature, multi-layered, forested stands of montane regions.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Mountain plover <i>Charadrius montanus</i>	S	-	Dry, open shortgrass prairie habitats. Also associated with heavily grazed areas.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Neotropic cormorant <i>Phalacrocorax brasilianus</i>	T	-	Large bodies of water (e.g. reservoirs) with stands of trees and/or shrubs in or near the water.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Northern beardless tyrannulet <i>Camptostoma imberbe</i>	E	-	Riparian and wooded lowland areas, including cienegas at the Gray Ranch, Hidalgo County.	Hidalgo and Grant counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Northern goshawk <i>Accipiter gentilis</i>	S	-	Mature, closed canopied forests of mountains or high mesas.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Painted bunting <i>Passerina ciris</i>	-	S	Primarily in riparian oases & surrounding desert shrub habitat; often nest in mesquite shrublands.	Doña Ana and Grant counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Peregrine falcon <i>Falco peregrinus anatum</i>	T	-	Large high cliffs where sufficient prey and water are available nearby.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
BIRDS (continued)					
Piñon jay <i>Gymnorhinus cyanocephalus</i>	-	S	Pinyon-juniper woodlands.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	E	-	Riparian habitats consisting of willow and or salt cedar.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Sprague's pipit <i>Anthus spragueii</i>	-	S	Prefers dry, open grasslands with native grass species. Wintering areas may include taller grass and some shrub cover.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Thick-billed kingbird <i>Tyrannus crassirostris</i>	E	-	Guadalupe Canyon, Antelope Wells, and the foothills of the Animas Mountains.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Varied bunting <i>Passerina versicolor</i>	T	-	Dense stands of mesquite (<i>Prosopis</i> spp.) and associated growth in canyon bottoms.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Violet-crowned hummingbird <i>Amazilia violiceps</i>	T	-	Low-elevation broadleaf riparian woodlands in Guadalupe Canyon in Hidalgo County. Vagrants may occur elsewhere in southwest New Mexico.	Doña Ana, Hidalgo, and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Western burrowing owl <i>Athene cunicularia hypugaea</i>	-	S	Dry, open, shortgrass, treeless plains, often associated with burrowing mammals. Also golf courses, cemeteries, road allowances within cities, airports, vacant lots in residential areas, campuses, and fairgrounds.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
BIRDS (continued)					
Whiskered screech owl <i>Megascops trichopsis</i>	-	S	Pine-oak woodlands in the Peloncillo and Animas mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
White-eared hummingbird <i>Hylocharis leucotis</i>	T	-	Bear and Indian canyons in the Animas Mountains.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	S	S	Mature riparian habitats.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Yellow-eyed junco <i>Junco phaeonotus</i>	T	-	Animas, Peloncillo, and Big Hatchett mountains.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
FISH					
Chihuahua chub <i>Gila nigrescens</i>	E	-	Reaches of the Mimbres River in deep pools bordered by undercut banks or containing downed trees.	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Desert sucker <i>Catostomus clarkii</i>	S	-	Gila Basin.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Gila chub <i>Gila intermedia</i>	E	-	Formerly occurred in the Gila basin in the Tularosa River, Duck Creek, and St. Simon Cienega.	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Gila topminnow <i>Poeciliopsis occidentalis occidentalis</i>	T	-	Gila River Basin.	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
FISH (continued)					
Gila trout <i>Oncorhynchus gilae</i>	T	-	Gila River Basin	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Headwater chubb <i>Gila nigra</i>	E	-	Gila River Basin.	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Loach minnow <i>Rhinichthys cobitis</i>	E	-	Gila River from the East Fork to the Middle Box.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Roundtail chub (lower Colorado River populations) <i>Gila robusta</i>	E	-	San Juan and Gila drainages	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Sonora sucker <i>Catostomus insignis</i>	S	-	Gila Basin.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Spikedace <i>Meda fulgida</i>	E	-	Gila River system in Grant County: the lowermost West and Middle forks, the upper East Fork, the reach between Mogollon Creek and the head of the Middle Box.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
MAMMALS					
Allen's big-eared bat <i>Idio nycteris phyllotis</i>	S	S	Ponderosa pine and riparian habitats in the Gila National Forest	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Arizona Myotis <i>Myotis occultus</i>	S	--	In a variety of habitats, ranging from desert scrub to spruce-fir, but typically in close proximity to water.	Doña Ana and Grant counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
MAMMALS (continued)					
Arizona shrew <i>Sorex arizonae</i>	E	-	Mesic sites in forested zones in the Animas Mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Big free-tailed bat <i>Nyctinomops macrotis</i>	S	-	Roosts in cracks and crevices in cliff faces and canyon walls.	Doña Ana and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Black-tailed prairie dog <i>Cynomys ludovicianus ludovicianus</i>	S	S	Plains-Mesa grasslands in southern New Mexico.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Cave Myotis <i>Myotis velifer</i>	S	-	Roosts in caves and forages in riparian habitats.	Hidalgo and Grant counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Common hog-nosed skunk <i>Conepatus leuconotus</i>	S	-	Creosote desert to pine-oak forest, but most common in riparian habitats.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Desert pocket gopher <i>Geomys arenarius arenarius</i>	S	-	Plains-mesa grasslands and sand scrub habitat.	Doña Ana and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Fringed Myotis <i>Myotis thysanodes</i>	S	-	Ranges from desert scrub to mountain pine communities. Roosts in caves and mines.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Greater western mastiff bat <i>Eumops perotis</i>	S	-	Roosts in cliff faces in the Peloncillo Mountains	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
MAMMALS (continued)					
Hooded skunk <i>Mephitis macroura</i>	S	-	Gila National Forest	Grant, Hidalgo, and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Lesser long-nosed bat <i>Leptonycteris yerbabuenae</i>	T	-	Peloncillo and Animas mountains	Hidalgo and Grant counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Long-eared Myotis <i>Myotis evotis</i>	S	-	Coniferous forests at moderate elevations in the Gila National Forest.	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Long-legged Myotis <i>Myotis volans</i>	S	-	Open woods and mountainous areas. Roosts in buildings, crevices, and hollow trees; may use caves as night roosts.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Mearns' pocket gopher <i>Thomomys bottae mearnsi</i>	S	-	Gray Ranch in Hidalgo County.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Mexican gray wolf <i>Canis lupus baileyi</i>	E	-	Gila National Forest	Doña Ana, Grant, Hidalgo, and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Mexican long-nosed bat <i>Leptonycteris nivalis</i>	E	-	Peloncillo Mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Mexican long-tongued bat <i>Choeronycteris mexicana</i>	S	S	Roosts in shallow caves in the Peloncillo Mountains. Forages in pine-oak woodlands and canyon bottoms.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
MAMMALS (continued)					
Pale Townsend's big-eared bat <i>Corynorhinus townsendii pallescens</i>	S	S	Ranges from desert scrub to pinyon-juniper woodlands. Roosts in caves or mines.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Pecos River muskrat <i>Ondatra zibethicus ripensis</i>	S	-	Creeks, rivers, lakes, drainage ditches, and canals; prefer shallow, fresh water with clumps of marshy vegetation, such as cattails, bulrushes, and sedges.	Doña Ana	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Red fox <i>Vulpes vulpes</i>	S	-	A variety of habitats from open woodlands, pasturelands, riparian, and agricultural lands	Doña Ana,	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Ringtail <i>Bassariscus astutus</i>	S	-	Extensive rocky areas and cliffs in grassland and woodland.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Southern pocket gopher <i>Thomomys umbrinus emotus</i>	T	-	Open slopes and forested ridges of the Animas Mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Spotted bat <i>Euderma maculatum</i>	S	S	Ranges from desert scrub to pine forests at high elevations. Roost sites typically located in cracks and crevices of cliff faces.	Doña Ana and Grant counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Western red bat <i>Lasiurus blossevillii</i>	S	S	Roosts in riparian areas where mature cottonwood and sycamore are present	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Western small-footed Myotis <i>Myotis ciliolabrum</i>	S	-	Ranges from desert scrub to wooded areas. Roosts beneath rocks, underneath exfoliating bark, and in buildings.	Doña Ana, Hidalgo, and Grant counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
MAMMALS (continued)					
Western spotted skunk <i>Spilogale gracilis</i>	S	-	Gila National Forest.	Doña Ana, Hidalgo, Grant, and Luna counties.	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Western yellow bat <i>Lasiurus xanthinus</i>	S	S	Riparian areas. Roosts in deciduous trees along riparian courses.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
White-nosed coati <i>Nasua narica</i>	T	S	Woodlands, riparian corridors and canyons.	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
White-sided jack rabbit <i>Lepus callotis</i>	T	S	Animas and South Playas valleys in Hidalgo County.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Yellow-nosed cotton rat <i>Sigmodon ochrognathus</i>	S	-	Rocky slopes with scattered shrubs and bunch grasses. Nests located at base of shrubs.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Yuma myotis <i>Myotis yumanensis</i>	S	-	Lowland habitats near open water.	Doña Ana, Hidalgo, and Grant counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
INVERTEBRATES					
Anthony blister beetle <i>Lytta mirifica</i>	-	S	Chihuahuan Desert.	Doña Ana County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Cooke's Peak woodlandsnail <i>Ashmunella macromphala</i>	T	-	Cooke's Peak in Cooke's Range.	Luna County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
INVERTEBRATES (continued)					
Doña Ana talussnail <i>Sonorella todsen</i>	T	-	Endemic to the Doña Ana Mountains	Doña Ana County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Gila springsnail <i>Pyrgulopsis thermalis</i>	T	-	Hot springs along the Gila River in Grant County	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Hacheta Grande woodlandsnail <i>Ashmunella hebardi</i>	T	-	Big Hatchet Mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Moore's fairy shrimp <i>Streptocephalus moorei</i>	S	S	Sparsely vegetated desert playas.	Doña Ana and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
New Mexico hot springsnail <i>Pyrgulopsis thermalis</i>	T	-	Hot springs along the Gila River in Grant County.	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Shortneck snaggletooth snail <i>Gastrocopta dalliana</i>	T	-	Indian Creek canyon on the northern slope of the Animas Mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Socorro Mountainsnail <i>Oreohelix neomexicana</i>	S	-	Mountain ranges in Grant County	Grant County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
REPTILES					
Bleached earless lizard <i>Holbrookia maculata ruthveni</i>	S	-	Sparsely vegetated sand dunes.	Doña Ana County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
REPTILES (continued)					
Gray-checked whiptail (dixoni pop.) <i>Aspidoscelis tessellata</i>	E	S	Desert grasslands and sandy or gravelly creosotebush flats in the Animas and Peloncillo mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Green rat snake <i>Senticolis triaspis</i>	T	-	Associated with rocky canyon bottoms near streams in the Animas and Peloncillo mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Little white whiptail <i>Aspidoscelis inornata gypsi</i>	S	-	Sparsely vegetated sand dunes.	Doña Ana County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Mexican gartersnake <i>Thamnophis eques</i>	E	S	Lower Gila Basin, with records along Duck and Mule creeks in Grant County and near Virden in Hidalgo County.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Mountain skink <i>Plestiodon callicephalus</i>	T	-	Peloncillo Mountains in Clanton and Guadalupe canyons.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Narrow-headed gartersnake <i>Thamnophis rufipunctatus</i>	T	S	On and below the Mogollon Plateau, primarily in the Pacific drainage in Grant and Hidalgo counties.	Grant and Hidalgo counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
New Mexico ridgenose rattlesnake <i>Crotalus willardi obscurus</i>	E	-	Animas Valley and the Peloncillo Mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Reticulate Gila monster <i>Heloderma suspectum suspectum</i>	E	S	Gila Valley (north and east to the vicinity of Redrock), the area from the Arizona border eastward to the foothills of the Peloncillo Mountains.	Doña Ana, Hidalgo, Grant, and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
REPTILES (continued)					
Slevin's bunchgrass lizard <i>Sceloporus slevini</i>	T	-	Extreme southwest Hidalgo County in the grasslands and adjacent foothills in the southern end of the Animas Valley.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Southwestern fence lizard <i>Sceloporus cowlesi</i>	S	-	Dune fields	Doña Ana County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Yaqui black-headed snake <i>Tantilla yaquia</i>	S	-	Guadalupe and Skeleton canyons in the Peloncillo Mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
PLANTS					
Alamo beardtongue <i>Penstemon alamosensis</i>	-	S	Sheltered rocky areas, canyon sides and bottoms, on limestone.	Doña Ana County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Chihuahua scurf pea <i>Pediomelum pentaphyllum</i>	-	S	Hachita Valley in desert grassland or desert scrub among creosote bush or mesquite in sandy or gravelly loam soils.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Maguire's milkvetch <i>Astragalus cobrensis</i> var. <i>maguirei</i>	-	S	Dry creek beds, banks, canyon sides, generally dry, open slopes with oaks, juniper, and pine, in the Peloncillo Mountains.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Mimbres figwort <i>Scrophularia macrantha</i>	-	S	Steep, rocky, usually north-facing igneous cliffs and talus slopes, occasionally in canyon bottoms; piñon-juniper woodland and lower montane coniferous forest.	Grant and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Night-blooming cereus <i>Peniocereus greggii</i> var. <i>greggii</i>	-	S	Mostly in sandy to silty gravelly soils in gently broken to level terrain in desert grassland or Chihuahuan desert scrub.	Doña Ana, Hidalgo, Grant, and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

Species	State Status	BLM Status	Habitat	Range	Determination
PLANTS (continued)					
Nodding cliff daisy <i>Perityle cernua</i>	-	S	Limestone or igneous cliffs in the Organ Mountains in Doña Ana County.	Doña Ana County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Parish's alkali grass <i>Puccinellia parishii</i>	-	S	Alkaline springs, seeps, and seasonally wet areas that occur at the heads of drainages or on gentle slopes.	Hidalgo County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Sand pricklypear <i>Opuntia arenaria</i>	-	S	Sandy areas, particularly semi-stabilized sand dunes among open Chihuahuan desert scrub, often with honey mesquite and a sparse cover of grasses.	Doña Ana and Luna counties	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Texas thelypody <i>Thelypodium texanum</i>	-	S	Barren hillsides and creek beds in Doña Ana County.	Doña Ana County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.
Villard's pincushion cactus <i>Escobaria villardii</i>	-	S	Loamy soils of desert grassland with Chihuahuan desert scrub on broad limestone benches in mountainous terrain.	Doña Ana County	Long term negligible direct and indirect adverse impacts. Short term minor to no direct and indirect adverse impacts.

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APPENDIX H

TIMR Right-of-Way Las Cruces BLM District Road Maintenance Stipulations



APPENDIX H

TIMR Right-of-Way Las Cruces BLM District Road Maintenance Stipulations

MAINTENANCE PLANS

- 1) CBP would operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with these stipulations (and plan of development if applicable) and the terms and conditions of the right-of-way grant. Any relocation, additional construction, or use that is not in accord with the approved stipulations, would not be initiated without the prior written approval of the authorized officer. A copy of the complete right-of-way grant, including all stipulations, would be made available on the right-of-way area during maintenance, operation, and termination to the authorized officer. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
- 2) CBP would submit a plan or plans of development that describe in detail the operation, maintenance, and termination of the right-of-way and its associated improvements and/or facilities. The degree and scope of these plans would vary depending upon (1) the complexity of the right-of-way or its associated improvements and/or facilities, (2) the anticipated conflicts that require mitigation, and (3) additional technical information required by the authorized officer. The plans would be reviewed, and if appropriate, modified and approved by the authorized officer. An approved plan of development would be made a part of the right-of-way grant.
- 3) CBP would contact the authorized officer at least 5 days prior to the anticipated start of any surface disturbing activities within the existing road footprint. As necessary, the authorized officer may require and schedule a pre-maintenance conference with CBP prior to CBP's commencing surface disturbing activities on the existing road footprint. CBP and/or his representative, contractors, and agents will attend the pre-maintenance conference to review the stipulations of the grant including the plans(s) of development.
- 4) CBP would designate a representative(s) who would have the authority to act upon and to implement instructions from the authorized officer. CBP's representative would be available for communication with the authorized officer within a reasonable time when maintenance or other surface disturbing activities are underway.
- 5) CBP would contact the authorized officer at least 30 days prior to work that exceeds typical maintenance work - both within the existing footprint or outside of the existing footprint within the ROW or outside of the ROW. The installation of culverts, bringing in fill or gravel beyond simple pot hole repair, increasing or lowering the height of the road, installing lateral water drainages, and staging areas are examples that would require a 30 day notice to the BLM authorized officer. An NTP from BLM would be required before work could proceed.

- 6) All culverts must be sized in accordance with accepted engineering practices and any special environmental concerns. The minimum size culvert in any installation is 18 inches. Drainage crossings and culverts should be designed for a 25-year or greater storm frequency. Culvert inlets and outlets would be armored with rip-rap that is properly sized to prevent soil erosion.
- 7) Low-Water crossings can be effectively accomplished by dipping the road down to the bed of the drainage. Site-specific designs and the construction of gravel, rip-rap, or concrete bottoms may be required in some situations. In no case should the low-water crossing fill the drainage so that water would be impounded. Low-water crossings that are not surfaced should not be used in wet conditions. Low-water crossings, in combination with culverts, may be utilized if the crossing is designed such that the structure is stable and self-cleaning.
- 8) Maintenance and repair of roads crossing low lying, non-channelized draws and bottomlands (i.e. tobosa draws) will be designed in a manner that will not alter patterns or amounts of overland flows. The use of culverts and turnouts will be designed so that ponding of overland flow is minimal and drains quickly. Measures will be taken to spread the water on the downstream side to re-spread the water to resemble the natural overland flow pattern. No maintenance and repair activities shall be conducted in a manner that alters in-channel or over-land water flow characteristics without prior written approval from the Authorized Officer; including, but not limited to, alteration of drainage ditches, culverts, erosion control structures, and raising or lowering of the road bed.

WORK LIMITS

- 9) CBP would utilize accepted minimum standards for road design, including the BLM Manual Section or the BLM Gold Book for any significant road maintenance work.
- 10) For road work within the existing footprint exceeding typical maintenance, CBP would submit standard or typical cross sections of the existing road segments as directed by the authorized officer. The cross sections should include, but are not limited to, the proposed road width, ditch dimensions, cut and fill slopes, and typical culvert installation.
- 11) CBP would place slope stakes, culvert location and grade stakes, and other maintenance control stakes as deemed necessary by the authorized officer to ensure maintenance work in accordance with the plan of development. If stakes are disturbed, they would be replaced before proceeding with maintenance.
- 12) CBP would survey and clearly mark the centerline and/or exterior limits of the right-of-way, as determined by the authorized officer. For maintenance purposes, the exterior limit of the right-of-way is the existing road/ancillary facility footprint.
- 13) No construction or routine maintenance activities would be performed during periods when the soil is too wet to adequately support construction equipment.

- 14) Maintenance holes left open overnight would be covered. Covers would be secured in place and would be strong enough to prevent livestock or wildlife from falling through and into a hole.
- 15) All design, material, operation, maintenance, and termination practices would be in accordance with safe and proven engineering practices.
- 16) Materials encountered on the project and needed for select borrow, surfacing, riprap, or other special needs would be conserved.
- 17) Specific areas as identified by the authorized officer (e.g., archaeological sites, areas with threatened and endangered species, or fragile watersheds) where maintenance equipment and vehicles would not be allowed would be clearly marked onsite by CBP before any maintenance or surface disturbing activities begin. CBP would be responsible for assuring that maintenance personnel are well trained to recognize these markers and understand the equipment movement restrictions involved.
- 18) CBP would provide for the safety of the public entering the right-of-way.
- 19) CBP would permit free and unrestricted public access to and upon the right-of-way for all lawful purposes except for those specific areas designated as restricted by the authorized officer to protect the public, wildlife, livestock, or facilities constructed within the right-of-way.

WILDERNESS STUDY AREA (WSA)

- 20) No construction, operation, maintenance, and termination activities would occur in any Wilderness Study Area. The road berm on the WSA side shall not be moved or pushed into the WSA as it is the WSA boundary.

FENCES AND GATES

- 21) CBP would minimize disturbance to existing fences, pipelines and other improvements on public lands. CBP is required to promptly repair impacted improvements to at least their former state. CBP would contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence would be braced on both sides of the passageway prior to cutting of the fence. No permanent gates would be allowed unless approved by the Authorized Officer.
- 22) Fences, gates, and brace panels would be reconstructed to appropriate BLM standards and/or specifications as determined by the authorized officer.
- 23) When maintenance activity in connection with the right-of-way breaks or destroys a natural barrier used for livestock control, the gap, thus opened, would be fenced to prevent the drift of livestock. The subject natural barrier would be identified by the authorized officer and fenced by CBP as per instruction of the authorized officer.

INDUSTRIAL AND TOXIC WASTE DISPOSAL

- 24) The ROW site would be maintained in a sanitary condition at all times; waste materials at those sites would be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
- 25) CBP would comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, CBP would comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 would be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances would be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

CULTURAL

- 26) Any cultural and/or paleontological resource (historical or prehistoric site or object) discovered by CBP, or any person working on his behalf, on public or Federal land would be immediately reported to the Authorized Officer. Holder would suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery would be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. CBP would be responsible for the cost of evaluation of any decision as to proper mitigation measures would be made by the Authorized Officer after consulting with CBP.
- 27) Operation, maintenance, and termination activities within sites identified on a cultural resources report dated February 2014 and titled "A Cultural Resources Survey of 25.49 Miles of Access Roads for the U.S. Customs and Border Protection, Hidalgo and Luna Counties, New Mexico" would not occur until BLM issues a written Notice to Proceed (NTP). NTP would not be issued until all treatment requirements are met. This requirement applies to all segments of road regardless of surface ownership.

PALEONTOLOGICAL

- 28) Prior to the commencement of operation, and maintenance of facilities, improvements, and structures, CBP would complete a paleontological survey in Potential Fossil Yield Classification areas 3 or 4. Based on the results of the analysis, the BLM may stipulate further mitigations to protect paleontological resources. Operation, maintenance, and termination activities within sites identified as sensitive in the survey would not occur until the BLM issues a written Notice to Proceed (NTP).

- 29) CBP would immediately notify the BLM Authorized Officer of any paleontological resources discovered as a result of operation under this authorization. CBP would suspend all activities in the vicinity of such discovery until notified to proceed by the Authorized Officer and would protect the discovery from damage or looting. CBP may not be required to suspend all operations if activities can be adjusted to avoid further impacts to a discovered locality or be continued elsewhere. The Authorized Officer would evaluate, or would have evaluated, such discoveries as soon as possible, but not later than 10 working days after being notified. Appropriate measures to mitigate adverse effects to significant paleontological resources would be determined by the Authorized Officer after consulting with CBP. Within 10 days, CBP would be allowed to continue maintenance through the site, or would be given the choice of either (1) following the Authorized Officer's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (2) following the Authorized Officer's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

AIR AND DUST CONTROL

- 30) CBP would meet Federal, State, and local emission standards for air quality.
- 31) CBP would furnish and apply water or other means satisfactory to the authorized officer for dust control.

SURVEY MONUMENTS

- 32) CBP would protect all survey monuments found within the ROW. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, CBP would immediately report the incident, in writing, to the Authorized Officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management ROW monuments or references are obliterated during operations, CBP would secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. CBP would record such survey in the appropriate county and send a copy to the Authorized Officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, CBP would be responsible for the survey cost.

NOXIOUS WEED CONTROL

- 33) CBP would be responsible for weed control on disturbed areas within the limits of the site. CBP is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods, which include following EPA and BLM requirements and policy.

- 34) Power or high-pressure clean all equipment of all mud, dirt, and plants immediately prior to moving into the project area. Any gravel or fill to be used would come from weed-free sources. Inspect gravel pits and fill sources to identify weed-free sources. No soil spoil that could potentially contain noxious weed seeds would be transported out of the area where it is created.
- 35) The project applicants would be responsible for conducting a survey for and control of noxious weeds along the route proposed for construction. If during construction noxious weeds are identified that were not originally encountered during the survey, the project applicant would avoid driving vehicles and equipment through or over the infested area. If avoidance measures cannot be taken within the area originally cleared, construction would cease and the project inspector (PI) or the authorized officer (AO) contacted.
- 36) Any use of herbicides/pesticides would comply with the applicable Federal and State laws. Herbicides/pesticides would be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, holder would obtain from the AO written approval of a plan showing the type and quantity of materials to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the AO. Emergency use of pesticides would be approved in writing by the AO prior to use.

WILDLIFE

The 2013 TIMR ROW grant proposal and road maintenance/repair proposed action include roads that pass through occupied habitat for aplomado falcon and Chihuahua scurfpea.

- 37) Aplomado Falcon The Ruckman Hills Road is in the active breeding territory of aplomado falcons. Include the following stipulations for Ruckman Hills Road:
 - i. No road repair, maintenance or vegetation removal shall occur between January 15 and October 31 of each year on Ruckman Hills Road.
 - ii. No herbicide application will occur along Ruckman Hills Road.
 - iii. TIMR work will not remove or disturb potential nest or hunting perch substrate vegetation along Ruckman Hills Road. Nest substrate and hunting perch vegetation includes any plant that is 5 feet or taller in height
- 38) Chihuahua Scurfpea: Doyle Road and Mingas (Public Access) Roads pass through occupied Chihuahua scurfpea habitat and through a proposed Area of Critical Environmental Concern designed to protect the species. Red Lake Access Road is relatively close to the extant habitat, is in an area that has not been surveyed and that may contain soils suitable to the species. For the entire lengths of Doyle and Red Lakes Access Roads and the segment of Mingas (Public Access) Road from the intersection with Doyle Road to the southwest, across Hachita Draw, to the point where it intersects Witch Well Road and turns in a southeasterly direction (Mingas Road segments to which

the protective measures apply are in Twp 29S, Rng 15W, Sec 34 and T 30S, Rng 15W, Sec's 4, 9, 16):

- i. No road repair or maintenance work will occur outside the existing disturbed area. Disturbed area is defined as bare soil with no vegetation present due to past road and road drainage work.
- ii. No road maintenance or repair work will occur that changes in any way, the overland water flow pattern on the areas along and near the roads.
- iii. No herbicide application will occur along Doyle, Red Lakes Access and the segment of Mingas Road located in Twp 29S, Rng 15W, Sec 34 and T 30S, Rng 15W, Sec's 4, 9, 16.

OTHER

- 39) CBP would comply with the practices and mitigating measures established by 33 CFR 323.4, which sets forth the parameters of the "nationwide permit" required by Section 404 of the Clean Water Act. If the proposed action exceeds the parameters of the nationwide permit, CBP would obtain an individual permit from the appropriate office of the Army Corps of Engineers and provide the authorized officer with a copy of same. Failure to comply requirement would be cause for suspension or termination of this ROW grant.
- 40) CBP is responsible to obtain all required private, Federal, State, and local government licenses, permits, rights-of-way, easements, or other forms of permission to conduct construction, operation, maintenance, and termination activities associated with this right-of-way.

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