FINAL

ENVIRONMENTAL STEWARDSHIP PLAN
FOR CONSTRUCTION, OPERATION, AND MAINTENANCE OF TACTICAL INFRASTRUCTURE
U.S. Border Patrol Tucson Sector, Naco Station, Arizona

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

July 2008

COVER SHEET

FINAL ENVIRONMENTAL STEWARDSHIP PLAN FOR CONSTRUCTION, OPERATION, AND MAINTENANCE OF TACTICAL INFRASTRUCTURE U.S. BORDER PATROL TUCSON SECTOR, NACO STATION, ARIZONA

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

Coordinating Agencies: National Park Service (NPS), Bureau of Land Management (BLM), Tucson Field Office; U.S. Army Corps of Engineers (USACE)-Los Angeles District; U.S. Fish and Wildlife Service (USFWS); and the U.S. Section, International Boundary and Water Commission (USIBWC).

Affected Location: U.S./Mexico international border in Cochise County, Arizona.

Project Description: The Planned Action includes the construction, operation, and maintenance of tactical infrastructure to include primary pedestrian fence, vehicle fence, a staging area, a construction/access road, and improvements to existing roads parallel to approximately 6 miles of the U.S./Mexico international border within the USBP Tucson Sector, Arizona.

Report Designation: Final Environmental Stewardship Plan (ESP)

Abstract: CBP plans to construct, operate, and maintain approximately 6 miles of tactical infrastructure, including primary pedestrian fence, vehicle fence, a staging area, a construction/maintenance road, access roads, and improvements to existing roads along the U.S./Mexico international border in the USBP Tucson Sector, Arizona. TI will begin on the western edge of the San Pedro River and extend westward into the National Park Service's (NPS) Coronado National Memorial. This ESP analyzes and documents environmental consequences associated with the Project.

The public may obtain additional copies of the ESP from the project Web site at *www.BorderFencePlanning.com*; by emailing *information@BorderFencePlanning.com*; or by written request to Mr. Loren Flossman, Program Manager, SBI Tactical Infrastructure, 1300 Pennsylvania Ave, NW, Washington, DC 20229, Tel: (877) 752-0420, Fax: (703) 752-7754.

EXECUTIVE SUMMARY

BACKGROUND

United States (U.S.) Customs and Border Protection (CBP) and U.S. Border Patrol (USBP) will construct, operate, and maintain approximately 6.24 miles of tactical infrastructure (TI) along the U.S/Mexico border in Cochise County, Arizona. TI is a term used by USBP to describe physical structures that facilitate enforcement activities; these items typically include, but are not limited to, roads, fences, lights, gates, boat ramps, and barriers.

In Section 102(b) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA), Congress mandated that the U.S. Department of Homeland Security (DHS) install fencing, barriers, roads, lighting, cameras, and sensors on not less than 700 miles of the southwestern border. This total includes certain priority miles of fencing in areas most practical and effective in deterring illegal entry and smuggling into the United States. Congress has mandated that these priority miles be completed by December 2008. To that end, DHS plans to complete 370 miles of pedestrian fencing and 300 miles of vehicle fencing along the southwestern border by the end of 2008. As of March 21, 2008, 201 miles of primary pedestrian fence and 140 miles of vehicle fence remained to be constructed to meet the December 2008 deadline. These efforts support the CBP mission to prevent terrorists and terrorist weapons from entering the U.S., while also facilitating the flow of legitimate trade and travel.

On April 1, 2008, the Secretary of DHS, pursuant to his authority under Section 102(c) of IIRIRA, exercised his authority to waive certain laws that were an impediment to the expeditious construction of tactical infrastructure along the southwestern border. Although the Secretary's waiver means that CBP no longer has any specific legal obligations under these laws, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP strongly supports this objective and remains committed to being a good steward of the environment.

Although the Secretary has exercised the authority vested in him by Congress, DHS and CBP remain committed to building tactical infrastructure in an environmentally responsible manner. In support of this commitment, CBP will continue to work in a collaborative manner with local government, state and federal land managers, and the interested public to identify and minimize the impact to environmentally sensitive resources.

CBP is performing an environmental review of the fencing projects and will publish the results of this analysis in Environmental Stewardship Plans (ESPs), including mitigation and Best Management Practices (BMPs) developed to minimize adverse effects to the environment. These ESPs will be developed for each USBP Sector scheduled for tactical infrastructure improvements and will address each segment of pedestrian and vehicle fencing covered by the waiver.

GOALS AND OBJECTIVES OF THE PLANNED ACTION

The goal of the project is to increase border security within the USBP Tucson Sector with an ultimate objective of reducing illegal cross-border activity. The project further meets the objectives of the Congressional direction in the Fiscal Year (FY) 2007 DHS Appropriations Act (Public Law [P.L.] 109-295), Border Security Fencing, Infrastructure, and Technology appropriation to install fencing, infrastructure, and technology along the border.

The USBP Tucson Sector identified a distinct area along the border that experiences high levels of illegal cross-border activity. This activity occurs in areas that contain thick vegetation that can provide concealment, is fairly remote and not easily accessed by USBP agents or have quick access to U.S. transportation routes. The Planned Action will help to deter illegal entries within the USBP Tucson Sector by improving enforcement efficiency, thus preventing terrorists and terrorist weapons, illegal aliens, drugs, and other cross border violators and contraband from entering the U.S., while providing a more safe work environment for USBP agents.

PLANNED ACTION

USBP will construct, operate, and maintain approximately 6.24 miles of primary pedestrian fence (PF), vehicle fence (VF), and construction/maintenance road along the U.S/Mexico border in USBP Tucson Sector, Naco Station's AO (Figure 1-1). TI will begin on the western edge of the San Pedro River and extend westward into the National Park Service's (NPS) Coronado National Memorial (Figure 1-2). The locations of TI are based on a USBP Tucson Sector assessment of local operations and includes fence sections installed in areas of the border that are not currently fenced and where such infrastructure will assist USBP agents in reducing illegal cross-border activities. The project includes approximately 5.75 miles of primary pedestrian fencing and approximately 0.49 miles of VF.

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION

Table ES-1 provides an overview of potential environmental impacts by specific resource areas. Chapters 2 through 12 of this ESP address these impacts in more detail. CBP followed specially developed design criteria to reduce adverse environmental impacts and will implement mitigation measures to further reduce or offset adverse environmental impacts. Design criteria to reduce adverse environmental impacts include selecting a route that will minimize impacts, consulting with Federal and state agencies and other stakeholders to avoid or minimize adverse environmental impacts, and developing appropriate BMPs to protect natural and cultural resources. Potential effects, including physical disturbance and construction of solid barriers on wetlands, riparian areas, streambeds, and floodplains, will be avoided whenever practicable or mitigated if appropriate. BMPs will include implementation of a Storm Water Pollution Prevention Plan (SWPPP), Construction Mitigation and Restoration (CM&R) Plan, Spill Prevention Control and Countermeasures Plan (SPCCP), Dust

Control Plan, Fire Prevention and Suppression Plan, and Unanticipated Discovery Plan to protect natural and cultural resources.

Table ES-1. Summary of Anticipated Environmental Impacts

Resource Area	Effects of the Project	Best Management Practices/Mitigation
Air Quality	Minor and temporary impact on air quality will occur during construction; air emissions will remain below *de minimis* levels.	Dust Control Plan. Fire Prevention and Suppression Plan. Maintain equipment according to specifications.
Noise	Minor temporary increases to ambient noise during construction activities will occur.	Equipment will be operated on an as-needed basis. A majority of the activities will occur away from population centers.
Land Use, Recreation, and Aesthetics	No additional impact, as the majority of the project is currently part of the 60-foot Roosevelt Reservation. There will be a minor permanent impact on visual resources and the character of NPS land, as the fence will be conspicuous from adjacent hilltops particularly within the Coronado National Memorial. Beneficial effects, such as reduced vandalism, habitat degradation, debris left by IAs, and wildfires will be expected.	No mitigation required.
Soils	Minor impact on soils. The majority of the impact will involve only topsoil layers. Also, the majority of the roads being improved are preexisting and will not require substantial modifications to the area's topography.	SWPP plan to control erosion. Unnecessary ground disturbances will be avoided. Materials will be obtained from previously used sources.
Hydrology and Groundwater	There will be a moderate impact on the Upper San Pedro basin caused by construction. The USP Basin is in a deficit situation. Additional withdrawals from the USP Basin will reduce flows in the San Pedro River which support several threatened and endangered species.	SWPP, SPCC, and CM&R plans. Provide compensation to mitigate for impacts to groundwater resources.
Surface Waters and Waters of the United States	Minor and temporary impact on surface water resources from sedimentation, erosion, and accidental spills or leaks caused by construction. Washes and other waters of the U.S. will be adversely impacted by construction.	SWPP and SPCC plans.
Floodplains	Direct impact on 0.9 acres of jurisdictional floodplains.	Fence will be constructed so as not to impede conveyance or increase flood elevations, frequencies, or durations.

Table ES-1, continued

Resource Area	Effects of the Project	Best Management Practices/Mitigation
Vegetation Resources	Minimal impacts on vegetation communities. The staging area and the majority of the construction/access road were previously disturbed. Approximately 3700 agave may be impacted due to construction activities.	Fire Suppression and Prevention Plan. Equipment will be cleaned prior to entering or exiting the project corridor. Avoid areas containing columnar cacti or agaves to the extent practicable. Invasive plants that appear during construction will be removed. Biological monitor on-site during construction to ensure all BMPs and mitigation plans are followed. Approximately 1500 agaves will be salvaged and transplanted. Seeds from 50 agave will be harvested and supplied to the NPS.
Wildlife and Aquatic Resources	Loss of aquatic resources as a result of the Planned Action may result in a major impact to the overall viability of species in the project region. Beneficial impact on wildlife populations is anticipated as a result of protecting habitat from IA traffic.	Surveys of nesting migratory birds will be conducted and migratory bird nests, will be flagged and avoided, to the extent practicable. Use of Normandy style fence within wash and floodplain areas will allow for conveyance of flood flows and opportunities for transboundary migration. Steep walled holes or trenches will be covered or equipped with ramps to prevent entrapment of wildlife. Use of lights during construction will be minimized.
Threatened and Endangered Species	Seven species may potentially occur within the project corridor. The Huachuca water umbel, yellow billed cuckoo, and jaguar may be adversely affected.	If a Federally protected species is found within the project corridor, all construction activities will cease within the immediate vicinity. Biological monitor on site during construction to ensure all BMPs and mitigation plans are followed. See Appendix B.
Cultural Resources	Several cultural resource sites fall within the project corridor and may be impacted by the Planned Action.	All construction will be restricted to previously surveyed areas. Cultural resources site that can not be avoided will be tested prior to construction. If any cultural material is discovered during construction, all activities within the vicinity of the discovery will be halted until cleared by a qualified archeologist.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF PHOTOGRAPHS

LIST OF APPENDICES

SECTION 1.0
GENERAL PROJECT DESCRIPTION

1.0 GENERAL PROJECT DESCRIPTION

1.1 INTRODUCTION TO THE ENVIRONMENTAL STEWARDSHIP PLAN

In Section 102(b) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA), Congress mandated that the United States (U.S.) Department of Homeland Security (DHS) install fencing, barriers, roads, lighting, cameras, and sensors on not less than 700 miles of the southwestern border. This total includes certain priority miles of fencing in areas most practical and effective in deterring illegal entry and smuggling into the U.S. Congress has mandated that these priority miles be completed by December 2008. To that end, DHS plans to complete 370 miles of pedestrian fencing and 300 miles of vehicle fencing along the southwestern border by the end of 2008. As of March 21, 2008, 201 miles of primary pedestrian fence and 140 miles of vehicle fence remained to be constructed to meet the December 2008 deadline. These efforts support the U.S. Customs and Border Protection (CBP) mission to prevent terrorists and terrorist weapons from entering the U.S., while also facilitating the flow of legitimate trade and travel.

On April 1, 2008, the Secretary of DHS, pursuant to his authority under Section 102(c) of IIRIRA, exercised his authority to waive certain laws that were an impediment to the expeditious construction of tactical infrastructure along the southwestern border. Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the Clean Water Act (CWA), Clean Air Act (CAA), or National Historic Preservation Act (NHPA), Endangered Species Act (ESA) and others, for the tactical infrastructure (TI) segments addressed in this Environmental Stewardship Plan (ESP), the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with these Federal regulations as the basis for evaluating potential environmental impacts and appropriate mitigations. A copy of the waiver is included as Appendix A.

In support of its commitment to environmental stewardship, CBP will continue 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 the projects.

CBP is conducting an environmental review of the projects and will publish the results of this analysis in Environmental Stewardship Plans (ESPs), including mitigation and BMPs developed to minimize adverse effects to the environment. These ESPs will be developed for each U.S. Border Patrol (USBP) Sector scheduled for tactical infrastructure improvements and will address each segment of pedestrian and vehicle fence covered by the waiver.

The project area covered by this ESP has been determined to be an area of high illegal entry into the U.S., and the project area has been designated by the Secretary of DHS as an area of critical border TI. As such, the project area is designated as an area where completion of border TI must be accomplished in an expeditious manner, and the Secretary of DHS has waived compliance with all Federal, state, or other laws, regulations and legal requirements necessary for the completion of the TI (the Planned Action). This ESP is prepared in order to evaluate impacts of the Planned Action on natural and human resources in the project corridor, and to assist CBP and USBP in protecting critical resources during construction and operation of the TI being installed for the Planned Action. This ESP is designed in a format that identifies each affected resource and evaluates all potential impacts to that resource, with the intent to minimize impacts to the extent practicable. This ESP was not prepared to comply with specific laws or regulations; rather it is a planning and guidance tool to assist CBP to accomplish construction in a manner that will minimize adverse impacts to the extent practicable.

In 2000, Immigration and Naturalization Service (INS) released the *Environmental Assessment Infrastructure Within U. S. Border Patrol Naco-Douglas Corridor Cochise County, Arizona*. CBP released *Final Supplemental Environmental Assessment (SEA) for Infrastructure within U.S. Border Patrol Naco-Douglas Corridor, Cochise County, Arizona* in 2003 (CBP 2003). This ESP will incorporate by reference some information from the 2000 Corridor EA and the 2003 SEA.

Some resources within the Planned Action's region of influence (ROI) are not addressed in this ESP because they are not relevant to the analyses. The resources such as utilities, communications, climate, and prime farmlands are not addressed for the following reasons:

- Utilities: The Planned Action will not affect any public utilities.
- Communications: The Planned Action will not affect communications systems in the area.
- Climate: The Planned Action will not affect or be affected by the climate.
- Prime farmlands: No impact will occur to soils protected by the Farmland Protection Policy Act since none are located within the project corridor.

1.2 USBP BACKGROUND

The mission of CBP is to prevent terrorists and terrorist weapons from entering the U.S., while also facilitating the flow of legitimate trade and travel. In supporting CBP's mission, USBP is charged with establishing and maintaining effective control of the U.S. border. USBP's mission strategy consists of five main objectives:

- Establish substantial probability of apprehending terrorists and their weapons as they attempt to enter illegally between the point of entries (POEs)

- Deter illegal entries through improved enforcement
- Detect, apprehend, and deter smugglers of humans, drugs, and other contraband
- Leverage "smart border" technology to multiply the effect of enforcement personnel
- Reduce crime in border communities and consequently improve quality of life and economic vitality of targeted areas

USBP has nine administrative sectors along the U.S/Mexico international border. Each sector is responsible for implementing an optimal combination of personnel, technology, and infrastructure appropriate for its operational requirements. Border areas under the Tucson Sector's responsibility include Cochise, Pima, and Santa Cruz counties in Arizona. The areas affected by the Planned Action include the westernmost portion of Cochise County.

1.3 GOALS AND OBJECTIVES OF THE PLANNED ACTION

The goal of the project is to increase border security within the USBP Tucson Sector with an ultimate objective of reducing illegal cross-border activity. The project further meets the objectives of the Congressional direction in the Fiscal Year (FY) 2007 DHS Appropriations Act (Public Law [P.L.] 109-295), Border Security Fencing, Infrastructure, and Technology appropriation to install fencing, infrastructure, and technology along the border.

The USBP Tucson Sector identified a distinct area along the border that experiences high levels of illegal cross-border activity. This activity occurs in areas that contain thick vegetation that can provide concealment, is fairly remote and not easily accessed by USBP agents or have quick access to U.S. transportation routes. The Planned Action will help to deter illegal entries within the USBP Tucson Sector by improving enforcement efficiency, thus preventing terrorists and terrorist weapons, illegal aliens, drugs, and other cross border violators and contraband from entering the U.S., while providing a more safe work environment for USBP agents.

1.4 STAKEHOLDER AND PUBLIC OUTREACH

A public announcement will be published in the *Arizona Daily Star* regarding the availability of the ESP. This is done to inform the public of the project and its potential impacts. Throughout the project, the public may obtain information concerning the ESP via the project Web site at *www.BorderFencePlanning.com*; by emailing *information@BorderFencePlanning.com*; or by written request to Mr. Loren Flossman, Program Manager, SBI Tactical Infrastructure, 1300 Pennsylvania Avenue NW, Washington, D.C. 20229, or by fax at 703-752-7754. In addition, a public meeting was conducted in Sierra Vista on 13 May 2008.

Although the Secretary of DHS issued the waiver, and thus, CBP has no responsibilities under the National Environmental Policy Act (NEPA) for this project, CBP will review, consider, and incorporate information received from the public and other Federal, state, and local agencies, as appropriate, during the preparation of this ESP. CBP's response to letters and other correspondence received during the previous public review period will be posted on the Internet at the following URL: www.BorderFencePlanning.com.

In addition to the recent public involvement and outreach program, CBP has continued to coordinate with various Federal agencies during the development of this ESP. These agencies are described in the following paragraphs.

U.S. Army Corps of Engineers (USACE), Los Angeles District - CBP has coordinated all activities with USACE to identify potential jurisdictional Waters of the U.S., including wetlands, and to develop measures to avoid, minimize or compensate for losses to these resources.

U.S. Fish and Wildlife Service (USFWS) - CBP has coordinated extensively with USFWS to identify listed species that have the potential to occur in the project area and have cooperated with the USFWS to prepare BMPs to reduce or off-set any adverse impacts. A copy of the Biological Resources Plan (BRP) is contained in Appendix B.

1.5 MITIGATION

It is CBP's policy to reduce impacts through the sequence of avoidance, minimization, mitigation, and finally, compensation. Mitigation efforts vary and include activities such as restoration of habitat in other areas and implementation of appropriate BMPs. CBP coordinates its environmental design measures with the appropriate Federal and state resource agencies, as appropriate. Both general BMPs and species-specific BMPs have been developed during the preparation of this ESP.

This section describes those measures that may be implemented to reduce or eliminate potential adverse impacts on the human and natural environment. Many of these measures have been incorporated by CBP as standard operating procedures on past projects. Appendix B contains the BRP, which includes the full list of environmental design measures and BMPs that will be incorporated as part of the Planned Action. Below is a summary of BMPs for each resource category that will be potentially affected. The mitigation measures will be coordinated with the appropriate agencies and land managers or administrators, as appropriate.

1.5.1 General Construction Activities

BMPs will be implemented as standard operating procedures during all construction activities. These BMPs will include proper handling, storage, and/or disposal of hazardous and/or regulated materials. To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils, and solvents will be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container

stored therein. The refueling of machinery will be completed following accepted guidelines, and all vehicles will have drip pans during storage to contain minor spills and drips. Although it will be unlikely for a major spill to occur, any spill of 5 gallons or more will be contained immediately within an earthen dike, and the application of an absorbent (*e.g.*, granular, pillow, sock, *etc.*) will be used to absorb and contain the spill. Furthermore, any spill of petroleum liquids (*e.g.*, fuel) or material listed on 40 CFR 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate Federal and state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table 302.4 will be included as part of the Spill Prevention, Control and Countermeasures Plan (SPCCP). A SPCCP will be in place prior to the start of construction and all personnel will be briefed on the implementation and responsibilities of this plan. All construction will follow DHS management directive 5100.1 for waste management.

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

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

The perimeter of all areas to be disturbed during construction or maintenance activities will be clearly demarcated using flagging or temporary construction fence, and no disturbance outside of that perimeter will be authorized.

1.5.2 Air Quality

Standard construction BMPs, such as routine watering of the construction/access roads, will be used to control fugitive dust during the construction phases of the Planned Action. Additionally, all construction equipment and vehicles will be maintained in good operating condition to minimize exhaust emissions.

1.5.3 Noise

Construction equipment will possess properly working mufflers and will be maintained properly to reduce backfires. All 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.

1.5.4 Soils

Vehicular traffic associated with the construction activities an operational support will remain on established roads to the maximum extent practicable. Areas with highly erodible soils will be given special consideration when designing the Planned Action to ensure incorporation of various BMPs, such as, straw bales, aggregate materials, and wetting compounds, to control erosion. A Storm Water Pollution Prevention Plan

(SWPPP) will be prepared prior to construction activities and BMPs described in the SWPPP will be implemented to reduce erosion.

Materials such as gravel or topsoil will be obtained from existing developed or previously used sources not from undisturbed areas adjacent to the project area.

1.5.5 Water Resources

Standard construction procedures will be implemented to minimize the potential for erosion and sedimentation during construction. All work may cease during heavy rains, and will not resume until conditions are suitable for the movement of equipment and material. The refueling of machinery will be completed following accepted guidelines, and all vehicles will have drip pans during storage to contain minor spills and drips. No refueling or storage will take place within 100 feet of any drainage. Other mitigation measures will be implemented, such as straw bales (weed and seed free), silt fencing, aggregate materials, wetting compounds, and re-vegetation with native plant species, where possible, to decrease erosion and sedimentation. Furthermore, a SWPPP will be completed before construction is initiated.

1.5.6 Biological Resources

Construction equipment will be cleaned using BMPs prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species.

CBP will designate a qualified environmental monitor who will be responsible for overseeing compliance with protective measures for Federally protected species during construction activities within designated areas. The environmental monitor will immediately notify the CBP designated representative to halt all associated project activities which may not be in compliance with the BRP.

Avoid areas containing columnar cacti (saguaro, organ pipe) or agaves that provide the forage base for Federally protected species. If they cannot be avoided, columnar cacti and agaves will be salvaged and moved prior to any activities that would cause them harm. A salvage plan will be developed and approved by the government prior to the action. The CBP Environmental Monitor will identify a location for storing any salvaged cactus and/or agaves.

If an individual of a Federally protected species is found in the designated project area, work will cease in the area of the species until either a qualified environmental monitor can safely remove the individual in accordance with accepted species handling protocols, or it moves away on its own. The environmental monitor will document all occurrences and resulting activities and incorporate that documentation into the Project Report.

Federally protected, species-specific measures, if any, resulting from the completion of the relevant BRP will be implemented by the Design-Build Contractor as required.

If construction or maintenance activities continue at night, all lights will be shielded to direct light only onto the area required for worker safety and productivity. The minimum wattage needed will be used and the number of lights will be minimized.

1.5.7 Cultural Resources

All construction will be kept in areas previously surveyed for cultural resources. If any cultural material is discovered during the planned action, then all construction activities will be halted in the vicinity of the discovery until a qualified archaeologist assesses the cultural remains. The construction contractor may continue to work in areas that have also been previously surveyed for cultural resources, unless further cultural materials are discovered in these areas.

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SECTION 2.0
DESCRIPTION OF THE PROJECT

2.0 DESCRIPTION OF THE PROJECT

The planned locations of TI are based on a USBP Tucson Sector assessment of local operations. CBP and USBP will construct, operate, and maintain approximately 6.24 miles of TI along the U.S/Mexico border in USBP Tucson Sector, Naco Station's AO (Figure 2-1). TI is a term used by USBP to describe physical structures that facilitate enforcement activities; these items typically include, but are not limited to, roads, fences, lights, gates, boat ramps, and barriers. TI addressed in this document will consist of primary PF, VF, a construction/maintenance road, and access roads within USBP's Tucson Sector.

TI will begin on the western edge of the San Pedro River and extend westward into the National Park Service's (NPS) Coronado National Memorial (Figure 2-2). The project includes approximately 5.75 miles of primary pedestrian fencing and approximately 0.49 miles of VF. The PF will start approximately 0.18 miles west of the San Pedro River and extend westward 5.75 miles. VF will be installed on both ends of the project corridor. The VF will extend approximately 0.18 miles and 0.31 miles from the east and west ends of the primary PF, respectively. Currently, USBP envisions that the primary PF and permanent vehicle barrier will be installed approximately 3 feet north of the U.S./Mexico border. VF installed within the floodplain of the San Pedro River will be temporarily removed during each monsoon season.

A construction/maintenance road will be constructed to allow installation of the fence. The majority of the construction/maintenance road will be adjacent to the border and encompass the entire 60-foot wide project corridor. The washes within the NPS portion of the project corridor do not allow for a construction/maintenance road within the 60-foot wide project corridor due to topography and geology (*e.g.*, incised channels and rock outcrops). At these locations, the maintenance/construction road will extend up to 250 feet north of the U.S./Mexico border, no closer than 75 feet from the high water mark for each of the washes, and return back to the Roosevelt Reservation once across the wash.

Extending the project corridor to 250 feet will allow for construction of the road with minimal impacts to the washes. Detailed maps of the Planned Action are presented on the following pages (Figures 2-3a through 2-3n).

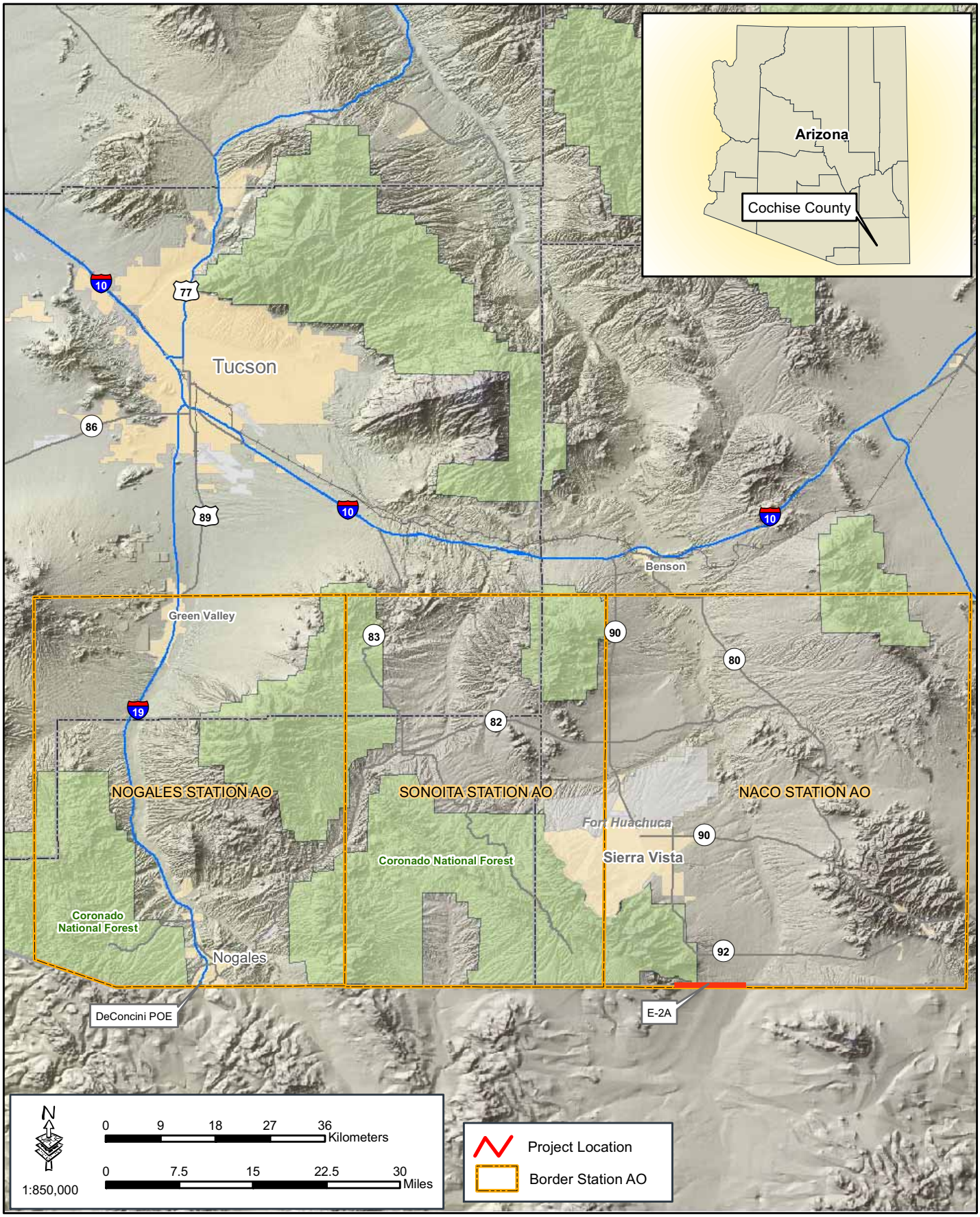

Figure 2-1: Vicinity Map

GSRC

April 2008

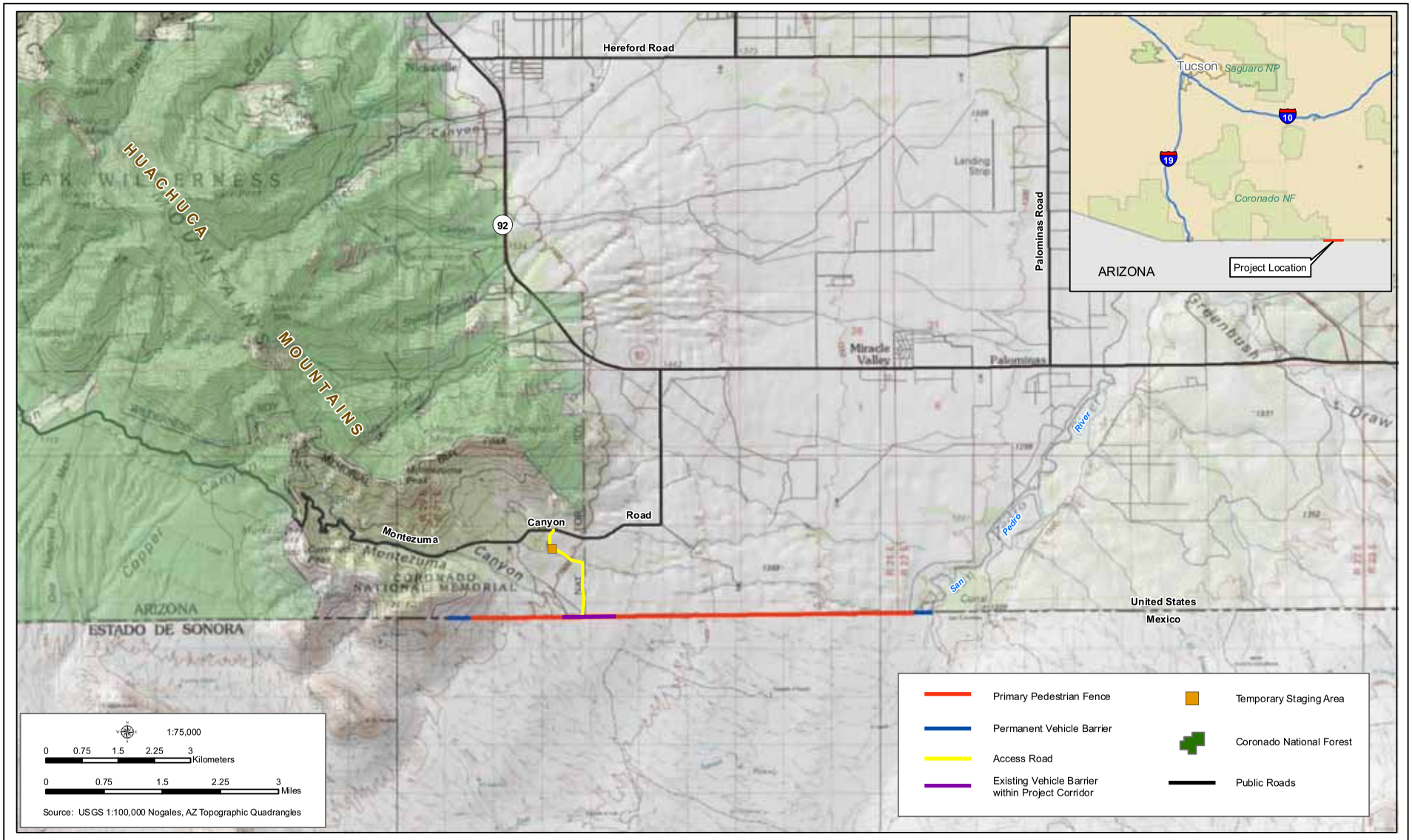

Figure 2-2: Project Corridor

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April 2008

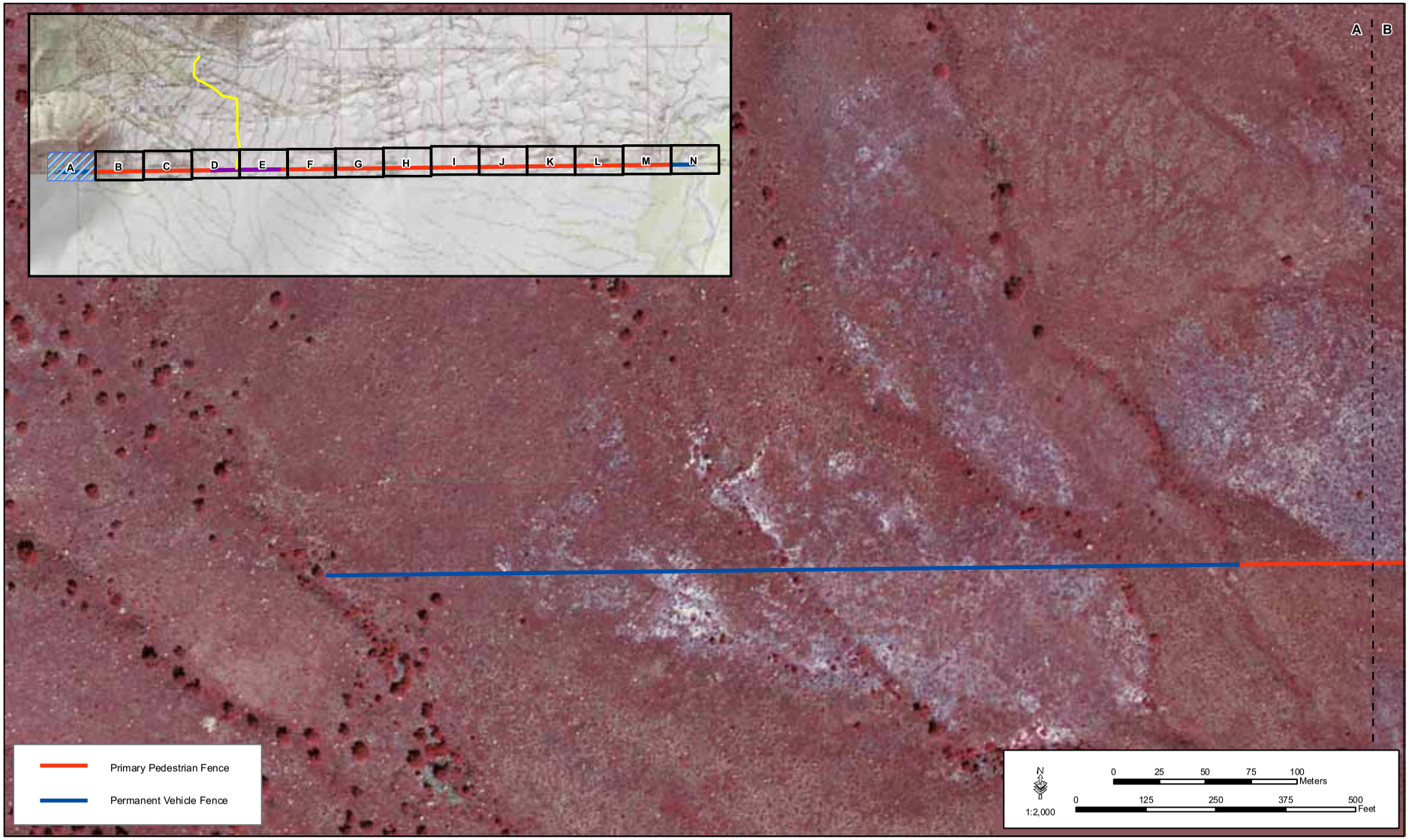

Figure 2-3a: Project Area Map

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March 2008

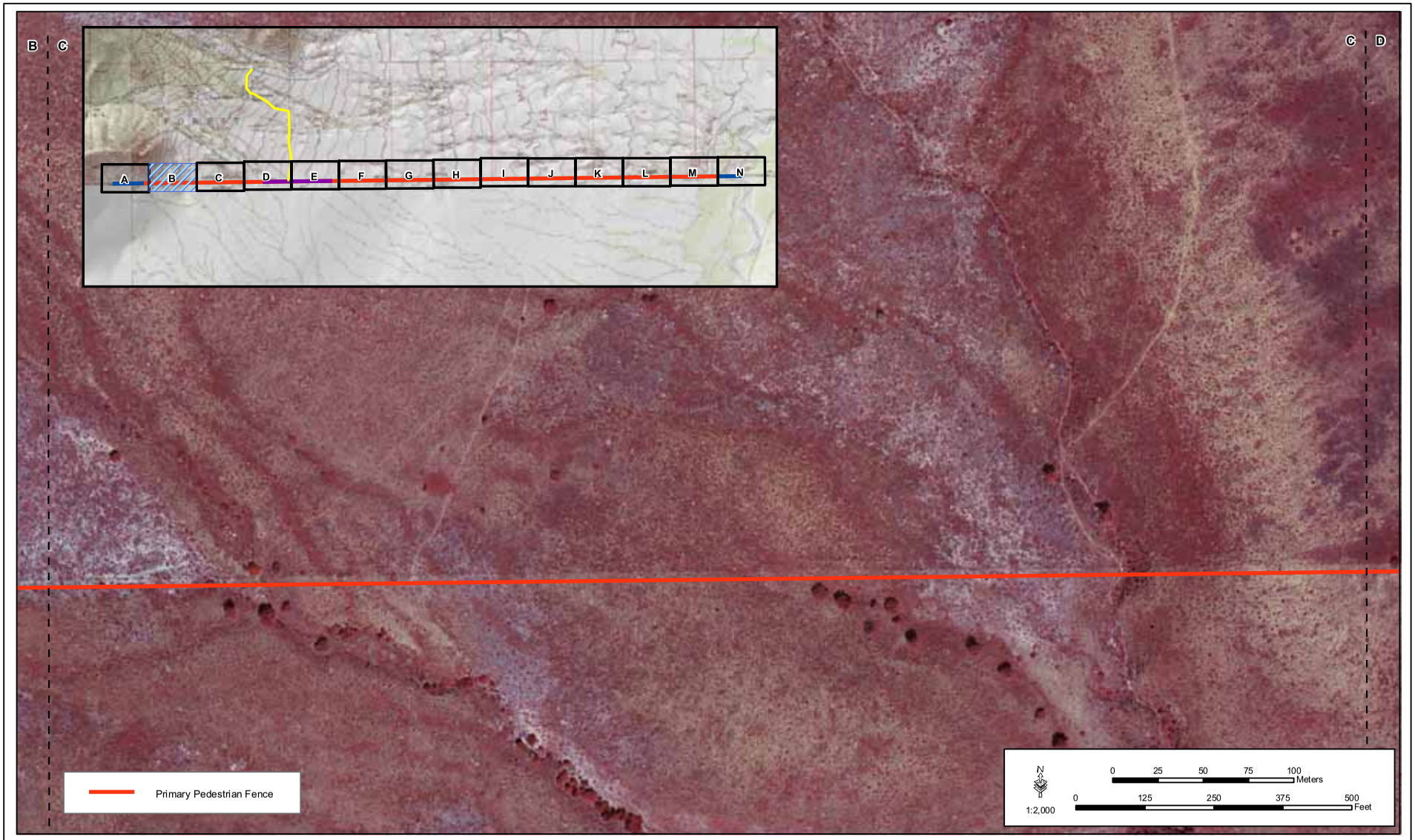

Figure 2-3b: Project Area Map

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March 2008

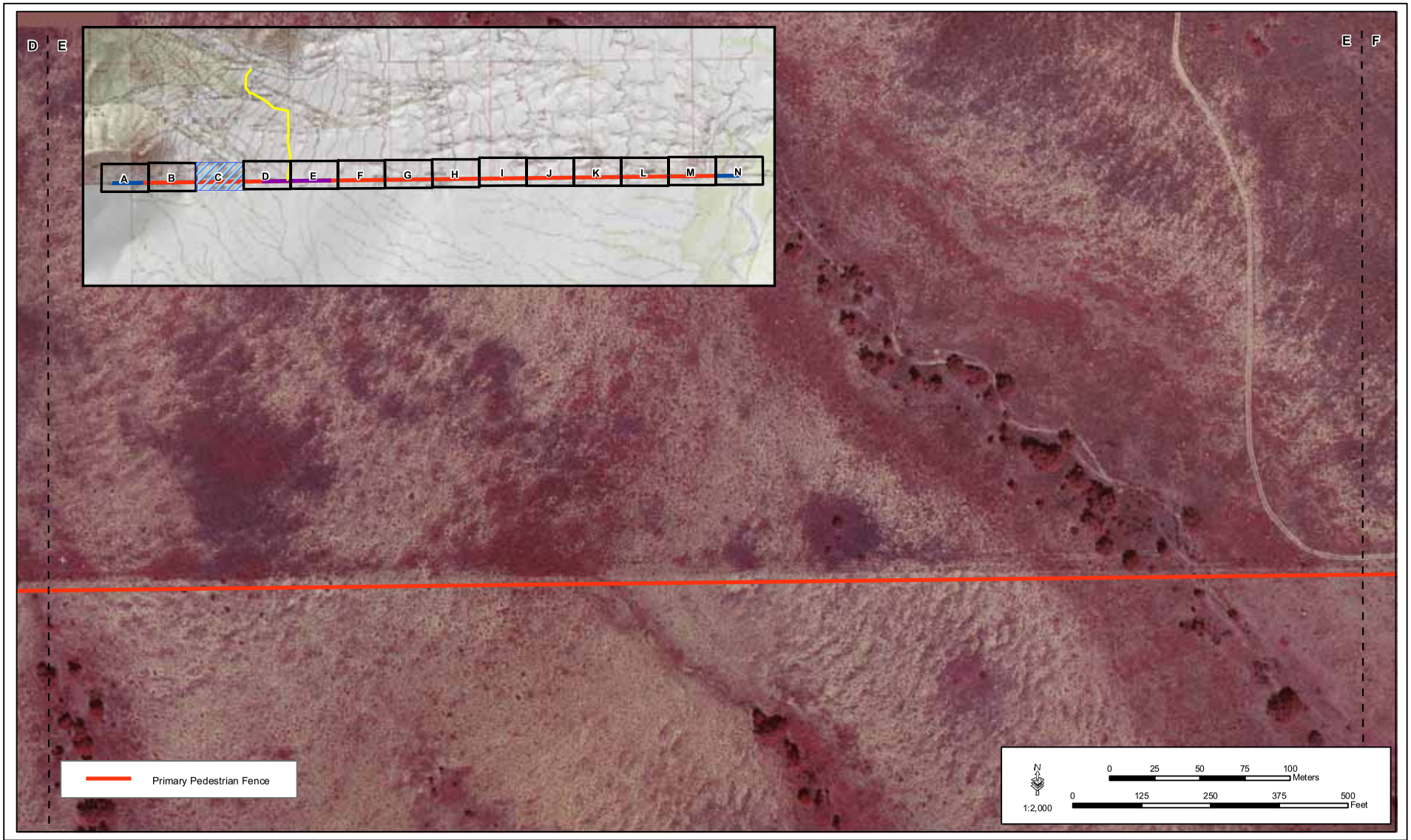

Figure 2-3c: Project Area Map

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March 2008

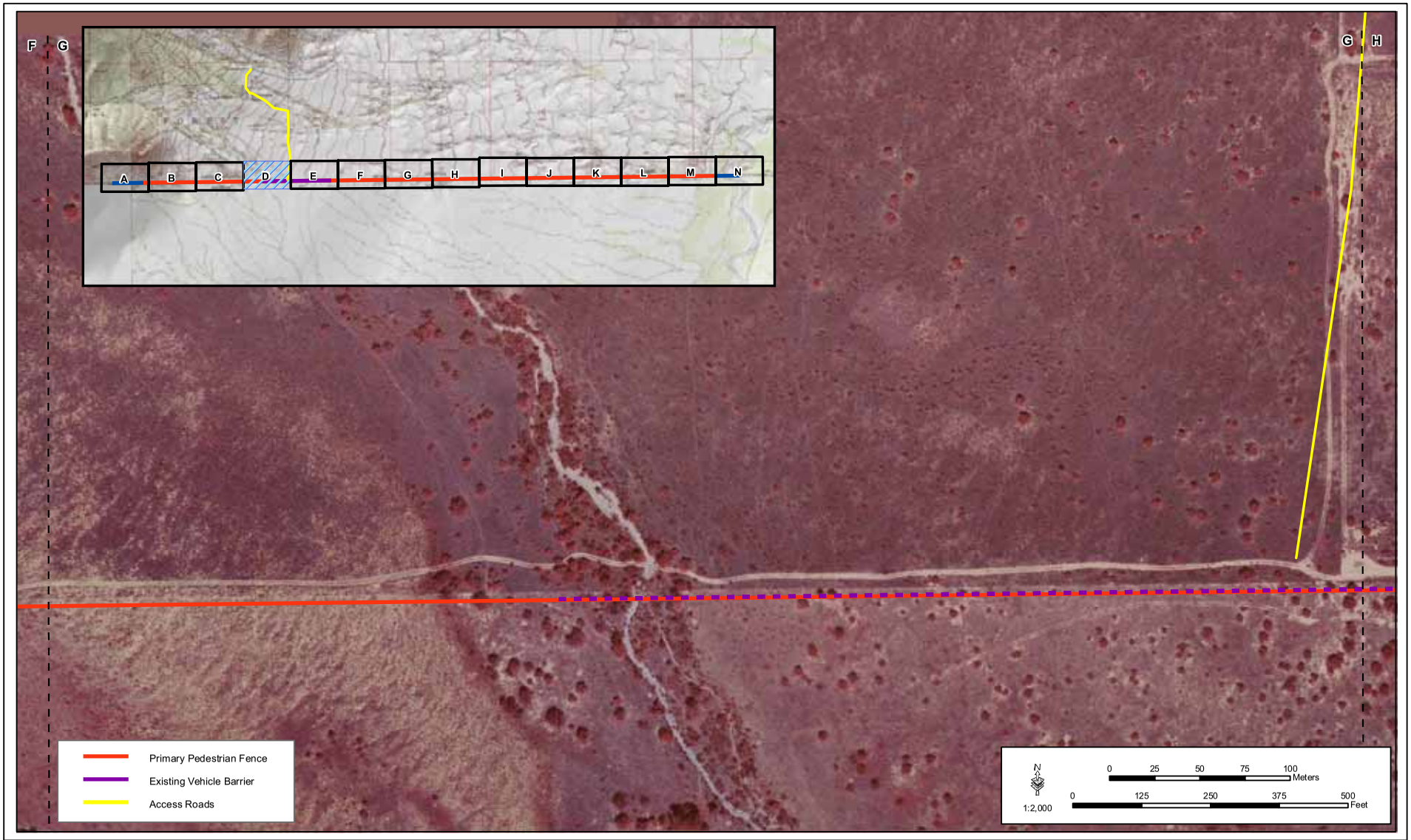

Figure 2-3d: Project Area Map

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March 2008

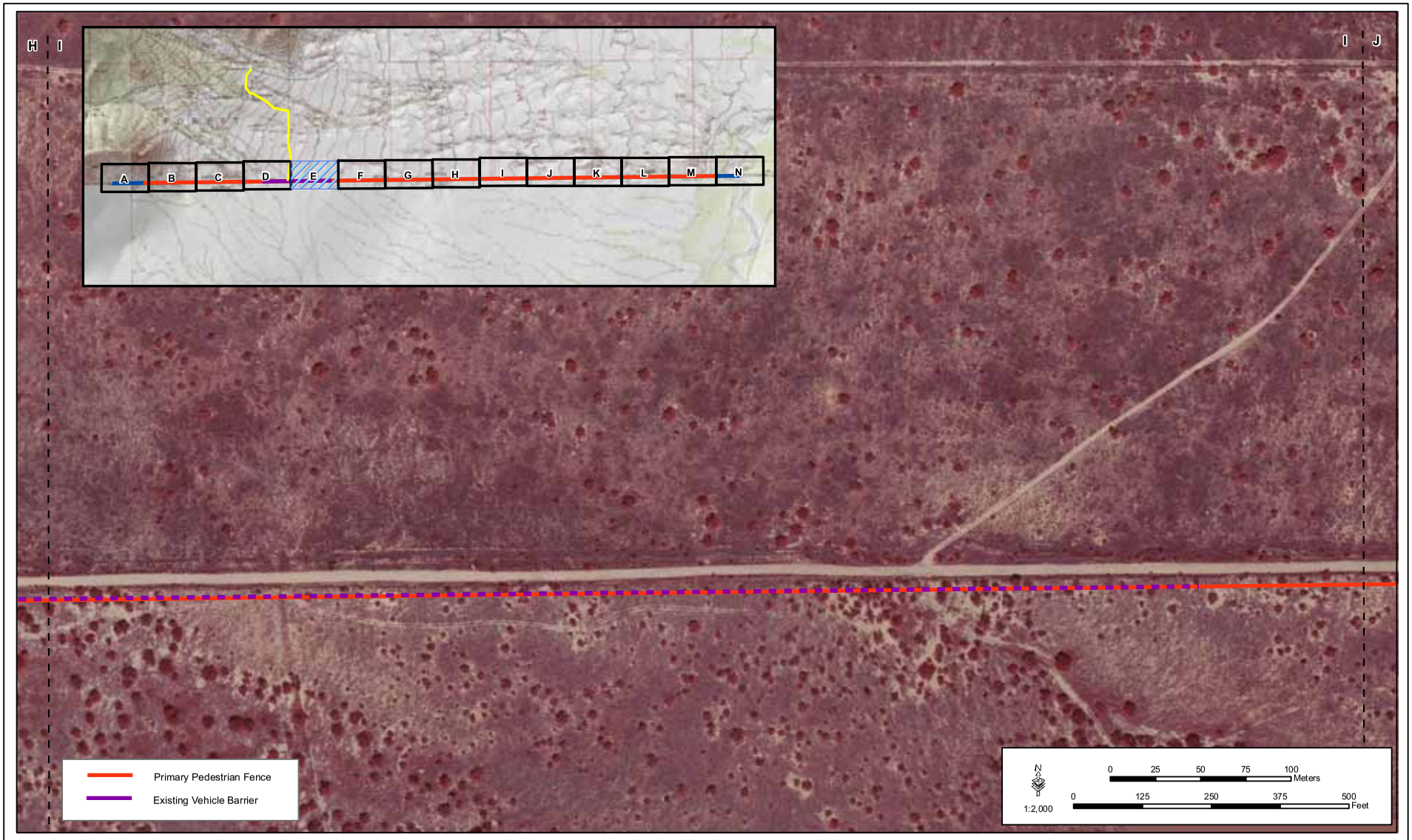

Figure 2-3e: Project Area Map

March 2008

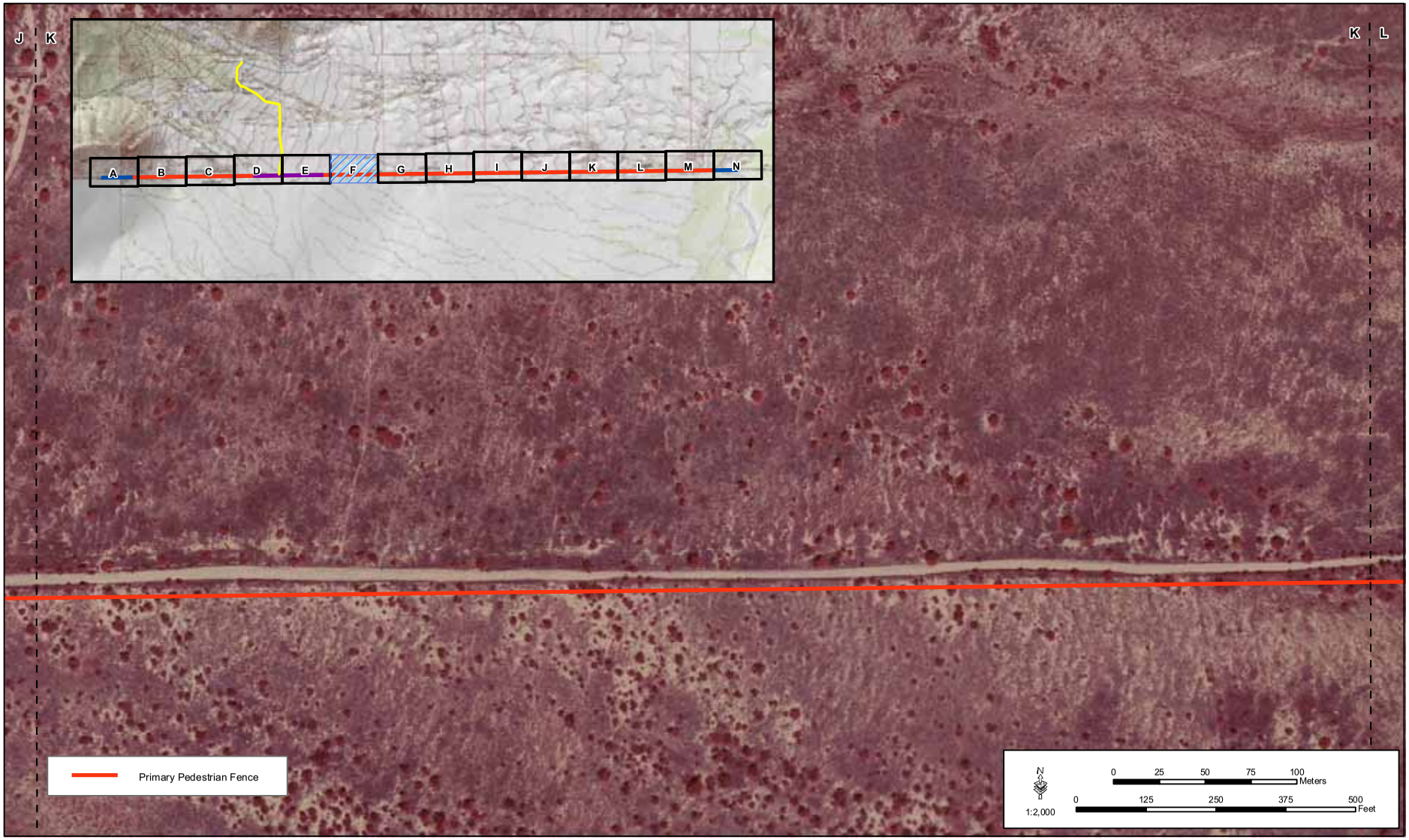

Figure 2-3f: Project Area Map

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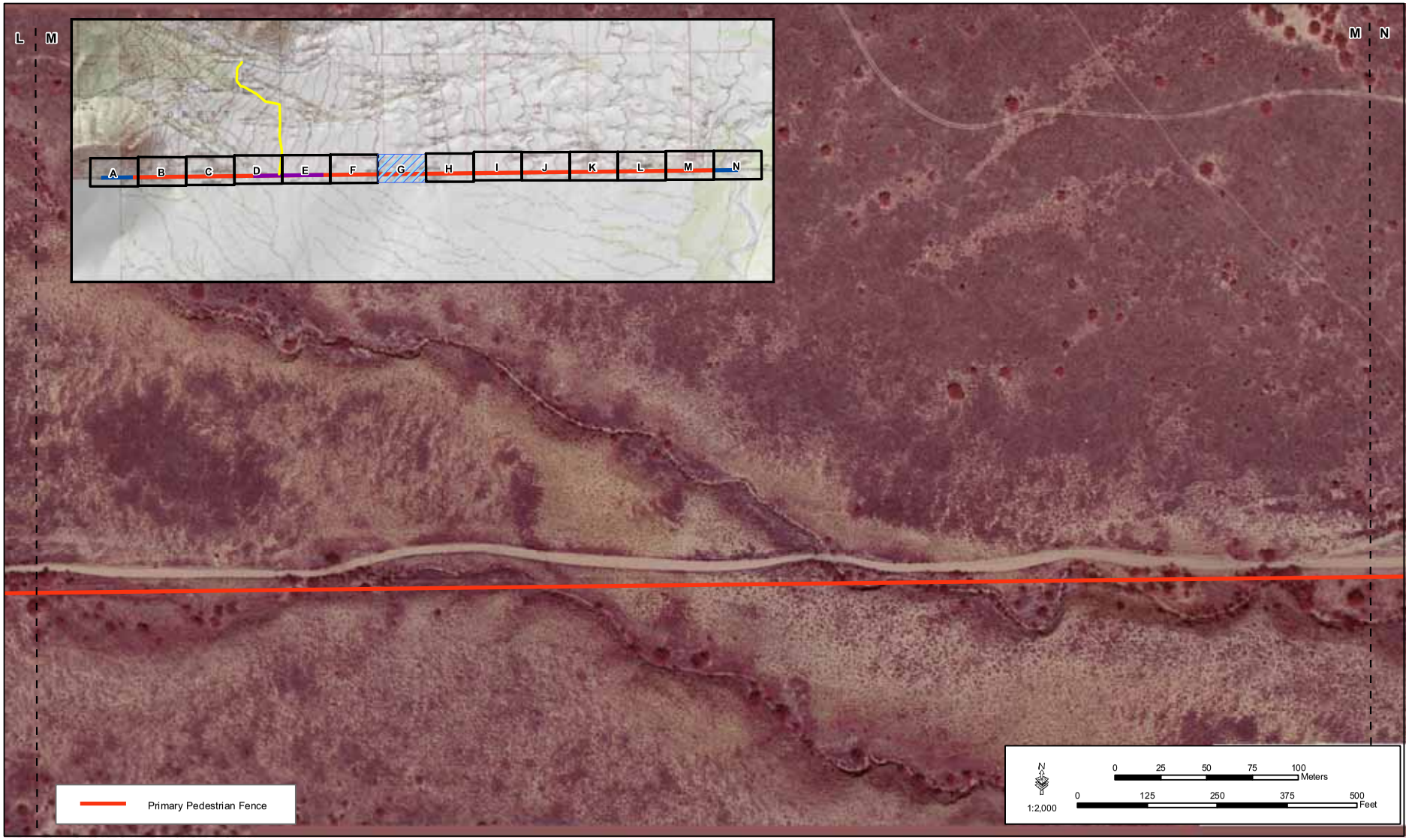

Figure 2-3g: Project Area Map

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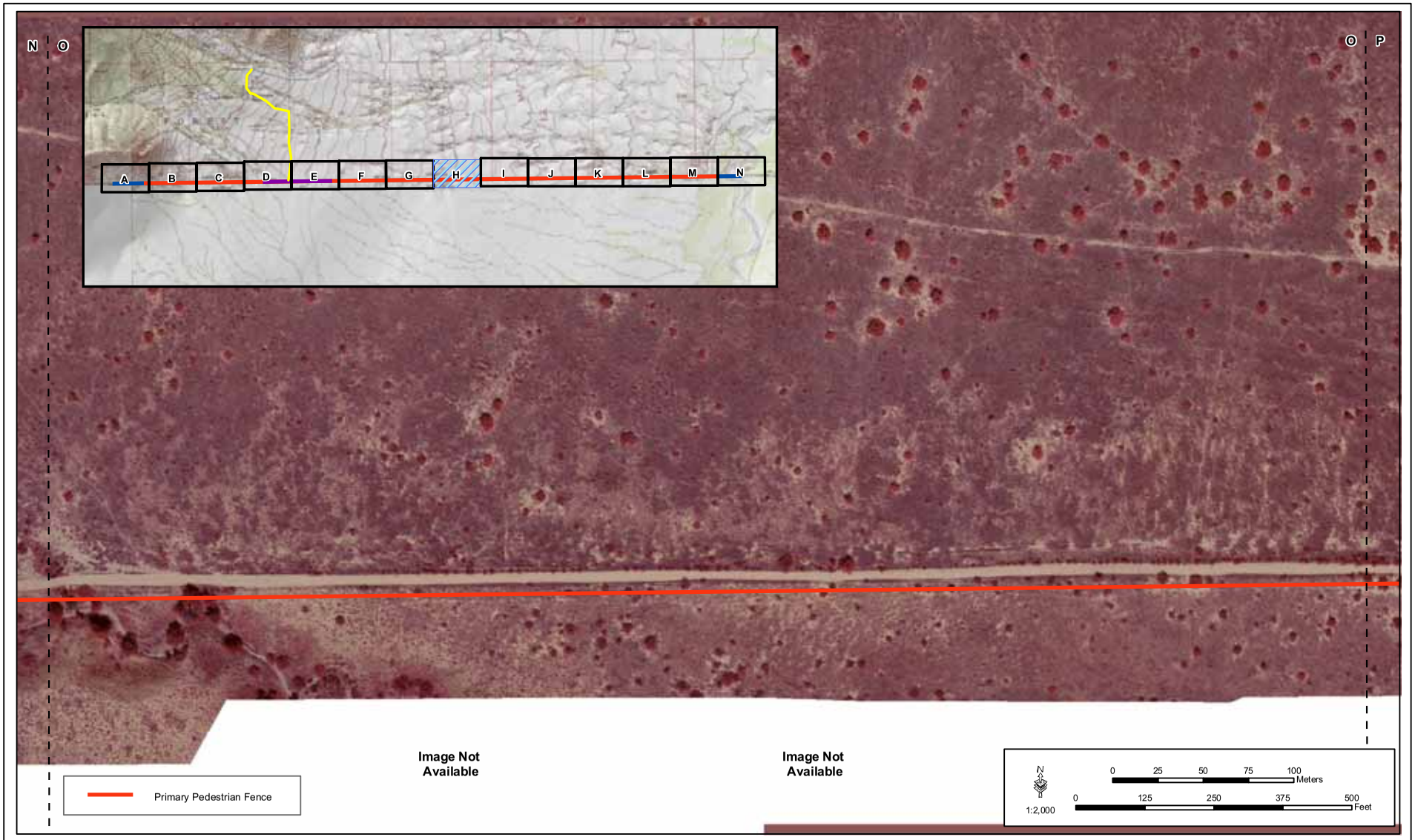

Figure 2-3h: Project Area Map

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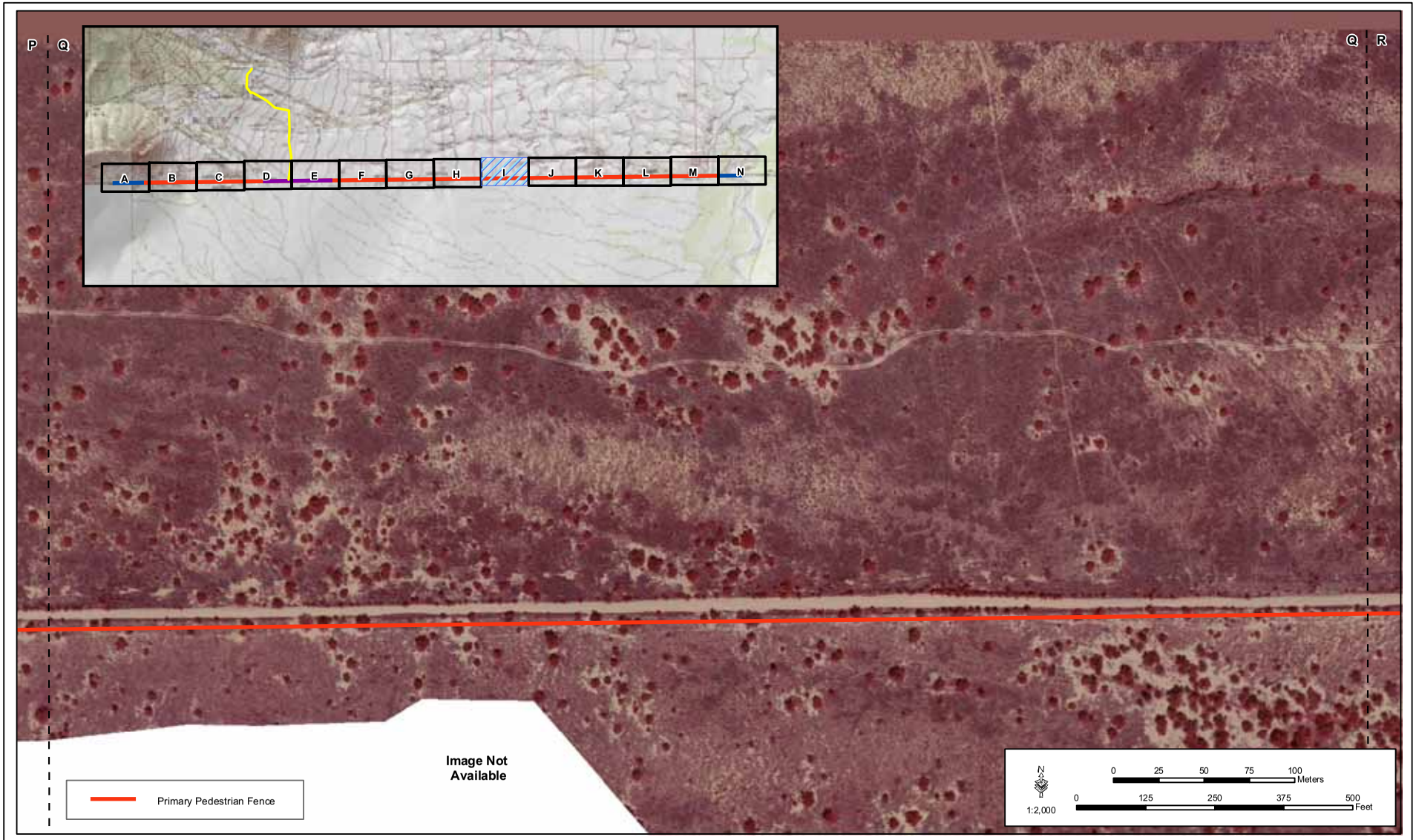

Figure 2-3i: Project Area Map

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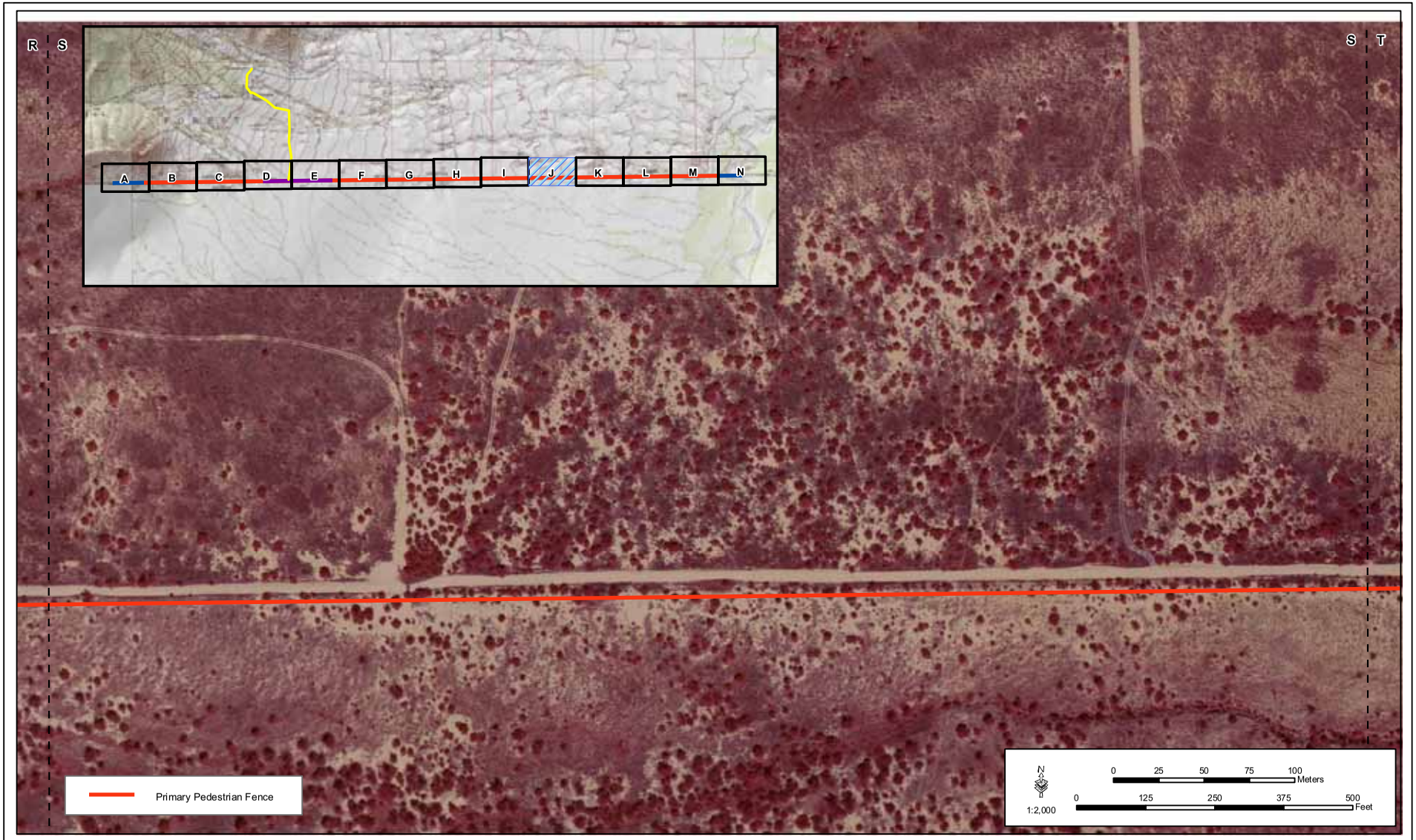

Figure 2-3j: Project Area Map

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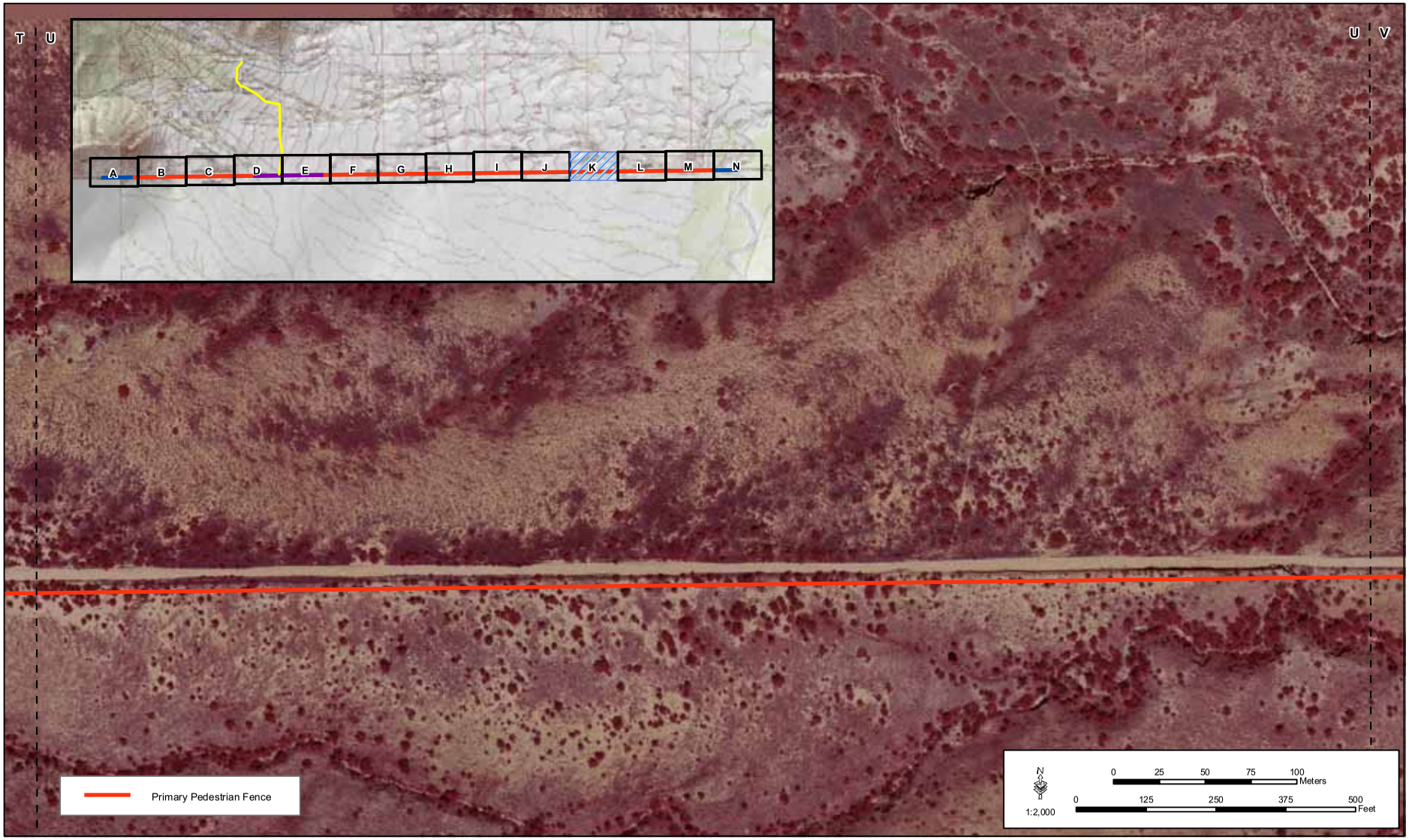

Figure 2-3k: Project Area Map

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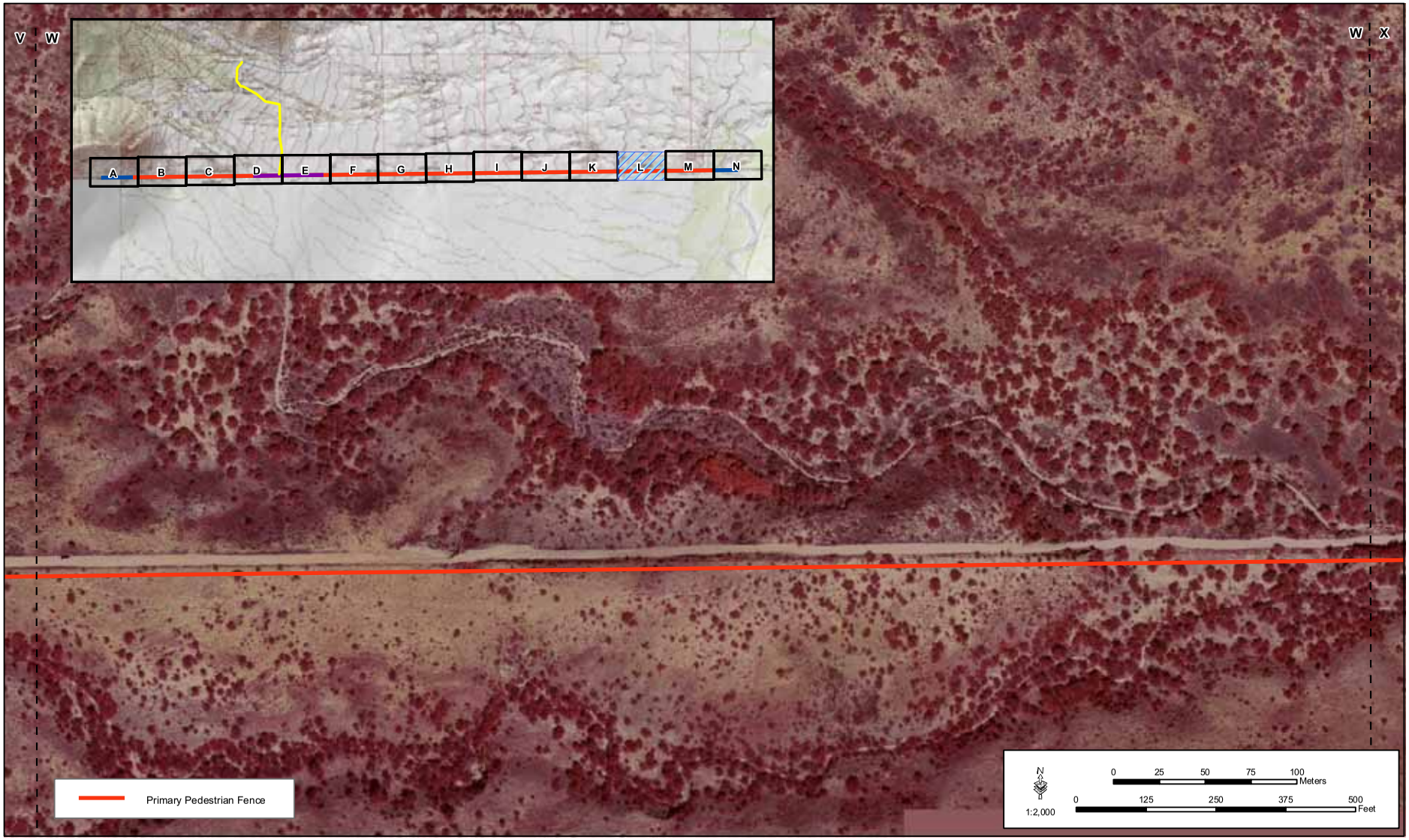

Figure 2-3l: Project Area Map

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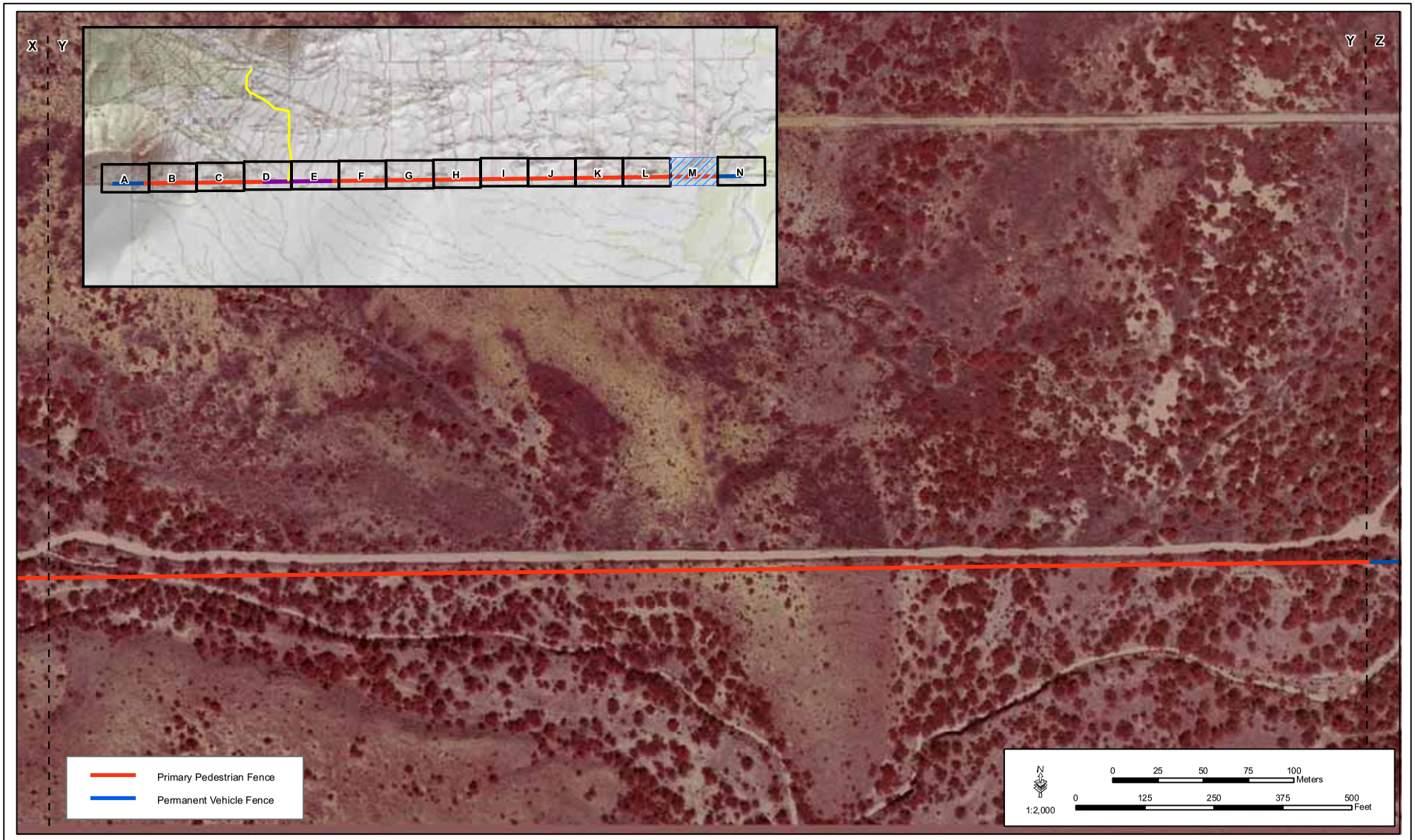

Figure 2-3m: Project Area Map

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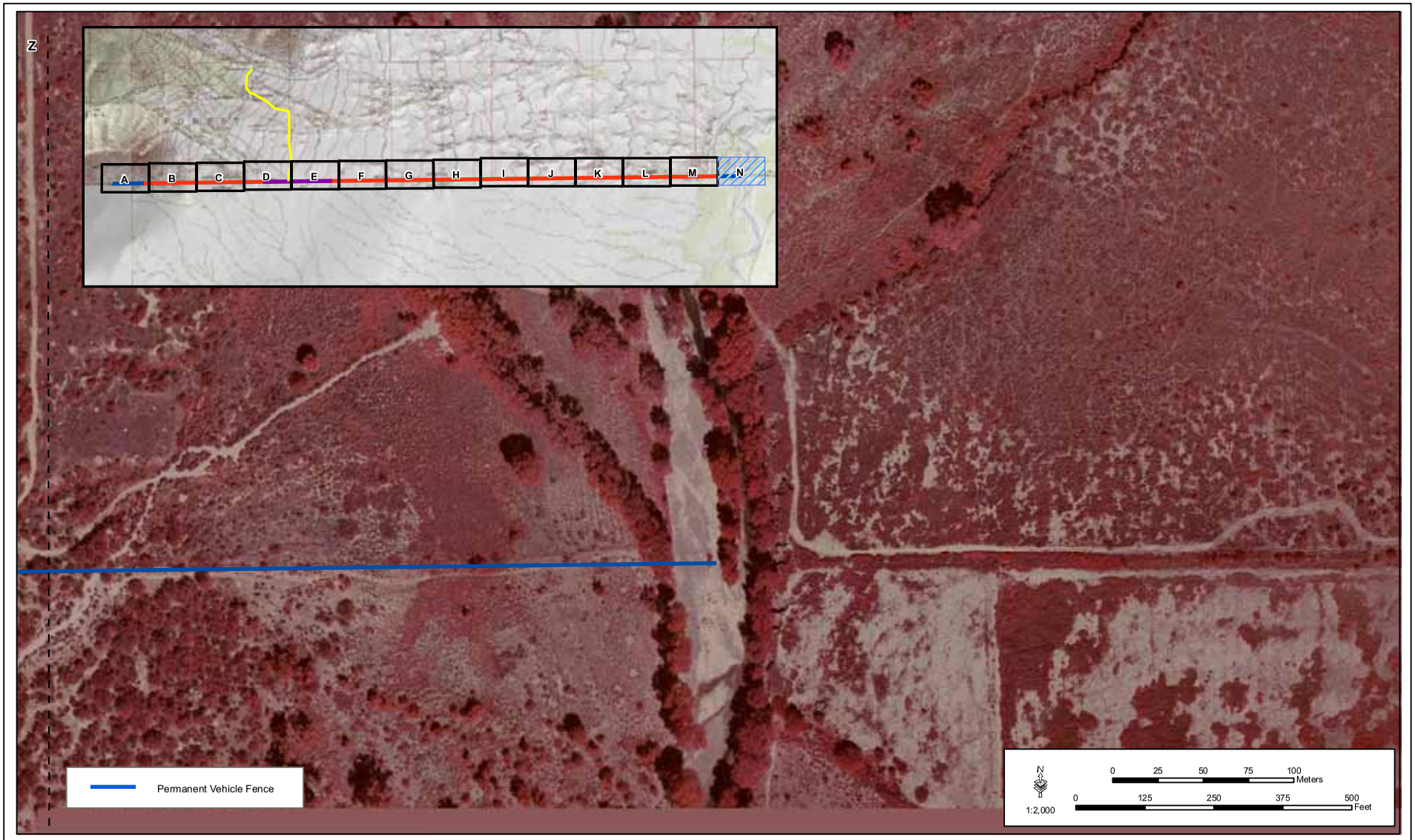

Figure 2-3n: Project Area Map

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Dependant on location, terrain, and the specific tactical need of USBP operations, several primary PF and VF designs are available for use. For the primary PF, CBP will construct a bollard style fence (PV-1) due to its low maintenance requirements, durability, and structural integrity. An example of the potential fence design for this bollard style fence is provided in Figure 2-4 below. The fence will be designed and constructed, as appropriate, to ensure proper conveyance of floodwaters and to eliminate the potential of ponding on either side of the border.

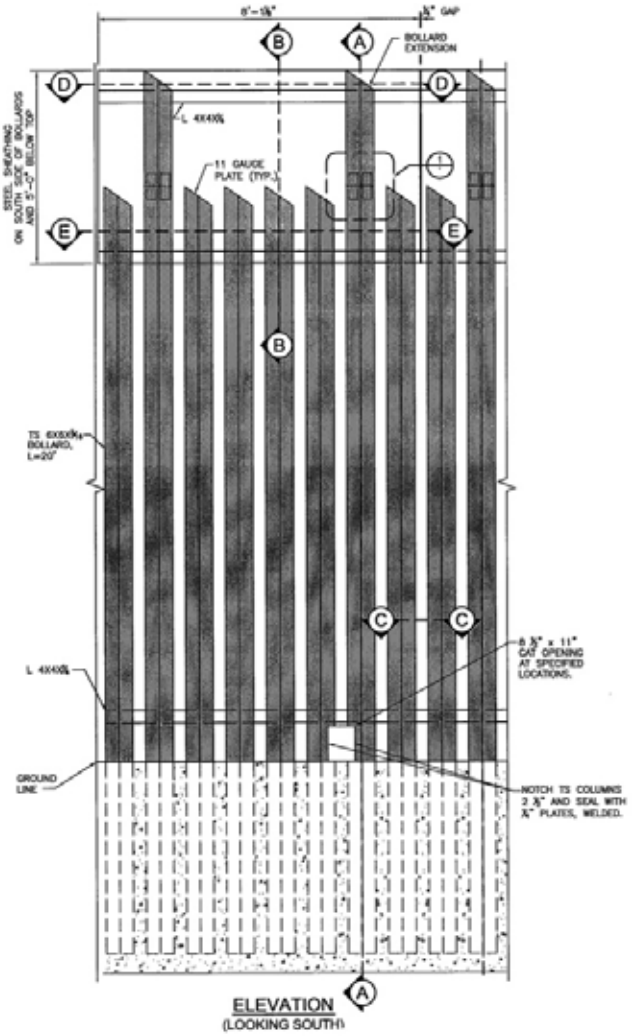

Figure 2-4. Schematic of PV-1 Fence Design

On the east and west end of the project corridor, CBP will construct a Normandy style VF. An example of this type of VF is provided in Photograph 2-1.

Photograph 2-1. Example of Normandy Style Vehicle Fence

Upon completion of the TI, CPB will be responsible for repair and maintenance of the fence and road. Such activities would include replacement or repair of fence segments that are vandalized, removal of debris that becomes entrapped along the fence or within any drainage structures, and grading of the road surface. These activities will occur on an as-needed basis; however, routine road maintenance would be expected to occur at least annually.

In order to facilitate construction activities, one temporary staging area has been identified along the project corridor. The staging area will be located within the Montezuma Ranch or NPS land and will be approximately 300 ft by 300 ft (2 acres). The exact location of the staging area will be identified in consultation with the NPS prior to construction. An existing ranch house and other small buildings are located within the staging area. The Design/Build Contractor may demolish the small buildings and remove other debris on the staging area, as deemed necessary, for the staging of equipment and materials. If the Design/Build Contractor determines that the ranch house needs to be demolished, they will coordinate with USACE and the NPS.

An access road leading from the staging area to the project corridor will be constructed. The new access road will be approximately 16 feet wide and 1.3 miles long. Additionally, previously constructed permanent vehicle barriers within the project corridor will be removed and replaced with primary pedestrian fencing.

To account for heat restrictions for adequate concrete drying and curing processes, concrete pours for low water crossings, other drainage structures, and fencing may take place during pre-dawn hours during summer months. The contractor will determine the appropriate schedule for concrete pouring and will ensure the concrete is installed in accordance with industry standards. A 24-hour schedule will be implemented only when additional efforts are needed in order to maintain the work task schedule due to weather or to meet Federally mandated timelines. In order to facilitate construction activities during these work hours, portable lights will be used. It is estimated that no more than 10 lights will be in operation at any one time at each project site within the project corridor.

A 6-kilowatt self-contained diesel generator powers these lights (Photograph 2-2). Each unit typically has four 400 to 1000-watt lamps. The portable light systems can be towed to the desired construction location, as needed. Lights will be shielded to direct light only and will be oriented to illuminate the work area to ensure the safety of the workers. The number of lights will be minimized and will be utilized for construction purposes only. The area affected by illumination is limited to 200 feet from the light source.

Photograph 2-2. Portable lights

It is anticipated that private contractors will perform the work. Construction will begin in July 2008 and be completed by December 2008. Equipment anticipated to be used during the construction will include bulldozers, dump trucks, portable light generators, graders, cement trucks, front-end loaders or forklifts, and flatbed trucks.

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SECTION 3.0
AIR QUALITY

3.0 AIR QUALITY

3.1 AFFECTED ENVIRONMENT

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the CAA for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with the CAA as the basis for evaluating potential environmental impacts and appropriate mitigations.

The USEPA established National Ambient Air Quality Standards (NAAQS) for specific pollutants. The NAAQS standards are classified as either "primary" or "secondary" standards. The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM-10), and lead (Pb). NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. The NAAQS are included in Table 3-1.

Table 3-1. National Ambient Air Quality Standards

POLLUTANT	STANDARD VALUE	STANDARD TYPE
Carbon Monoxide (CO)		
8-hour average	9ppm (10mg/m^3)	P
1-hour average	35ppm (40mg/m^3)	P
Nitrogen Dioxide (NO_2)		
Annual arithmetic mean	0.053ppm (100µ/m^3)	P and S
Ozone (O_3)		
8-hour average*	0.08ppm (157µg/m^3)	P and S
1-hour average*	0.12ppm (235µg/m^3)	P and S
Lead (Pb)		
Quarterly average	1.5µg/m^3	P and S
Particulate<10 micrometers (PM-10)		
Annual arithmetic mean	50µg/m^3	P and S
24-hour average	150µg/m^3	P and S
Particulate<2.5 micrometers (PM-2.5)		
Annual arithmetic mean	15µg/m^3	P and S
24-hour average	65µg/m^3	P and S
Sulfur Dioxide (SO_2)		
Annual average mean	0.03ppm (80µg/m^3)	P
24-hour average	0.14ppm (365µg/m^3)	P
3-hour average	0.50ppm (1300µg/m^3)	S

Legend: P= Primary S= Secondary Source: USEPA 2006.
ppm = parts per million
mg/m^3 = milligrams per cubic meter of air
µg/m^3 = micrograms per cubic meter of air

* Parenthetical value is an approximate equivalent concentration

Areas that do not meet these NAAQS standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas. The Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria or requirements for conformity determinations for Federal projects. While issuance of the waiver eliminated the requirement for CBP to comply with the CAA, the NAAQS have been used to evaluate the potential impacts to air quality associated with the fencing projects in both Arizona and California and to develop BMPs to minimize those impacts.

Cochise County is designated as a moderate non-attainment area for PM-10. The sources of PM-10 include natural wind storms, wind blown dust from agricultural operations and emissions from the combustion of hydrocarbons in cars, trucks, generators and industrial equipment.

3.2 ENVIRONMENTAL CONSEQUENCES

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the CAA, for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with the CAA as the basis for evaluating potential environmental impacts and appropriate mitigations.

Temporary and minor increases in air pollution will occur from the use of construction equipment (combustible emissions) and the disturbance of soils (fugitive dust) during construction of the primary pedestrian fence and maintenance/access roads.

EPA's NONROAD 2005 Model was used, as recommended by EPA's *Procedures Document for National Emission Inventory, Criteria Air Pollutants, 1985-1999* (EPA 2001), to calculate emissions from construction equipment such as bulldozers, cranes, etc. Assumptions were made regarding the type of equipment, the total number of days each piece of equipment would be used, and the number of hours per day each type of equipment would be used.

Similarly, emissions from delivery trucks and commuters traveling to the job site were calculated using the EPA MOBILE6.2 Model (EPA 2001). Construction workers will temporarily increase the combustible emissions in the airshed during their commute to and from the project area. These emissions were calculated in the air emission analysis and included in the total emission estimates.

Furthermore, large amounts of dust (i.e., fugitive dust) can arise from the mechanical disturbance of surface soils, including grading, driving, and road and fence construction. Fugitive dust emissions were calculated using the emission factor of 0.11ton per acre per month, which is a more current standard than EPA's 1985 *Compilation of Air Pollutant Emission Factors*, also known as AP-42 (EPA 2001). The total air quality emissions were calculated for the construction activities occurring in Cochise County to compare to the General Conformity Rule. Summaries of the total emissions for Cochise

County are presented in Table 3-2. Details of the analyses are presented in Appendix C.

Table 3-2. Total Air Emissions (tons/year) from Construction Activities in Cochise County vs. the *de minimis* Levels

Pollutant	Total (tons/year)	*de minimis* Thresholds (tons/year)
CO	34.05	NA
VOCs	7.13	NA
NOx	59.80	NA
PM-10	62.67	100
PM-2.5	16.44	NA
SO_2	7.66	NA

Source: 40 CFR 51.853 and GSRC model projections

BMPs to be implemented will include proper and routine maintenance of all vehicles and construction equipment to ensure that emissions are within the design standards of all vehicles and construction equipment. Dust suppression methods such as wetting solutions will be applied to minimize fugitive dust. Construction speed limits will not exceed 35 mph on major unpaved roads (graded with ditches on both sides) and 25 mph on all other unpaved roads. Nighttime travel speeds will not exceed 25 mph, and might be less based on visibility and other safety considerations. Construction at night will be minimized.

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SECTION 4.0
NOISE

4.0 NOISE

4.1 AFFECTED ENVIRONMENT

Noise is generally described as unwanted sound, which can be based either on objective effects (*i.e.*, hearing loss, damage to structures, *etc.*) or subjective judgments (*e.g.*, community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Sound on the decibel scale is referred to as sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB. Acceptable noise levels have been established by the U.S. Department of Housing and Urban Development (HUD) for construction activities in residential areas:

A dBA of 65 dB is the level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like construction. A dBA of 55 dB was identified by USEPA, as a level below which there is no adverse impact (USEPA 1974).

As a general rule of thumb, noise generated by a stationary noise source, or "point source," will decrease by approximately 6 dB over hard surfaces and 9 dB over soft surfaces for each doubling of the distance. For example, if a noise source produces a noise level of 85 dBA at a reference distance of 50 feet over a hard surface, then the noise level would be 79 dBA at a distance of 100 feet from the noise source, 73 dBA at a distance of 200 feet, and so on. To estimate the attenuation of the noise over a given distance the following relationship is utilized:

$$\text{Equation 1: } dBA_2 = dBA_1 - 20 \log^{(d2/d1)}$$

Where:

dBA_2 = dBA at distance 2 from source (predicted)
dBA_1 = dBA at distance 1 from source (measured)
d_2 = Distance to location 2 from the source
d_1 = Distance to location 1 from the source

Source: California Department of Transportation 1998

4.2 ENVIRONMENTAL CONSEQUENCES

The project corridor is located in a rural area with no sensitive noise receptors such as residential homes, churches, schools and hospitals; however, the western edge of the project corridor is located in a National Park and construction noise could affect wild animals and visitors to the park.

Noise emissions from the Planned Action may impact the foraging, nesting, and mating habits of wild animals. Noise and human presence within habitat occupied or utilized by wild animals could result in temporary avoidance of the area.

Construction noise could temporarily impact the recreational value of citizens enjoying the National Park. Overnight campers could be exposed to construction noises above thresholds of 55 dBA.

The road improvements will require the use of common construction equipment. Table 4-1 describes noise emission levels for construction equipment which range from 70 dBA to 81 dBA (Federal Highway Administration 2007 [FHWA] 2007).

Table 4-1. A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances[1]

Noise Source	50 feet	100 feet	200 feet	500 feet	1000 feet
Backhoe	78	72	68	58	52
Crane	81	75	69	61	55
Dump truck	76	70	64	56	50
Excavator	81	75	69	61	55
Front end loader	79	73	67	59	53
Concrete mixer truck	79	73	67	59	53
Pneumatic tools	81	75	69	61	55
Generator	81	75	69	61	55

Source: FHWA 2007 and GSRC

1. The dBA at 50 feet is a measured noise emission (FHWA 2007). The 100 to 1,000 foot results are modeled estimates.

Assuming the worst case scenario of 81 dBA, the noise model predicted that noise emissions of 81 dBA from the excavator would have to travel 1,000 feet before they would attenuate to a 55 dBA, a level that may not affect the foraging and nesting habits of wild animals or disturb the sleep of overnight campers. To minimize this impact potential, it is recommended that mitigation actions be implemented when working in the National Park, including limiting work to daylight and weekday periods, to the maximum extent practicable.

SECTION 5.0
LAND USE, RECREATION, AND AESTHETICS

5.0 LAND USE, RECREATION, AND AESTHETICS

5.1 AFFECTED ENVIRONMENT

Land use and aesthetics are described in detail in the 2000 Corridor EA (INS 2000), the 2003 Naco-Douglas SEA (CBP 2003), and the 2007 NPS Environmental Assessment (EA) (NPS 2007) and are incorporated herein by reference. The NPS, BLM, and a handful of private landowners control the majority of the land composing the project corridor (Figure 5-1).

The major visual appeal to southern Arizona lies in its vast areas of naturally occurring landscape. It is known for its tranquil dark skies and scenic mountain ranges. The project area is positioned across a scenic valley between two mountain ranges. Several unique and pristine areas exist within the corridor and contribute to the overall beauty of the southern desert region. For example, the San Pedro Riparian National Conservation Area (SPRNCA) is a rare, unique occurrence of lush vegetative habitat that can be seen for miles and is virtually, an oasis among the desertscrub surroundings. To the west of the SPRNCA lies the southern edge of the Huachuca Mountains, which contains the Coronado National Memorial and Coronado National Forest.

Visitors come to Coronado National Memorial to learn about the history associated with the site, enjoy the outdoor recreational opportunities, hiking, birding, caving, bicycling, or simply to marvel at the spectacular views from Montezuma Pass. The scenery from the roadside viewing area at the top of Montezuma's Pass in the Coronado National Memorial portrays the entire picture of the relatively untouched scenic beauty of southeastern Arizona and Sonora, Mexico.

5.2 ENVIRONMENTAL CONSEQUENCES

The installation of primary fence under the Planned Action will have minimal additional impact on land use, as the majority of the project corridor is currently part of the 60-foot Roosevelt Reservation, which is designated for border enforcement. Temporary impacts to visual resources will occur due to construction activities. Additionally, the Planned Action will have long-term, minor to moderate impact on visual resources because the 6.24 miles of primary PF and VF will be visible and attract the attention of the casual observer particularly within the Coronado National Memorial.

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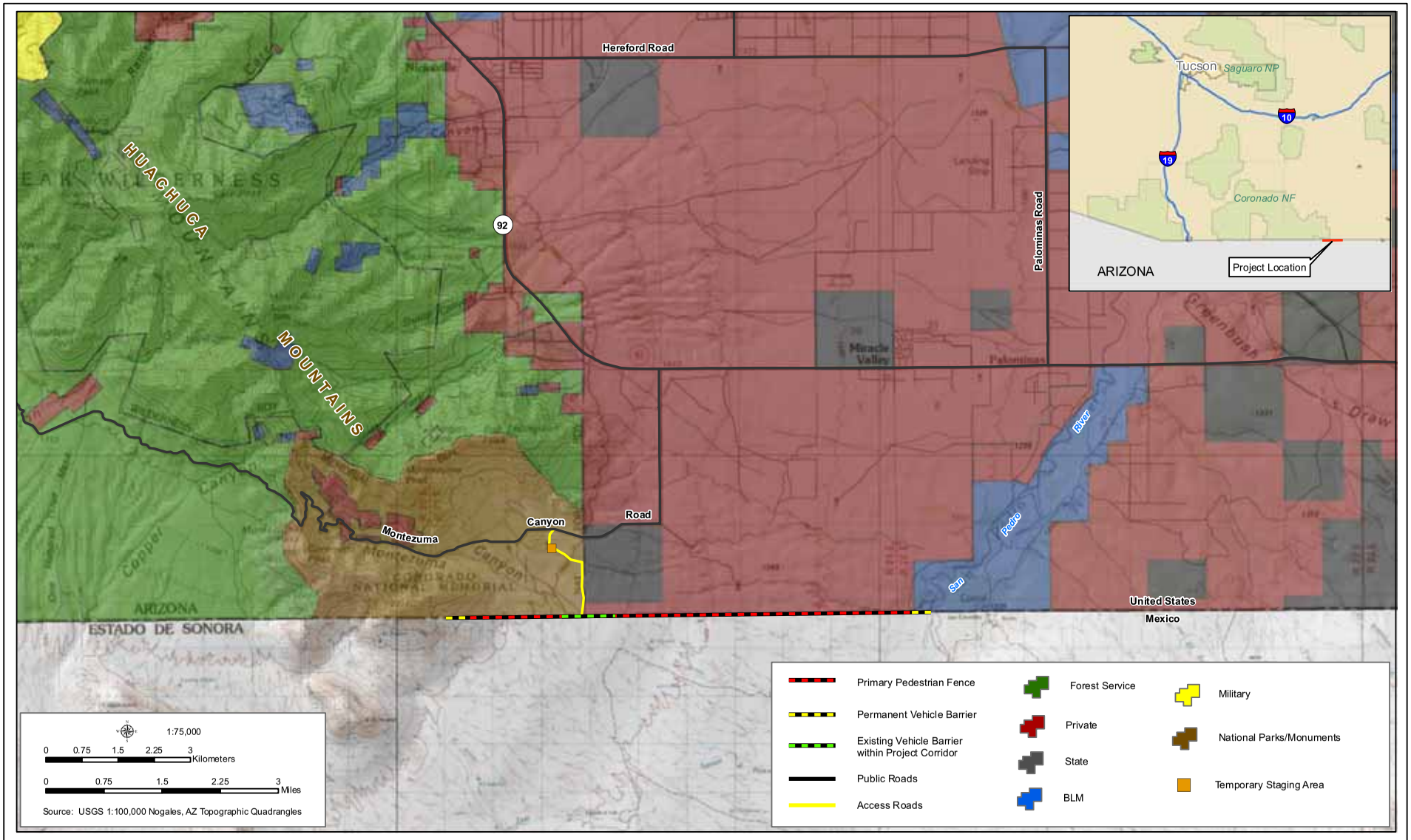

Figure 5-1: E-2A Project Corridor Land Ownership

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SECTION 6.0
GEOLOGICAL RESOURCES AND SOILS

6.0 GEOLOGICAL RESOURCES AND SOILS

6.1 AFFECTED ENVIRONMENT

Arizona has a diverse assortment of soil types throughout the state with variations in depth, texture, chemical properties and appropriate land uses. This diversity is directly related to regional differences in climate, parent material, topography and erosion actions.

Soil attributes were discussed in the 2000 Corridor EA (INS 2000), the 2003 Naco-Douglas SEA (CBP 2003), and the 2007 NPS EA (NPS 2007). Discrepancies discovered from researching current data suggests that there may be inconsistencies in previous soil surveys conducted within the project corridor. Therefore, a single figure was created from data believed to be most representative of site conditions within the project corridor (Figure 6-1). The predominant soil associations found along the border in Cochise County are described below as defined by the USDA; Natural Resources Conservation Service (NRCS) (NRCS 1971and 2000, NPS 2007). Soils within the Coronado National Memorial were mapped by Denny and Peacock (2000).

The soil associations found in the project corridor are the Coppercan-Canquya and Coppercan-Yarbam-Rock Outcrop complexes, the Gardencan-Terrarossa and Gardencan-Lanque complexes, the Montcan-Amuzet-Riverwash complex, and Sasabe, Ubik, and Courtland-Diaspar complexes (NRCS 1971, 2000; Denny and Peacock 2000; NPS 2007). Soils types identified as occurring within the boundary of the project corridor are presented in Figure 6-1.

Both Coppercan soil complexes occurring onsite are typical of side slopes of hills, and are both well drained with similar permeability rates and can be found near the western most portion of the project corridor. These complexes often occur at an elevation ranging from 4,900 to 6,000 feet above mean sea level (amsl) and are located within areas of exposed limestone bedrock on eroded shoulders and side slopes of pediments.

Both Gardencan soil complexes are well drained and have relatively low to moderate erosion susceptibility. The Gradencan-Lanque complex is typical of alluvial fans and terraces and has a slope of 0 to 5 percent. This soil often occurs between 4,850 and 5,100 feet amsl and occupies the majority of the central portion of the project corridor. The Gardencan-Terrarossa complex is characteristic of the summits of fan terraces, has a slope of 2 to 18 percent, and is classified as a fine, mixed, superactive, thermic Aridic Paleustalfs. This soil typically occurs between 4,800 to 5,400 feet amsl in elevation and is located near the western portion of the corridor.

The Montcan-Amuzet-Riverwash Complex is present in the wash feature toward the western portion of the project corridor. This soil is typical of relict side bars, stream floodplains, and stream channels. It is described as a sandy-skeletal, mixed, thermic soil with a slope of 3 to 5 percent.

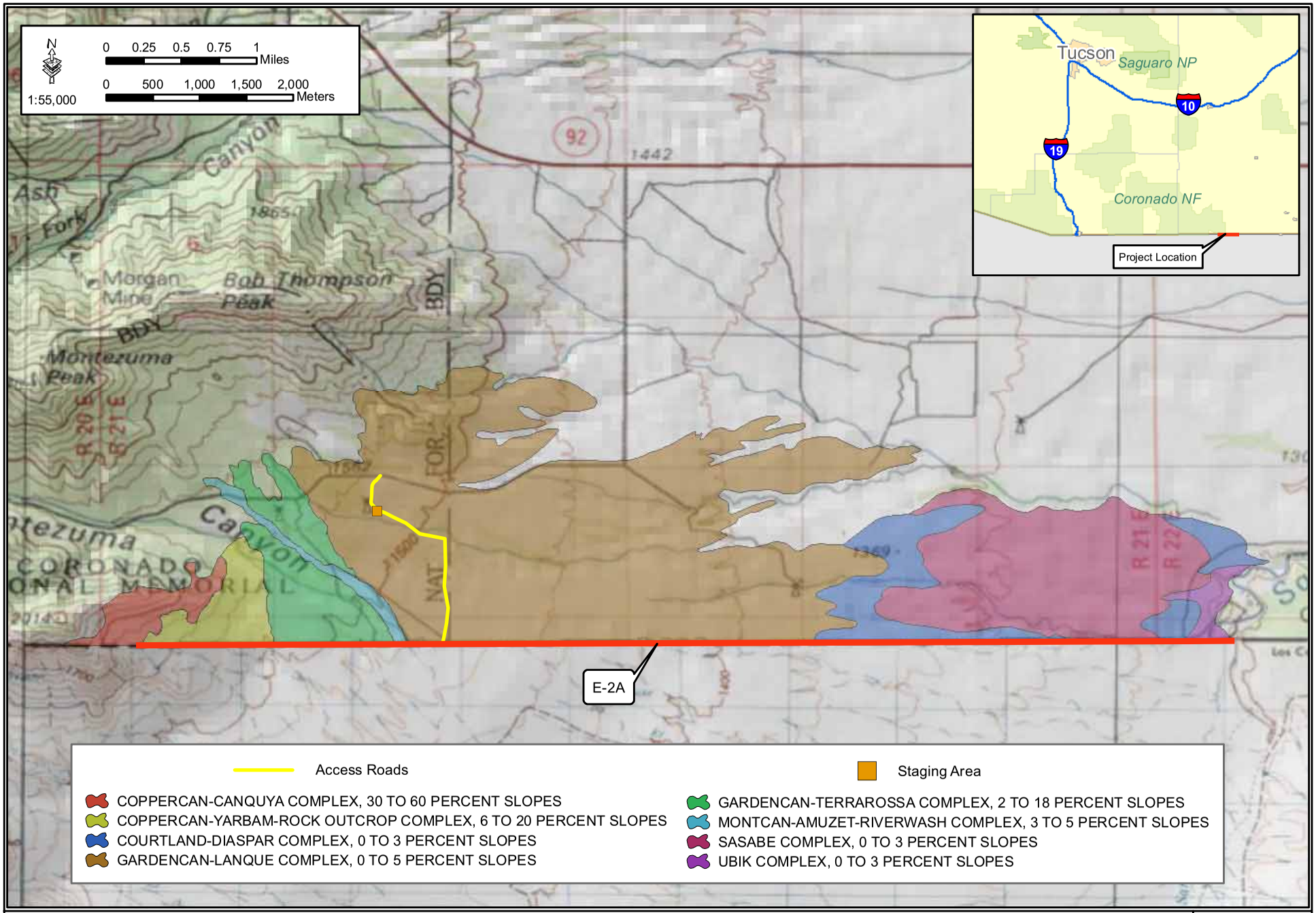

Figure 6-1: Soils for E-2A

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March 2008

The Courtland-Diaspar Complex is a well drained deep soil typical of fan terraces and can be found near the eastern third of the project corridor. This soil has moderately slow permeability rates, a high available water capacity, and has a slope of 0 to 3 percent. The soil surface is stabilized by warm-season perennial grasses and when vegetation is removed, the Courtland soil is highly susceptible to wind erosion.

The Sasabe Complex occupies much of the central portion of the eastern third of the project site and is typical of fan terraces. It is a well drained deep soil with slow rates of permeability and high available water capacity. The Sasabe complex is frequently flooded and has a high shrink-swell potential due to elevated levels of clay present within the soil profile.

The Ubik Complex soil type is typical of floodplains and alluvial fans and can be found near the eastern terminus of the project corridor. This soil is occasionally flooded, has a slight to moderate hazard of water erosion and special consideration will be made when planning water management strategies.

6.2 ENVIRONMENTAL CONSEQUENCES

The Planned Action will directly impact approximately 58 acres of soil within the project corridor. Approximately 56 acres will be permanently impacted from construction of the primary PF, VF, and construction/maintenance road; however, 7 acres of soil have been previously disturbed by the existing patrol road. The staging area will impact approximately 2 acres, but will be rehabilitated upon completion of construction activities.

Construction of the primary PF, VF, and construction/maintenance road will indirectly impact approximately 58 acres of soil within the project area due to the susceptibility of the soils in this region to erosion. Pre- and post-construction SWPPP measures will be implemented to control erosion.

The Planned Action will involve only disturbances to the topsoil layers, and in the case of creating holes for fence posts or removing existing fence posts, the impacts will occur to only a very small surface area, not altering the geology of the region. Additionally, the majority or the roads being improved within the project corridor are preexisting, and will, therefore, not require substantial modifications to the area's topography (*i.e.*, road cuts). Thus, no major impact on soils and the region's geology are expected.

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SECTION 7.0
WATER USE AND QUALITY

7.0 WATER USE AND QUALITY

7.1 AFFECTED ENVIRONMENT

7.1.1 Hydrology and Groundwater

The groundwater resources were discussed in detail in the 2003 Naco-Douglas SEA and are incorporated herein by reference (CBP 2003). Groundwater resources affected in the project corridor are located in the Upper San Pedro River Basin. The USP basin is an intermontaine valley of about 1,875 square miles bounded on the west by the Huachuca, Whetstone, and Rincon Mountains, and on the east by the Mule, Dragoon, Little Dragoon, and Winchester Mountains (Barnes 1997). About 72 percent (1,175 square miles) of the basin is within the U.S., mostly within Cochise County. The remaining 28 percent (700 square miles) is located within Mexico.

Groundwater resources are available from both water table and artesian aquifer conditions. Groundwater is collected in the streambed alluvium and sediments that fill the valley areas. The basin is fed by direct rainfall and groundwater that follows faults and existing bedrock from the adjacent mountains. The direction of flow generally follows the surface flow northwesterly with the riverbed. Major inflows into the groundwater system come from recharge of water along the fronts of the Huachuca, Mule, Whetstone, Rincon and Dragoon Mountains (including ephemeral channel recharge), from groundwater flowing across the U.S/Mexico border, and from recharge of flood flows of the streams in the basin. Secondary sources are recharge of water from recharge projects, septic tanks, and golf courses (Arizona Department of Water Resources [ADWR] 2005).

Water is used in the USP basin for a variety of purposes, including municipal, industrial, military and domestic uses, agricultural and stock use, and by wildlife and riparian systems primarily associated with the San Pedro and Babocomari Rivers. Municipal water use in the USP basin includes use by public and private water utilities, use at Fort Huachuca and use by domestic (exempt) wells (ADWR 2005).

The total available groundwater in storage in the USP basin varies from source to source, and year to year, which is generally revised downward. In 1990, the ADWR estimated that there was 56,700,000 acre-feet (ac-ft) of water in aquifer storage (ADWR 1990). A 2002 Water Resources Inventory conducted for Cochise County, however, estimated that the total water in storage in the USP basin is 40,400,000 ac-ft (Engineering and Environmental Consultants [EEC] 2002), all of which is contained within the Upper and Lower basin fill, unconfined to confined aquifer. In a 1998 report prepared by the Center for Environmental Cooperation (CEC), a ground water budget for the U.S. portion of the USP basin was reported at approximately 7,400 ac-ft/year deficit and a 12,670 ac-ft/year deficit was estimated by the year 2030 if conservation measures are not incorporated (CEC 1999). There is a consensus that the San Pedro Basin experiences an annual deficit to its recharge.

7.1.2 Surface Water

Within the Coronado National Memorial most surface waters are ephemeral streams, consisting of dry washes, arroyos, or continuous and discontinuous gullies. Montezuma Canyon is the major drainage within the Coronado National Memorial (NPS 2002a). It receives flow from several ephemeral streams before its confluence with the San Pedro River (Figure 7-1). Evidence of streambank erosion and downcutting in Montezuma Canyon can be seen in areas where development and grazing have occurred. In addition, large amounts of eroded soils that have been transported downstream can be seen along drainage ways (NPS 2002a).

Surface waters outside of the Coronado National Memorial were discussed in detail in the 2003 Naco-Douglas SEA and are incorporated herein by reference (CBP 2003). The project corridor contains up to 21 potential Waters of the U.S. (WUS). The majority of the project corridor lies within the San Pedro River Valley. The San Pedro River, which starts in the desert grasslands of northern Sonora, Mexico, flows northward for 140 miles into the Gila River near Lineman, Arizona (U.S. Department of the Interior [USDOI] 1989). The San Pedro River is the largest un-dammed river in the southwest.

7.1.3 Floodplains

Floodplains were described in detail in the 2003 Naco-Douglas SEA and are incorporated herein by reference (CBP 2003). Floodplains are low-lying areas adjacent to or within major watersheds that serve to contain excess water during rainfall events. The 100-year flood is generally the standard utilized in management of floodplains. This boundary is based on the elevation in which there is a one percent chance that floodwater will reach a designated limit during a rainfall event. According to the Federal Emergency Management Agency (FEMA) floodplain maps (FEMA 1989), approximately 680 linear feet of the project corridor is bisected by a floodplain (Figure 7-2).

7.2 ENVIRONMENTAL CONSEQUENCES

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the CWA for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with the CWA as the basis for evaluating potential environmental impacts and appropriate mitigations.

7.2.1 Groundwater

Water required for construction purposes (*e.g.*, fugitive dust control and concrete pours) will be obtained from sources within the USP basin. The volume of water used for construction of new fencing and new access roads is estimated to be 1.4 million gallons (4.3 ac-ft). Actual water usage will be metered by the contractor. Due to the fact that the USP basin experiences an annual deficit to its recharge, the water required for construction purposes will be considered a moderate impact to regional groundwater supplies. Mitigation measures will be identified and implemented, as appropriate, and in coordination with the USACE Los Angeles District and USFWS.

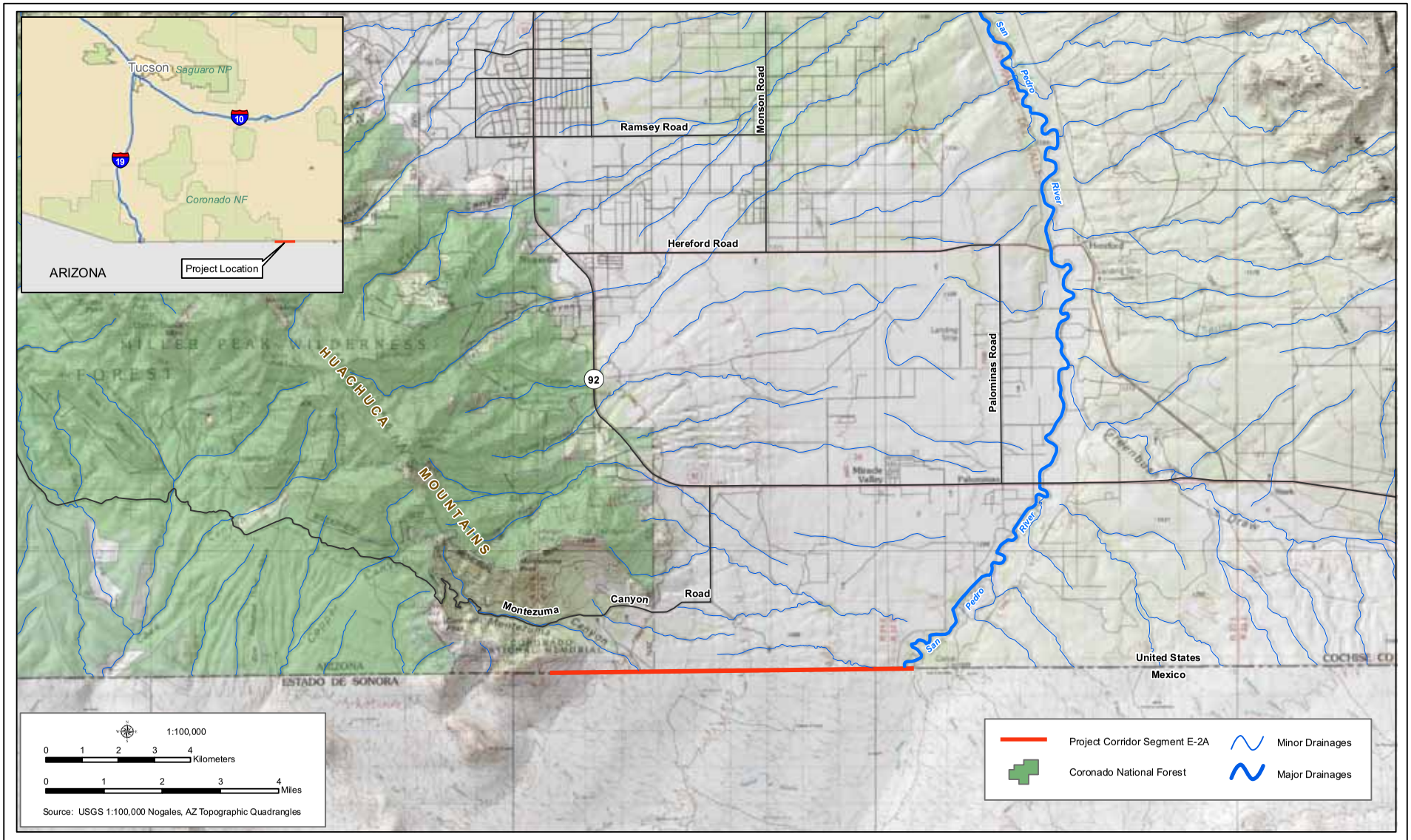

Figure 7-1: Surface Waters and Waters of the U.S.

GSRC

April 2008

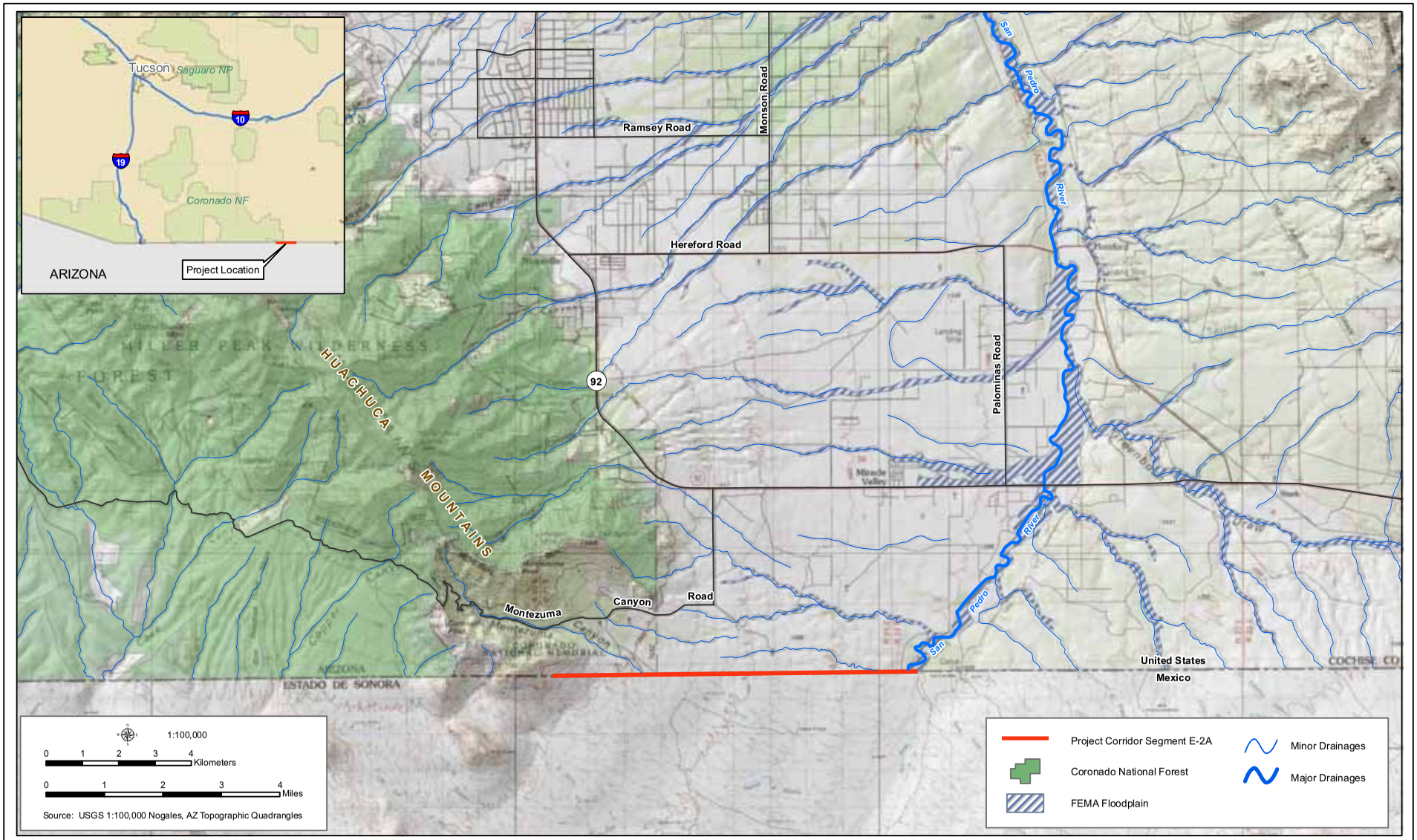

Figure 7-2: FEMA Floodplain Map

GSRC

April 2008

7.2.2 Surface Water

With the implementation of the Planned Action, the total impact on the 21 potential WUS will be less than 1 acre. The fence designs will be provided to USIBWC for recommendations that could be implemented to avoid impediments to international stream flow within either country. Additionally, CBP will remove woody debris after each rain event, as necessary, to provide proper conveyance of flood waters.

During the construction period, erosion, downstream sedimentation, and accidental spills or leaks could have temporary and minor effects on surface water quality. However, with proper implementation of BMPs, as identified in the current SWPPP and SPCCP for the ongoing construction, these effects will be substantially reduced or eliminated.

The Planned Action will not substantially alter existing drainage patterns or substantially affect water quality. Thus, the Planned Action will have minimal impact on the region's surface waters.

7.2.3 Floodplains

Due to the general north/south orientation of floodplains within the project corridor and the need to place infrastructure parallel to the U.S/Mexico border, the Planned Action will have an unavoidable direct impact on approximately 0.9 acres of floodplains. However, CBP has committed to develop fence and road designs that do not impede conveyance or increase flood elevations, frequencies, and durations. CBP has determined that there is no other practicable alternative to constructing sections of the fence within the floodplain, as the border bisects the floodplain and the fence will be located on the border.

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SECTION 8.0
BIOLOGICAL RESOURCES
(VEGETATION, WILDLIFE, AQUATIC SPECIES, SPECIAL STATUS SPECIES)

8.0 BIOLOGICAL RESOURCES (VEGETATION, WILDLIFE, AQUATIC SPECIES, SPECIAL STATUS SPECIES)

8.1 AFFECTED ENVIRONMENT

8.1.1 Vegetation

Surveys of the vegetation communities of the Coronado National Memorial were conducted in 1991 and are incorporated by reference to describe the vegetation in the western portion of the project area (NPS 2007). A field reconnaissance survey of the eastern portion of the project area was discussed in detail in the 2003 Naco-Douglas SEA and is incorporated by reference (CBP 2003). The field reconnaissance survey was performed in April 2002 within the limits of the project corridor (within 300 feet of the U.S/Mexico border). As expected, the April 2002 survey was consistent with previous investigations (INS 2000; USACE 1994, 1996). Vegetation communities in both portions of the project are described below.

Semi-desert grassland scrub is prevalent in the broad open valleys of the project corridor. This vegetation community is dominated by blue grama (*Bouteloua gracilis*) and other grama grasses (*Bouteloua* spp.), plains lovegrass (*Eragrostis intermedia*), Arizona cottontop (*Digitaria californica*), alkali sacaton (*Sporobolus airoides*), tobosa grass (*Hilaria mutica*), and sotol (*Dasylirion wheeleri*) are dominant grass species in this community. Common shrub species in this community include rabbit brush (*Chrysothamnus nauseosus*), fairy duster (*Calliandra eriophylla*), broom snakeweed (*Gutierrezia sarothrae*), honey mesquite (*Prosopis glandulosa*), little leaf sumac (*Rhus microphylla*), desert broom (*Baccharis sarothroides*), acacia (*Acacia* sp.), and ocotillo (*Fouquieria splendens*). Succulents and cacti include hedgehog cactus (*Echinocereus pectinatus*), Palmer agave (*Agave palmeri*), and jumping cholla (*Cylindropuntia fulgida*). Arizona white oak (*Quercus arizonica*), Emory oak (*Q. emoryi*), desert hackberry (*Celtis pallida*), one-seed juniper (*Juniperus monosperma*) are scattered throughout this community and are common.

The Riparian Scrub vegetation community is primarily associated with washes in the project corridor, and is restricted to streams, springs, ephemeral drainages, and areas that have a shallow water table. Trees usually do not form a closed canopy in this community type. Typical species of this association include Arizona white oak, desert willow (*Chilopsis linearis*), Emory oak, honey mesquite, poison ivy (*Rhus radicans*), rabbit brush, sumac (*Rhus virens*), and cane cholla (*Cylindropuntia spinosior*). Relatively dense stands of desert willow and occasional honey mesquites are scattered along drainages in the southeastern corner of the Coronado National Memorial.

The riparian forest vegetation community is isolated to those lands where the project corridor transects the San Pedro River floodplain. This area is primarily comprised of mature trees such as Goodding willow (*Salix gooddingii*), Fremont cottonwood (*Populus fremontii*), and American sycamore (*Plantanus occidentalis*). Other shrubs and grasses

found in this area included saltcedar (*Tamarix* sp.), rabbitbush, grama grass, and acacia.

The Chihuahuan scrub plant community is prevalent throughout much of southeast Arizona and occupies foothills, slopes, and rocky areas in the project corridor. The plant community consists of creosote bush (*Larrea tridentata*), tarbush (*Flourensia cernua*), honey mesquite, lechuguilla (*Agave lechuguilla*), sotol, banana yucca (*Yucca baccata*), mimosa (*Mimosa* sp.), acacia, and ocotillo. Several other species that were identified during the April 2002 surveys included four-wing saltbush (*Atriplex canescens*), kingcup cactus (*Echinocereus triglochidiatus*), and allthorn (*Koeberlinia spinosa*).

The interior chaparral vegetation community generally occupies the lower slopes of mountainous areas above the grasslands. This community supports vegetation that is a mix of shrubs, small trees, and grasses. Some of the more common interior chaparral species found in the project corridor are sugar bush (*Rhus ovata*), desert ceanothus (*Ceanothus greggii)*, sideoats grama (*Bouteloua curtipendula*), purple verbena (*Verbena wrightii*), Parry's agave (*Agave parryi*), and plains lovegrass. Other species observed include sneezeweed (*Helenium* sp.), acacia, ocotillo, cholla, soap tree yucca (*Yucca elata*), prickly pear (*Opuntia* sp.), aster, little leaf sumac, and sotol.

Lehmann lovegrass is an exotic plant that exists within the project corridor and tends to become established in disturbed areas (NPS 2007). Lehmann lovegrass, a species introduced from South Africa, appears to be spreading naturally throughout much of southern Arizona to the detriment of more palatable native grasses.

8.1.2 Wildlife and Aquatic Resources

Arizona contains an enormous diversity of environments for wildlife (751 vertebrate species) ranging from hot, dry deserts at low elevations through rich upland deserts, grasslands, and woodlands at mid-elevations to cold, moist montane/alpine habitats. The distribution of these environments is controlled generally by climatic conditions, as well as by topographic features (Hendrickson and McKinley 1984). Physiographic features such as scarps, plateaus, plains, mountains, and drainage systems, along with soil types and pedogenic and biotic elements, influence wildlife distribution (Hendrickson and McKinley 1984).

A discussion of wildlife native to southeastern Arizona, including Cochise County, is incorporated herein by reference from the 2000 Corridor EA, the 2003 Naco-Douglas SEA, and the 2007 NPS EA (INS 2000, CBP 2003, NPS 2007).

8.1.2.1 Mammals

Common mammals in the project corridor include mule deer (*Odocoileus hemionus*), black-tailed jackrabbits (*Lepus californicus*) and ground squirrels (*Spermophilus* sp.). A white-tailed deer (*Odocoileus virginianus*) was observed in the project corridor during the site visit on March 14, 2008. Signs of cougar (*Felis concolor*) and coyotes (*Canis latrans*) were also recorded in the project corridor during past surveys.

8.1.2.2 Birds

Common bird species for the region include Gambel's quail (*Callipepla gambelii*), greater roadrunner (*Geococcyx californianus*), house finch (*Carpodacus mexicanus*), mourning dove (*Zenaida macroura*) and Swainson's hawk (*Buteo swainsoni*). The rufous-winged sparrow (*Aimophila carpalis*) seeks grasslands mixed with thorn bushes, mesquite trees, or cholla patches (NPS 2007). Other sparrows, such as the rufous-crowned sparrow (*Aimophila ruficeps*), prefer treeless dry uplands with grassy vegetation and bushes, often near rocky outcrops, and open oak woodlands (NPS 2007). The common raven can be found in deserts, coniferous forests, and arid mountains (NPS 2007). Raptors, including red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and American kestrel (*Falco sparverious*), are present, but few observations have been recorded in the Coronado National Memorial (NPS 2002b).

8.1.2.3 Amphibians and Reptiles

Of the 23 amphibian species that inhabit southeastern Arizona, two families, the spadefoot and true toads, are dominant and the most widespread. Iguanid lizards, colubrid snakes, and whiptails (*Cnemidophorus* spp.) are the most common reptile groups in the area. Reptile species observed in the project corridor include Sonoran coachwhip (*Masticophis flagellum cingulum*), whiptail lizards, and earless lizards (*Holbrookia* spp.).

8.1.2.4 Aquatic Resources

The San Pedro River intersects the eastern edge of the project corridor (see Figure 1-2). Within the project corridor, the river is classified as being a perennial stream. North of the project corridor it is classified as an intermittent stream. Historically, 13 native species of fish were present in the San Pedro River (Table 8-1). Of these species, only two remain: the longfin dace (*Agosia chrysogaster*) and desert sucker (*Catostomus clarki*). Most of the fish (14 species) currently present in the San Pedro River system are non-native species (see Table 8-1; USDOI 1989).

8.1.3 Protected Species and Critical Habitat

8.1.3.1 Federal

A total of 24 Federally protected species and three candidate species have the potential to occur within Cochise County (USFWS 2007a) (Table 8-2). Of these 24 species, seven could potentially occur within the project corridor. Of the 24 listed species in Cochise County, 11 are listed with designated Critical Habitat. However, only designated Critical Habitat for the Mexican spotted owl (*Strix occidentalis lucida)* occurs within the project construction area. A brief description of the seven species and one Critical Habitat designation occurring or potentially occurring within the project corridor is presented in the following paragraphs.

Table 8-1. Historic and Current Fish Species of the San Pedro River, Cochise County, Arizona

Native Fish	Scientific Name	Non-Native Fish	Scientific Name
Colorado River squawfish	*Ptychocheilus lucius*	black bullhead	*Ameiurus melas*
desert pupfish	*Cyprinodon macularius*	bluegill	*Lepomis macrochirus*
desert sucker	*Catostomus clarki*	brook trout	*Salvelinus fontinalis*
flannel-mouth sucker	*Catostomus latipinnis*	channel catfish	*Ictalurus punctatus*
Gila chub	*Gila intermedia*	common carp	*Cyprinus carpio*
Gila topminnow	*Poeciliopsis occidentalis*	fathead minnow	*Pimephales promelas*
loach minnow	*Rhinichthys cobitis*	goldfish	*Carassius auratus*
longfin dace	*Agosia chrysogaster*	green sunfish	*Lepomis cyanellus*
razorback sucker	*Xyrauchen texanus*	largemouth bass	*Miropterus salmoides*
roundtail chub	*Gila robusta*	mosquitofish	*Gambusia affinis*
speckled dace	*Rhinichthys osculus*	rainbow trout	*Oncorhynchus mykiss*
spikedace	*Meda fulgida*	red shinner	*Cyprinella lutrensis*
Sonoran sucker	*Catostomus insignis*	threadfin shad	*Dorosoma petenense*
		yellow bullhead	*Ameiurus natalis*

Source: USDOI 1989.

Table 8-2. Federally-Listed and Candidate Species Potentially Occurring within Cochise County, Arizona

Common/Scientific Name	Federal Status	Habitat	Potential to Occur within or near the Project Corridor
PLANTS			
Canelo Hills ladies'-tresses *Spiranthes delitescens*	E	Finely grained, highly organic, saturated soils of cienegas.	None – Known populations occur in or near the Canelo Hills northwest of the project corridor (USFWS 1997a, 2008).
Huachuca water umbel *Lilaeopsis schaffneriana* spp. *Recurva*	E	Cienegas, perennial low gradient streams, wetlands	High –Occupancy noted in the San Pedro River portion of the project corridor during the February 14-17, 2008 survey.
Lemmon fleabane *Erigeron lemmonii*	C	Grows in dense clumps in crevices, ledges, and boulders in canyon bottoms in pine-oak woodland	None – Found at one site on Fort Huachuca (USFWS 2007a).
Cochise pincushion cactus *Coryphantha robbinsorum*	T	Desertscrub or semi-desert grassland communities on gray limestone hills.	None – known from an area of several square miles on Arizona State Trust Lands in the San Bernardino Creek basin east of the project corridor (USFWS 2007b).

Table 8-2, continued

Common/Scientific Name	Federal Status	Habitat	Potential to Occur within or near the Project Corridor
INVERTEBRATES			
Huachuca springsnail *Pyrgulopsis thomsoni*	C	Aquatic areas, small springs with vegetation and slow moderate flow.	None – No suitable habitat present.
BIRDS			
California Brown Pelican *Pelicanus occidentalis californicus*	E, PD	Breeds in coastal areas, wandering individuals reported from Arizona streams and lakes	Low - Individuals could be found along the San Pedro River (USFWS 2007c).
Mexican spotted owl *Strix occidentalis lucida*	T	Nests in canyons and dense forests with multi-layered foliage structure.	Moderate– Critical habitat designated in western portion of project region (USFWS 1993).
Southwestern willow flycatcher *Empidonax traillii extimus*	E	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	None – Known populations on the San Pedro River occur near the Gila River north of the project corridor (USFWS 2005a).
Yellow-billed cuckoo *Coccyzus americanus*	C	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries)	High - Known populations occur along the San Pedro River in the vicinity of the project corridor (USFWS 2008).
AMPHIBIANS			
Chiricahua leopard frog *Rana chiricahuensis*	T	Streams, rivers, backwaters, ponds, and stock tanks free from non-native aquatic species	None – The species' distribution is primarily west of the Huachuca Mountains and the project corridor (USFWS 2007d).
Sonora tiger salamander *Ambystoma tigrinum stebbinsi*	E	Stock tanks and impounded cienegas	None – The species' distribution is primarily west of the Huachuca Mountains and the project corridor (USFWS 2007e).
REPTILES			
New Mexico ridge-nosed rattlesnake *Crotalus willardi Obscurus*	T	Found in canyon bottoms of pine-oak and pine-fir communities	None - Nearest known populations occur in the Peloncillo Mountains west of the project corridor (USFWS 1985, AESFO 2007).
MAMMALS			
Jaguar *Panthera onca*	E	Found in a variety of habitats at higher elevations	High – Sightings have been documented near the western portion of the project corridor within the CNF (USFWS 2007f).
Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	E	Desert scrub habitat with agave and columnar cacti present as food plants	High – Potential foraging habitat but no suitable roosting habitat present (USFWS 1997b).
Ocelot *Leopardis pardalis*	E	Humid tropical and subtropical forests, savannahs, and semi-arid thornscrub	Low- Thought to be extirpated from U.S., but may persist along the San Pedro River (USFWS 1990, AGFD 2004b).

Table 8-2, continued

Common/Scientific Name	Federal Status	Habitat	Potential to Occur within or near the Project Corridor
FISHES			
Beautiful shiner *Cyprinella formosa*	T	Small to medium streams with sand, gravel, and rock bottoms	None – Only known population introduced to ponds on the San Bernardino National Wildlife Refuge east of project area (USFWS 1994).
Desert pupfish *Cyprinodon macularis*	E	Shallow springs, small streams, and marshes; tolerates saline and warm water	None - All natural populations have been extirpated from Arizona (USFWS 2007g).
Gila chub *Gila intermedia*	E	Pools, springs, cienegas, and streams.	None– Nearest population of Gila chub occurs in the Santa Cruz River in the San Rafael Valley west of the project corridor (USFWS 2005b).
Gila topminnow *Poeciliopsis occidentalis sonoriensis*	E	Vegetated shallows of small streams, springs, cienegas and.	None – Nearest populations occur in headwaters of the Santa Cruz basin west of the project corridor (USFWS 1998).
Loach minnow *Tiaroga cobitus*	T	Benthic species of small to large perennial streams with swift shallow water over cobble and gravel	None - Nearest extant population occurs within Pinal and Graham counties along Aravaipa Creek (USFWS 2007h).
Spikedace *Meda fulgida*	T	Moderate to large perennial streams with gravel cobble substrates and moderate to swift velocities over sand and gravel substrates	None - Nearest extant population occurs within Pinal and Graham counties along Aravaipa Creek (USFWS 2007h).
Yaqui catfish *Ictalurus pricei*	T	Moderate to large streams in areas of medium to slow current over sand or rock	None– reports of the species in the U.S. are not supported by specimens (USFWS 1994).
Yaqui chub *Gila purpurea*	E	Deeper pools of small stream, pools, or ponds near undercut banks and debris	None – Known populations restricted to San Bernardino Creek subbasin east of project corridor (USFWS 1994).
Yaqui topminnow *Poeciliopsis occidentalis sonoriensis*	E	Shallow areas of small to moderate sized streams, springs, and cienegas	None – Known populations restricted to San Bernardino Creek subbasin east of project corridor (USFWS 1994).

E – Endangered; C – Candidate; PD - Proposed for Delisting; T – Threatened

Huachuca Water Umbel

The Huachuca water umbel is found in mid-elevation wetland communities in southern Arizona and northern Sonora, Mexico (USFWS 1999). Known populations occur along the Santa Cruz River and its tributaries in the San Rafael Valley, along Sonoita Creek, along the San Pedro River near the U.S/Mexico border, and in eastern Cochise County. Huachuca water umbel is typically associated with perennial springs and stream headwaters that have permanently or seasonally saturated and highly organic soils. The Huachuca water umbel requires refugial sites where it is free from scouring caused

by flooding. Following a flood event, the species is capable of rapidly colonizing disturbed areas from these refugial populations. Although Huachuca water umbel can persist in dense mats where scouring is absent, populations within flooded areas typically become less dominant as competition with other aquatic plants exceeds its tolerance.

California Brown Pelican

The brown pelican does not breed in Arizona; however, following the breeding season, wandering individuals can be found throughout the state (USFWS 2007c). The documented occurrences of wandering brown pelicans are uncommon, however individuals could be found along the San Pedro River.

Mexican Spotted Owl and Critical Habitat

In the U.S., the Mexican spotted owl occupies warm-temperate and cold-temperate forests from the southern Rocky Mountains in Colorado and the Colorado Plateau in southern Utah southward through Arizona and New Mexico (USFWS 1993). A discontinuous population also occurs in Mexico with a range extending from the Sierra Madre Occidental and Oriental mountains southward to the southern end of the Mexican Plateau. In southeast Arizona, the species typically occurs in mixed-conifer forests; however, the species utilizes a variety of habitat types throughout its range. Habitat characteristics which favor the Mexican spotted owl are usually found in old growth forests at least 200 years of age. These characteristics include a dense multi-layered canopy with numerous snags and downed woody matter. Nesting habitat is commonly associated with at least some old-growth trees, steep slopes at elevations from 6,000 to 8,000 feet amsl, and a northern or eastern aspect.

Nesting pairs typically establish a home range of about 1,000 acres which provides year-round access to nesting, roosting, and foraging areas (USFWS 1993). Nesting has been observed on a variety of substrates including artificial platforms, tree cavities, and cliff ledges. Male and female owls begin roosting together in February and the female begins laying eggs as early as March. Incubation lasts 30 days and most eggs are hatched by the end of May. Fledging occurs from May through October when young owls become fully independent. Mexican spotted owls prey on a variety of small animals hunting from perches and attacking over short distances.

The structural characteristics of habitat occupied by the Mexican spotted owl vary depending upon the subspecies use of the habitat and changes in plant communities over the subspecies range (USFWS 2004). However, life history requirements of the Mexican spotted owl are met by similar conditions throughout its range. In order to support a breeding pair on a year-round basis, sufficient habitat must occur within the home range and in an appropriate configuration to provide for foraging, roosting, sheltering, nesting, and rearing. Primary constituent elements are grouped by forest and canyon habitats to reflect differences in elements of these habitats which meet life history requirements and by elements related to maintenance of adequate prey species.

Primary constituent elements related to forest structure include:

- A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30 percent to 45 percent of which are large trees with a trunk diameter of 12 inches or more when measured at 4.5 feet from the ground;
- A shade canopy created by the tree branches covering 40 percent or more of the ground; and
- Large dead trees (snags) with a trunk diameter of at least 12 inches when measured at 4.5 feet from the ground.

Primary constituent elements related to canyon habitat include one or more of the following:

- Presence of water (often providing cooler and often higher humidity than the surrounding areas);
- Clumps or stringers of mixed-conifer, pine-oak, pinyon-juniper, and/or riparian vegetation;
- Canyon wall containing crevices, ledges, or caves; and,
- High percent of ground litter and woody debris.

Primary constituent elements related to maintenance of adequate prey species include:

- High volumes of fallen trees and other woody debris;
- A wide range of tree and plant species, including hardwoods; and,
- Adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration.

Designated Critical Habitat includes the majority of known Mexican spotted owl breeding sites. Critical Habitat units BR-W-11 through 16 are found in south central Arizona. Critical Habitat unit BR-W-15 occurs within the project region and construction area.

Yellow Billed Cuckoo

Yellow-billed cuckoos west of the continental divide are a distinct population segment (DPS) that is a significant component of the total population (USFWS 2001, AGFD 2002). Breeding populations are scattered throughout much of southeastern Arizona and important areas of habitat are found in Phoenix area rivers (Gila, Hassayampa, Agua Fria, Salt, and Verde rivers), and Tucson area rivers and creeks (Altar Valley; Santa Cruz River, San Pedro River; and Sonoita, Arivapa, and Cienega creeks) (USFWS 2008, AGFD 2004a). The western yellow-billed cuckoo is a neotropical migrant and breeds in riparian vegetation throughout the western U.S as far north as Washington and Montana. In Arizona, preferred habitats include cottonwood-willow forests and larger mesquite bosques. Nests are built in willow or mesquite thickets, and

egg laying is timed to coincide with outbreaks of insects, especially caterpillars. Fledglings develop quickly and begin the migration back to Mexico.

Based on historic accounts, the species was most widespread and locally common in California and Arizona, and was only locally common or uncommon in the remaining states within its breeding range (USFWS 2001). Since 1980, state-wide surveys from New Mexico, Arizona, and California, indicate an overall estimated 52 percent decline with numbers too low to establish trends from Idaho, Montana, Utah, Nevada and Colorado. About 186 cuckoo pairs and 80 single birds were located in Arizona in 1999, based on preliminary results from a state-wide survey which covered 265 miles of river and creek bottoms. From these results, it is evident that cuckoo numbers in 1999 are substantially less than some previous estimates for Arizona, including a 1976 estimate of 846 pairs for the lower Colorado River and five major tributaries.

Arizona probably contains the largest remaining cuckoo population among states west of the Rocky Mountains (USFWS 2001). Losses have been greatest at lower elevations along the lower Colorado River and its major tributaries. In some Arizona areas, such as the SPRNCA encompassing about 40 miles of the upper San Pedro River, ongoing conservation efforts may improve habitat conditions for the species. Water management and livestock grazing has removed or degraded much of the potential habitat for this species and continues to threaten remaining populations (USFWS 2008). Off-highway vehicle use, which can degrade watershed conditions and substantially degrade riparian habitats, is also an ongoing threat.

Jaguar

The historic range of the jaguar included a wide belt from central U.S. to central Mexico (USFWS 1997c). Although the greatest abundance of jaguars occurs in tropical environments of Mexico, the range of northern populations extends into the more arid environments of the southwestern U.S. In the U.S., records of jaguar sightings have been associated with a number of related factors including rugged terrain, high elevation, close proximity to water, and far distance from urbanized areas (Hatten *et al.* 2002). The general distribution of past sightings and the habitat associated with these sighting includes areas of forest, woodland, and grassland vegetation types in the Baboquivari Mountains, the southern portion of the Altar Valley, a portion of the southern Santa Cruz River basin, and the San Pedro River basin south of Arivapa Creek. Although jaguar detections over the last 10 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 (USFWS 2007f).

Jaguars are the largest of the North American cats and have relatively large home ranges (USFWS 1997c). Jaguars hunt a variety of prey throughout their range, and are likely to be supported in large part by javelina and mule deer in the southwestern U.S. Although livestock can also provide prey, management practices such as grazing regimes and predator control measures can degrade habitats, reduce abundance of other prey, and potentially result in incidental take. Jaguars can breed year round;

however, occurrences in the U.S. are likely to be males hunting at the northern extent of their range.

Lesser Long-Nosed Bat
The lesser long-nosed bat (LLNB) roosts in caves and abandoned mines throughout its historical range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador (USFWS 1997b). The lesser long-nosed bat primarily utilizes natural caves and abandoned mines for roosting, but can transiently roost among overhanging rocks and other shelters. Occupied roosts have been documented as far west as the eastern portion of the Cabeza Prieta National Wildlife Refuge (CPNWR), north as far as Phoenix, and east as far as the Animas Valley in New Mexico (Cockrum and Petryszyn 1991). Use of roosting sites may vary depending upon seasonal fluctuations in the timing of forage availability. Thus, some roosts may be occupied or unoccupied through parts or all of a breeding season.

The female and volant young move to roosts in southeastern Arizona in July and remain in the area until fall migration. (USFWS 1997b). These maternity colonies begin to disband by September, and both males and females can be found in transient or maternity roosts from September to as late as early November. One of these roosts is in close proximity of the project area. The LLNB eat nectar and fruits of columnar cacti and paniculate agaves and are considered important dispersal and pollination vector for these species. Food sources for the LLNB exist within the project area. LLNB are known to travel up to 30 miles to reach suitable concentrations of forage.

Ocelot
The ocelot's range historically included the southern U.S. and northern Mexico (USFWS 1990, AGFD 2004b). Habitat destruction, trapping, and poaching has resulted in the extirpation of this cat from the northern portion of its range and it is no longer thought to occur in Arizona or New Mexico. Conservation and management efforts along the San Pedro River could allow the northward expansion of this species in the future. The installation of vehicle barriers across the San Pedro River will help reduce IA-related impacts to all habitats in the San Pedro River basin.

8.1.3.2 State
The Arizona Natural Heritage Program (ANHP) maintains a list of species with special status in Arizona. These species are not necessarily the same as those protected under the ESA of 1973, as amended. The ANHP list includes flora and fauna whose occurrence in Arizona is or may be in jeopardy, or has known or perceived threats of population declines. The ANHP list is provided in Appendix D.

8.2 ENVIRONMENTAL CONSEQUENCES

8.2.1 Vegetation
The Planned Action will have minimal impacts to vegetation communities. A total of 56 acres of undisturbed vegetation will be permanently altered; however, approximately seven acres were previously disturbed by the existing patrol road. The greatest effects

will occur to the semidesert grassland scrub and the Chihuahuan scrub vegetation communities. Both of these are relatively common Arizona plant communities within the project area and therefore this represents a less-than-significant impact.

Within the Coronado National Memorial, approximately 3,700 agave may be directly impacted due to construction activities. As a mitigation measure, the Construction Mitigation and Restoration (CM&R) plan will salvage and transplant approximately 1,500 agave plants from within the project corridor to an alternate location within the Coronado National Memorial. Additionally, seeds from 50 agave plants will be harvested and provided to the NPS. Pre-construction surveys will be conducted to confirm the number of agaves within the project corridor.

Approximately 1 acre of riparian forest will be impacted by the installation of the Planned Action. Although these vegetation communities are not common in southern Arizona, the construction and operation of TI is expected to protect hundreds of acres of interior riparian forest and riparian scrub upstream of the impact zone as a result of minimizing illegal alien (IA) drive-throughs and foot traffic. IA drive-throughs and foot traffic have the effect of disturbing and removing vegetation through brush clearing, burning, trampling, and disturbing germination. Construction and operation of TI will increase border security in the E-2A project corridor and may result in a change to illegal traffic patterns. However, changes to illegal alien traffic patterns result from a myriad of factors in addition to USBP operations and, therefore, are considered unpredictable and beyond the scope of this ESP.

The staging area at Montezuma Ranch house has been previously disturbed; thus, staging activities will not result in an impact to natural vegetation. Operation of temporary lighting will result in only negligible indirect impacts to vegetation adjacent to the project corridor. The impacts to vegetation communities from temporary lighting will not inhibit ecological processes, or affect population viability of any plant species adjacent to the project corridor. Invasive species have already established populations along the project corridor and will potentially spread to the 56 acres disturbed by construction activities. However, with proper implementation of BMPs, the spread of invasive species will be reduced or eliminated.

8.2.2 Wildlife and Aquatic Resources

The project will convert 49 acres of wildlife habitat to a primary PF, VF and construction/maintenance road. However, this type of wildlife habitat is abundant locally and regionally, and the loss will result in a negligible impact to the overall viability of wildlife species in the project region. The fence will be constructed within the Roosevelt Reservation were the majority of the habitat has already been disturbed. Additionally, approximately 2 acres of habitat will be temporarily disturbed for use as a staging area.

Aquatic resources within the project corridor include the San Pedro River. Water used for construction of the Planned Action will draw upon the USP Basin which is the primary recharge source for the San Pedro River. The USP basin currently experiences

an annual deficit to its recharge, so any additional withdrawals will ultimately reduce the surface flows in the river resulting in an adverse impact to the associated species.

8.2.3 Protected Species and Critical Habitat

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the Endangered Species Act (ESA) for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with the ESA as the basis for evaluating potential environmental impacts and appropriate mitigations.

Three of the seven species potentially occurring within the project corridor may be adversely affected by the Planned Action, including Huachuca water umbel, yellow billed cuckoo, and jaguar. These three species, which are primarily dependent upon aquatic habitats, are associated with the San Pedro River. Water used for construction of the Planned Action will draw upon the USP Basin, which is the primary recharge source for the San Pedro River. The USP Basin currently experiences an annual deficit to its recharge, so any additional withdrawals will ultimately reduce the surface flows in the river resulting in an adverse impact to the species. Critical Habitat for the water umbel is located outside of the project corridor; therefore, this one time withdrawal may affect but is not likely to adversely affect the water umbel's Critical Habitat. A small area of riparian forest could be impacted; however, the remaining forest will not be reduced in size below the threshold for supporting yellow billed cuckoos (25 acres).

The four remaining species, the ocelot, the California brown pelican, the Mexican spotted owl, and the lesser long-nosed bat will not be impacted by the Planned Action. The ocelot is thought to no longer occur in Arizona or New Mexico, and therefore, will not be impacted. The California brown pelican is a rare migrant to Arizona and it does not breed within the state. Additionally, NatureServe data indicate that there are no elements of occurrence on the upper San Pedro River. Therefore the California brown pelican will not be impacted by the Planned Action. The Mexican spotted owl is associated with the Huachuca Mountains and generally occurs at high elevations. Designated Critical Habitat for the Mexican spotted owl does occur within the construction area. However, because the project corridor lacks primary constituent elements, no adverse modification to Mexican spotted owl Critical Habitat is expected. The reduction of IA activity in the Huachuca Mountains will benefit the Mexican spotted owl, by reducing human presence and habitat degradation. Although the area is rich in agave, a prime food source for the LLNB, there are no lesser long-nosed bat roosts within the project corridor. Only one roost exists within close proximity to the project corridor. The loss of agave within the project corridor is less than 0.1 percent of the entire forage habitat available, therefore, the lesser long-nosed bat is not likely to be adversely affected by the implementation of the Planned Action. With implementation of the Planned Action, IA activity, which can result in disturbance of roosts and degrade foraging habitats, is expected to be reduced, resulting in indirect benefits to the species.

The general distribution of jaguar past sightings and the habitat associated with these sightings includes areas of vegetation types such as in the San Pedro River basin and the Huachuca Mountains. Therefore, the Planned Action could result in temporary avoidance of the area by jaguars and may adversely affect the ability of the jaguar to continue to enter the U.S. from its core population in northern Mexico. The reduction of IA activity will benefit the jaguar, by reducing human presence and habitat degradation.

Construction and operation of TI will increase border security in the E-2A project corridor and may result in a change to illegal traffic patterns. However, changes to illegal alien traffic patterns result from a myriad of factors in addition to USBP operations and, therefore, are considered unpredictable and beyond the scope of this ESP. The Planned Action will indirectly benefit the riparian forest associated with the San Pedro through the reduction of IA drive-throughs and foot traffic and subsequent enforcement efforts.

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SECTION 9.0
CULTURAL RESOURCES

9.0 CULTURAL RESOURCES

9.1 BACKGROUND

Cultural resources are widespread and diverse in the region surrounding the project corridor. The San Pedro river valley which encompasses the project area hosts expressions of human occupation spanning the Paleo-Indian era to some of the most recent markers of historic events in the 20th century. This long and varied past has been the focus of numerous scholars with a vast body of literature dedicated to interpreting its extensive permutations. This project corridor and the adjacent lands along the U.S.-Mexico border have been surveyed for previous environmental assessments such as the 2000 Corridor EA (INS 2000) and the 2003 Naco-Douglas SEA (CBP 2003). These previous documents cover the area which includes this project corridor and discuss the general popular assumptions of the past cultural setting for the region and are herein incorporated by reference.

The National Historic Preservation Act (NHPA) of 1966 establishes the Federal government's policy to provide leadership in the preservation of historic properties and to administer Federally owned or controlled historic properties in a spirit of stewardship. Section 106 of the NHPA discusses the identification and assessment of actions on cultural resources. CBP has consulted with appropriate state and local officials, Native American Tribes, and members of the public and considered their views and concerns about historic preservation issues when making final project decisions.

9.2 PREVIOUS INVESTIGATIONS

The project corridor has been included in the surveys of previous investigations for the purpose of improvements to the tactical infrastructure along the international border. Aztlan Archaeology Inc. (AAI) performed a survey in 2002, which included a portion of the current project corridor extending from the eastern boundary of the Coronado National Memorial eastward to beyond the San Pedro River. The investigation included a pedestrian survey of a 300-ft wide right of way north of the border fence line. AAI revisited two sites lying within the current project corridor, AZ EE: 12:38 and AZ EE: 12:40 that were reported in earlier surveys by Martynec *et al.* 1994 and Yost *et al.* 2001. Most recently, USACE revisited site AZ EE: 12:38 in an attempt to resolve its eligibility status and determine if additional data recovery efforts were warranted

Site AZ EE: 12:38 spans the U.S/Mexico border at the southeast corner of township 24S Range 21E. The site was interpreted as a lithic reduction locus and a temporary camp for exploiting riverine resources and will be considered eligible for the NRHP by Martynec *et al.* (1994). Yost *et al.* (2001) revisited the site but did not concur with Martynec *et al.* (1994) in that they felt the site components did not substantiate the earlier interpretation, and recommended the site not be considered eligible. AAI's revisit to the site confirmed the Yost *et al.* (2001) interpretation; however they discovered an additional historic component of the site consisting of glass artifacts, metal hole in top

cans, oyster shells and cartridge casings consistent with materials and manufacturing technology they identified were from the 1880s and 1890s. Based on the proximity of AZ EE: 12:38 to Border Monument 98, which is one of many loci for NRHP eligible site AZ FF: 11:105, and the similarity of the artifact assemblage to other sites near international border monuments, AAI surmised that the historic component of AZ EE: 12:38 was evidence for a campsite of the International Border Commission's (IBC) resurvey of the border from 1892-1893. Considering the association with the already eligible International Border Site AZ FF: 11:105, AAI recommended AZ EE: 12:38 to be considered eligible for NRHP under Criterion D. USACE (2008) revisited the site to recover surface and subsurface information about the site in an attempt to resolve its eligibility status and determine if additional data recovery efforts were warranted. USACE concluded that there is no evidence of any subsurface remains and it is unlikely that subsurface remains are present. Therefore, USACE recommended that the prehistoric component of site AZ EE: 12:38 be considered ineligible to the NRHP. Additional work within the prehistoric component of the site is not recommended. Also, the historic component falls entirely outside of the project corridor and is considered a non-contributing element to the overall NRHP eligibility of the site.

Site AZ EE: 12:40 is located at the far eastern end of the project area where South Border Monument Road meets the border road. AZ EE: 12:40 is described vaguely as a small lithic reduction and procurement site (AAI 2002; Martynec *et al.* 1994). AAI (2002) recommended that AZ EE: 12:40 be considered eligible for NRHP under Criterion D based on its potential to contribute information regarding prehistoric procurement techniques.

The western portion of the project corridor, which includes the segment of the border that lies within the Coronado National Memorial boundaries, was surveyed in 2002 by the Western Archaeological and Conservation Center (WACC). In a memorandum drafted to the Superintendent of the Coronado National Memorial the survey was described and clearance was given for construction activities to occur. The survey included a 3-mile long, 90-foot wide pedestrian survey transect along the border in which no cultural resources were encountered. On May 22, 2008 an additional survey within the western portion of the project corridor was conducted by GSRC. The pedestrian survey included the 1.3 mile access road, 50 feet along each side of the existing 2-track road southeast to the section line, then 50 feet along the western edge of the section line to the U.S/Mexico border. The investigation also included a pedestrian survey of a 250-ft wide right of way north of the border fence line along both sides (up to 75 feet) of 11 washes located within the Coronado National Memorial. No cultural resources were found during this investigation.

Site AZ FF: 11:105 alluded to above spans the U.S/Mexico border between Arizona and Mexico. The site has multiple loci in the form of border monuments spaced within line-of-sight from one another along the entire length of the border by the IBC in 1854 and again between 1892 and 1893. Five border monuments numbered 98 through 102 fall within the project corridor. The border monuments consist of either stone masonry obelisks erected in the first 1854 IBC border survey or cast iron obelisks erected during

the second IBC survey between 1892 and 1893. Interestingly, AAI (2002) refers to Monument 98 as part of AZ FF: 11:105 in their discussion of AZ EE: 12:38, but did not mention Monument 99 in the report. Similarly, the WACC survey does not mention Monuments 100, 101 and 102, which are within the confines of the Coronado National Memorial park boundaries. These monuments, as constituents of AZ FF: 11:105, are considered eligible for inclusion in the NRHP under Criterion D.

9.3 ENVIRONMENTAL CONSEQUENCES

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the National Historic Preservation Act (NHPA) for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. Accordingly, CBP will not obtain compliance permits or develop plans for regulatory approval but will apply the appropriate standards and guidelines associated with the NHPA as a basis for evaluating potential environmental impacts and appropriate mitigations.

Six cultural resource sites, AZ EE: 12:40 and the five international border monuments associated with AZ FF: 11:105, all recommended for NRHP eligibility, fall within the project corridor and will be affected by the Planned Action without mitigation measures. The impact of the Planned Action can be eliminated for AZ FF: 11:105 by avoiding Border Monuments 98, 99, 100, 101 and 102.

The boundary of site AZ EE: 12:40 is within the 60 foot right of way for the project but does not cross the present border road footprint. Avoidance of AZ EE: 12:40 is also possible if construction activities are limited to the present road footprint in the area around the site.

Site AZ EE: 12:38 falls entirely outside the project corridor and will not be impacted by the Planned Action. However, potential impacts to site AZ EE: 12:38 may be avoided by marking and protecting the features during construction of the Planned Action.

It is important to note that if previously unidentified cultural resources are encountered during execution of the project, the contractor will stop all ground disturbing activities in the vicinity of the discovery until an archaeologist is notified and the nature and significance of the find can be evaluated and appropriate actions can be taken. If human remains associated with Native American groups are encountered during construction activity, construction will stop and procedures described in the Native American Graves Protection and Repatriation Act (NAGPRA) will be followed. In addition, the Arizona State Museum and appropriate tribal organizations will be consulted.

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SECTION 10.0
SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

10.0 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

10.1 SOCIOECONOMICS

10.1.1 Affected Environment

The socioeconomic environment of the project region is described in detail Section 3.10 in the 2000 Corridor EA, in Section 3.13 in the 2003 Naco-Douglas SEA, and partially throughout the 2007 NPS EA; the descriptions are incorporated herein by reference (INS 2000, CBP 2003, NPS 2007). In summary, the previous EAs examined population structure, housing, and environmental justice and protection of children.

The ROI for the project is Cochise County. The estimated 2006 population of Cochise County was 127,757 (U.S. Census Bureau [USCB] 2006). In 2000, the City of Naco had 833 residents (USCB 2000) and is the only community located within the vicinity of the project corridor. The racial mix of Cochise County consists predominantly of Caucasians (83 percent) and people claiming to be of some race other than Caucasian, African-American, Native American, Asian, Native Hawaiian, and other Pacific Islander (17 percent). About 32 percent of the total population of Cochise County claim to be of Hispanic origin (USCB 2006).

Table 10-1. Socioeconomic Data from Current ESP and Previous EAs

Index	2000 Corridor EA	2003 Naco-Douglas SEA	Current Data
Total number of jobs	47,008 (1997)	50,041 (2000)	58,141 (2005)
Percent annual unemployment rate	9.7 (1997)*	4.6 (2001)	4.5 (2006)
Total personal income, in billions	$1.8 (1997)	$2.3 (2000)	$3.4 (2005)
Per capita personal income	$16,532 (1997)	$19,153 (2000)	$26,866 (2005)
Percentage of all ages in poverty	Not reported	21.7 (1997)	16.9 (2005)

Source: Bureau of Economic Analysis (BEA) 2005a and 2005b, CBP 2003, INS 2000, U.S. Census Bureau 2005, Arizona Department of Economic Security 2006

* January 1997 seasonally adjusted unemployment rate.

The total number of jobs in the ROI in 2005 was 58,141, an increase of 28 percent over the number of jobs in 1995 (45,136) (BEA 2005a). The government and government services industry provided the most jobs, followed by the retail trade industry and the health care and social services sector. The 2005 annual average unemployment rate for Cochise County was 16.9 percent (Arizona Department of Economic Security 2006).

10.1.2 Environmental Consequences

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under Executive Orders (EO) 12898 and 13045 for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. Accordingly, CBP will not obtain compliance permits or develop plans for regulatory approval but will

apply the appropriate standards and guidelines associated with these EOs as a basis for evaluating potential environmental impacts and appropriate mitigations.

The Planned Action will be constructed by private contractors. A temporary increase in personal income may occur due to purchase of supplies and materials from local sources. No displacement is predicted to result from this action; therefore, there will be no direct impacts to housing in the region. No permanent or long-lasting socioeconomic impacts will be anticipated as a result of construction activity associated with the project.

SECTION 11.0
HAZARDOUS MATERIALS AND WASTE

11.0 HAZARDOUS MATERIALS AND WASTE

11.1 AFFECTED ENVIRONMENT

The EPA maintains a list of hazardous waste sites, particularly waste storage/treatment facilities or former industrial manufacturing sites in the U.S. The chemical contaminants released into the environment (air, soil or groundwater) from hazardous waste sites may include heavy metals, organic compounds, solvents and other chemicals. The potential adverse human health impact of hazardous waste sites is a considerable source of concern to the general public, as well as government agencies and health professionals.

Solid and hazardous wastes are regulated in Arizona by a combination of mandated laws promulgated by the Federal, state and regional Councils of Government. A search was conducted on the USEPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). CERCLIS contains information on hazardous waste sites, potential hazardous waste sites, and remedial activities, including sites that are on the National Priorities List (NPL) or being considered for the NPL. A search of the CERCLIS database showed one facility that reported contaminated media and exposures: the Apache Powder Company, located in Saint David, Arizona (USEPA 2007a), approximately 40 miles north of the project corridor. A search of the Envirofacts Data Warehouse showed that Cochise County Sheriffs office in Hereford, is a hazardous waste handler located approximately 16 miles from the project corridor (USEPA 2007b). As discussed in the TI SEA (CBP 2003), evidence of illegal and uncontrolled dumping in several areas of the project corridor may include potentially hazardous wastes. However, field surveys conducted in April 2002 and March 2008 did not reveal any overt environmental liabilities.

11.2 ENVIRONMENTAL CONSEQUENCES

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. Accordingly, CBP will not obtain compliance permits or develop plans for regulatory approval but will apply the appropriate standards and guidelines associated with CERCLA as a basis for evaluating potential environmental impacts and appropriate mitigations.

Although no hazardous waste is anticipated to be stored within the project corridor, POL will be stored at the temporary staging area in order to maintain and refuel construction equipment. Primary and secondary containment measures as well as clean-up materials (*e.g.,* oil mops) will also be maintained at the site to allow for an immediate response in case an accidental spill occurs. Drip pans will be provided for the power

generators and other stationary equipment to capture any POL that is accidentally spilled during maintenance activities or leaks from the equipment.

Sanitary facilities will be provided during construction activities, and waste will be collected and disposed of by licensed contractors. No gray water will be discharged to the ground. Disposal contractors will use only established roads to transport equipment and supplies, and all waste will be disposed of in strict compliance with Federal, state, and local regulations.

Because of the random nature of illegal dumping along the border areas, it is difficult to determine the location and quantity of hazardous waste that may be present within the project corridor. If hazardous materials or wastes are present, there will be a potential for exposure during construction activities. Construction personnel will be informed about the potential to encounter hazardous wastes that may be present onsite from illegal dumping and the appropriate procedures to use if suspected hazardous contamination is encountered.

SECTION 12.0
ROADWAYS AND TRAFFIC

12.0 ROADWAYS AND TRAFFIC

12.1 AFFECTED ENVIRONMENT

Roadways and transportation were discussed in the 2003 Naco-Douglas SEA and are incorporated herein by reference. Major roads near the project corridor include: U.S. Highway 92, Coronado Memorial Road, and East Montezuma Canyon Road (State Highway 83). U.S. Highway 80 runs from Interstate 10 (at Benson) to the New Mexico border, passing through Bisbee and Douglas.

12.2 ENVIRONMENTAL CONSEQUENCES

Traffic increases on the affected highways, interstate, and road will result in only minor increases during the period of construction to accommodate transportation of materials and equipment to construction sites.

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SECTION 13.0
RELATED PROJECTS AND PROTECTION EFFECTS

13.0 RELATED PROJECTS AND POTENTIAL EFFECTS

This section of the ESP addresses the potential cumulative impacts associated with the implementation of the Planned Action and other projects/programs that are planned for the region. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time by various agencies (Federal, state, and local) or individuals. Informed decision-making is served by consideration of cumulative impacts resulting from projects that are planned, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

This cumulative impacts analysis summarizes expected environmental effects from the combined impacts of past, current, and reasonably foreseeable future projects. The geographic scope of the analysis varies by resource area. For example, the geographic scope of cumulative impacts on resources such as noise, visual resources, soils, and vegetation is very narrow and focused on the location of the resource. The geographic scope of air quality, wildlife and sensitive species, and socioeconomics is much broader and considers more county- or region-wide activities. Projects that were considered for this analysis were identified by reviewing USBP documents, news releases, and published media reports, and through consultation with planning and engineering departments of local governments, and state and Federal agencies. Projects that do not occur in close proximity (*i.e.*, within several miles) to the project will not contribute to a cumulative impact and are generally not evaluated further.

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

With continued funding and implementation of CBP/USBP's environmental conservation measures, including environmental education and training of its agents, use of biological and archaeological monitors, wildlife water systems, and restoration activities, adverse impacts of future and ongoing projects will be prevented or minimized. However, recent, ongoing, and reasonably foreseeable projects will result in cumulative impacts. General description of these types of activities are discussed in the following paragraphs.

Cumulative Fencing along Southwestern Border. There are currently 62 miles of landing mat fence at various locations along the U.S./Mexico international border (CRS 2006); 14 miles of single, double, and triple fence in San Diego, California; 70 miles of new primary pedestrian fence at various locations along the U.S./Mexico international border; and fences at POE facilities throughout the southern border. In addition, 225 miles of fence (including the 14 miles planned in the USBP Yuma Sector) are currently being planned for Texas, New Mexico, Arizona, and California.

Past Actions. Past actions are those within the cumulative effects analysis areas that have occurred prior to the development of this ESP. The effects of these past actions are generally described throughout the previous sections.

Present Actions. Present actions include current or funded construction projects, USBP or other agency actions in close proximity to the planned fence locations, and current resource management programs and land use activities within the cumulative effects analysis areas. Ongoing actions considered in the cumulative effects analysis include the following:

- Secure Border Initiative (SBI*net*) Projects – SBI*net* is a comprehensive program focused on transforming border control through technology and infrastructure. The goal of the program is to field the ideal combination of technology, infrastructure, and staffing, and integrate them into a single comprehensive border security suite for DHS. SBI*net* is currently constructing 36 miles of primary pedestrian fence along the U.S./Mexico border within the Barry M. Goldwater Range (BMGR) and 6 miles west of the BMGR (122 acres). It is anticipated this project will be completed in FY 2008.
- CBP Enforcement Zone – CBP is currently constructing a 9-mile enforcement zone near San Luis, Arizona (20 acres). The enforcement zone includes primary and second fence, all-weather road, safety fence, and permanent lighting. The enforcement zone will be completed in FY 2008.

Reasonably Foreseeable Future Actions. Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with respect to their effects. The following activities are reasonably foreseeable future actions:

- SBI*net* Projects - Potential future SBI*net* projects include deployment of sensor technology, communications equipment, command and control equipment, fencing, barriers capable of stopping a vehicle, and any required road or components such as lighting and all-weather access roads. SBI*net* is planning to construct and retrofit a total of approximately 57 towers within the western portion of the Tucson Sector in FY 2008.

Other CBP Projects:

- USBP Facilities – CBP is also planning to construct a new USBP station in Wellton, Arizona (43 acres).
- Vegetation Clearing along the Colorado River – USBP is cooperating with BLM and the Cocopah and Quechan Indian Nations to remove exotic plants and trees along the Colorado River. The entire area to be cleared is approximately 3,000 acres and current plans are to replant the area with native vegetation.
- Lighting Projects – USBP plans to install permanent lights along the international border within Imperial County and other areas within Yuma County where the need for additional security is identified.
- Construction of Primary Fence. The FY 2007 DHS Appropriations Act provided $1.2 billion for the installation of fencing, infrastructure, and technology along the border (CRS 2006). CBP is proposing to construct up to 225 miles of primary fence in the Rio Grande Valley, Marfa, Del Rio, and El Paso, Texas; Tucson and Yuma, Arizona; El Centro and San Diego, California, sectors. In addition, up to 200 miles of vehicle barriers are also currently being planned in the El Centro, Yuma, Tucson, El Paso and Marfa sectors.

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

Plans by other agencies that will also affect the region's natural and human environment include various road improvements by Arizona Department of Transportation (ADOT) and/or Santa Cruz County. The majority of these projects will be expected to occur along existing corridors and/or within previously disturbed sites. The magnitude of the impacts will depend upon the length and width of the road right of way (ROW) and the extant conditions within and adjacent to the ROW.

The 2007 Road EA documented several ADOT projects planned in the next 5 years (CBP 2007b). The details of these projects are incorporated herein by reference. Following is a summary of the types of ADOT projects currently in the planning stage:

- Country Club Road-Ruby Road – design of frontage roads
- U.S./Mexico border – Business I-19 roadway improvements
- Junction of State Route-189 and I-19 – roadway improvements
- Doe Street to Baffert Drive – retrofit, sidewalks, landscaping
- Patagonia Lake/Sonoita Creek – design planning
- State Route-82 between Mileposts 38 and 39.5 – slope flattening
- State Route-189 at Milepost 0.095 – drainage improvements
- Mariposa POE – parking lot and road improvements

Other agencies, such as BLM, U.S. Air Force, U.S. Marine Corps, NPS, and USFS, routinely prepare or update Resource Management Plans for the resources they manage. USFS has the responsibility of managing approximately half of all lands within Santa Cruz County. In addition to general range land management, the types of projects conducted by USFS include:

- lake maintenance projects;
- pasture divisions and grazing allotment management plans;
- fuelwood/hazardous fuel reduction plans;
- specific habitat improvement projects;
- facility planning;
- invasive exotic plant management programs;
- land exchanges;
- pipeline/transmission ROWs; and
- mechanical brush control plans.

The City of Nogales is the designated gateway from and to Mexico on the CANAMEX Trade Corridor. The name "CANAMEX" is derived from the country names of Canada, America, and Mexico, where a western trade corridor of 1,700 miles of existing highway and interstate systems connects the three countries. The CANAMEX corridor is expected to become one of the most important north/south trade corridors in North America. The state governments of Arizona and Nevada are committed to obtaining funds to construct a four-lane divided highway in anticipation of the CANAMEX Trade Corridor. The completion of these projects will create an uninterrupted north/south highway system down the spine of the CANAMEX Trade Corridor. This project is in the planning stage, and potential impacts are unknown at this time.

A list of the past, on-going, and other reasonable foreseeable projects within the region surrounding the Naco Station's AO are summarized in Table 13-1.

Table 13-1. Recently Completed or Reasonably Foreseeable USBP projects near Naco Station's AO

Project	Approximate Distance from Project Corridor (miles)	Approximate Acres Permanently Impacted
PVFs and primary fence for construction along a 52 mile corridor along border between Naco and Douglas.	0	402
Leased an 80-acre parcel of land near the Mariposa POE for USBP operations (portable lights and maintenance of roads), Nogales Station.	60	80
Construction and maintenance of approximately 11.7 miles of all-weather roads, which includes 8.5 miles of drag roads, low water crossings, and drainage structures on either side of Nogales.	60	40
Restoration of Ephraim Ridge near Nogales.	60	1
Expansion of USBP checkpoint facilities near Three-Points.	140	5
Placement of Temporary Vehicle Fences at up to 21 different locations (approximately 37 miles) along the U.S/Mexico border within the Tucson, Nogales, and Sonoita stations AO.	26	0
Relocation of Nogales Interstate 19 checkpoint	70	1
Installation of 15 remote video surveillance systems in the Nogales Station's AO.	60	2
Installation of a relay tower at Crawford Hill in the Nogales Station's AO.	60	0.1
Installation of a SBInet tower at Montezuma Pass	2.3	0.15
	Total	**568 acres**

A summary of the anticipated cumulative impacts relative to the project (*i.e.*, construction of 6.24 miles of TI from the western edge of the San Pedro River and extending westward into the Coronado National Memorial) is presented below. These discussions are presented for each of the resources described previously.

13.1 AIR QUALITY

The emissions generated during and after the construction of the fence will be short-term and minor. Although maintenance of the fence and associated maintenance road will result in cumulative impacts to the region's airshed, these impacts will not be considered significant. No violation of air quality standards, obstruction of air quality plans, or exposure of sensitive receptors will occur. Deterrence of and improved response time to IAs created by the construction of the fence and road is expected to reduce the need for off-road enforcement actions currently required by USBP agents thus providing a benefit to air quality.

13.2 NOISE

Most of the noise generated by the project will occur during construction and, thus, will not contribute to cumulative impacts to ambient noise levels. Routine maintenance of the fence and road will result in slight temporary and sporadic increases in noise levels

that will continue to occur over the long-term. Potential sources of noise from other projects in combination with routine maintenance are not enough (temporal or spatial) to increase ambient noise levels above the 65 dBA range in the ROI. Thus, the noise generated by the construction and maintenance of the fence and road, when considered with the other existing and planned projects in the region, will not be a major cumulative adverse impact.

13.3 LAND USE, RECREATION, AESTHETICS

The project will permanently affect 56 acres, of which 7 acres have been previously disturbed. While temporary effects will occur to an additional 2 acres for a staging area, this area will return to the current use upon completion of construction. CBP operations and TI construction within the 60-foot Roosevelt Reservation is consistent with the purpose of the Roosevelt Reservation. Therefore, this action will not be expected to result in a major cumulative adverse effect.

Impacts to visual resources will occur from the project especially within the CNM, due in part to the remoteness and higher elevations which afford visits from where the TI can be seen. The CNM was established to provide a high point from where visitors could view the route Coronado travelled. Although the TI will impact this view and the overall intent of the monument, construction and maintenance of the primary PF and VF, when considered with existing and planned developments in the surrounding area, including other USBP TI components will not result in a major cumulative adverse impact on the visual quality of the region. Areas north of the border will experience beneficial, indirect cumulative effects by the reduction of trash, soil erosion, and wildfires produced by IAs.

13.4 GEOLOGICAL RESOURCES AND SOILS

The project does not impact prime farmland soils or agricultural production. Pre- and post-construction SWPPP measures will be implemented to control erosion. No inappropriate soil types are located at the project site that will present a safety risk. The impact on approximately 56 acres of permanently altered and approximately 2 acres of temporarily disturbed soils, when combined with past and planned projects in the region, will not be considered to have a major cumulative adverse impact.

13.5 WATER USE AND QUALITY

Major impacts on groundwater resources within the USP Basin will be expected, and will be offset through mitigation measures coordinated with the USACE Los Angeles District and USFWS, as appropriate. The required SWPPP measures will reduce erosion and sedimentation during construction to negligible levels, and will eliminate post-construction erosion and sedimentation from the site. The same measures will be implemented for other construction projects; therefore, cumulative impacts will not be major.

Consultation with USACE Los Angeles District will occur prior to construction within potential jurisdictional WUS to avoid net loss of the functions of these sensitive resources. All engineering designs and subsequent hydrology reports will be reviewed by USIBWC prior to the start of construction activities so that the results of those activities do not increase, concentrate, or relocate overland surface flows into either country.

A minor impact to floodplains will occur as a result of the project. Fences and roads will be designed to ensure that floodwater conveyance is not impeded and that flood elevations, frequencies, and durations will not be increased. Additionally, CBP will remove woody debris after each rain event, as necessary, to alleviate potential alterations to drainage patterns and provide proper conveyance of flood waters. Therefore, when combined with other existing and planned projects in the region, any adverse impacts to floodplains will be minor.

13.6 BIOLOGICAL RESOURCES (VEGETATION, WILDLIFE, AQUATIC SPECIES, SPECIAL STATUS SPECIES)

Removal of semidesert grassland scrub community and the Chihuahuan scrub vegetation community, will not result in significant cumulative impacts to vegetation due to the vast amount of similar habitat contained within and surrounding the project corridor and the juxtaposition of the project corridor with other disturbed and developed areas.

Other USBP projects, including the vegetation clearing and additional lighting, will result in cumulative adverse impacts. The extent of these impacts is not known since these actions are not planned or defined to date. However, the long-term viability of vegetation communities in the ROI will not be threatened. This loss of vegetative habitat, when combined with other ground disturbing or development projects in the ROI, will not result in major cumulative impacts to the region's vegetation communities.

Wildlife and Aquatic Resources. Removal of wildlife habitat will result in minor cumulative impacts due to the vast amount of similar habitat contained within and surrounding the project corridor.

As a result of past and planned projects within Tucson Sector, cumulative impacts due to fragmentation of habitat will be considered moderate to substantial. Most all of the border within Tucson Sector will have physical barriers installed once all planned projects are completed. However, many segments of these barriers will be vehicle fence rather than primary PF. In addition, even future primary PF that is constructed within arroyos or washes will be designed and constructed to allow conveyance of flood flows, which will require some small gaps in the fence panels. Thus, there will still be opportunities for transboundary migration. However, animals which are larger than the small gaps in the fence panels will not be able to migrate. These tend to be the animals that require migration for genetic diversity and integrity.

Threatened and Endangered Species. Minimal impacts to the lesser long-nosed bat species as a whole could occur from the loss of agaves during construction. Impediments to the migration routes of the jaguar may occur and the jaguar may be adversely affected. Major impacts to the Huachuca water umbel, yellow billed cuckoo, and jaguar may occur due to reductions in surface flow of the San Pedro River. Measures outlined in the BRP will be implemented to reduce impacts to these species (see Appendix B). Construction, operation, and maintenance of tactical infrastructure, when combined with past, present, and future residential and commercial development, has the potential to result in minor to major adverse cumulative impacts on these species.

13.7 CULTURAL RESOURCES

The Planned Action will have no effect on historic properties, provided avoidance measures are implemented as described. Avoidance measures include limiting construction activities to previously surveyed areas. Additionally, in the vicinity of Site AZ EE: 12:40, where construction will be limited to the present road footprint, the area will be flagged to signify to construction personnel the restricted work zone. Flagging the vicinity of other cultural resource sites near the construction corridor such as AZ EE: 12:38 and the international border monuments associated with AZ FF: 11:105 will also serve to instruct construction personnel to exert added caution in those areas. If any additional cultural material is discovered during the construction efforts, then all activities will halt until a qualified archaeologist assesses the cultural remains. Therefore, this action, when combined with other existing and planned projects in the region, will not have major cumulative impacts on cultural resources.

13.8 SOCIOECONOMICS

Construction of the project will result in temporary, minor and beneficial impacts to the region's economy. No significant impacts to residential areas, populations, minority or low-income families will occur. When possible, materials and other project expenditures will predominantly be obtained through merchants in the local community. All construction activities will be limited to daylight hours, when possible. Safety buffer zones will be designated around all construction sites to ensure public health and safety. These effects, when combined with the other projects currently planned or on-going projects within the region, will have minor cumulative impacts.

13.9 HAZARDOUS MATERIALS

Only minor increases in the use of hazardous substances (*e.g.*, POLs) will occur as a result of the construction and maintenance of the fence and road. No health of safety risks will be created by the project. Once confirmation of any existing hazards that may exist within the project corridor is complete, and if any discovered hazards are removed, the effects of this project, when combined with other on-going and planned projects in the region, will be considered a negligible cumulative effect.

13.10 ROADWAYS AND TRAFFIC

Although this project and other ongoing projects will increase traffic loads within local road systems during construction, these impacts will be short-term. Additionally, traffic volumes will return to pre-construction levels upon completion of the projects. Thus, no major cumulative impacts will occur.

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SECTION 14.0
REFERENCES

14.0 REFERENCES

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SECTION 15.0
ABBREVIATIONS AND ACRONYMS

15.0 ABBREVIATIONS AND ACRONYMS

AAI	Aztlan Archaeology, Inc.
AESFO	Arizona Ecological Services Field Office
ADWR	Arizona Department of Water Resources
AGFD	Arizona Game and Fish Department
ANHP	Arizona Natural Heritage Program
AO	Area of Operation
amsl	above mean sea level
BEA	United States Bureau of Economic Analysis
BLM	United States Bureau of Land Management
BMP	Best Management Practices
BRP	Biological Resources Plan
BO	Biological Opinion
CBP	United States Customs and Border Protection
CEC	Council for Environmental Cooperation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CPNWR	Cabeza Prieta National Wildlife Refuge
dBA	decibel – A weighted scale
DHS	United States Department of Homeland Security
DNL	day-night average sound level
DPS	distinct population segment
EA	Environmental Assessment
ECSO	Engineering Construction Support Office
EEC	Engineering and Environmental Consultants
ESA	Endangered Species Act
ESP	Environmental Stewardship Plan
FEMA	Federal Emergency Management Agency
GSRC	Gulf South Research Corporation
IBC	International Border Commission
IIRIRA	Illegal Immigration Reform and Immigrant Responsibility Act
INS	Immigration and Naturalization Service
LLNB	lesser long-nosed bat
MARAMA	Mid-Atlantic Regional Air Management Association
MRI	Midwest Research Institute
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves and Protection Act
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NOA	Notice of Availability

NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
O_3	Ozone
Pb	Lead
PF	Pedestrian Fence
PM-10	Particulate<10 micrometers
PM-2.5	Particulate<2.5 micrometers
POE	Port of Entry
POL	petroleum, oil, and lubricants
PVB	permanent vehicle barrier
ROI	region of influence
SEA	Supplemental Environmental Assessment
SO_2	Sulfur Dioxide
SPCCP	Spill Prevention, Control, and Countermeasures Plan
SPRNCA	San Pedro River National Conservation Area
SWPPP	Storm Water Pollution Prevention Plan
TI	Tactical Infrastructure
U.S.	United States
USACE	United States Army Corps of Engineers
USBP	United States Border Patrol
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USDOI	United States Department of Interior
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USIBWC	United States Section, International Boundary Water Commission
USP	Upper San Pedro (basin)
VF	Vehicle Fence
WACC	Western Archaeological and Conservation Center
WUS	Waters of the U.S.

APPENDIX A
Copy of 2008 Border Waiver

FOR FURTHER INFORMATION CONTACT: Ken Hunt, Executive Director, 245 Murray Lane, Mail Stop 0550, Washington, DC 20528, 703–235–0780 and 703–235–0442, *privacycommittee@dhs.gov*.

Purpose and Objective: Under the authority of 6 U.S.C. section 451, this charter establishes the Data Privacy and Integrity Advisory Committee, which shall operate in accordance with the provisions of the Federal Advisory Committee Act (FACA) (5 U.S.C. App).

The Committee will provide advice at the request of the Secretary of DHS and the Chief Privacy Officer of DHS on programmatic, policy, operational, administrative, and technological issues within the DHS that relate to personally identifiable information (PII), as well as data integrity and other privacy-related matters.

Duration: The committee's charter is effective March 25, 2008, and expires March 25, 2010.

Responsible DHS Officials: Hugo Teufel III, Chief Privacy Officer and Ken Hunt, Executive Director, 245 Murray Drive, Mail Stop 0550, Washington, DC 20528, *privacycommittee@dhs.gov*, 703–235–0780.

Dated: April 1, 2008.

Hugo Teufel III,

Chief Privacy Officer.

[FR Doc. E8–7277 Filed 4–7–08; 8:45 am]

BILLING CODE 4410–10–P

DEPARTMENT OF HOMELAND SECURITY

Office of the Secretary

Determination Pursuant to Section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, as Amended

AGENCY: Office of the Secretary, Department of Homeland Security.

ACTION: Notice of determination; correction.

SUMMARY: The Secretary of Homeland Security has determined, pursuant to law, that it is necessary to waive certain laws, regulations and other legal requirements in order to ensure the expeditious construction of barriers and roads in the vicinity of the international land border of the United States. The notice of determination was published in the **Federal Register** on April 3, 2008. Due to a publication error, the Project Area description was inadvertently omitted from the April 3 publication. For clarification purposes, this document is a republication of the April 3 document including the omitted Project Area description.

DATES: This Notice is effective on April 8, 2008.

Determination and Waiver

The Department of Homeland Security has a mandate to achieve and maintain operational control of the borders of the United States. Public Law 109–367, 2, 120 Stat. 2638, 8 U.S.C. 1701 note. Congress has provided the Secretary of Homeland Security with a number of authorities necessary to accomplish this mandate. One of these authorities is found at section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (''IIRIRA''). Public Law 104–208, Div. C, 110 Stat. 3009–546, 3009–554 (Sept. 30, 1996) (8 U.S.C 1103 note), as amended by the REAL ID Act of 2005, Public Law 109–13, Div. B, 119 Stat. 231, 302, 306 (May 11, 2005) (8 U.S.C. 1103 note), as amended by the Secure Fence Act of 2006, Public Law 109–367, 3, 120 Stat. 2638 (Oct. 26, 2006) (8 U.S.C. 1103 note), as amended by the Department of Homeland Security Appropriations Act, 2008, Public Law 110–161, Div. E, Title V, 564, 121 Stat. 2090 (Dec. 26, 2007). In Section 102(a) of the IIRIRA, Congress provided that the Secretary of Homeland Security shall take such actions as may be necessary to install additional physical barriers and roads (including the removal of obstacles to detection of illegal entrants) in the vicinity of the United States border to deter illegal crossings in areas of high illegal entry into the United States. In Section 102(b) of the IIRIRA, Congress has called for the installation of fencing, barriers, roads, lighting, cameras, and sensors on not less than 700 miles of the southwest border, including priority miles of fencing that must be completed by December of 2008. Finally, in section 102(c) of the IIRIRA, Congress granted to me the authority to waive all legal requirements that I, in my sole discretion, determine necessary to ensure the expeditious construction of barriers and roads authorized by section 102 of the IIRIRA.

I determine that the following area of Hidalgo County, Texas, in the vicinity of the United States border, hereinafter the Project Area, is an area of high illegal entry:

- Starting approximately at the intersection of Military Road and an unnamed road (i.e. beginning at the western end of the International Boundary Waters Commission (IBWC) levee in Hidalgo County) and runs east in proximity to the IBWC levee for approximately 4.5 miles.
- Starting approximately at the intersection of Levee Road and 5494 Wing Road and runs east in proximity to the IBWC levee for approximately 1.8 miles.
- Starting approximately 0.2 mile north from the intersection of S. Depot Road and 23rd Street and runs south in proximity to the IBWC levee to the Hidalgo POE and then east in proximity to the new proposed IBWC levee and the existing IBWC levee to approximately South 15th Street for a total length of approximately 4.0 miles.
- Starting adjacent to Levee Road and approximately 0.1 miles east of the intersection of Levee Road and Valley View Road and runs east in proximity to the IBWC levee for approximately 1.0 mile then crosses the Irrigation District Hidalgo County #1 Canal and will tie into the future New Donna POE fence.
- Starting approximately 0.1 mile east of the intersection of County Road 556 and County Road 1554 and runs east in proximity to the IBWC levee for approximately 3.4 miles.
- Starting approximately 0.1 mile east of the Bensten Groves road and runs east in proximity to the IBWC levee to the Progresso POE for approximately 3.4 miles.
- Starting approximately at the Progresso POE and runs east in proximity to the IBWC levee for approximately 2.5 miles.

In order to deter illegal crossings in the Project Area, there is presently a need to construct fixed and mobile barriers and roads in conjunction with improvements to an existing levee system in the vicinity of the border of the United States as a joint effort with Hidalgo County, Texas. In order to ensure the expeditious construction of the barriers and roads that Congress prescribed in the IIRIRA in the Project Area, which is an area of high illegal entry into the United States, I have determined that it is necessary that I exercise the authority that is vested in me by section 102(c) of the IIRIRA as amended. Accordingly, I hereby waive in their entirety, with respect to the construction of roads and fixed and mobile barriers (including, but not limited to, accessing the project area, creating and using staging areas, the conduct of earthwork, excavation, fill, and site preparation, and installation and upkeep of fences, roads, supporting elements, drainage, erosion controls, safety features, surveillance, communication, and detection equipment of all types, radar and radio towers, and lighting) in the Project Area, all federal, state, or other laws, regulations and legal requirements of, deriving from, or related to the subject of, the following laws, as amended: The National Environmental Policy Act (Pub. L. 91–190, 83 Stat. 852 (Jan. 1,

1970) (42 U.S.C. 4321 *et seq.*)), the Endangered Species Act (Pub. L. 93–205, 87 Stat. 884) (Dec. 28, 1973) (16 U.S.C. 1531 *et seq.*)), the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) (33 U.S.C. 1251 *et seq.*), the National Historic Preservation Act (Pub. L. 89–665, 80 Stat. 915 (Oct. 15, 1966) (16 U.S.C. 470 *et seq.*)), the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), the Clean Air Act (42 U.S.C. 7401 *et seq.*), the Archeological Resources Protection Act (Pub. L. 96–95, 16 U.S.C. 470aa *et seq.*), the Safe Drinking Water Act (42 U.S.C. 300f *et seq.*), the Noise Control Act (42 U.S.C. 4901 *et seq.*), the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 U.S.C. 6901 *et seq.*), the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 *et seq.*), the Archaeological and Historic Preservation Act (Pub. L. 86–523, 16 U.S.C. 469 *et seq.*), the Antiquities Act (16 U.S.C. 431 *et seq.*), the Historic Sites, Buildings, and Antiquities Act (16 U.S.C. 461 *et seq.*), the Farmland Protection Policy Act (7 U.S.C. 4201 *et seq.*), the Coastal Zone Management Act (Pub. L. 92–583, 16 U.S.C. 1451 *et seq.*), the Federal Land Policy and Management Act (Pub L. 94–579, 43 U.S.C. 1701 *et seq.*), the National Wildlife Refuge System Administration Act (Pub. L. 89–669, 16 U.S.C. 668dd-668ee), the Fish and Wildlife Act of 1956 (Pub. L. 84–1024, 16 U.S.C. 742a, *et seq.*), the Fish and Wildlife Coordination Act (Pub. L. 73–121, 16 U.S.C. 661 *et seq.*), the Administrative Procedure Act (5 U.S.C. 551 *et seq.*), the Rivers and Harbors Act of 1899 (33 U.S.C. 403), the Eagle Protection Act (16 U.S.C. 668 *et seq.*), the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 *et seq.*), the American Indian Religious Freedom Act (42 U.S.C. 1996), the Religious Freedom Restoration Act (42 U.S.C. 2000bb), and the Federal Grant and Cooperative Agreement Act of 1977 (31 U.S.C. 6303–05).

I reserve the authority to make further waivers from time to time as I may determine to be necessary to accomplish the provisions of section 102 of the IIRIRA, as amended.

Michael Chertoff,

Secretary.

[FR Doc. E8–7450 Filed 4–7–08; 8:45 am]

BILLING CODE 4410–10–P

DEPARTMENT OF HOMELAND SECURITY

Office of the Secretary

Determination Pursuant to Section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, as Amended

AGENCY: Office of the Secretary, Department of Homeland Security.

ACTION: Notice of determination; correction.

SUMMARY: The Secretary of Homeland Security has determined, pursuant to law, that it is necessary to waive certain laws, regulations and other legal requirements in order to ensure the expeditious construction of barriers and roads in the vicinity of the international land border of the United States. The notice of determination was published in the **Federal Register** on April 3, 2008. Due to a publication error, the description of the Project Areas was inadvertently omitted from the April 3 publication. For clarification purposes, this document is a republication of the April 3 document including the omitted description of the Project Areas.

DATES: This Notice is effective on April 8, 2008.

Determination and Waiver

I have a mandate to achieve and maintain operational control of the borders of the United States. Public Law 109–367, 2, 120 Stat. 2638, 8 U.S.C. 1701 note. Congress has provided me with a number of authorities necessary to accomplish this mandate. One of these authorities is found at section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (''IIRIRA''). Public Law 104–208, Div. C, 110 Stat. 3009–546, 3009–554 (Sept. 30, 1996) (8 U.S.C 1103 note), as amended by the REAL ID Act of 2005, Public Law 109–13, Div. B, 119 Stat. 231, 302, 306 (May 11, 2005) (8 U.S.C. 1103 note), as amended by the Secure Fence Act of 2006, Public Law 109–367, 3, 120 Stat. 2638 (Oct. 26, 2006) (8 U.S.C. 1103 note), as amended by the Department of Homeland Security Appropriations Act, 2008, Public Law 110–161, Div. E, Title V, 564, 121 Stat. 2090 (Dec. 26, 2007). In Section 102(a) of IIRIRA, Congress provided that the Secretary of Homeland Security shall take such actions as may be necessary to install additional physical barriers and roads (including the removal of obstacles to detection of illegal entrants) in the vicinity of the United States border to deter illegal crossings in areas of high illegal entry into the United States. In Section 102(b) of IIRIRA, Congress has called for the installation of fencing, barriers, roads, lighting, cameras, and sensors on not less than 700 miles of the southwest border, including priority miles of fencing that must be completed by December 2008. Finally, in section 102(c) of the IIRIRA, Congress granted to me the authority to waive all legal requirements that I, in my sole discretion, determine necessary to ensure the expeditious construction of barriers and roads authorized by section 102 of IIRIRA.

I determine that the following areas in the vicinity of the United States border, located in the States of California, Arizona, New Mexico, and Texas are areas of high illegal entry (collectively ''Project Areas''):

California

- Starting approximately 1.5 mile east of Border Monument (BM) 251 and ends approximately at BM 250.
- Starting approximately 1.1 miles west of BM 245 and runs east for approximately 0.8 mile.
- Starting approximately 0.2 mile west of BM 243 and runs east along the border for approximately 0.5 mile.
- Starting approximately 0.7 mile east of BM 243 and runs east along the border for approximately 0.9 mile.
- Starting approximately 1.0 mile east of BM 243 and runs east along the border for approximately 0.9 mile.
- Starting approximately 0.7 mile west of BM 242 and stops approximately 0.4 mile west of BM 242.
- Starting approximately 0.8 mile east of BM 242 and runs east along the border for approximately 1.1 miles.
- Starting approximately 0.4 mile east of BM 239 and runs east for approximately 0.4 mile along the border.
- Starting approximately 1.2 miles east of BM 239 and runs east for approximately 0.2 mile along the border.
- Starting approximately 0.5 mile west of BM 235 and runs east along the border for approximately 1.1 miles.
- Starting approximately 0.8 mile east of BM 235 and runs east along the border for approximately 0.1 mile.
- Starting approximately 0.6 mile east of BM 234 and runs east for approximately 1.7 miles along the border.
- Starting approximately 0.4 mile east of BM 233 and runs east for approximately 2.1 miles along the border.
- Starting approximately 0.05 mile west of BM 232 and runs east for approximately 0.1 mile along the border.

• Starting approximately 0.2 mile east of BM 232 and runs east for approximately 1.5 miles along the border.

• Starting 0.6 mile east of Border Monument 229 heading east along the border for approximately 11.3 miles to BM 225.

• Starting approximately 0.1 mile east of BM 224 and runs east along the border for approximately 2.5 miles.

• Starting approximately 2.3 miles east of BM 220 and runs east along the border to BM 207.

Arizona

• Starting approximately 1.0 mile south of BM 206 and runs south along the Colorado River for approximately 13.3 miles.

• Starting approximately 0.1 mile north of County 18th Street running south along the border for approximately 3.8 miles.

• Starting at the Eastern edge of BMGR and runs east along the border to approximately 1.3 miles west of BM 174.

• Starting approximately 0.5 mile west of BM 168 and runs east along the border for approximately 5.3 miles.

• Starting approximately 1 mile east of BM 160 and runs east for approximately 1.6 miles.

• Starting approximately 1.3 miles east of BM 159 and runs east along the border to approximately 0.3 mile east of BM 140.

• Starting approximately 2.2 miles west of BM 138 and runs east along the border for approximately 2.5 miles.

• Starting approximately 0.2 miles east of BM 136 and runs east along the border to approximately 0.2 mile west of BM 102.

• Starting approximately 3 miles west of BM 99 and runs east along the border approximately 6.5 miles.

• Starting approximately at BM 97 and runs east along the border approximately 6.9 miles.

• Starting approximately at BM 91 and runs east along the border to approximately 0.7 miles east of BM 89.

• Starting approximately 1.7 miles west of BM 86 and runs east along the border to approximately 0.7 mile west of BM 86.

• Starting approximately 0.2 mile west of BM 83 and runs east along the border to approximately 0.2 mile east of BM 73.

New Mexico

• Starting approximately 0.8 mile west of BM 69 and runs east along the border to approximately 1.5 miles west of BM 65.

• Starting approximately 2.3 miles east of BM 65 and runs east along the border for approximately 6.0 miles.

• Starting approximately 0.5 mile east of BM 61 and runs east along the border until approximately 1.0 mile west of BM 59.

• Starting approximately 0.1 miles east of BM 39 and runs east along the border to approximately 0.3 mile east of BM 33.

• Starting approximately 0.25 mile east of BM 31 and runs east along the border for approximately 14.2 miles.

• Starting approximately at BM 22 and runs east along the border to approximately 1.0 mile west BM 16.

• Starting at approximately 1.0 mile west of BM 16 and runs east along the border to approximately BM 3.

Texas

• Starting approximately 0.4 miles southeast of BM 1 and runs southeast along the border for approximately 3.0 miles.

• Starting approximately 1 Mi E of the intersection of Interstate 54 and Border Highway and runs southeast approximately 57 miles in proximity to the IBWC levee to 3.7 miles east of the Ft Hancock POE.

• Starting approximately 1.6 miles west of the intersection of Esperanza and Quitman Pass Roads and runs along the IBWC levee east for approximately 4.6 miles.

• Starting at the Presidio POE and runs west along the border to approximately 3.2 miles west of the POE.

• Starting at the Presidio POE and runs east along the border to approximately 3.4 miles east of the POE.

• Starting approximately 1.8 miles west of Del Rio POE and runs east along the border for approximately 2.5 miles.

• Starting approximately 1.3 Mi north of the Eagle Pass POE and runs south approximately 0.8 miles south of the POE.

• Starting approximately 2.1 miles west of Roma POE and runs east approximately 1.8 miles east of the Roma POE.

• Starting approximately 3.5 miles west of Rio Grande City POE and runs east in proximity to the Rio Grande river for approximately 9 miles.

• Starting approximately 0.9 miles west of County Road 41 and runs east approximately 1.2 miles and then north for approximately 0.8 miles.

• Starting approximately 0.5 mile west of the end of River Dr and runs east in proximity to the IBWC levee for approximately 2.5 miles.

• Starting approximately 0.6 miles east of the intersection of Benson Rd and Cannon Rd and runs east in proximity to the IBWC levee for approximately 1 mile.

• Starting at the Los Indios POE and runs west in proximity to the IBWC levee for approximately 1.7 miles.

• Starting at the Los Indios POE and runs east in proximity to the IBWC levee for approximately 3.6 miles.

• Starting approximately 0.5 mile west of Main St and J Padilla St intersection and runs east in proximity to the IBWC levee for approximately 2.0 miles.

• Starting approximately 1.2 miles west of the Intersection of U.S. HWY 281 and Los Ranchitos Rd and runs east in proximity to the IBWC levee for approximately 2.4 miles.

• Starting approx 0.5 miles southwest of the intersection of U.S. 281 and San Pedro Rd and runs east in proximity to the IBWC levee for approximately 1.8 miles.

• Starting approximately 0.1 miles southwest of the Intersection of Villanueva St and Torres Rd and runs east in proximity to the IBWC levee for approximately 3.6 miles.

• Starting approximately south of Palm Blvd and runs east in proximity to the City of Brownsville's levee to approximately the Gateway-Brownsville POE where it continues south and then east in proximity to the IBWC levee for a total length of approximately 3.5 miles.

• Starting at the North Eastern Edge of Ft Brown Golf Course and runs east in proximity to the IBWC levee for approximately 1 mile.

• Starting approximately 0.3 miles east of Los Tomates-Brownsville POE and runs east and then north in proximity to the IBWC levee for approximately 13 miles.

In order to deter illegal crossings in the Project Areas, there is presently a need to construct fixed and mobile barriers (such as fencing, vehicle barriers, towers, sensors, cameras, and other surveillance, communication, and detection equipment) and roads in the vicinity of the border of the United States. In order to ensure the expeditious construction of the barriers and roads that Congress prescribed in the IIRIRA in the Project Areas, which are areas of high illegal entry into the United States, I have determined that it is necessary that I exercise the authority that is vested in me by section 102(c) of the IIRIRA as amended.

Accordingly, I hereby waive in their entirety, with respect to the construction of roads and fixed and mobile barriers (including, but not limited to, accessing the project area, creating and using staging areas, the

conduct of earthwork, excavation, fill, and site preparation, and installation and upkeep of fences, roads, supporting elements, drainage, erosion controls, safety features, surveillance, communication, and detection equipment of all types, radar and radio towers, and lighting) in the Project Areas, all federal, state, or other laws, regulations and legal requirements of, deriving from, or related to the subject of, the following laws, as amended: The National Environmental Policy Act (Pub. L. 91–190, 83 Stat. 852 (Jan. 1, 1970) (42 U.S.C. 4321 *et seq.*)), the Endangered Species Act (Pub. L. 93–205, 87 Stat. 884 (Dec. 28, 1973) (16 U.S.C. 1531 *et seq.*)), the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) (33 U.S.C. 1251 *et seq.*)), the National Historic Preservation Act (Pub. L. 89–665, 80 Stat. 915 (Oct. 15, 1966) (16 U.S.C. 470 *et seq.*)), the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), the Clean Air Act (42 U.S.C. 7401 *et seq.*), the Archeological Resources Protection Act (Pub. L. 96–95, 16 U.S.C. 470aa *et seq.*), the Safe Drinking Water Act (42 U.S.C. 300f *et seq.*), the Noise Control Act (42 U.S.C. 4901 *et seq.*), the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 U.S.C. 6901 *et seq.*), the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 *et seq.*), the Archaeological and Historic Preservation Act (Pub. L. 86–523, 16 U.S.C. 469 *et seq.*), the Antiquities Act (16 U.S.C. 431 *et seq.*), the Historic Sites, Buildings, and Antiquities Act (16 U.S.C. 461 *et seq.*), the Wild and Scenic Rivers Act (Pub. L. 90–542, 16 U.S.C. 1281 *et seq.*), the Farmland Protection Policy Act (7 U.S.C. 4201 *et seq.*), the Coastal Zone Management Act (Pub. L. 92–583, 16 U.S.C. 1451 *et seq.*), the Wilderness Act (Pub. L. 88–577, 16 U.S.C. 1131 *et seq.*), the Federal Land Policy and Management Act (Pub L. 94–579, 43 U.S.C. 1701 *et seq.*), the National Wildlife Refuge System Administration Act (Pub. L. 89–669, 16 U.S.C. 668dd–668ee), the Fish and Wildlife Act of 1956 (Pub. L. 84–1024, 16 U.S.C. 742a, *et seq.*), the Fish and Wildlife Coordination Act (Pub. L. 73–121, 16 U.S.C. 661 *et seq.*), the Administrative Procedure Act (5 U.S.C. 551 *et seq.*), the Otay Mountain Wilderness Act of 1999 (Pub. L. 106–145), Sections 102(29) and 103 of Title I of the California Desert Protection Act (Pub. L. 103–433), 50 Stat. 1827, the National Park Service Organic Act (Pub. L. 64–235, 16 U.S.C. 1, 2–4), the National Park Service General Authorities Act (Pub. L. 91–383, 16 U.S.C. 1a–1 *et seq.*), Sections 401(7), 403, and 404 of the National Parks and Recreation Act of 1978 (Pub. L. 95–625), Sections 301(a)–(f) of the Arizona Desert Wilderness Act (Pub. L. 101–628), the Rivers and Harbors Act of 1899 (33 U.S.C. 403), the Eagle Protection Act (16 U.S.C. 668 *et seq.*), the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 *et seq.*), the American Indian Religious Freedom Act (42 U.S.C. 1996), the Religious Freedom Restoration Act (42 U.S.C. 2000bb), the National Forest Management Act of 1976 (16 U.S.C. 1600 *et seq.*), and the Multiple Use and Sustained Yield Act of 1960 (16 U.S.C. 528–531).

This waiver does not supersede, supplement, or in any way modify the previous waivers published in the **Federal Register** on September 22, 2005 (70 FR 55622), January 19, 2007 (72 FR 2535), and October 26, 2007 (72 FR 60870).

I reserve the authority to make further waivers from time to time as I may determine to be necessary to accomplish the provisions of section 102 of the IIRIRA, as amended.

Michael Chertoff,

Secretary.

[FR Doc. E8–7451 Filed 4–7–08; 8:45 am]

BILLING CODE 4410–10–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

[USCG–2008–0202]

Information Collection Request to Office of Management and Budget; OMB Control Numbers: 1625–0044, 1625–0045, and 1625–0060

AGENCY: Coast Guard, DHS.

ACTION: Sixty-day notice requesting comments.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995, the U.S. Coast Guard intends to submit Information Collection Requests (ICRs) and Analyses to the Office of Management and Budget (OMB) requesting an extension of their approval for the following collections of information: (1) 1625–0044, Outer Continental Shelf Activities—Title 33 CFR Subchapter N; (2) 1625–0045, Adequacy Certification for Reception Facilities and Advance Notice—33 CFR part 158; and (3) 1625–0060, Vapor Control Systems for Facilities and Tank Vessels. Before submitting these ICRs to OMB, the Coast Guard is inviting comments as described below.

DATES: Comments must reach the Coast Guard on or before June 9, 2008.

ADDRESSES: To avoid duplicate submissions to the docket [USCG–2008–0202], please submit them by only one of the following means:

(1) *Online: http://www.regulations.gov.*

(2) *Mail:* Docket Management Facility (DMF) (M–30), U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590–0001.

(3) *Hand delivery:* DMF between the hours of 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The telephone number is 202–366–9329.

(4) *Fax:* 202–493–2251.

The DMF maintains the public docket for this notice. Comments and material received from the public, as well as documents mentioned in this notice as being available in the docket, will become part of this docket and will be available for inspection or copying at room W12–140 on the West Building Ground Floor, 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also find this docket on the Internet at *http://www.regulations.gov.*

A copy of the complete ICR is available through this docket on the Internet at *http://www.regulations.gov.* Additionally, copies are available from Commandant (CG–611), U.S. Coast Guard Headquarters (Attn: Mr. Arthur Requina), 2100 2nd Street, SW., Washington, DC 20593–0001. The telephone number is 202–475–3523.

FOR FURTHER INFORMATION CONTACT: Mr. Arthur Requina, Office of Information Management, telephone 202–475–3523, or fax 202–475–3929, for questions on these documents. Contact Ms. Renee V. Wright, Program Manager, Docket Operations, 202–366–9826, for questions on the docket.

SUPPLEMENTARY INFORMATION:

Public Participation and Request for Comments

The Coast Guard invites comments on whether this information collection request should be granted based on it being necessary for the proper performance of Departmental functions. In particular, the Coast Guard would appreciate comments addressing: (1) The practical utility of the collections; (2) the accuracy of the estimated burden of the collections; (3) ways to enhance the quality, utility, and clarity of information subject to the collections; and (4) ways to minimize the burden of

APPENDIX B
Biological Resources Plan

BIOLOGICAL RESOURCES PLAN

FOR

CONSTRUCTION, OPERATION, AND MAINTENANCE OF TACTICAL INFRASTRUCTURE

FOR

U.S. BORDER PATROL TUCSON SECTOR, ARIZONA

SECTION E-2A

U.S. DEPARTMENT OF HOMELAND SECURITY
U.S. CUSTOMS AND BORDER PROTECTION
U.S. BORDER PATROL TUCSON SECTOR

Prepared by

Solutions Today for a Sustainable Tomorrow

JULY 2008

ABBREVIATIONS AND ACRONYMS

BLM	Bureau of Land Management
BMP	Best Management Practice
BRP	biological resources plan
CBP	U.S. Customs and Border Protection
DHS	U.S. Department of Homeland Security
GIS	Geographic Information System
GPS	Global Positioning System
IIRIRA	Illegal Immigration Reform and Immigrant Responsibility Act
NPS	National Park Service
PAC	protected activity center
PCE	primary constituent element
PV-1	Personnel-Vehicle Fence Type-1
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
USFS	U.S. Forest Service
USFWS	U.S. Fish & Wildlife Service
VF-2	Vehicle Fence Type-2

EXECUTIVE SUMMARY

The U.S. Department of Homeland Security (DHS or the Department), Customs and Border Protection (CBP), U.S. Border Patrol (USBP) plans to construct, operate, and maintain tactical infrastructure consisting of primary pedestrian and vehicle fencing, a staging area, a construction/maintenance road, access roads, and improvements to existing roads in Section E-2A along the U.S./Mexico international border in USBP's Tucson Sector in Cochise County, Arizona.

Table ES-1 outlines federally listed species, candidate species, and federally designated critical habitats known to occur or to potentially occur within Cochise County and the determination of effects resulting from the Project.

Of the species and critical habitat listed in **Table ES-1**, the Project is likely to adversely affect Huachuca water umbel (*Lilaeopsis schaffneriana ssp. recurva*), yellow-billed cuckoo (*Coccyzus americanus*), jaguar (*Panthera onca*), and lesser long-nosed bat (*Leptonycteris curasonae*). The Project may affect, but is not likely to adversely affect Huachuca water umbel critical habitat, Chiricahua leopard frog (*Rana chiricahuensis)*, and southwestern willow flycatcher (*Empidonax traillii extimus)*. The Project will have no effect on the Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*), California brown pelican (*Pelicanus occidentalis californicus*), Mexican spotted owl (*Strix occidentalis lucida*), Mexican spotted owl critical habitat, southwestern willow flycatcher critical habitat, ocelot (*Leopardus pardalis*), Canelo Hills ladies'-tresses (*Spiranthes delitescens*), Lemmon fleabane (*Erigeron lemmonii*), Cochise pincushion cactus (*Coryphantha robbinsorum*), Huachuca springsnail (*Pyrgulopsis thomsoni*), New Mexico ridge nosed rattlesnake (*Crotalus willardi obscurus*), beautiful shiner (*Cyprinella formosa*), desert pupfish (*Cyprinodon macularius*), Gila chub (*Gila intermedia*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), loach minnow (*Tiaroga cobitis*), spikedace (*Meda fulgida*), Yaqui catfish (*Ictalurus pricei*), Yaqui chub (*Gila purpurea*), and Yaqui topminnow (*Poeciliopsis occidentalis sonoriensis*). Therefore, these will not be discussed in detail in this biological resources plan (BRP).

On April 1, 2008, the Secretary of DHS, pursuant to his authority under Section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA), exercised his authority to waive certain environmental and other laws in order to ensure expeditious construction of tactical infrastructure along the U.S./Mexico international border. Although the Secretary's waiver means that CBP no longer has any specific legal obligations under these laws, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP strongly supports this objective and remains committed to being a good steward of the environment. To that end, CBP has prepared the following Biological Resources Plan (BRP), which analyzes the potential impacts on threatened and endangered species associated with construction of tactical infrastructure in the USBP's Tucson Sector. The BRP also discusses CBP's plans as to how potential impacts on

threatened and endangered species can be mitigated. The BRP will help to guide CBP's efforts going forward.

Table ES-1. Determination of Effects on Federally Listed Species and Critical Habitats Potentially Occurring within Cochise County, Arizona

Species	Listing Status	Year Listed, Proposed or Designated	Determination
PLANTS			
Canelo Hills ladies'-tresses, *Spiranthes delitescens*	Endangered	1997	No effect
Cochise pincushion cactus, *Coryphantha robbinsorum*	Threatened	1986	No effect
Huachuca water umbel, var. recurva, *Lilaeopsis schaffneriana* ssp. *recurva*	Endangered	1997	Likely to adversely affect
Huachuca water umbel, var. recurva, *Lilaeopsis schaffneriana* ssp. *recurva*	Critical Habitat, not within E-2A project corridor (Bear Canyon)	1999	Not likely to adversely affect
Lemmon fleabane, *Erigeron lemmonii*	Candidate		No effect
INVERTEBRATES			
Huachuca springsnail, *Pyrgulopsis thomsoni*	Candidate		No effect
FISHES			
Beautiful shiner, *Cyprinella formosa*	Threatened	1984	No effect
Desert pupfish, *Cyprinodon macularius*	Endangered	1986	No effect
Gila chub *Gila intermedia*	Endangered	2005	No effect
Gila topminnow, *Poeciliopsis occidentalis occidentalis*	Endangered	1967	No effect
Loach minnow, *Tiaroga cobitis*	Threatened	1986	No effect
Spikedace, *Meda fulgida*	Threatened	1986	No effect
Yaqui catfish, *Ictalurus pricei*	Threatened	1984	No effect
Yaqui chub, *Gila purpurea*	Endangered	1984	No effect

Species	Listing Status	Year Listed, Proposed or Designated	Determination
FISHES (continued)			
Yaqui topminnow, *Poeciliopsis occidentalis sonoriensis*	Endangered	1967	No effect
AMPHIBIANS			
Chiricahua leopard frog, *Rana chiricahuensis*	Threatened	2002	Not likely to adversely affect
Sonora tiger salamander, *Ambystoma tigrinum stebbinsi*	Endangered	1997	No effect
REPTILES			
New Mexico ridge nosed rattlesnake, *Crotalus willardi obscurus*	Threatened	1978	No effect
BIRDS			
California brown pelican, *Pelicanus occidentalis californicus*	Endangered, proposed delisted	1970	No effect
Mexican spotted owl, *Strix occidentalis lucida*	Threatened	1993	No effect
Mexican spotted owl, *Strix occidentalis lucida*	Critical Habitat	1995	No effect
Southwestern willow flycatcher, *Empidonax traillii extimus*	Endangered	1995	Not likely to adversely affect
Southwestern willow flycatcher, *Empidonax traillii extimus*	Critical Habitat, not within E-2A project corridor	1997	No effect
Yellow-billed cuckoo, *Coccyzus americanus*	Candidate		Likely to adversely affect
MAMMALS			
Jaguar, *Panthera onca*	Endangered	1972	Likely to adversely affect
Lesser long-nosed bat, *Leptonycteris curasonae*	Endangered	1988	Likely to adversely affect
Ocelot, *Leopardus pardalis*	Endangered	1982	No effect

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BIOLOGICAL RESOURCES PLAN
USBP TUCSON SECTOR, SECTION E-2A

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

FIGURES

TABLES

1. PROJECT DESCRIPTION

The U.S. Department of Homeland Security (DHS or the Department), Customs and Border Protection (CBP), U.S. Border Patrol (USBP) plans to construct, operate, and maintain approximately 6.24 miles of tactical infrastructure along the U.S./Mexico international border. Tactical infrastructure will include approximately 5.75 miles of primary pedestrian fencing, approximately 0.49 miles of vehicle fence, a staging area, a construction/maintenance road, access roads, and improvements to existing roads. Construction is expected to be completed by December 2008.

On April 1, 2008, the Secretary of DHS, pursuant to his authority under Section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA), exercised his authority to waive certain environmental and other laws in order to ensure expeditious construction of tactical infrastructure along the U.S./Mexico international border. Although the Secretary's waiver means that CBP no longer has any specific legal obligations under these laws, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP strongly supports this objective and remains committed to being a good steward of the environment. To that end, CBP has prepared this Biological Resources Plan (BRP), which analyzes the potential impacts on threatened and endangered species associated with construction of tactical infrastructure in the USBP's Tucson Sector. The BRP also discusses CBP's plans as to how potential impacts on threatened and endangered species can be mitigated. The BRP will help to guide CBP's efforts going forward.

1.1 LOCATION

Planned tactical infrastructure Section E-2A will be constructed in the USBP Tucson Sector, Naco Station's Area of Operation, Cochise County, Arizona. The majority of the Section E-2A project corridor will occur in the Roosevelt Reservation, which is designated for border enforcement.

Primary pedestrian and vehicle fencing will begin on the western edge of the San Pedro River and extend westward along the U.S./Mexico international border into the National Park Service (NPS) Coronado National Memorial (see **Figure 1-1**). The Project is located on a combination of private lands and on public lands administered by the NPS, Bureau of Land Management (BLM), and U.S. Forest Service (USFS).

The primary pedestrian fence will start approximately 0.18 miles west of the San Pedro River and extend westward 5.75 miles. Vehicle fence will be installed on both ends of the project corridor. The vehicle fence will extend approximately 0.18 miles and 0.31 miles from the east and west edge of the primary pedestrian

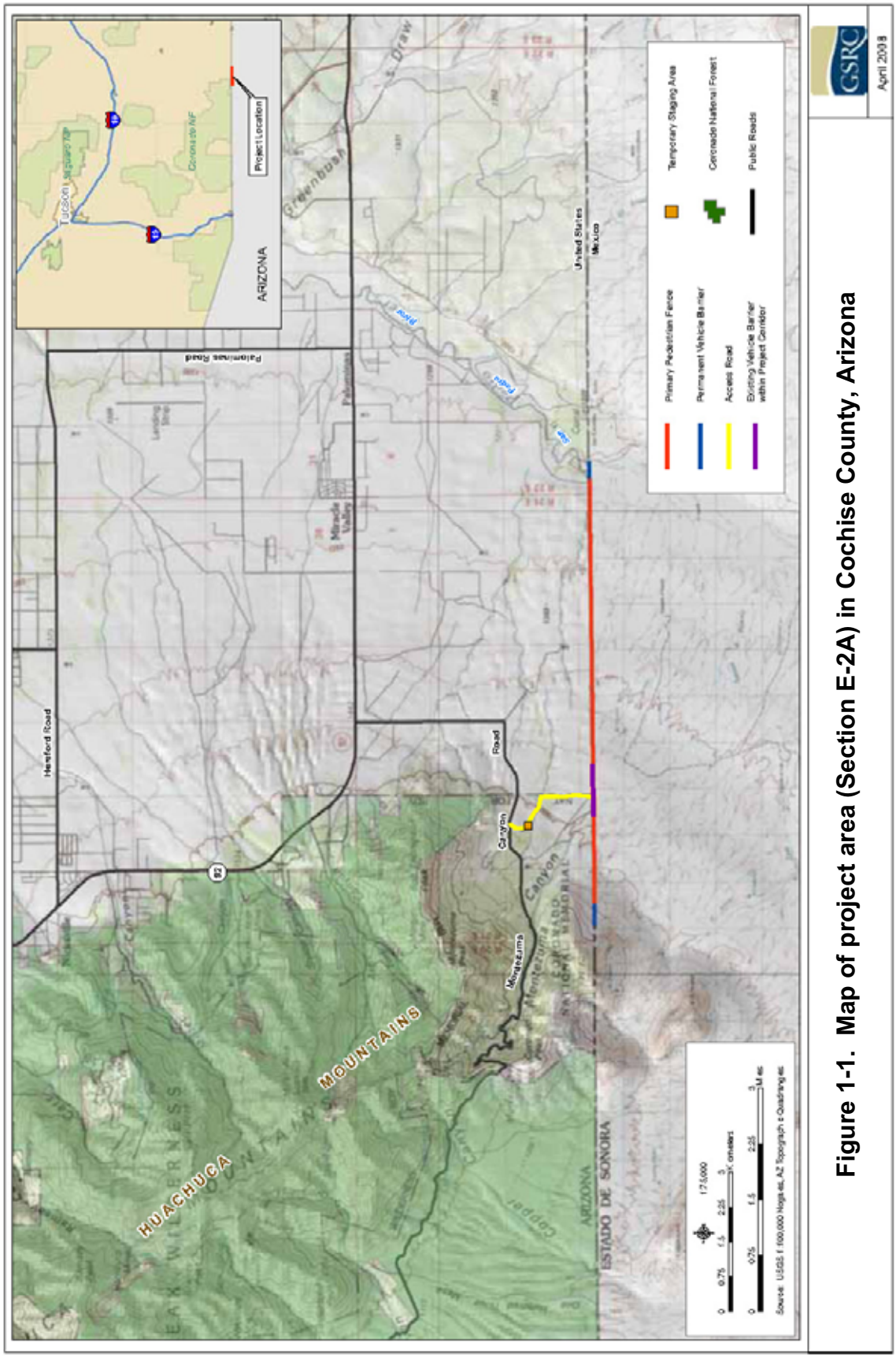

Figure 1-1. Map of project area (Section E-2A) in Cochise County, Arizona

fence, respectively. The majority of the construction/maintenance road will be built adjacent to the U.S./Mexico international border and will occur entirely within the 60-foot-wide project corridor. Some washes do not allow for a construction/maintenance road within the 60-foot-wide project corridor due to topography and geology (e.g., incised channels and rock outcrops). At these locations within the project corridor, the maintenance/construction road will extend up to 250 feet north of the U.S./Mexico international border and 75 feet east and west of the high water mark for each of the washes. There will be a temporary staging area within the Montezuma Ranch which will be approximately 300 feet by 300 feet (2 acres).

The majority of the E-2A project corridor falls within the northwest-trending San Pedro River Valley, located in the Upper San Pedro basin. The San Pedro River is the basin's major surface-water drainage. The river enters the basin at the International Boundary near Palominas, Arizona. The western portion of the project corridor falls within the boundaries of the Coronado National Memorial and the Coronado National Forest.

1.2 CONSTRUCTION, OPERATION, AND MAINTENANCE

The Project construction consists of the following Project components: (1) the construction, operation, and maintenance of primary pedestrian and vehicle barrier fence along the U.S./Mexico international border; (2) road improvements to existing roads to improve access for construction, operation, and maintenance; (3) construction of new roads adjacent to the border fence for installation and maintenance; and (4) the development of a temporary construction staging area.

It is anticipated that construction will begin in July 2008 and be completed by December 2008. Equipment anticipated to be used during the construction will include bulldozers, dump trucks, portable light generators, graders, cement trucks, front-end loaders or forklifts, and flatbed trucks.

The construction, operation, and maintenance of a total of 6.24 miles of barrier fence in Section E-2A will permanently impact 56 acres of vegetation within the 60-foot-wide project corridor; however, 7 acres were previously disturbed by the existing patrol road. Approximately 48 acres of Chihuahuan semi-desert grassland scrub and Chihuahuan scrub vegetation communities will be affected, and approximately 1 acre of riparian forest will be impacted. Approximately 3,700 agave plants that could be directly impacted by construction activities were observed within the Coronado National Memorial during an April 2008 survey (Gelinas 2008). An additional survey will be conducted prior to construction to verify this estimate. No impacts to natural vegetation are expected from the establishment of one 2-acre staging area at Montezuma Ranch house because the area has been previously disturbed and will be rehabilitated upon completion of construction activities.

1.2.1 Fence

Planned tactical infrastructure in Section E-2A includes the construction of a total of approximately 6.24 miles of new primary pedestrian and vehicle barrier fence. For the primary pedestrian fence, Tucson Sector will construct a Personnel-Vehicle Fence Type-1 (PV-1), due to its low maintenance requirements, durability, and structural integrity (see **Figure 1-2**). Additionally, in washes and arroyos the fence will be designed and constructed, as appropriate, to ensure proper conveyance of floodwaters and to eliminate the potential to cause ponding on either side of the border; the specific design anticipated to be used is unknown at this time. In areas where the installation of primary pedestrian fence is not feasible, Tucson Sector will construct a Vehicle Fence Type-2 (VF-2) or Normandy-style fence design (see **Figure 1-3**).

Figure 1-2. Personnel-Vehicle Fence Type-1 (PV-1)

Figure 1-3. Vehicle Fence Type-2 (VF-2)

The PV-1 fence is an anchored, 18-foot (aboveground) grout-filled steel bollard-style fence designed to prevent passage by both people and vehicles. Panels of PV-1 fence will be manufactured off site and transported to the site by small trucks with lowboy trailers. Using a crane, fence panels will be set in concrete–filled trenches. Construction of new fence will be completed using a trencher, a cement mixer, and a crane. No pile driving will be required for construction of PV-1 fence.

The VF-2 fence is Normandy-barrier style fence designed to prevent vehicle passage. Sections of VF-2 fence will be transported to the site by small trucks with lowboy trailers. The vehicle fence will be placed with forklifts. Vehicle fence installed within the floodplain of the San Pedro River would be temporarily removed during each monsoon season. No pile driving or trenching will be required for construction of VF-2 fence.

Currently, CBP plans to install the primary pedestrian fence and vehicle fence approximately 3 feet north of the U.S./Mexico international border or at the southern toe of the construction road in areas (e.g., large washes) where the road footprint deviates slightly northward, as described below.

Nighttime construction activities will occur only when absolutely necessary for adequate concrete pours or in the case of an accelerated construction schedule to meet Federal mandates. Therefore, to account for heat restrictions for adequate concrete drying and curing processes, most concrete pours for low water crossings, other drainage structures, and fencing would need to take place during pre-dawn hours during summer months. However, the possibility exists that work would have to occur on a 24-hour basis. A 24-hour schedule would be implemented only when additional efforts are needed to maintain the work task schedule due to weather or other unforeseen situations. To facilitate construction activities during these work hours, portable lights will be used. It is estimated that no more than 10 lights would be in operation at any one time at each construction site within the project corridor. A 6-kilowatt self-contained diesel generator powers these lights. Each unit typically has four 400- to 1,000–watt lamps. The portable light systems can be towed to the desired construction location, as needed.

If construction or maintenance work activities continue at night, all lights will be shielded to direct light only onto the work site and the area necessary to ensure the safety of the workers, the minimum wattage needed will be used, and the number of lights would be minimized. Upon completion of construction activities, all portable lights would be removed from the project corridor.

1.2.2 Roads

The Project includes improvements to existing patrol and access roads for use during fence construction. Construction roads allow construction equipment to access the project site. A construction/maintenance road will be constructed to

allow installation of the fence. The majority of the construction/maintenance road will be adjacent to the border and encompass a 60-foot-wide project corridor. This 60-foot-wide area constitutes the permanent impact area in which construction, operation, and maintenance activities will be conducted. See Figure 1-4 for a schematic of the 60-foot-wide project corridor. The washes within the NPS portion of the project corridor do not allow for a construction/maintenance road within the 60-foot-wide project corridor due to topography and geology (e.g., incised channels, rock outcrops). At these locations, the maintenance/construction road will extend up to 250 feet north of the U.S./Mexico border, no closer than 75 feet from the high water mark for each of the washes, and return back to the Roosevelt Reservation once across the wash. Extending the project corridor to 250 feet will allow for construction of the road with minimal impacts to the washes.

An access road leading from the staging area to the project corridor will be constructed. The new access road will be approximately 16 feet wide and 1.3 miles long. **Figure 1-5** shows the access road relative to the E-2A project corridor.

1.2.3 Staging Area

The Project includes the establishment of one 300-foot-by-300-foot (2 acre) staging area to accommodate construction equipment and stockpile materials. The planned staging area consists of disturbed habitat within the Montezuma Ranch on NPS land. The exact location of the staging area will be identified in consultation with the NPS prior to construction. An existing ranch house and other small buildings are located within the staging area. The Design/Build Contractor may demolish the small buildings and remove other debris on the staging area, as deemed necessary, for the staging of equipment and materials. If the Design/Build Contractor determines that the ranch house needs to be demolished, they will coordinate with USACE and the NPS.

1.2.4 Maintenance and Operations

There will be no change in overall USBP Sector operations. The fences will be made from nonreflective steel. No painting will be required. Fence maintenance will include removing any accumulated debris on the fence after a rain event to avoid potential future flooding. Debris that builds up against the fence and brush will also be removed as needed. Additionally, vehicle fence would be removed from the San Pedro River floodplain during monsoon season and replaced once monsoon season is over. Brush removal throughout the entire 60-foot-wide project corridor could include mowing, removal of small trees, and application of herbicide if needed. During normal patrols, Sector personnel will observe the condition of the fence. Any destruction or breaches of the fence will be repaired, as needed.

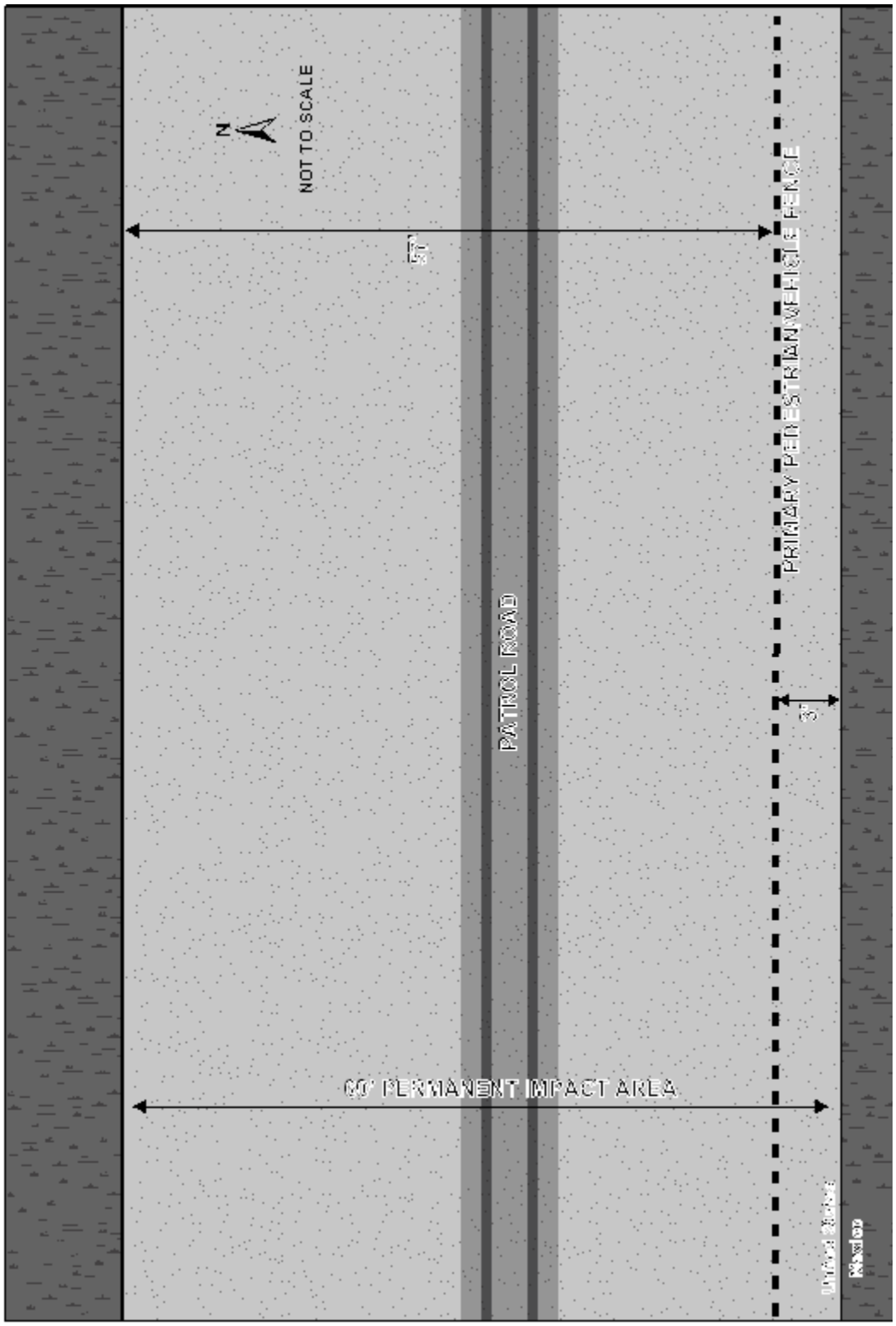

Figure 1-4. Schematic of the Permanent Impact Area within the 60-foot-wide Project Corridor

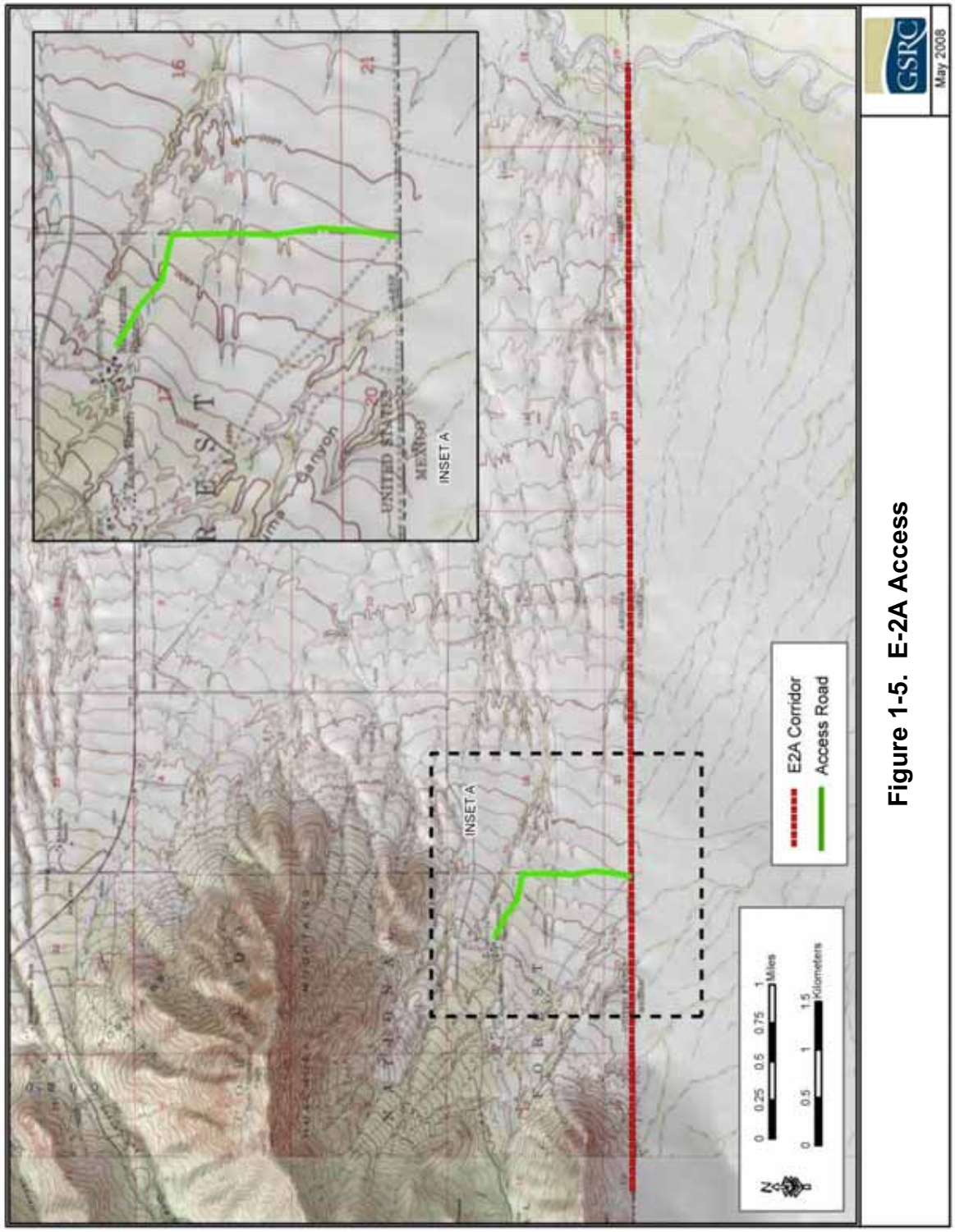

Figure 1-5. E-2A Access

1.3 BEST MANAGEMENT PRACTICES

General BMPs

The following best management practices (BMPs) should be implemented to avoid or minimize impacts associated with the Project during construction. These represent project objectives for implementation to the extent possible and will be incorporated into construction and monitoring contracts.

1. The perimeter of all areas to be disturbed during construction or maintenance activities in Sections E-2A will be clearly demarcated using flagging or temporary construction fence, and no disturbance outside that perimeter will be authorized.
2. CBP will develop (in coordination with U.S. Fish & Wildlife Service [USFWS]) a training plan regarding Trust Resources for construction personnel. At a minimum, the program will include the occurrence of the listed and sensitive species in the area, their general ecology, sensitivity of the species to human activities, protection afforded these species, and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area environments by the species. Included in this program will be color photos of the listed species, which will be shown to the employees. Following the education program, the photos will be posted in the contractor and resident engineer office, where they will remain through the duration of the project. The selected construction contractor will be responsible for ensuring that employees are aware of the listed species.
3. Project Reports. For construction and maintenance projects (e.g., fences, towers, stations, facilities) within 3 months of project completion, a Project Report will be developed that details the BMPs that were implemented, identifies how well the BMPs worked, discusses ways that BMPs could be improved for either protection of species and habitats or implementation efficiency, and reports on any federally listed species observed at or near the project site. If site restoration was included as part of the project, the implementation of that restoration and any follow-up monitoring will be included. Annual reports could be required for some longer-term projects. The project and any annual reports will be made available to the USFWS.
4. Biological Surveys for each Project. CBP will either assume presence of a federally listed species based on suitable habitat or known presence, and implement appropriate measures or will, as part of project design and planning, perform reconnaissance-level preconstruction surveys to validate presence of suitable habitat.
5. Relocation of individuals of federally listed plants found in the project area is generally not a suitable activity. Relocation of aquatic species such as

the water umbel and ladies'-tresses is not appropriate. Relocation of small cacti has not been very successful, and is not recommended. A salvage plan will be developed and approved by the government prior to the action. The CBP biological monitor will identify a location for storing any salvaged cactus and/or agaves. For particular actions, the USFWS will advise CBP regarding the relocation of plants.

6. Individual federally listed animals found in the project area will be relocated by a qualified biologist to a nearby safe location in accordance with accepted species-handling protocols to the extent practicable.
7. All construction projects in habitats of federally listed species will have a qualified designated biological monitor on site during the work. The biological monitor will document implementation of construction-related BMPs designed for the project to reduce the potential for adverse effects on the species or their habitats. Weekly reports from the biological monitor should be used for developing the Project Report.
8. Where, based on species location maps or results of surveys, individuals of a federally listed species could be present on or near the project site, a designated biological monitor will be present during construction activities to protect individuals of the species from harm. Duties of the biological monitor will include ensuring that activities stay within designated project areas, evaluating the response of individuals that come near the project site, and implementing the appropriate BMP. The designated biological monitor will notify the construction manager of any activities that might harm or harass an individual of a federally listed species. Upon such notification, the construction manager may temporarily suspend all activities in question and notify the Contracting Officer, the Administrative Contracting Officer, and the Contracting Officer's Representative of the suspense so that the key U.S. Army Corps of Engineers (USACE) personnel can be notified and apprised of the situation and the potential situation can be resolved.
9. Where a construction project could be located within one mile of occupied species habitats but the individuals of the species are not likely to move into the project area, a biological monitor is not needed. However, the construction monitor will be aware of the species-specific BMPs and ensure that BMPs designed to minimize habitat impacts are implemented and maintained as planned. This category includes the lesser long–nosed bat and all aquatic species.
10. Particular importance is given to proper design and location of roads so that the potential for road bed erosion into federally listed species habitat will be avoided or minimized.
11. Particular importance is given to proper design and location of roads so that the potential for entrapment of surface flows within the roadbed due to grading will be avoided or minimized. Depth of any pits created will be minimized so animals do not become trapped.

12. Particular importance is given to proper design and location of roads so that the widening of existing or created roadbed beyond the design parameters due to improper maintenance and use will be avoided or minimized.
13. Particular importance is given to proper design and location of roads so that excessive use of unimproved roads for construction purposes that results in their deterioration that affects the surrounding federally listed species habitat areas will be minimized. Road construction and use for construction will be monitored and documented in the Project Report.
14. Particular importance is given to proper design and location of roads so that the fewest roads needed for construction will be developed and that these are maintained to proper standards. Roads no longer needed by the government should be closed and restored to natural surface and topography using appropriate techniques. The Global Positioning System (GPS) coordinates of roads that are thus closed should be recorded and integrated into the USBP Geographic Information System (GIS) database. A record of acreage or miles of roads taken out of use, restored, and revegetated will be maintained.
15. The width of all roads that are created or maintained by CBP for construction purposes will be measured and recorded using GPS coordinates and integrated into the USBP GIS database. Maintenance actions should not increase the width of the road bed or the amount of disturbed area beyond the roadbed.
16. Construction equipment will be cleaned using BMPs prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species.
17. Surface water from untreated sources, including water used for irrigation purposes, will not be used for construction or maintenance projects located within one mile of aquatic habitat for federally listed aquatic species. Groundwater or surface water from a treated municipal source will be used when close to such habitats. This is to prevent the transfer of invasive animals or disease pathogens between habitats if water on the construction site was to reach the federally listed species habitats.
18. Materials such as gravel or topsoil will be obtained from existing developed or previously used sources, not from undisturbed areas adjacent to the project area.
19. If new access is needed or existing access requires improvements to be usable for the Project, related road construction and maintenance BMPs will be incorporated into the access design and implementation.
20. When available, areas already disturbed by past activities or those that will be used later in the construction period will be used for staging, parking, and equipment storage, where practicable.

21. Within the designated disturbance area, grading or topsoil removal will be limited to areas where this activity is needed to provide the ground conditions needed for construction or maintenance activities. Minimizing disturbance to soils will enhance the ability to restore the disturbed area after the project is complete.
22. Removal of trees and brush in habitats of federally listed species will be limited to the smallest amount needed to meet the objectives of the project. This type of clearing is likely to be a permanent impact on habitat.
23. Water for construction use will be from wells or irrigation water sources at the discretion of the landowner (depending on water rights). Because the planned use of water from the Upper San Pedro basin is likely to adversely affect threatened and endangered species, CBP has committed to fund the Upper San Pedro Partnership, or other relevant entity, approximately $200,000 to implement measures to offset this impact.
24. Surface water from aquatic or marsh habitats will not be used for construction purposes if that site supports aquatic federally listed species or if it contains nonnative invasive species or disease vectors and there is any opportunity to contaminate a federally listed species habitat through use of the water at the project site.
25. Water tankers that convey untreated surface water will not discard unused water where it has the potential to enter any aquatic or marsh habitat.
26. Water storage on the project area should be in closed on-ground containers located on upland areas, not in washes.
27. Pumps, hoses, tanks, and other water storage devices will be cleaned and disinfected with a 10 percent bleach solution at an appropriate facility before use at another site, if untreated surface water was used (this water is not to enter any surface water area). If a new water source is used that is not from a treated or groundwater source, the equipment will require additional cleaning. This is important to kill any residual disease organisms or early life stages of invasive species that could affect local populations of federally listed species.
28. CBP will develop and implement storm water management plans for every project.
29. All construction will follow DHS management directive 5100 for waste management.
30. A CBP-approved spill protection plan will be developed and implemented at construction and maintenance sites to ensure that any toxic substances are properly handled and that escape into the environment is prevented. Agency standard protocols will be used. Drip pans

underneath equipment, containment zones used when refueling vehicles or equipment, and other measures are to be included.

31. Nonhazardous waste materials and other discarded materials, such as construction waste, will be contained until removed from construction site. This will assist in keeping the project area and surroundings free of litter and reduce the amount of disturbed area needed for waste storage.
32. To eliminate attracting predators of protected animals, all food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed daily from the project site.
33. Waste water is water used for project purposes that is contaminated with construction materials, was used for cleaning equipment and thus carries oils or other toxic materials or other contaminants in accordance with state regulations. Waste water will be stored in closed containers on site until removed for disposal. Concrete wash water will not be dumped on the ground, but is to be collected and moved offsite for disposal. This wash water is toxic to aquatic life.
34. If an individual of a federally listed species is found in the designated project area, work will cease in the area of the species until either a qualified biological monitor can safely remove the individual, or it moves away on its own, to the extent possible, construction schedule permitting.
35. Construction speed limits will not exceed 35 mph on major unpaved roads (graded with ditches on both sides) and 25 mph on all other unpaved roads. Nighttime travel speeds will not exceed 25 mph, and might be less based on visibility and other safety considerations. Construction at night will be minimized.
36. No pets owned or under the care of the construction contractor or any and all construction workers will be permitted inside the project's construction boundaries, adjacent native habitats, or other associated work areas. This BMP does not apply to any animals under service to the USBP (such as canine and horse patrols).
37. If construction or maintenance activities continue at night, all lights will be shielded to direct light only onto the area required for worker safety and productivity. The minimum wattage needed will be used and the number of lights will be minimized.
38. Light poles and other pole-like structures will be designed to discourage roosting by birds, particularly ravens or raptors that may use the poles for hunting perches.
39. Noise levels for day or night construction and maintenance will be minimized. All 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.

40. Transmission of disease vectors and invasive nonnative aquatic species can occur if vehicles cross infected or infested streams or other waters and water or mud remains on the vehicle. If these vehicles subsequently cross or enter uninfected or noninfested waters, the disease or invasive species could be introduced to the new area. To prevent this, crossing of streams or marsh areas with flowing or standing water will be avoided by construction vehicles and equipment, and, if not avoidable, the construction vehicle/equipment will be sprayed with a 10 percent bleach solution.
41. Materials used for onsite erosion control in uninfested native habitats will be free of nonnative plant seeds and other plant parts to limit potential for infestation. Since natural materials cannot be certified as completely weed-free, if such materials are used, there will be follow-up monitoring to document establishment of nonnative plants, and appropriate control measures will be implemented for a period of time to be determined in the site restoration plan.
42. Fill material brought in from outside the project area will be identified as to source location and will be weed-free to the extent practicable.
43. For purpose of construction, infrastructure sites will only be accessed using designated roads. Parking will be in designated areas. This will limit the development of multiple trails to such sites and reduce the effects to federally listed habitats in the vicinity.
44. Appropriate techniques to restore the original grade, replace soils, and restore proper drainage will be implemented for areas to be restored (e.g., temporary staging areas).
45. A site restoration plan for federally listed species and habitat will be developed during project planning and provide an achievement goal to be met by the restoration activity. If seeding with native plants is identified as appropriate, seeding will take place at the proper season and with seeds from nearby stocks, to the extent practicable. It is understood that some sites cannot be restored, and the project planning documents should acknowledge this.
46. During follow-up monitoring and during maintenance activities, invasive plants that appear on the site will be removed. Mechanical removal will be done in ways that eliminate the entire plant and remove all plant parts to a disposal area. All chemical applications on refuges must be used in coordination with the NPS Integrated Pest Management Coordinator to ensure accurate reporting. Herbicides can be used according to label directions. The monitoring period will be defined in the site restoration plan. Training to identify non-native invasives will be provided for CBP personnel or contractors, as necessary.
47. Maintenance activities in cactus and agave habitat will not increase the existing disturbed areas. Use of existing roads and trails will be

maximized in areas of suitable habitat for cactus and agaves. Protection of the cactus will be stressed in environmental education for contractors involved in construction or maintenance of facilities.

48. To prevent entrapment of wildlife species during emplacement of vertical posts/bollards, all vertical fence posts/bollards that are hollow (i.e., those that will be filled with a reinforcing material such as concrete), will be covered so as to prevent wildlife from entrapment. Covers will be deployed from the time the posts or hollow bollards are erected to the time they are filled with reinforcing material.

49. To prevent entrapment of wildlife species during the construction of the project, all excavated, steep-walled holes or trenches will either be covered at the close of each working day by plywood or provided with one or more escape ramps constructed of earth fill or wooden planks. The ramps will be located at no greater than 1,000-foot intervals and will be sloped less than 45 degrees. Each morning before the start of construction and before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. Any animals so discovered will be allowed to escape voluntarily (by escape ramps or temporary structures), without harassment, before construction activities resume, or removed from the trench or hole by the biological monitor and allowed to escape unimpeded.

BMPs for Temporary Impacts

The following apply as offsetting conservation measures for temporary impacts.

1. Site restoration of temporarily disturbed areas such as staging areas and construction access routes will be monitored as appropriate.
2. During follow-up monitoring of any restoration areas, invasive plants that appear on the site will be removed. Mechanical removal will be done in ways that eliminate the entire plant and remove all plant parts to a disposal area. All chemical applications on refuges must be used in coordination with the NPS Integrated Pest Management Coordinator to ensure accurate reporting. Herbicides can be used according to label directions. The monitoring period will be defined in the site restoration plan. Training to identify nonnative invasive plants will be provided for CBP contractor personnel, as necessary.

Species-Specific BMPs

Chiricahua Leopard Frog

1. Roads will be designed to minimize animal collisions and fragmentation of federally listed populations. Exclusion fencing might be appropriate where road kill is likely or to direct species to underpasses or other

passageways. Specific protocols are available for Chiricahua leopard frog.

2. Monitoring of effects to the frog's terrestrial and aquatic habitat during construction could be required. Disease prevention protocols will be employed if the construction project is in areas known or likely to harbor chytridiomycosis (consult with the USFWS to identify these areas). In such cases, if vehicles/equipment use will occur in more than one frog habitat, ensure that all equipment is clean and dry or disinfected before it moves to another habitat.
3. To the extent practicable, removal of riparian vegetation within 100 feet of aquatic habitats will be avoided to provide a buffer area to protect the habitat from sedimentation.

Southwestern Willow Flycatcher

1. Whenever practicable, road construction and maintenance will not improve or create new available access to flycatcher habitats.
2. In planning for roads and fences that would require land clearing, placement of these facilities in riparian vegetation communities will be avoided to the extent practicable. Since these areas might also be in flood-prone areas, this avoidance could also contribute to reduced maintenance requirements.
3. Removal of dense understory or midstory vegetation from breeding or migration habitat will be avoided to the extent practicable. This removal compromises the ability of the habitat to support flycatcher use.
4. Actions will be taken to avoid transporting salt cedar leaf beetles (biocontrols used to eradicate salt cedar in some areas) to areas occupied by flycatchers. Actions will include inspection of construction vehicles and equipment and subsequent beetle removal, or equipment cleaning if the construction equipment was used in areas where leaf beetles have been released to eradicate salt cedar.
5. Maintenance activities can occur at any time; however, for major work on roads or fences where significant amount of equipment will be required, the October to April period is preferred.

Huachuca Water Umbel

1. Because loss of habitat is a significant risk to the water umbel, no roads, fences, structures, or other on-ground facilities will be placed within 0.5 miles of occupied or potentially suitable habitat areas to the extent practicable. If these areas cannot be avoided, minimization and mitigation will be included in the project design.
2. If facilities must be located within 0.5 miles of known or potential habitat, vegetation clearing will be limited to that needed to meet the objectives of

the construction project, and erosion-control measures put in place to reduce sediment runoff potential. Monitoring of effects to aquatic habitat during construction could be required.

3. Preconstruction surveys are not required as long as projects are located at least 0.5 miles from occupied habitat areas so that watershed effects will not reach the water umbel habitat.
4. Whenever practicable, road construction and maintenance will not improve or create new available access to water umbel habitats.
5. For construction purposes, use of existing roads and trails in or adjacent to water umbel habitat will be maximized. Educational briefing materials on the presence of the species will be provided as part of pre-construction training. Maps can be helpful for this purpose.

Jaguar

1. If construction or maintenance activities continue at night, all lights will be shielded to direct light only onto the area required for worker safety and productivity.
2. Roads will be designed to minimize animal collisions and fragmentation of threatened and endangered species populations to the extent practicable.

Lesser Long-Nosed Bat

1. When planning activities, avoid areas containing columnar cacti (saguaro, organ pipe) or agaves that provide the forage base for the bat. If they cannot be avoided, columnar cacti and agaves will be salvaged and transplanted (see Mitigation below). A salvage plan will be developed and approved by the government prior to the action. The CBP biological monitor will identify a location for storing any salvaged cactus and/or agaves.
2. Maintenance activities in cactus and agave habitat would not increase the existing disturbed areas. Use of existing roads and trails will be maximized in areas of suitable habitat for cactus and agaves. Protection of the cactus will be stressed in environmental education for contractors involved in construction or maintenance of facilities.
3. Maintenance activities can occur at any time; however, for major work on roads or fences where significant amount of equipment will be required, the October to April period is the preferred period for such activities
4. If construction or maintenance activities continue at night, all lights will be shielded to direct light only onto the area required for worker safety and productivity.

1.3.1 Compensation Measures

It is CBP's policy to reduce impacts through the sequence of avoidance, minimization, mitigation, and, finally, compensation. Using funds contributed to the compensation pool by CBP, USFWS may offset permanent direct and indirect impacts on habitat used by Federal-listed species. USFWS may use these monies to fund conservation actions benefitting these species. Mitigation ratios and current estimates of impacts for each habitat type are presented in **Table 1-1**. Individual agave plants impacted will be mitigated at a 2:1 ratio. In a recent (April 2008) NPS survey, approximately 3,700 agave plants were observed within the Coronado National Memorial that could be directly impacted by construction activities (Gelinas 2008). An additional survey will be performed prior to construction to verify this estimate. As a proposed mitigation measure, 1,500 agave plants will be salvaged and transplanted to an alternate location within the Coronado National Memorial. Additionally, seeds from 50 agave plants will be harvested and provided to NPS (DHS 2008).

Table 1-1. Summary of Permanent Impacts of the Project on Habitat and Mitigation to Offset Impacts

Habitat Type	Mitigation Ratio	Estimated Acres of Permanent Impact	Acreages to Offset Impact
Chihuahuan semi-desert grassland scrub and Chihuahuan scrub (habitat for lesser long-nosed bat and jaguar)	1.5	48	72
Interior riparian forest (habitat for yellow-billed cuckoo, southwestern willow flycatcher, jaguar, Huachuca water umbel)	2.0	1	2
Previously disturbed by the existing patrol road	N/A	7	N/A
Totals	**--**	**56**	**74**

CBP will compensate for impacts on federally listed species associated with construction-related water draw down on the Upper San Pedro River basin. The draw down is likely to adversely affect Huachuca water umbel and yellow-billed cuckoo and is not likely to adversely affect Huachuca water umbel critical habitat, Chiricahua leopard frog, and southwestern willow flycatcher. CBP has committed to fund the Upper San Pedro Partnership, or other relevant entity, approximately $200,000 to implement measures to offset adverse effects. Actual impacts on habitats will be documented during construction by the environmental monitors and included in the Project Report which will be made available to USFWS.

Southwestern Willow Flycatcher

1. Using funds from the mitigation pool established by CBP, USFWS may undertake restoration of riparian areas at the site of the disturbance to restore the acreage lost. If this is not possible, funding from the mitigation pool will be used to replace riparian areas at a 2:1 ratio in a protected area or to restore and manage flycatcher habitat within the planning unit.

Jaguar

1. Using funds from the mitigation pool established by CBP, USFWS may support Jaguar Conservation Team activities or support the monitoring program, such as funding for additional trip cameras at potential jaguar locations and radio telemetry.

Lesser Long-Nosed Bat

1. Using funds from the mitigation pool established by CBP, USFWS may continue monitoring of maternity and summer roost sites to assist in documenting the status of the species. Infra-red cameras could also be purchased to document bats at roosts.
2. Using funds from the mitigation pool established by CBP, USFWS may plant Palmer's agave in suitable areas as part of revegetation and erosion-control actions. This would enhance foraging opportunities.
3. Using funds from the mitigation pool established by CBP, USFWS may support telemetry monitoring of foraging bats to determine the degree to which roads, fences, and other operations facilities act as barriers or increase habitat fragmentation to provide useful information for determining the effect on bat foraging and movement of future projects.

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2. DESCRIPTION OF THE SPECIES AND THEIR HABITAT

2.1 HUACHUCA WATER UMBEL, VAR. RECURVA

The Huachuca water umbel was listed as endangered on January 6, 1997.

2.1.1 Distribution

The Huachuca water umbel is found in mid-elevation wetland communities in southern Arizona and northern Sonora, Mexico. Known populations occur along the Santa Cruz River and its tributaries in the San Rafael Valley, along Sonoita Creek, along the San Pedro River near the U.S./Mexico international border, and in eastern Cochise County (USFWS 1999).

2.1.2 Habitat Requirements

Huachuca water umbel is typically associated with perennial springs and stream headwaters that have permanently or seasonally saturated and highly organic soils. Habitat features essential to the conservation of the species include a riparian plant community that is fairly stable over time and not dominated by nonnative plant species, a stream channel that is relatively stable but subject to periodic flooding, refugial sites (sites safe from catastrophic flooding), and a substrate that is permanently wet or nearly so (USFWS 1999).

2.1.3 Threats

Huachuca water umbel requires wetland habitats, which are rare and declining in the Southwest. Threats include watershed degradation due to livestock grazing and development, trampling by livestock, diversion of water and dewatering of habitats, and flash flooding (USFWS 2001a).

2.2 CHIRICAHUA LEOPARD FROG

The Chiricahua leopard frog was listed as threatened on June 13, 2002.

2.2.1 Distribution

The species occurs at elevations of 3,281 to 8,890 feet in central and southeastern Arizona, west-central and southwestern New Mexico, and the sky islands and Sierra Madre Occidental of northeastern Sonora and western Chihuahua, Mexico. The range of the species is split into two disjunct parts—northern populations along the Mogollon Rim in Arizona east into the mountains of west-central New Mexico; and southern populations in southeastern Arizona, southwestern New Mexico, and Mexico. Genetic analysis suggests the northern populations might be an undescribed, distinct species (USFWS 2007a).

2.2.2 Habitat Requirements

The Chiricahua leopard frog is an inhabitant of montane and river valley cienegas, springs, pools, cattle tanks, lakes, reservoirs, streams, and rivers. It is a habitat generalist that historically was found in a variety of aquatic habitat types. Presently, it is limited to aquatic systems that have few or no nonnative predators (these include American bullfrogs, fish, and crayfishes). For breeding, the species requires permanent or semipermanent pools, low levels of contaminants, and moderate pH (USFWS 2007a).

2.2.3 Threats

Threats to the Chiricahua leopard frog include predation by nonnative organisms, especially American bullfrogs, fish, and crayfish; the fungal disease chytridiomycosis; drought; floods; degradation and loss of habitat as a result of water diversions and groundwater pumping, livestock management, catastrophic wildfire, mining, development, and other human activities; disruption of metapopulation dynamics; increased chance of extirpation or extinction resulting from small numbers of populations and individuals existing in dynamic environments; and environmental contamination such as runoff from mining operations and airborne contaminants from copper smelters. Loss of Chiricahua leopard frog populations fits a pattern of global amphibian decline, suggesting other regional or global causes of decline might be important as well, such as elevated ultra-violet radiation, pesticides or other contaminants, and climate change (USWFS 2007a).

2.3 SOUTHWESTERN WILLOW FLYCATCHER

The southwestern willow flycatcher was listed as endangered on February 27, 1995.

2.3.1 Distribution

The southwestern willow flycatcher breeding range extends from southern California north to Independence, Arizona; southwestern New Mexico; southern Utah; and formerly southern Nevada. It migrates to winter ranges in central Mexico to northwestern Colombia (NatureServe 2008).

2.3.2 Habitat Requirements

Lands with moist conditions which support riparian plant communities provide habitat for the southwestern willow flycatcher. The habitat requirements of the southwestern willow flycatcher include areas of dense riparian foliage and nesting habitat with trees and shrubs that include willow species and box elder (USFWS 2005a).

2.3.3 Threats

This species is threatened by the loss and degradation of cottonwood-willow riparian habitat and structurally similar riparian habitats. Increased irrigated agriculture and livestock grazing have aided brown-headed cowbird populations that in turn impact the southwestern willow flycatcher by parasitizing their nests. The current population exists in small, fragmented populations, which increases the risk of local extirpation (NatureServe 2008).

2.4 YELLOW-BILLED CUCKOO

The yellow-billed cuckoo is currently a candidate for Federal listing.

2.4.1 Distribution

The western yellow-billed cuckoo is a neotropical migrant and breeds in riparian vegetation throughout the western Unites States. Based on historic accounts, the species was most widespread and locally common in California and Arizona, and was only locally common or uncommon in the remaining states within its breeding range. Currently, Arizona probably contains the largest yellow-billed cuckoo population among states west of the Rocky Mountains (USFWS 2001b). Breeding populations are scattered throughout much of southeastern Arizona and important areas of habitat are found in Phoenix area rivers, and Tucson area rivers and creeks, including the San Pedro River (USFWS 2008).

2.4.2 Habitat Requirements

Western yellow-billed cuckoos breed in large blocks of riparian habitats, particularly woodlands with cottonwood and willows. Dense understory foliage appears to be an important factor in nest site selection. Nesting west of the Continental Divide occurs almost exclusively close to water (USFWS 2001b).

2.4.3 Threats

In western North America, large declines in distribution and abundance have occurred as a result of loss, degradation, and fragmentation of riparian habitat (NatureServe 2008).

2.5 JAGUAR

The jaguar was listed as endangered on March 28, 1972.

2.5.1 Distribution

The historic range of the jaguar included a wide belt from the central United States to central Mexico (USFWS 1997a). Although the greatest abundance of jaguars occurs in tropical environments of Mexico, the range of northern

populations extends into the more arid environments of the southwestern United States. In the United States, records of jaguar sightings have been associated with a number of related factors including rugged terrain, high elevation, close proximity to water, and far distance from urbanized areas (Hatten et al. 2002). In Arizona, the general distribution of past sightings and the habitats associated with these sightings include areas of forest, woodland, and grassland vegetation types in the Baboquivari Mountains, the southern portion of the Altar Valley, a portion of the southern Santa Cruz River basin, and the San Pedro River basin south of Arivapa Creek. Recent (2001–2007) jaguar observations in south-central Arizona near the Mexican border have primarily occurred in Madrean oak woodland communities; however, jaguars were also documented in open mesquite grasslands and desert scrub/grasslands on the desert valley floor (USFWS 2007b).

2.5.2 Habitat Requirements

Jaguars are the largest of the North American cats and have relatively large home ranges (USFWS 1997a). Jaguars hunt a variety of prey throughout their range, and are likely to be supported in large part by javelina and mule deer in the southwestern United States. Livestock can also provide prey. Jaguars are known from a variety of vegetation communities, including those found in the arid Southwest. Toward and at middle latitudes, they show a high affinity for lowland wet communities, typically swampy savannas or tropical rainforests. However, they also occur in upland vegetation communities in warmer regions of North and South America. For example, jaguars occur in dry tropical forest in Jalisco and southern Sonora (Alamos region). Jaguars prefer a warm, tropical climate, usually associated with water, and are rarely found in extensive arid areas. However, jaguars occur in arid areas, including thornscrub, desertscrub, and grassland communities, of northwestern Mexico (USFWS 2007b).

2.5.3 Threats

Loss and modification of habitat, shooting, and predator control have contributed to the jaguar's decline (USFWS 2000). Livestock management practices such as grazing regimes and predator control measures can degrade habitats, reduce abundance of other prey, and potentially result in incidental take.

2.6 LESSER LONG-NOSED BAT

The lesser long-nosed bat was listed as endangered on September 30, 1988.

2.6.1 Distribution

The lesser long-nosed bat roosts in caves and abandoned mines throughout its historical range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador (USFWS 1995a). The lesser long-nosed bat can be found in Arizona from April to September and in Mexico

the rest of the year. In the daytime it roosts in caves and abandoned tunnels, which exist north and west of the proposed vehicle barrier extension. Lesser long-nosed bats establish maternity roosts from April through June in southwestern Arizona. At higher elevation sites, such as Coronado National Memorial, no sizable aggregations of lesser long-nosed bats occur until the latter part of July. The number of bats in the memorial peaks in mid to late August, and most are gone by late September. This residency period of 8 and 10 weeks corresponds with the blooming of Palmer's agave which is a food source. The bats forage throughout much of the memorial where flowering agaves are available (NPS 2007).

2.6.2 Habitat Requirements

The lesser long-nosed bat primarily utilizes natural caves and abandoned mines for roosting, but can transiently roost among overhanging rocks and other shelters. Use of roosting sites can vary depending upon seasonal fluctuations in the timing of forage availability. Thus, some roosts could be occupied or unoccupied through parts or all of a breeding season (USFWS 1995a).

Female lesser long-nosed bats, most of which are pregnant, arrive at known maternity roosts in southwestern Arizona as early as April continuing through mid-July. These maternity colonies begin to disband by September, and both males and females can be found in transient or maternity roosts from September to as late as early November. The bats eat nectar and fruits of columnar cacti and paniculate agaves and are considered important dispersal and pollination vectors for these species. Lesser long-nosed bats are known to travel up to 30 miles to reach suitable concentrations of forage (USFWS 1995a).

2.6.3 Threats

Threats to lesser long-nosed bats include disturbance to roost sites, killing by humans, and loss of habitat and food sources (agave and columnar cacti) (USFWS 1995a).

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3. ACTION AREA

The Action Area is defined by a corridor that extends approximately 300 feet from construction access routes, staging areas, and construction sites. This is the area directly affected by the Project. The extension of 300 feet represents the approximate distance that project-related noise is estimated to attenuate to ambient noise levels of 55 to 80 dBA. The Action Area includes primary pedestrian and vehicle fence and patrol road construction activities, construction access roads, and a construction staging area.

The Action Area also includes the portion of the San Pedro River riparian corridor that lies within the Upper San Pedro basin. The San Pedro River enters the basin at the International Boundary near Palominas, Arizona, and flows northwest for about 62 miles before leaving the basin north of Benson at "The Narrows" (near Pomerene). The riparian corridor could be indirectly affected by the use of water within the Upper San Pedro basin for construction, which could reduce surface flows in the upper San Pedro River resulting in adverse impacts on the associated species.

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4. EFFECTS OF THE PROJECT

4.1 HUACHUCA WATER UMBEL, VAR. RECURVA

The Project is likely to adversely affect Huachuca water umbel, var. recurva. Surveys conducted for wildlife habitat assessment have found several discontinuous clumps of Huachuca water umbel within the upper San Pedro River (USWFS 1999), and the species was noted in the San Pedro River portion of the project corridor during a February 14–17, 2008, survey (DHS 2008). Water from wells and irrigation sources that will be used for construction of the Project will draw from the Upper San Pedro basin, which is the primary recharge source for the San Pedro River. The Upper San Pedro basin experiences an annual deficit to its recharge; therefore, the additional withdrawals will reduce surface flows in the upper San Pedro River resulting in adverse impacts on the Huachuca water umbel. Placement of seasonal vehicle fence within the floodplain of the San Pedro River could alter hydrology and lead to habitat degradation if fence maintenance is insufficient; however, CBP will remove debris after each rain event and vehicle fence will be temporarily removed during each monsoon season. Approximately one acre of riparian forest will be permanently impacted. The Project could indirectly benefit the riparian habitat associated with the San Pedro River through the reduction of cross-border violator traffic. There is the potential for introduction of exotic plant species through construction activities and use of roads in areas without previously existing roads.

4.2 HUACHUCA WATER UMBEL, VAR. RECURVA CRITICAL HABITAT

The Project may affect, but is not likely to adversely affect Huachuca water umbel, var. recurva critical habitat. Designated critical habitat for the Huachuca water umbel does not occur in the impact corridor; however, critical habitat does fall within the Action Area. Critical habitat has been designated within the Upper San Pedro basin in Bear Canyon; an unnamed tributary of Bear Canyon; and in approximately 33.7 miles of the San Pedro River, from the south of Hereford to north of Fairbanks (USFWS 1999). The short-term water draw down is not expected to result in the drying out of designated Huachuca water umbel critical habitat or presence of primary constituent elements (PCEs).

4.3 CHIRICAHUA LEOPARD FROG

The Project may affect, but is not likely to adversely affect Chiricahua leopard frog. NatureServe data indicate that this species occurs on the upper San Pedro River. However, the last known occurrence in the upper San Pedro River was 1979, and it is now absent as a breeding species (USFWS 2007a). There are no other streams, rivers, ponds, or stock tanks within the impact corridor that support appropriate habitat for the Chiricahua leopard frog. The species' current distribution is primarily west of the Huachuca Mountains and the project action

area (USFWS 2007a). Water from wells and irrigation sources that will be used for construction of the Project will draw from the Upper San Pedro basin, which is the primary recharge source for the San Pedro River. The Upper San Pedro basin experiences an annual deficit to its recharge; therefore, the additional withdrawals will reduce surface flows in the upper San Pedro River resulting in discountable adverse impacts to individual specimens, should they be present.

4.4 SOUTHWESTERN WILLOW FLYCATCHER

The Project may affect, but is not likely to adversely affect the southwestern willow flycatcher. The Project action area includes construction activities within the San Pedro River floodplain. NatureServe data indicate that this species occurs on the upper San Pedro River. Additionally, known populations of southwestern willow flycatcher on the San Pedro River occur near the Gila River, north of the project action area (USFWS 2005a). However, appropriate habitat does not occur within the project corridor and thus no direct effects on the species are expected. Water from wells and irrigation sources that will be used for construction of the Project will draw from the Upper San Pedro basin, which is the primary recharge source for the San Pedro River. The Upper San Pedro basin experiences an annual deficit to its recharge; therefore, the additional withdrawals will reduce surface flows in the upper San Pedro River. Reduction in surface flows in the river associated with construction activities could adversely affect habitat downstream. However, the effects of a one-time withdrawal should not provide long-term changes in southwestern willow flycatcher habitat or presence of PCEs.

4.5 YELLOW-BILLED CUCKOO

The Project is likely to adversely affect the yellow-billed cuckoo. Populations of yellow-billed cuckoos are known to occur along the San Pedro River in the vicinity of the project corridor (USFWS 2008). Additionally, NatureServe data indicate that this species occurs on the upper San Pedro River. Approximately one acre of riparian forest associated with the river will be directly impacted by project activities, but the remaining forest would not be reduced in size below the 25-acre threshold for supporting yellow-billed cuckoos (DHS 2008). Water from wells and irrigation sources that will be used for construction of the Project will draw from the Upper San Pedro basin, which is the primary recharge source for the San Pedro River. The Upper San Pedro basin experiences an annual deficit to its recharge; therefore, the additional withdrawals will reduce surface flows in the upper San Pedro River. Reduction in surface flows in the river associated with construction activities could adversely affect yellow-billed cuckoo habitat. However, the effects of a one-time withdrawal should not provide long-term changes in habitat or presence of PCEs.

4.6 JAGUAR

The Project is likely to adversely affect the jaguar. The jaguar is associated with the mountains of southeastern Arizona over an area extending 47 miles from the U.S./Mexico international border. Jaguars were found using areas from rugged mountains at 5,174 feet to flat lowland desert floor at 2,877 feet. It is also documented that riparian vegetation provides value as movement corridors for the jaguar in Arizona. Additionally, jaguars can occur in arid desertscrub and grassland communities, which include the Chihuahuan semidesert grassland scrub and Chihuahuan scrub vegetation communities that make up the majority of the project corridor (USFWS 2007b, DHS 2008). Due to this wide range and variety of habitats used by the jaguar, the entire project corridor is potential habitat.

The eastern end of the fence ends at the San Pedro River, which a jaguar could use. However, because of the human use and exurbanization there, the likelihood that a jaguar would move through the San Pedro is low (USFWS 2007b). Riparian vegetation will be removed in the San Pedro River at the eastern end of the project corridor. Here, the project would impact one acre of riparian forest. Human activity and elevated noise levels would disturb any jaguar in the immediate area during the construction period, and possibly hinder or impede jaguar movement into the United States.

The western end of the fence is on the Coronado National Forest, and a jaguar could move through that area. Since it is reported in southeastern Arizona that jaguars must at least cross the open valleys between mountain ranges, approximately 37 miles apart, it is possible that they could move through anywhere in the San Pedro Valley (USFWS 2007b). The presence of planned tactical infrastructure would result in fragmentation of jaguar habitat and could impede movement of jaguars across the border. Because jaguars in Arizona are believed to be part of a population in northern Mexico, preventing jaguar movement and exchange between the U.S. and Mexico would likely have deleterious effects on jaguars, particularly those in Arizona. Habitat fragmentation would reduce the ability of the jaguar to continue to enter the United States from its core population in northern Mexico, but will not have a significant effect on the survival and recovery of the species.

4.7 LESSER LONG-NOSED BAT

The Project is likely to adversely affect the lesser long-nosed bat. The Project will impact potential forage habitat for the lesser long-nosed bat, but no suitable roosting habitat exists in the proposed action area that would support these bats.

Within the Coronado National Memorial, no day roost sites such as caves or abandoned mines exist in the area of the proposed vehicle barrier; however, the area is rich in agave, which is a prime food source for the bats (NPS 2007, DHS 2008). A recent NPS survey in April 2008 estimated approximately 3,700 agaves

within the project corridor which have the potential to be impacted by project activities; however, additional surveys will be performed prior to construction to confirm this estimate (Gelinas 2008, DHS 2008).

Other impacts on potential forage habitat could result from (1) introduction of nonnative plant species through the construction process which could prevent the recruitment of plant forage species and could also carry fire that could further reduce the number of forage plants, (2) nighttime construction which could temporarily affect foraging, and (3) the potential for altered hydrology and increased erosion and sedimentation caused by the fence and associated road, potentially reducing the number of forage plants. Construction of new tactical infrastructure has effects related to ground or surface disturbance for the infrastructure and the construction operations. The direct footprint for the infrastructure results in ground disturbances, vegetation removal, soil compaction, interruption of washes or conveyance of sheetflow across open landscapes that can contribute to erosion in the footprint and surrounding areas.

Vehicle traffic, foot traffic, and presence of cross-border violators can affect habitat by altering composition, structure, and function of wildlife habitats. Vehicle and foot traffic can lead to the destruction of vegetation and degradation habitats. Beneficial impacts could occur by reducing future damage to agave plants from illegal vehicular activity. Construction and operation of tactical infrastructure will increase border security in Section E-2A and could result in a change to illegal traffic patterns. However, changes in traffic patterns result from a variety of factors in addition to border patrol operations and therefore are considered unpredictable and beyond the scope of this BRP.

5. DETERMINATION OF EFFECT

Table 5-1 outlines federally listed species, candidate species, and federally designated critical habitats known to occur or to potentially occur within Cochise County and the determination of effects resulting from the Project. Of these, the Project is likely to adversely affect Huachuca water umbel, var. recurva (*Lilaeopsis schaffneriana* ssp. *recurva*), yellow-billed cuckoo (*Coccyzus americanus*), jaguar (*Panthera onca*), and lesser long-nosed bat (*Leptonycteris curasonae*). The project may affect, but is not likely to adversely affect Huachuca water umbel critical habitat, Chiricahua leopard frog (*Rana chiricahuensis*), and southwestern willow flycatcher (*Empidonax traillii extimus*). The Project will have no effect on the Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*), California brown pelican (*Pelicanus occidentalis californicus*), Mexican spotted owl (*Strix occidentalis lucida*), Mexican spotted owl critical habitat, southwestern willow flycatcher critical habitat, ocelot (*Leopardus pardalis*), Canelo Hills ladies'-tresses (*Spiranthes delitescens*), Lemmon fleabane (*Erigeron lemmonii*), Cochise pincushion cactus (*Coryphantha robbinsorum*), Huachuca springsnail (*Pyrgulopsis thomsoni*), New Mexico ridge nosed rattlesnake (*Crotalus willardi obscurus*), beautiful shiner (*Cyprinella formosa*), desert pupfish (*Cyprinodon macularius*), Gila chub (*Gila intermedia*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), loach minnow (*Tiaroga cobitis*), spikedace (*Meda fulgida*), Yaqui catfish (*Ictalurus pricei*), Yaqui chub (*Gila purpurea*), and Yaqui topminnow (*Poeciliopsis occidentalis sonoriensis*).

Sonora tiger salamander. The determination of no effect for impacts on Sonora tiger salamander is based on the fact that construction or maintenance activities will not occur within known occupied areas or habitat. There are no stock tanks or cienegas within the project corridor that support appropriate habitat for the Sonora tiger salamander. The species' distribution is primarily west of the Huachuca Mountains and the project action area (USFWS 2007c).

California brown pelican. The determination of no effect for impacts on the California brown pelican is based on the fact that this species is a rare migrant to Arizona and it does not breed within the state. Additionally, NatureServe data indicate that there are no elements of occurrence on the upper San Pedro River.

Mexican spotted owl. The determination of no effect on Mexican spotted owl is based on the fact that there are no known owl sites (Protected Activity Centers [PACs]) or habitat within the project corridor, planned access road, or staging area. PACs are delineated around known owl sites and include a minimum of 600 acres of the best nesting and roosting habitat in the area. Construction or maintenance activities will occur within a designated critical habitat unit within

Table 5-1. Determination of Effects on Federally Listed Species and Critical Habitats Potentially Occurring within Cochise County, Arizona

Species	Listing Status	Year Listed, Proposed or Designated	Determination
PLANTS			
Canelo Hills ladies'-tresses, *Spiranthes delitescens*	Endangered	1997	No effect
Cochise pincushion cactus, *Coryphantha robbinsorum*	Threatened	1986	No effect
Huachuca water umbel, var. recurva, *Lilaeopsis schaffneriana* ssp*. recurva*	Endangered	1997	Likely to adversely affect
Huachuca water umbel, var. recurva, *Lilaeopsis schaffneriana* ssp. *recurva*	Critical Habitat, not within E-2A project corridor (Bear Canyon)	1999	Not likely to adversely affect
Lemmon fleabane, *Erigeron lemmonii*	Candidate		No effect
INVERTEBRATES			
Huachuca springsnail, *Pyrgulopsis thomsoni*	Candidate		No effect
FISHES			
Beautiful shiner, *Cyprinella formosa*	Threatened	1984	No effect
Desert pupfish, *Cyprinodon macularius*	Endangered	1986	No effect
Gila chub *Gila intermedia*	Endangered	2005	No effect
Gila topminnow, *Poeciliopsis occidentalis occidentalis*	Endangered	1967	No effect
Loach minnow, *Tiaroga cobitis*	Threatened	1986	No effect
Spikedace, *Meda fulgida*	Threatened	1986	No effect
Yaqui catfish, *Ictalurus pricei*	Threatened	1984	No effect
Yaqui chub, *Gila purpurea*	Endangered	1984	No effect
Yaqui topminnow, *Poeciliopsis occidentalis sonoriensis*	Endangered	1967	No effect

Species	Listing Status	Year Listed, Proposed or Designated	Determination
AMPHIBIANS			
Chiricahua leopard frog, *Rana chiricahuensis*	Threatened	2002	Not likely to adversely affect
Sonora tiger salamander, *Ambystoma tigrinum stebbinsi*	Endangered	1997	No effect
REPTILES			
New Mexico ridge nosed rattlesnake, *Crotalus willardi obscurus*	Threatened	1978	No effect
BIRDS			
California brown pelican, *Pelicanus occidentalis californicus*	Endangered, proposed delisted	1970	No effect
Mexican spotted owl, *Strix occidentalis lucida*	Threatened	1993	No effect
Mexican spotted owl, *Strix occidentalis lucida*	Critical Habitat	1995	No effect
Southwestern willow flycatcher, *Empidonax traillii extimus*	Endangered	1995	Not likely to adversely affect
Southwestern willow flycatcher, *Empidonax traillii extimus*	Critical Habitat, not within E-2A project corridor	1997	No effect
Yellow-billed cuckoo, *Coccyzus americanus*	Candidate		Likely to adversely affect
MAMMALS			
Jaguar, *Panthera onca*	Endangered	1972	Likely to adversely affect
Lesser long-nosed bat, *Leptonycteris curasonae*	Endangered	1988	Likely to adversely affect
Ocelot, *Leopardus pardalis*	Endangered	1982	No effect

Coronado National Memorial, but not within 300 feet of known PACs or habitats used by the species. Prior to construction, the NPS will be consulted regarding the exact location of the staging area. The Mexican spotted owl is associated with the Huachuca Mountains and critical habitat is designated in the western

portion of the project corridor; however, impacts on habitats at the western end of the project corridor would have no impact on forest communities used by the Mexican spotted owl. The habitats it primarily uses for foraging and nesting (mixed conifer forests on rocky slopes and in pine/oak/juniper forests) do not occur in the area of proposed action (USFWS 2004). This species generally occurs at high elevations and is not likely to be disturbed by construction activities. The owl's most likely prey species does not inhabit the grasslands of the proposed area of impact. No long-term impacts from the presence of a vehicle barrier are expected because no owls are expected to use the project area (NPS 2007).

The reduction of cross-border violator activity in the Huachuca Mountains would benefit the Mexican spotted owl by reducing human presence and habitat degradation.

Mexican spotted owl critical habitat. The determination of no effect for Mexican spotted owl critical habitat is based on the fact that construction or maintenance activities will not impact the PCEs for Mexican spotted owl critical habitat. The PCEs for Mexican spotted owl include the presence of water; abundance of canyon walls with crevices, caves, and ledges; clumps or stringers of mixed conifer, pine-oak, pinyon-juniper, or riparian vegetation; and a high percentage of ground litter and woody debris. Specifically, mixed-conifer forest habitat dominated by Douglas-fir, pine-oak, and riparian forests with high tree diversity are important to the owl (USFWS 1995b and 2004).

All of Coronado National Memorial has been designated as critical habitat for the Mexican spotted owl and the western portions of Section E-2A which fall within the Coronado National Memorial occur within Critical Habitat unit BR-W-15. However, the Project action area contains no PCEs of nesting and forage habitat for this species. Project activities at the western end of the project corridor occur in Chihuahuan semidesert grassland scrub and Chihuahuan scrub vegetation communities, and do not include forest communities or other habitat used by the Mexican spotted owl. Additionally, no PACs will be affected by the Project.

Southwestern willow flycatcher critical habitat. The determination of no effect for impacts on southwestern willow flycatcher critical habitat is based on the fact that construction or maintenance activities will not occur within known occupied area or designated critical habitat. The Middle Gila/San Pedro Management Unit is designated critical habitat that includes a portion of the San Pedro River north of the project action area (USFWS 2005a). This area is north/downstream from "The Narrows" and within the Lower San Pedro River basin; and would not be affected by reduction in surface flows of the river that result from construction activities in the Upper San Pedro basin.

Ocelot. The determination of no effect for impacts on ocelot is based on the fact that the ocelot is thought to no longer occur in Arizona, and therefore will not be impacted by construction and maintenance activities (USFWS 1990, DHS 2008).

Canelo Hills ladies'-tresses. The determination of no effect for impacts is based on the fact that known populations occur in or near the Canelo Hills, northwest of the project corridor (USFWS 1997b, 2008).

Lemmon fleabane. The determination of no effect for impacts is based on the fact that no habitat exists for Lemmon fleabane within the project corridor. This species occurs within pine-oak woodland habitat. The one known locality is found in crevices and on ledges of west-, south-, and north-facing cliffs on the vertical faces of large boulders along a single canyon bottom. The species is known from only one location in the Scheelite Canyon, Huachuca Mountains on Fort Huachuca Military Reservation, outside the project area (USFWS 2007d).

Cochise pincushion cactus. The determination of no effect is based on the fact that this species is known only from an area of several square miles on Arizona State Trust Lands in the San Bernardino Creek basin east of the project corridor (USFWS 2007e).

Huachuca springsnail. The determination of no effect is based on the fact that no suitable habitat is present within the project corridor and known populations of the species occur outside the project area. Habitat for this species includes small springs and cienegas with vegetation and slow moderate flow. Huachuca springsnail is known from only nine sites in the upper San Pedro River drainage (USFWS 2007f).

New Mexico ridge nosed rattlesnake. The determination of no effect is based on the fact that no suitable habitat is present within the project corridor and known populations of the species occur outside the project area. This species is found in canyon bottoms of pine-oak and pine-fir communities. The nearest known populations occur in the Peloncillo Mountains west of the project corridor (USFWS 1985, AESFO 2007).

Beautiful shiner. The determination of no effect for this species is based on the fact that it does not occur within the project area. The only known occurrences in Arizona are introduced populations in three ponds on the San Bernardino National Wildlife Refuge east of project area (USFWS 1994).

Desert pupfish. The determination of no effect for this species is based on the fact that all known populations have been extirpated from Arizona (USFWS 2007g).

Gila chub. The determination of no effect for this species is based on the fact that the nearest population of Gila chub occurs in the Santa Cruz River in the San Rafael Valley west of the project corridor (USFWS 2005b).

Gila topminnow. The determination of no effect for this species is based on the fact that the nearest populations occur in headwaters of the Santa Cruz basin west of the project corridor (USFWS 1998).

Loach minnow. The determination of no effect for this species is based on the fact that the nearest extant population occurs within Pinal and Graham counties along Aravaipa Creek (USFWS 2007h).

Spikedace. The determination of no effect for this species is based on the fact that the nearest extant population occurs within Pinal and Graham counties along Aravaipa Creek (USFWS 2007h).

Yaqui catfish. The determination of no effect is based on the fact that there are no extant populations of this species in Arizona. A population of Yaqui catfish stocked into the upper Santa Cruz River in 1899 persisted until the late 1950s. Other than from the Santa Cruz stocking, no records supported by specimens are known in the United States (USFWS 1994).

Yaqui chub. The determination of no effect is based on the fact that known populations of this species are restricted to the San Bernardino Creek subbasin east of project corridor (USFWS 1994).

Yaqui topminnow. The determination of no effect is based on the fact that known populations of this species are restricted to the San Bernardino Creek subbasin east of project corridor (USFWS 1994).

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APPENDIX C
Air Emission Calculations

CALCULATION SHEET-COMBUSTABLE EMISSIONS-COCHISE COUNTY

Assumptions for Cumbustable Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	2	300	10	240	1440000
Diesel Road Compactors	1	100	10	240	240000
Diesel Dump Truck	1	300	10	240	720000
Diesel Excavator	1	300	10	240	720000
Diesel Hole Trenchers	1	175	10	240	420000
Diesel Bore/Drill Rigs	1	300	10	240	720000
Diesel Cement & Mortar Mixers	1	300	10	240	720000
Diesel Cranes	2	175	10	240	840000
Diesel Graders	1	300	10	240	720000
Diesel Tractors/Loaders/Backhoes	2	100	10	240	480000
Diesel Bull Dozers	1	300	10	240	720000
Diesel Front End Loaders	1	300	10	240	720000
Diesel Fork Lifts	2	100	10	240	480000
Diesel Generator Set	2	40	10	240	192000

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

CALCULATION SHEET-COMBUSTABLE EMISSIONS-COCHISE COUNTY

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

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.698	3.285	8.712	0.651	0.635	1.174	850.568
Diesel Road Paver	0.098	0.391	1.296	0.090	0.087	0.196	141.814
Diesel Dump Truck	0.349	1.642	4.356	0.325	0.317	0.587	425.284
Diesel Excavator	0.270	1.031	3.650	0.254	0.246	0.587	425.522
Diesel Hole Cleaners\Trenchers	0.236	1.129	2.689	0.213	0.204	0.343	247.990
Diesel Bore/Drill Rigs	0.476	1.817	5.673	0.397	0.389	0.579	420.285
Diesel Cement & Mortar Mixers	0.484	1.841	5.776	0.381	0.373	0.579	420.285
Diesel Cranes	0.407	1.203	5.295	0.315	0.305	0.676	490.796
Diesel Graders	0.278	1.079	3.753	0.262	0.254	0.587	425.522
Diesel Tractors/Loaders/Backhoes	0.979	4.343	3.819	0.725	0.704	0.503	365.564
Diesel Bull Dozers	0.286	1.095	3.777	0.262	0.254	0.587	425.522
Diesel Front End Loaders	0.302	1.230	3.967	0.278	0.270	0.587	425.443
Diesel Aerial Lifts	1.047	4.105	4.528	0.735	0.714	0.503	365.406
Diesel Generator Set	0.256	0.796	1.263	0.154	0.150	0.171	124.263
Total Emissions	**6.165**	**24.988**	**58.554**	**5.041**	**4.902**	**7.659**	**5554.262**

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-COCHISE COUNTY

Construction WorkerPersonal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emisssions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	120	240	10	10	0.43	0.51	0.94
CO	12.4	15.7	120	240	10	10	3.94	4.98	8.92
NOx	0.95	1.22	120	240	10	10	0.30	0.39	0.69
PM-10	0.0052	0.0065	120	240	10	10	0.00	0.00	0.00
PM 2.5	0.0049	0.006	120	240	10	10	0.00	0.00	0.00
							-		

Heavy Duty Trucks Delivery Supply Trucks to Construction Sight									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emisssions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55	60	240	2	2	0.01	0.02	0.03
CO	1.32	3.21	60	240	2	2	0.04	0.10	0.14
NOx	4.97	12.6	60	240	2	2	0.16	0.40	0.56
PM-10	0.12	0.33	60	240	2	2	0.00	0.01	0.01
PM 2.5	0.13	0.36	60	240	2	2	0.00	0.01	0.02

OBP Commute to New Site									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emisssions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	0	0	0	-	0.00	-
CO	12.4	15.7	60	0	0	0	-	0.00	-
NOx	0.95	1.22	60	0	0	0	-	0.00	-
PM-10	0.0052	0.0065	60	0	0	0	-	0.00	-
PM 2.5	0.0049	0.006	60	0	0	0	-	0.00	-

POV Source: USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway vehicle emission factor model.
Fleet Charactorization: 20 POVs commuting to work were 50% are pick up trucks and 50% passenger cars

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-COCHISE COUNTY

Conversion factor:	gms to tons
	0.000001102

CALCULATION SHEET-FUGITIVE DUST-COCHISE COUNTY

Fugitive Dust Emissions at New Construction Site.					
Construction Site	**Emission Factor tons/acre/month (1)**	**Total Area-Construction Site**	**Months/yr**	**Total PM-10 Emissions tns/yr**	**Total PM-2.5 (2)**
Fugitive Dust Emissions	0.11	43.65	12	57.61	11.52

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

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

Coastruction Site Area	**Demension (ft)**			**Total**
Proposed Prioject	**Length**	**Width**	**Units**	**Acres/month**
Project Corridor	31,680.0	60.00	1.00	43.64
Construction Area				0.01
Total				**43.65**

Conversion Factors	**Feet to Miles**	**Acres to sq ft**	**Sq ft to acres**	**Sq ft in 0.5 acres**
Units	5280	0.000022957	43560	21780
Length of Project Corridore	6			

CALCULATION SHEET-SUMMARY OF EMISSIONS-COCHISE COUNTY

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)						
Emission source	VOC	CO	NOx	PM-10	PM-2.5	SO_2
Combustable Emissions	6.17	24.99	58.55	5.04	4.90	7.66
Construction Site-fugitive PM-10	NA	NA	NA	57.61	11.52	NA
Construction Workers Commuter & Trucking	0.97	9.06	1.25	0.02	0.02	NA
Total emissions	7.13	34.05	59.80	62.67	16.44	7.66
De minimis threshold	NA	NA	NA	100.00	NA	NA

APPENDIX D
Arizona Natural Heritage Program (ANHP) List

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	ESA	BLM	HAB	USFS NESL	MEXFED	STATE	ELCODE	S RANK		
Cochise	AMPHIBIAN	Ambystoma tigrinum stebbinsi	Sonora Tiger Salamander	LE	1	PR	WSC	AAAAA01145	S1	G5T1T2			
Cochise	AMPHIBIAN	Bufo debilis insidior	Western Green Toad		0	PR		AAABB01062	S3	G5T5			
Cochise	AMPHIBIAN	Eleutherodactylus augusti cactorum Western Barking Frog	Western Barking Frog	1	S		WSC	AAABD04171	S2	G5T5			
Cochise	AMPHIBIAN	Hyla wrightorum	Huachucas Treefrog	1				AAABC02082	S1	G4T1			
Cochise	AMPHIBIAN	Rana blairi	Plains Leopard Frog		1				WSC	AAABH01040	S1	G5	
Cochise	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	LT	1	S		A	WSC	AAABH01080	S2	G3	
Cochise	AMPHIBIAN	Rana subaquavocalis	Ramsey Canyon Leopard Frog	SC	1	S				AAABH01280	S1	G1Q	
Cochise	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	SC	1	S		PR	WSC	AAABH01250	S3	G4	
Cochise	AMPHIBIAN	Spea bombifrons	Plains Spadefoot							AAABF02010	S4	G5	
Cochise	BIRD	Accipiter gentilis	Northern Goshawk	SC	1	S	4	A	WSC	ABNKC12060	S3	G5	
Cochise	BIRD	Aimophila carpalis	Rufous-winged Sparrow							ABPBX91080	S3	G4	
Cochise	BIRD	Amazilia beryllina	Berylline Hummingbird		0					ABNUC29080	S1	G4	
Cochise	BIRD	Amazilia violiceps	Violet-crowned Hummingbird		1				WSC	ABNUC29150	S3	G5	
Cochise	BIRD	Ammodramus bairdii	Baird's Sparrow	SC	1				WSC	ABPBXA0010	S2N	G4	
Cochise	BIRD	Ammodramus savannarum ammolegus	Arizona grasshopper sparrow							ABPBXA0021	S2	G5TU	
Cochise	BIRD	Anas platyrhynchos diazi	Mexican Duck							ABNJB10062	S4	G5T5	
Cochise	BIRD	Anthus spragueii	Sprague's Pipit		1				WSC	ABPBM02060	S2N	G4	
Cochise	BIRD	Aquila chrysaetos	Golden Eagle		0		3	P		ABNKC22010	S4	G5	
Cochise	BIRD	Ardea herodias	Great Blue Heron					|		ABNGA04010	S5	G5	
Cochise	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	1		4	A		ABNSB10012	S3	G4T4
Cochise	BIRD	Basileuterus rufifrons	Rufous-capped Warbler							ABPBX21020	SAB	G4G5	
Cochise	BIRD	Buteo albonotatus	Zone-tailed Hawk							ABNKC19090	S4	G4	
Cochise	BIRD	Buteo nitidus maxima	Northern Gray Hawk	SC	1	S		PR	WSC	ABNKC19011	S3	G5T4Q	
Cochise	BIRD	Buteo swainsoni	Swainson's Hawk							ABNKC19070	S3	G5	
Cochise	BIRD	Buteogallus anthracinus	Common Black-Hawk		1	S		A	WSC	ABNKC15010	S3	G4G5	
Cochise	BIRD	Calothorax lucifer	Lucifer Hummingbird							ABNUC44010	S2	G4G5	
Cochise	BIRD	Camptostoma imberbe	Northern Beardless-Tyrannulet							ABPAE04010	S4	G5	
Cochise	BIRD	Caprimulgus ridgwayi	Buff-collared Nightjar							ABNTA07060	S2S3	G5	
Cochise	BIRD	Carduelis tristis	American Goldfinch		0			A		ABPBY06110	S1B,S5N	G5	
Cochise	BIRD	Catharus ustulatus	Swainson's Thrush							ABPBJ18100	S1	G5	
Cochise	BIRD	Chloroceryle americana	Green Kingfisher							ABNXD02020	S2	G5	
Cochise	BIRD	Coccothraustes vespertinus	Evening Grosbeak							ABPBY09020	S3	G5	
Cochise	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	C	1	S	2		WSC	ABNRB02022	S3	G5T3Q	
Cochise	BIRD	Dendrocygna autumnalis	Black-bellied Whistling-Duck		1				WSC	ABNJB01040	S3	G5	
Cochise	BIRD	Dumetella carolinensis	Gray Catbird		1				WSC	ABPBK01010	S1	G5	
Cochise	BIRD	Elanus leucurus	White-tailed Kite							ABNKC06010	S2B,S2S3N	G5	
Cochise	BIRD	Empidonax fulvifrons pygmaeus	Northern Buff-breasted Flycatcher	SC	1				WSC	ABPAE33141	S1	G5T5	
Cochise	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	LE	1	S	2		WSC	ABPAE33043	S1	G5T1T2	
Cochise	BIRD	Euptilotis neoxenus	Eared Quetzal		1	S		A		ABNWA03010	SAB,S1N	G3	
Cochise	BIRD	Falco peregrinus anatum	American Peregrine Falcon	SC	1	S	4	A	WSC	ABNKD06071	S4	G4T4	
Cochise	BIRD	Haliaeetus leucocephalus (wintering population)	Bald Eagle	LT,PDL	1	S		P	WSC	ABNKC10012	S4N	G5	
Cochise	BIRD	Himantopus mexicanus	Black-necked Stilt								ABNND01010	S2	G5
Cochise	BIRD	Icterus bullockii	Bullock's Oriole								ABPBXB9220	S?	G5
Cochise	BIRD	Ictinia mississippiensis	Mississippi Kite			1			A	WSC	ABNKC09010	S3	G5
Cochise	BIRD	Lampornis clemenciae	Blue-throated Hummingbird								ABNUC34040	S4	G5
Cochise	BIRD	Plegadis chihi	White-faced Ibis	SC		1					ABNGE02020	S?B,S2S3N	G5
Cochise	BIRD	Recurvirostra americana	American Avocet								ABNND02010	S2	G5
Cochise	BIRD	Sialia sialis fulva	Azure Bluebird								ABPBJ15012	S3	G5TU
Cochise	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	LT		1	S	3	A	WSC	ABNSB12012	S3S4	G3T3
Cochise	BIRD	Tachybaptus dominicus	Least Grebe								ABNCA01010	SAB	G5
Cochise	BIRD	Thalasseus maximus	Royal Tern								ABNNM08030	SA	G5

Cochise	BIRD	Trogon elegans	Elegant Trogon			1					WSC	ABNWA02070	S3	G5
Cochise	BIRD	Tyrannus crassirostris	Thick-billed Kingbird			1					WSC	ABPAE52040	S2	G5
Cochise	BIRD	Tyrannus melancholicus	Tropical Kingbird			1					WSC	ABPAE52010	S3	G5
Cochise	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace	SC	S	1			A			AFCJB37151	S3S4	G4T3T4
Cochise	FISH	Agosia chrysogaster ssp. 1	Yaqui Longfin Dace	SC	S	1			A			AFCJB37152	S1	G4T1
Cochise	FISH	Campostoma ornatum	Mexican Stoneroller	SC		1	S		P		WSC	AFCJB03030	S1	G3
Cochise	FISH	Catostomus clarki	Desert Sucker	SC	S	1						AFCJC02040	S3S4	G3G4
Cochise	FISH	Catostomus insignis	Sonora Sucker	SC	S	1			P			AFCJC02100	S3	G3
Cochise	FISH	Cyprinella formosa	Beautiful Shiner	LT		1			A		WSC	AFCJB49080	S1	G2
Cochise	FISH	Gila intermedia	Gila Chub	LE		1	S		P		WSC	AFCJB13160	S2	G2
Cochise	FISH	Gila purpurea	Yaqui Chub	LE		1			P		WSC	AFCJB13140	S1	G1
Cochise	FISH	Ictalurus pricei	Yaqui Catfish	LT		1			PR		WSC	AFCKA01090	S1	G2
Cochise	FISH	Poeciliopsis occidentalis sonoriensis Yaqui Topminnow	LE		1		A	WSC	AFCNC05022		S1	G3T3		
Cochise	FISH	Rhinichthys osculus	Speckled Dace	SC	S	1		P			AFCJB37050	S3S4	G5	
Cochise	INVERTEBRATE	Agathymus aryxna	Arizona Giant Skipper			1	S				IILEP87080	S?	G4G5	
Cochise	INVERTEBRATE	Agathymus evansi	Huachuca Giant-skipper			1	S				IILEP87110	S?	G2G3	
Cochise	INVERTEBRATE	Agathymus neumoegeni	Neumogen's Giant Skipper			1	S				IILEP87010	S?	G4G5	
Cochise	INVERTEBRATE	Anthocharis cethura	Felder's Orange Tip			1	S				IILEPA6010	S?	G4G5	
Cochise	INVERTEBRATE	Cicindela nevadica citata	A Tiger Beetle								IICOL02175	S?	G5T3	
Cochise	INVERTEBRATE	Cicindela oregona maricopa	Maricopa Tiger Beetle	SC	S	1	S				IICOL02362	S3	G5T3	
Cochise	INVERTEBRATE	Erynnis scudderi	Scudder's Dusky Wing			1	S				IILEP37070	S?	G4G5	
Cochise	INVERTEBRATE	Neophasia terlooii	Chiricahua Pine White			1	S				IILEP99020	S2?	G3G4	
Cochise	INVERTEBRATE	Psephenus arizonensis	Arizona Water Penny Beetle	SC		1	S				IICOL63010	S2?	G2?	
Cochise	INVERTEBRATE	Pyrgulopsis bernardina	San Bernardino Springsnail	C	S	1	S				IMGASJ0950	S1	G1	
Cochise	INVERTEBRATE	Pyrgulopsis thompsoni	Huachuca Springsnail	C	S	1	S				IMGASJ0230	S2	G2	
Cochise	INVERTEBRATE	Sonorella pedregosensis	Leslie Canyon Talussnail								IMGASC9730	S1	G1G2	
Cochise	INVERTEBRATE	Sonorella virilis	Chiricahua Talussnail								IMGASC9620	S2	G2	
Cochise	INVERTEBRATE	Sphingicampa raspa	A Royal Moth								IILEW0H080	S?	G1G2	
Cochise	INVERTEBRATE	Stygobromus arizonensis	Arizona Cave Amphipod	SC		1	S				ICMAL05360	S1?	G2G3	
Cochise	INVERTEBRATE	Sympetrum signiferum	Mexican Meadowfly			1	S				IIODO61150	S?	G2G3	
Cochise	MAMMAL	Antrozous pallidus	Pallid Bat								AMACC10010	S4	G5	
Cochise	MAMMAL	Baiomys taylori	Northern Pygmy Mouse								AMAFF05010	S3	G4G5	
Cochise	MAMMAL	Choeronycteris mexicana	Mexican Long-tongued Bat	SC		1		A	WSC		AMACB02010	S3	G4	
Cochise	MAMMAL	Corynorhinus townsendii pallescens Pale Townsend's Big-eared E	SC	1	4	AMACC08014	S3S4	G4T4						
Cochise	MAMMAL	Didelphis virginiana californica	Mexican Oppossum						AMAAA01011		S3	G5TNR		
Cochise	MAMMAL	Eptesicus fuscus	Big Brown Bat						AMACC04010		S4S5	G5		
Cochise	MAMMAL	Eumops perotis californicus	Greater Western Bonneted Bat	SC		1			AMACD02011		S3	G5T4		
Cochise	MAMMAL	Idionycteris phyllotis	Allen's Big-eared Bat	SC	S	1			AMACC09010		S2S3	G3G4		
Cochise	MAMMAL	Lasionycteris noctivagans	Silver-haired Bat			0	PR		AMACC02010		S3S4	G5		
Cochise	MAMMAL	Lasiurus blossevillii	Western Red Bat			1		WSC	AMACC05060		S3	G5		
Cochise	MAMMAL	Lasiurus cinereus	Hoary Bat	No					AMACC05030		S4	G5		
Cochise	MAMMAL	Lasiurus xanthinus	Western Yellow Bat	S		1		WSC	AMACC05070		S2S3	G5		
Cochise	MAMMAL	Leptonycteris curasoae yerbabuenae Lesser Long-nosed Bat	LE		1	S	|	WSC	AMACB03030		S2S3	G4		
Cochise	MAMMAL	Mustela frenata	Long-tailed Weasel								AMAJF02030	S4	G5	
Cochise	MAMMAL	Myotis auriculus	Southwestern Myotis								AMACC01080	S3	G5	
Cochise	MAMMAL	Myotis californicus	California Myotis								AMACC01120	S4S5	G5	
Cochise	MAMMAL	Myotis ciliolabrum	Western Small-footed Myotis	SC	S	1					AMACC01140	S3S4	G5	
Cochise	MAMMAL	Myotis occultus	Arizona Myotis	SC	S	1					AMACC01160	S3	G3G4	
Cochise	MAMMAL	Myotis thysanodes	Fringed Myotis	SC	S	1					AMACC01090	S3S4	G4G5	
Cochise	MAMMAL	Myotis velifer	Cave Myotis	SC	S	1					AMACC01050	S3S4	G5	
Cochise	MAMMAL	Myotis volans	Long-legged Myotis	SC	S	1					AMACC01110	S3S4	G5	
Cochise	MAMMAL	Neotoma mexicana	Mexican Woodrat								AMAFF08070	S5	G5	

Cochise	MAMMAL	Notiosorex cockrumi	Cockrum's Desert Shrew								AMABA05020	S?	GNR
Cochise	MAMMAL	Nyctinomops femorosaccus	Pocketed Free-tailed Bat		S	1					AMACD04010	S3	G4
Cochise	MAMMAL	Nyctinomops macrotis	Big Free-tailed Bat	SC	S	1					AMACD04020	S3	G5
Cochise	MAMMAL	Panthera onca	Jaguar	LE		1	S	P	WSC		AMAJH02010	S1	G3
Cochise	MAMMAL	Reithrodontomys fulvescens	Fulvous Harvest Mouse								AMAFF02050	S4	G5
Cochise	MAMMAL	Reithrodontomys montanus	Plains Harvest Mouse								AMAFF02010	S3	G5
Cochise	MAMMAL	Sciurus nayaritensis chiricahuae	Chiricahua Fox Squirrel	SC		1	S				AMAFB07051	S2	G5T1T2
Cochise	MAMMAL	Sigmodon ochrognathus	Yellow-nosed Cotton Rat	SC		1					AMAFF07040	S4	G4G5
Cochise	MAMMAL	Sorex arizonae	Arizona Shrew	SC		1	S	P	WSC		AMABA01240	S2	G3
Cochise	MAMMAL	Tadarida brasiliensis	Brazilian Free-tailed Bat								AMACD01010	S3S4	G5
Cochise	MAMMAL	Thomomys bottae	Botta's Pocket Gopher								AMAFC01020	S5	G5
Cochise	MAMMAL	Thomomys bottae mearnsi	Mearns' Southern Pocket Gopher	SC		1					AMAFC0102G	S5	G5T5
Cochise	PLANT	Adiantum pedatum	American Maidenhair								PPADI030B0	S5	G5
Cochise	PLANT	Aeschynomene villosa	Sensitive Joint Vetch								PDFAB04070	S2?	G4
Cochise	PLANT	Ageratina lemmonii	Lemmon's Thorough-wort								PDASTBX0L0	S1	G3?
Cochise	PLANT	Allium plummerae	Plummer Onion			1			SR		PMLIL021V0	S3	G4
Cochise	PLANT	Allium rhizomatum	Redflower Onion			1	S		SR		PMLIL02320	S1	G3?Q
Cochise	PLANT	Ammocodon chenopodioides	Goosefoot Moonpod			0					PDNYC04010	S1	G5
Cochise	PLANT	Apacheria chiricahuensis	Chiricahua Rock Flower			1			SR		PDCRO01010	S2	G2
Cochise	PLANT	Arabis tricornuta	Chiricahua Rock Cress			1	S				PDBRA06200	S1?	G1?
Cochise	PLANT	Arceuthobium blumeri	Blumer Dwarf Mistletoe								PDVIS03040	S1?	G3?
Cochise	PLANT	Arenaria fendleri var. fendleri	Fendler's Sandwort								PDCAR04087	S2	G5T4T5
Cochise	PLANT	Asclepias lemmonii	Lemmon Milkweed			1	S				PDASC020Z0	S2	G4?
Cochise	PLANT	Asclepias quinquedentata	Tooth Hood Milkweed								PDASC021L0	S2	G4
Cochise	PLANT	Asplenium dalhousiae	Dalhouse Spleenwort		S	1					PPASP020A0	S1	GNR
Cochise	PLANT	Asplenium exiguum	Sonoran Spleenwort								PPASP020D0	S1	GU
Cochise	PLANT	Aster pauciflorus	Marsh Alkali Aster								PDASTEL010	S1	G4
Cochise	PLANT	Aster potosinus	Lemmon's Aster								PDASTE8160	S1	G2
Cochise	PLANT	Astragalus cobrensis var. maguirei	Coppermine Milk-vetch	SC		1	S		SR		PDFAB0F262	S1	G4T2
Cochise	PLANT	Astragalus hypoxylus	Huachuca Milk-vetch	SC	S	1	S		SR		PDFAB0F470	S1	G1
Cochise	PLANT	Atriplex griffithsii	Griffith Saltbush								PDCHE040S0	S2S3	G2G3
Cochise	PLANT	Bouchea prismatica	Prism Bouchea								PDVER04020	S4	G4G5
Cochise	PLANT	Carex chihuahuensis	A Sedge			1	S				PMCYP032T0	S2S3	G3G4
Cochise	PLANT	Carex meadii	Mead Sedge								PMCYP03870	S3?	G4G5
Cochise	PLANT	Carex ultra	Arizona Giant Sedge		S	1	S				PMCYP03E50	S2	G3?
Cochise	PLANT	Castilleja lanata	White-woolly Indian-paintbrush								PDSCR0D1L0	S4	G5
Cochise	PLANT	Castilleja nervata	Trans-pecos Indian-paintbrush			1	S				PDSCR0D270	S1	G3Q
Cochise	PLANT	Castilleja patriotica	Tricolor Indian Paintbrush								PDSCR0D2F0	S3S4	G4
Cochise	PLANT	Centaurea rothrockii	Knap Thistle								PDAST1Y0P0	S3	G4
Cochise	PLANT	Cheilanthes arizonica	Arizona Lip Fern								PPADI09030	S2	G4
Cochise	PLANT	Cleome multicaulis	Playa Spider Plant	SC		1			SR		PDCPP03080	S1	G2G3
Cochise	PLANT	Coryphantha robbinsorum	Cochise Pincushion Cactus	LT		1			HS		PDCAC0X0C0	S1	G1
Cochise	PLANT	Coryphantha scheeri var. valida	Slender Needle Corycactus			1			SR		PDCAC040C4	S3?	G4T4
Cochise	PLANT	Coursetia glabella		SC		1	S				PDFAB140B0	S1	G3?
Cochise	PLANT	Croton fruticulosus	Encinillas			0					PDEUP0H0F0	S1	G5
Cochise	PLANT	Dichondra argentea	Silver Pony Foot								PDCON08010	S1	G4
Cochise	PLANT	Draba standleyi	Standley Whitlow-grass	SC		1					PDBRA112G0	S2S3	G2G3
Cochise	PLANT	Dryopteris rossii	Ross' Wood Fern								PPDRY0A0M0	S1	G1Q
Cochise	PLANT	Echinocereus ledingii	Pinaleno Hedgehog Cactus			1			SR		PDCAC06066	S4	G4G5T4
Cochise	PLANT	Echinocereus pectinatus var. pectinatus	Texas Rainbow Cactus			1			SR		PDCAC060A3	S4	G5T4
Cochise	PLANT	Echinomastus erectocentrus var. erectocentrus	Needle-spined Pineapple Cactus	SC		1	S		SR		PDCAC0J0E2	S3	G3T3Q
Cochise	PLANT	Epithelantha micromeris	Button Cactus			1		PR	SR		PDCAC07020	S1	G4

Cochise	PLANT	Eragrostis obtusiflora	Alkali Lovegrass			1	S			PMPOA2K150	S3	G5
Cochise	PLANT	Erigeron arisolius				1	S			PDAST3M510	S2	G2
Cochise	PLANT	Erigeron arizonicus	Arizona Fleabane							PDAST3M0B0	S3	G3?
Cochise	PLANT	Erigeron kuschei	Chiricahua Fleabane	SC		1	S		SR	PDAST3M240	S1	G1
Cochise	PLANT	Erigeron lemmonii	Lemmon Fleabane	C		1			HS	PDAST3M2A0	S1	G1
Cochise	PLANT	Erigeron sceptrifer	Scepterbearing Fleabane							PDAST3M520	S1	GNR
Cochise	PLANT	Erigeron scopulinus	Winn Falls Fleabane							PDAST3M4E0	S1	G3?
Cochise	PLANT	Eriogonum capillare	San Carlos Wild-buckwheat	SC		1			SR	PDPGN08100	S4	G4
Cochise	PLANT	Eriogonum terrenatum	San Pedro River Wild Buckwheat		S	1				PDPGN08760	S1	G1
Cochise	PLANT	Eryngium lemmonii	Lemmon Button Snakeroot							PDAPI0Z0J0	S3	G4
Cochise	PLANT	Eryngium sparganophyllum	Ribbonleaf Button Snakeroot							PDAPI0Z0T0	S1	G2
Cochise	PLANT	Escobaria tuberculosa	Incense Corycactus			1			SR	PDCAC0X0F0	S1	G4
Cochise	PLANT	Euphorbia macropus	Woodland Spurge	SC		1			SR	PDEUP0Q2U0	S2	G4
Cochise	PLANT	Euphorbia trachysperma	Roughseed Spurge						PDEUP0D2E0	S4	G4	
Cochise	PLANT	Fraxinus goddingii	Goodding Ash						PDOLE04080	S3	G3	
Cochise	PLANT	Gentianella wislizeni	Wislizeni Gentian	SC		1	S	SR	PDGEN07090	S1	G2	
Cochise	PLANT	Gentianopsis macrantha	Mexican Fringed Gentian						PDGEN08060	S1S2	G4	
Cochise	PLANT	Graptopetalum bartramii	Bartram Stonecrop	SC	S	1	S	SR	PDCRA06010	S3	G3	
Cochise	PLANT	Gutierrezia wrightii	Wright's Snakeweed						PDAST4B0C0	S2S3	G4?	
Cochise	PLANT	Hedeoma costatum	Chiricahua Mock Pennyroyal			1	S		PDLAM0M0L0	S1	G5	
Cochise	PLANT	Hedeoma dentatum	Mock-pennyroyal			1	S		PDLAM0M0M0	S3	G3	
Cochise	PLANT	Heteranthera limosa	Mud Plantain						PMPON03030	S1	G5	
Cochise	PLANT	Heterotheca rutteri	Huachuca Golden Aster	SC	S	1	S		PDAST4V0J0	S2	G2	
Cochise	PLANT	Heuchera glomerulata	Arizona Alum Root			1	S		PDSAX0E0F0	S3	G3	
Cochise	PLANT	Hexalectris revoluta	Chisos Coral-root		S	1	S	SR	PMORC1C030	S1	G1G2	
Cochise	PLANT	Hexalectris spicata	Crested Coral Root			1		SR	PMORC1C040	S3S4	G5	
Cochise	PLANT	Hexalectris warnockii	Texas Purple Spike	SC	S	1	S	HS	PMORC1C050	S1	G2G3	
Cochise	PLANT	Hieracium pringlei	Pringle Hawkweed	SC		1	S		PDAST4W170	S1	G2Q	
Cochise	PLANT	Hieracium rusbyi	Rusby Hawkweed			1	S		PDAST4W1A0	S1	G2?	
Cochise	PLANT	Hymenoxys ambigens var. floribunda	A Daisy						PDAST530T2	S2	G3?T2	
Cochise	PLANT	Hymenoxys quinquesquamata	Five Scale Bitterweed						PDAST530F0	S3	G3	
Cochise	PLANT	Hypoxis mexicana	Yellow Star Grass						PMLIL16030	S1	G5	
Cochise	PLANT	Ibervillea tenuisecta	Texas Globe Berry			0			PDCUC0F020	S1	G4	
Cochise	PLANT	Ipomoea plummerae var. cuneifolia Huachuca Morning Glory			1	S		PDCON0A141	S3	G4T3		
Cochise	PLANT	Ipomoea tenuiloba	Trumpet Morning-glory					PDCON0A1H0	S4	G4		
Cochise	PLANT	Ipomoea thurberi	Thurber's Morning-glory		1	S		PDCON0A1K0	S1	G3		
Cochise	PLANT	Justicia sonorae	Palm Canyon Justicia					PDACA0E0K0	SE	G4		
Cochise	PLANT	Laennecia eriophylla	Woolly Fleabane		1	S		PDASTDL020	S2	G3		
Cochise	PLANT	Leibnitzia lyrata	Woodland Sunbonnets					PDASTDM010	S4	G5		
Cochise	PLANT	Lilaeopsis schaffneriana var. recurva Huachuca Water Umbel	LE	1		HS	PDAPI19051	S2	G4T2			
Cochise	PLANT	Lilium parryi	Lemmon Lily	SC	1	S	SR	PMLIL1A0J0	S2	G3		
Cochise	PLANT	Lithospermum viride	Green Puccoon	0			PDBOR0L0G0	S1	G4			
Cochise	PLANT	Lobelia fenestralis	Leafy Lobelia	1		SR	PDCAM0E0H0	S1	G4			
Cochise	PLANT	Lupinus huachucanus	Huachuca Mountain Lupine	1	S		PDFAB2B210	S2	G2			
Cochise	PLANT	Lupinus lemmonii	Lemmon's Lupine	1	S		PDFAB2B2A0	S1S2Q	G1G2Q			
Cochise	PLANT	Machaeranthera bigelovii var. bigelovii	Bigelow's Tansy-aster				PDAST64071	S2	G4G5T3T			
Cochise	PLANT	Machaeranthera riparia	Chiricahua Mountain Tansy-aster	0			PDAST641B0	S1	G4			
Cochise	PLANT	Malaxis corymbosa	Madrean Adders Mouth	1		SR	PMORC1R020	S3S4	G4			
Cochise	PLANT	Malaxis porphyrea	Purple Adder's Mouth	1		SR	PMORC1R0Q0	S2	G4			
Cochise	PLANT	Malaxis tenuis	Slender Adders Mouth	1		SR	PMORC1R090	S1	G4			
Cochise	PLANT	Mammillaria viridiflora	Varied Fishhook Cactus	1		SR	PDCAC0A0D0	S4	G4			
Cochise	PLANT	Mammillaria wrightii var. wilcoxii	Wilcox Fishhook Cactus	1		SR	PDCAC0A0E1	S4	G4T4			

Cochise	PLANT	Mentzelia lindheimeri	Lindheimer Stickleaf				PDLOA030U0	S1		G4				
Cochise	PLANT	Mentzelia oligosperma	Sparseseed Stickleaf				PDLOA03170	S1		G4				
Cochise	PLANT	Metastelma mexicanum	Wiggins Milkweed Vine	SC		1	S				PDASC050P0	S1S2	G3G4	
Cochise	PLANT	Microchloa kunthii	Kunth Grass								PMPOA40010	S1	G5	
Cochise	PLANT	Muhlenbergia dubioides	Box Canyon Muhly			1	S				PMPOA480G0	S1	G1Q	
Cochise	PLANT	Nemastylis tenuis	Slender Shell Flower								PMIRI0B040	S1	G5	
Cochise	PLANT	Nissolia wislizeni	Arizona Nissolia								PDFAB2Q030	S1	G2G4	
Cochise	PLANT	Notholaena aschenborniana	Aschenborn Cloak Fern								PPADI0G020	S1	G4	
Cochise	PLANT	Notholaena neglecta	Neglected Cloak Fern								PPADI0G0F0	S1	G4	
Cochise	PLANT	Oenothera havardii	Havard Primrose								PDONA0C0K0	S1	G4	
Cochise	PLANT	Ophioglossum engelmannii	Engelmann Adders Tongue								PPOPH02040	S1	G5	
Cochise	PLANT	Pectis imberbis	Beardless Chinch Weed	SC		1	S				PDAST6W0A0	S1	G3	
Cochise	PLANT	Pellaea ternifolia	Ternate Cliffbrake								PPADI0H0B0	S2	G5	
Cochise	PLANT	Peniocereus greggii var. greggii	Night-blooming Cereus	SC		1		PR		SR	PDCAC0V011	S1	G3G4T2	
Cochise	PLANT	Penstemon discolor	Catalina Beardtongue			1	S			HS	PDSCR1L210	S2	G2	
Cochise	PLANT	Penstemon pinifolius	Pineleaf Beardtongue								PDSCR1L500	S3	G3G4	
Cochise	PLANT	Penstemon ramosus	Branching Penstemon			1	S				PDSCR1L7L0	S1	G3G4Q	
Cochise	PLANT	Penstemon stenophyllus	Narrowleaf Beardtongue								PDSCR1L5V0	S3	G4?	
Cochise	PLANT	Penstemon superbus	Superb Beardtongue			1	S				PDSCR1L630	S2?	G3?	
Cochise	PLANT	Perityle cochisensis	Chiricahua Rock Daisy			1	S			SR	PDAST70080	S1S2	G1G2	
Cochise	PLANT	Phyllanthus polygonoides	Knotleaf Flower								PDEUP130E0	S2	G5	
Cochise	PLANT	Physalis latiphysa	Broad-leaf Ground-cherry			1	S				PDSOL0S0H0	S1	G1	
Cochise	PLANT	Physocarpus monogynus	Mountain Ninebark								PDROS19040	S4	G4	
Cochise	PLANT	Pinaropappus roseus	Rock Lettuce								PDAST78020	S2	G5	
Cochise	PLANT	Platanthera limosa	Thurber's Bog Orchid			1				SR	PMORC1Y0G0	S4	G4	
Cochise	PLANT	Polemonium flavum	Pinaleno Jacobs Ladder			1	S				PDPLM0E0B2	S2	G5T3?	
Cochise	PLANT	Polemonium pauciflorum ssp. hinckleyi	Hinckley's Ladder	SC		1	S				PDPLM0E0G1	S1	G3G5T2Q	
Cochise	PLANT	Polygala glochidiata	Spiny Milkwort								PDPGL020J0	S2	G5	
Cochise	PLANT	Psacalium decompositum	Sonoran Indian-plantain								PDASTDS010	S2	G4?	
Cochise	PLANT	Psilactis gentryi	Mexican Bare-ray-aster			1	S				PDASTE7010	S1	G3	
Cochise	PLANT	Psorothamnus scoparius	Broom Pea								PDFAB3C070	S1	G4	
Cochise	PLANT	Pyrrhopappus rothrockii	False Dandelion								PDAST7V050	S3	G4	
Cochise	PLANT	Ranunculus arizonicus	Arizona Buttercup								PDRAN0L0B0	S3	G4	
Cochise	PLANT	Rhamnus serrata	Serrate Buckbrush								PDRHA0C0D0	S1	G4G5	
Cochise	PLANT	Rumex orthoneurus	Blumer's Dock	SC		1	S			HS	PDPGN0P0Z0	S3	G3	
Cochise	PLANT	Sagittaria montevidensis	Long-lobed Arrow-head								PMALI040K0	S1	G4G5	
Cochise	PLANT	Salvia amissa	Aravaipa Sage	SC	S	1	S				PDLAM1S020	S2	G2	
Cochise	PLANT	Samolus vagans	Chiricahua Mountain Brookweed			1	S				PDPRI09040	S2	G2?	
Cochise	PLANT	Schiedeella arizonica	Fallen Ladies'-tresses			1				SR	PMORC67020	S4	GNR	
Cochise	PLANT	Senecio carlomasonii	Seemann Groundsel			1	S				PDAST8H3W0	S2S3	G4?Q	
Cochise	PLANT	Senecio multidentatus var. huachucanus	Huachuca Groundsel			1	S			HS	PDAST8H411	S2	G2G4T2	
Cochise	PLANT	Senecio parryi	Mountain Groundsel								PDAST8H2B0	S4	G4	
Cochise	PLANT	Seymeria bipinnatisecta	Sierra Madre Seymeria								PDSCR1T060	S1	G4G5	
Cochise	PLANT	Sisyrinchium cernuum	Nodding Blue-eyed Grass			1	S				PMIRI0D0B0	S2	G5	
Cochise	PLANT	Solanum heterodoxum	Melonleaf Nightshade								PDSOL0Z0X0	S4	G4G5	
Cochise	PLANT	Sophora arizonica	Arizona Necklace								PDFAB3N020	S3	G3	
Cochise	PLANT	Spiranthes delitescens	Madrean Ladies'-tresses	LE		1				HS	PMORC2B140	S1	G1	
Cochise	PLANT	Stellaria porsildii	Porsild's Starwort			1	S				PDCAR0X160	S1	G1	
Cochise	PLANT	Stenorrhynchos michuacanum	Michoacan Ladies'-tresses			1				SR	PMORC2B0L0	S3	G4	
Cochise	PLANT	Streptanthus carinatus	Lyre-leaved Twistflower								PDBRA2G0C0	S3S4	G4	
Cochise	PLANT	Talinum angustissimum	Yellow Flame Flower								PDPOR08010	S2	G4	
Cochise	PLANT	Talinum marginatum	Tepic Flame Flower	SC		1	S			SR	PDPOR080N0	S1	G2	

Cochise	PLANT	Tephrosia thurberi	Thurber Hoary Pea			1	S			PDFAB3X0M0	S3	G4G5	
Cochise	PLANT	Tillandsia recurvata	Ball Moss							PMBRO090E0	S2	G5	
Cochise	PLANT	Tragia amblyodonta	Tombstone Noseburn							PDEUP1D010	S1	G4	
Cochise	PLANT	Tragia laciniata	Sonoran Noseburn			1	S			PDEUP1D060	S3?	G3G4	
Cochise	PLANT	Trifolium amabile	Linda Clover							PDFAB40030	S1S2	G4	
Cochise	PLANT	Tripsacum lanceolatum	Mexican Gama Grass							PMPOA68030	S2S3	G4	
Cochise	PLANT	Vauquelinia californica ssp. Pauciflora	Limestone Arizona Rosewood	SC		1			SR	PDROS1R022	S1	G4T3	
Cochise	PLANT	Viola umbraticola	Shade Violet			1	S			PDVIO042E0	S2?	G3G4	
Cochise	PLANT	Xanthisma texanum	Sleepy Daisy							PDAST9Y010	S1	G5	
Cochise	PLANT	Zigadenus virescens	Green Death Camas			1			SR	PMLIL280E0	S4	G4	
Cochise	REPTILE	Aspidoscelis arizonae	Arizona Striped Whiptail						WSC	ARACJ02071	S1S2	G1G2	
Cochise	REPTILE	Aspidoscelis burti stictogrammus	Giant Spotted Whiptail	SC	S	1	S			ARACJ02011	S2	G4T4	
Cochise	REPTILE	Crotalus lepidus klauberi	Banded Rock Rattlesnake			0		PR		ARADE02051	S3	G5T5	
Cochise	REPTILE	Crotalus pricei	Twin-spotted Rattlesnake			0		PR		ARADE02080	S2	G5	
Cochise	REPTILE	Crotalus willardi obscurus	New Mexico Ridge-nosed Rattlesnake	LT		1	S	PR		ARADE02131	S1	G5T1T2	
Cochise	REPTILE	Crotalus willardi willardi	Arizona Ridge-nosed Rattlesnake			1	S	PR	WSC	ARADE02132	S1S2	G5T4	
Cochise	REPTILE	Eumeces callicephalus	Mountain Skink							ARACH01030	S2	G4G5	
Cochise	REPTILE	Gopherus agassizii (Sonoran population)	Sonoran Desert Tortoise	SC		1		A	WSC	ARAAF01013	S4	G4T4	
Cochise	REPTILE	Gyalopion canum	Chihuahuan Hook-nosed Snake							ARADB16010	S3	G5	
Cochise	REPTILE	Heloderma suspectum suspectum	Reticulate Gila Monster			0		A		ARACE01012	S4	G4T4	
Cochise	REPTILE	Heterodon nasicus kennerlyi	Mexican Hog-nosed Snake			0		PR		ARADB17012	S3	G5T4	
Cochise	REPTILE	Kinosternon flavescens	Yellow Mud Turtle							ARAAE01020	S1	G5	
Cochise	REPTILE	Lampropeltis triangulum celaenops	New Mexico Milksnake			0		A		ARADB19052	S1	G5TNR	
Cochise	REPTILE	Leptotyphlops dissectus	New Mexico Threadsnake							ARADD01030	S3	G4G5	
Cochise	REPTILE	Phrynosoma cornutum	Texas Horned Lizard	SC	S	1		A		ARACF12010	S3S4	G4G5	
Cochise	REPTILE	Phrynosoma hernandesi	Greater Short-horned Lizard							ARACF12080	S4	G5	
Cochise	REPTILE	Phrynosoma modestum	Round-tailed Horned Lizard							ARACF12050	S3	G5	
Cochise	REPTILE	Sceloporus slevini	Slevin's Bunchgrass Lizard							ARACF14180	S2	G4	
Cochise	REPTILE	Sceloporus virgatus	Striped Plateau Lizard							ARACF14150	S3	G4	
Cochise	REPTILE	Senticolis triaspis intermedia	Northern Green Ratsnake							ARADB44011	S3	G5T4	
Cochise	REPTILE	Sistrurus catenatus edwardsii Tantilla nigriceps	Desert Massasauga Plains Black-headed Snak		1	S	PR	WSC	ARADE03012 ARADB3505(	S1 S2	4Q G5		
Cochise	REPTILE	Tantilla wilcoxi	Chihuahuan Black-headed Snake						ARADB35120	S1	G5		
Cochise	REPTILE	Tantilla yaquia	Yaqui Black-headed Snake						ARADB35130	S2	G4		
Cochise	REPTILE	Terrapene ornata luteola	Desert Box Turtle		0		PR		ARAAD08021	S2S3	G5T4		
Cochise	REPTILE	Thamnophis eques megalops	Northern Mexican Gartersnake	SC	1	S	A	WSC	ARADB36061	S1	G5T5		