

Final Environmental Assessment Baboquivari Road Project Along the U.S./Mexico International Border in Arizona

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

December 2014



ABBREVIATIONS AND ACRONYMS

A

AZGFD Arizona Game and Fish
Department

B

BMP best management practice

C

CAA Clean Air Act

CBP U.S. Customs and Border
Protection

CEQ Council on Environmental Quality

CFR Code of Federal Regulations

CO carbon monoxide

CO₂ carbon dioxide

CWA Clean Water Act

D

DHS Department of Homeland Security

E

EA Environmental Assessment

EIS Environmental Impact Statement

EO Executive Order

ESA Endangered Species Act

F

FERC Federal Energy Regulatory
Commission

FONSI Finding of No Significant Impact

G

GHG greenhouse gas

M

MBTA Migratory Bird Treaty Act

MD Management Directive

N

NAAQS National Ambient Air Quality
Standards

NEPA National Environmental Policy Act

NHPA National Historic Preservation Act

NO₂ nitrogen dioxide

NOA Notice of Availability

NRHP National Register of Historic Places

O

O₃ ozone

P

Pb lead

PM₁₀ particulate matter equal to or less
than 10 microns in diameter

PM_{2.5} particulate matter equal to or less
than 2.5 microns in diameter

ppm parts per million

S

SHPO State Historic Preservation Office

SO₂ sulfur dioxide

SR State Route

SWPPP Storm Water Pollution Prevention
Plan

T

TIMR Tactical Infrastructure Maintenance
and Repair

U

USACE U.S. Army Corps of Engineers

USBP U.S. Border Patrol

USEPA U.S. Environmental Protection
Agency

USFWS U.S. Fish and Wildlife Service

µg/m³ micrograms per cubic meter

FINDING OF NO SIGNIFICANT IMPACT
Addressing Proposed Improvement of the Baboquivari Road along the U.S./Mexico
Border in Arizona

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The U.S. Customs and Border Protection (CBP) is proposing to improve access roads in the Pozo Verde Mountains along the U.S./Mexico international border west of Sasabe, Arizona. The access roads addressed in the proposed action consist of Presumido Canyon Road and Presumido Pass Road in the U.S. Border Patrol Tucson Sector. The project includes improvement and reconstruction activities in order to facilitate general patrolling of the border to deter and prevent illegal cross-border activity and improve agent safety.

The access roads proposed to be addressed consist of Presumido Canyon Road, Presumido Pass Road, El Mirador Ranch Road, and La Osa Ranch Road. For the purposes of the analysis in the Environmental Assessment, El Mirador Ranch Road and La Osa Ranch Road are considered a part of Presumido Canyon Road. Improvement and reconstruction activities would occur at various locations along the 8.3 miles of Presumido Canyon Road from its intersection with Arizona State Route 286 at the east to the border of the Tohono O'odham Nation at the west. Improvement and reconstruction activities would occur at various locations along the 2.6 miles of Presumido Pass Road from its intersection with Presumido Canyon Road at the south to its intersection with Aros Wash Road at the north.

Approximately 6 miles of roadway would require improvement activities, including grading to smooth the drive surface and reduce steepness, and possible widening of the roadways along the existing roadway alignment. Improvement activities would also include the installation of low-flow drainage structures and articulated concrete mats in select wash crossings.

Approximately 2 miles of reconstruction activities would include reconstructing the roadway outside of the current roadway alignment. Reconstruction activities would occur at sections of the roadway where the existing road is located in a large wash or in areas where future maintenance activities may affect sensitive resources. The realigned roadway would be located on higher ground outside of washes and adjacent to the current roadway alignment at locations that would meet tactical infrastructure standards.

Alternative 1: Alternative 1 consists of the improvement and reconstruction of Presumido Canyon Road and Presumido Pass Road. A comprehensive set of best management practices would be incorporated as part of the proposed improvement and reconstruction activities to minimize potential impacts.

No Action Alternative: Under the no action alternative, maintenance activities would continue on Presumido Canyon Road and Presumido Pass Road as per the Tactical Infrastructure Maintenance and Repair (TIMR) project for all CBP tactical infrastructure along the U.S./Mexico international border in Arizona. TIMR activities include filling in of potholes, regrading road surfaces, implementing improved water drainage measures (e.g., ensuring road crowns shed water and establishing drainage ditches, culverts, or other water-control features, as needed to control

runoff and prevent deterioration to existing infrastructure or surrounding land), applying soil stabilization agents, controlling vegetation and debris, and adding lost material to reestablish intended surface elevation needed for adequate drainage. Additionally, maintenance and repair of drainage systems may require cleaning blocked culverts and grates of trash and general debris and repairing or replacing nonfunctional or damaged structures when necessary; and riprap, gabions, and other erosion-control structures would be repaired, resized, or added to in order to reduce erosion and improve water flow.

PUBLIC INVOLVEMENT

Consultation and coordination with Federal, state, and local agencies, federally recognized tribes, private property owners, and local interest groups began with scoping letters that were delivered September 26, 2013, and followed by a 30-day comment period. Input from scoping responses that was relevant to this project was incorporated into the analysis of potential environmental impacts.

The Environmental Assessment (EA) and Notice of Availability was distributed to Federal, state, and local agencies, federally recognized tribes, private property owners, and local interest groups that responded to the September 26, 2013, scoping letters. A Notice of Availability (NOA) for the EA and proposed Finding of No Significant Impact (FONSI) was published in the *Arizona Daily Star* on March 28, 2014. The EA was available electronically at <http://www.cbp.gov/about/environmental-cultural-stewardship/nepa-documents/docs-review> and at the Joel D. Valdez Main Library, 101 N. Stone Avenue, Tucson, Arizona from April 1, 2014, to April 30, 2014. This was done to solicit comments on the proposed action and involve the local community in the decision-making process. Two responses with comments were received during the 30-day public comment period.

ENVIRONMENTAL CONSEQUENCES:

Best management practices (BMPs) to reduce or minimize potential impacts on a particular resource are described in **Appendix B** of the EA and are incorporated by reference to this FONSI.

Physical Environment: The proposed action would have a direct impact on approximately 21.8 acres of land. Of the 21.8 acres that would be impacted, approximately 7.1 acres would be permanently disturbed by roadway widening and reconstruction, and approximately 14.7 acres would be temporarily disturbed for temporary workspace and staging areas. Standard BMPs and erosion-control measures will be implemented during and following construction.

The proposed action would have a negligible impact on air quality. Temporary and minor increases in air emissions and fugitive dust would be anticipated during the improvement and reconstruction activities. However, air emissions associated with these activities would not be anticipated to exceed Federal, state, and local air quality rules and criteria. Surface water quality could be temporarily impacted during construction as a result of increased erosion and sedimentation; however, these impacts would be minor. Long-term, minor, beneficial impacts to surface water would be expected after construction by moving segments of the roadway outside of washes, and installation of drainage structures.

Natural Environment: Improvement and reconstruction activities on Presumido Canyon Road and Presumido Pass Road would result in the loss of 7.1 acres of habitat and would have short-term, negligible impacts to general wildlife but would not adversely impact the population viability of any plant species in the region. Impacting saguaro cacti and Palmer agave would be avoided to the extent

possible. Saguaro cacti that are 8 feet tall or less and cannot be avoided by permanent ground-disturbing activities would be transplanted, as would any non-flowering Palmer agave less than 20 inches in diameter and which are not in rocky substrate. Construction activities in temporary workspace and staging areas would avoid impacting vegetation to the extent possible. Standard BMPs such as reseeding disturbed areas after construction and cleaning construction equipment to minimize the spread of noxious weeds would mitigate direct impacts to vegetation.

The CBP has determined that impacts from the proposed action to Chiricahua leopard frog (*Lithobates chiricahuensis*), jaguar (*Panthera onca*) (and designated critical habitat), Kearney's bluestar (*Amsonia kearneyana*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), northern Mexican gartersnake (*Thamnophis eques megalops*) (and proposed critical habitat), and Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) would range from none to negligible. The CBP has completed Endangered Species Act, Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) regarding the potential effects of the proposed action to these species. On December 2, 2014, the USFWS provided the CBP with a Biological Opinion that concurred with the CBP's findings that the proposed action may affect, but would not likely adversely affect, the Chiricahua leopard frog, lesser long-nosed bat, and the northern Mexican gartersnake, as well as designated critical habitat for the jaguar and proposed critical habitat for the northern Mexican gartersnake. The USFWS Biological Opinion (December 2, 2014), and October 13, 2013, letter from the USFWS are provided in **Appendix E**.

Standard BMPs such as erosion-control measures and species-specific conservation measures (such as avoiding impacts to saguaros and Palmer agaves to minimize impacts to lesser long-nosed bat foraging habitat) would minimize potential impacts to wildlife. A complete list of BMPs and species-specific conservation measures is provided as **Appendix B** in the EA.

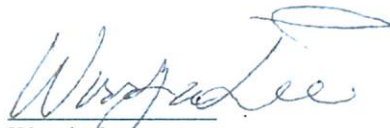
Cultural Resources: Improvement and reconstruction activities on Presumido Canyon Road and Presumido Pass Road would affect three cultural properties that are either eligible for listing in the National Register of Historic Places (NRHP) or that require additional investigations to determine their NRHP eligibility. Two cultural properties would be avoided by the proposed reconstructed segments, and impacts to the third cultural property would be avoided through the implementation of appropriate avoidance and monitoring measures. CBP has consulted with the State Historic Preservation Office (SHPO) regarding the potential for the proposed action to affect these properties and has determined, with SHPO concurrence (November 4, 2014), that the proposed action would result in no adverse effect to properties listed in, eligible for, or potentially eligible for the NRHP. The November 4, 2014, SHPO concurrence letter is provided in **Appendix F**.

If unanticipated discoveries of cultural properties or unanticipated impacts to known cultural properties occur after construction has commenced, CBP would implement the following procedures in accordance with 36 Code of Federal Regulations 800.13. CBP would immediately cease activities with the potential to adversely affect a historic property and secure the impacted area. CBP Tucson Sector shall notify CBP Environmental and Energy Division of the discovery within 24 hours. CBP Environmental and Energy Division shall notify the Arizona SHPO/Tribal Historic Preservation Office, Native American Tribe(s), and any other consulting parties in writing of the discovery within 2 business days.

Human Environment: The proposed action would have short-term, temporary, negligible impact to traffic on Presumido Canyon Road and Presumido Pass Road during construction. The reconstructed segments of Presumido Canyon Road and Presumido Pass Road would have an adverse effect on the

change in visual characteristics caused by these reconstructed roadway segments. No direct impacts on minority or low-income populations or children would occur.

Finding: On the basis of the findings of the EA, which is incorporated by reference, and has been conducted in accordance with the National Environmental Policy Act, the Council on Environmental Quality regulations, and Department of Homeland Security Management Directive 023-01, and after careful review of the potential environmental impacts of implementing the proposal, we find there would be no significant impact on the quality of the human or natural environment, either individually or cumulatively; therefore, there is no requirement to develop an Environmental Impact Statement. Further, we commit to implement BMPs identified in the EA and supporting documents.


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1-21-2015
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1. INTRODUCTION

The U.S. Customs and Border Protection (CBP) is proposing to improve access roads in the southern Altar Valley and Pozo Verde Mountains along the U.S./Mexico international border west of Sasabe, Arizona. The access roads proposed to be improved consist of Presumido Canyon Road, Presumido Pass Road, El Mirador Ranch Road, and La Osa Ranch Road in the U.S. Border Patrol (USBP) Tucson sector. For the purposes of this Environmental Assessment (EA), El Mirador Ranch Road and La Osa Ranch Road are considered part of Presumido Canyon Road. The proposed action includes, improvement and reconstruction activities in order to facilitate general patrolling of the border to deter and prevent illegal cross-border activity. CBP operations on these roads would remain unchanged and are not analyzed as part of the proposed action in this EA.

The access roads included in this analysis cross public lands managed by the Arizona State Land Department and the U.S. Fish and Wildlife Service (USFWS), Buenos Aires National Wildlife Refuge, and private land in Sections 26 and 35, Township 21 South, Range 7 East; Sections 2, 10–13, Township 22 South, Range 7 East; and Sections 18–20, Township 22 South, Range 8 East, Gila and Salt River Baseline and Meridian. The Tohono O’odham Nation Indian Reservation is located immediately west of the project area. The CBP Facilities Management and Engineering Office is responsible for maintenance and repair of the access roads and other tactical infrastructure (e.g., fences, lights, and drainage structures) to support CBP border security requirements.

This EA has been prepared through coordination with Federal, state, and local agencies to identify and assess the potential impacts associated with the proposed repair and improvement of tactical infrastructure. This EA is also being prepared to fulfill the requirements of the National Environmental Policy Act (NEPA).

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

1.1 U.S. BORDER PATROL BACKGROUND

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

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

USBP's new and traditional missions complement one another. USBP has nine administrative sectors along the U.S./Mexico international border within the states of California, Arizona, New Mexico, and Texas. The sectors are San Diego, El Centro, Yuma, Tucson, El Paso, Marfa, Del Rio, Laredo, and Rio Grande Valley.

This EA will examine the improvement and reconstruction of Presumido Canyon Road and Presumido Pass Road in the southern Altar Valley and Pozo Verde Mountains along the U.S./Mexico international border west of Sasabe, Arizona.

1.2 PURPOSE AND NEED

The purpose of the proposed action is to provide improved access on Presumido Canyon Road and Presumido Pass Road within the Pozo Verde Mountains to enable CBP to execute its statutory mission to protect the U.S. southern border and for the safety of CBP personnel and other law enforcement officers in carrying out their duties.

The need for the proposed action is the hindrance to CBP officers in carrying out their duties of protecting the U.S. southern border with Mexico in this remote area as a result of the poor condition of the roads. Presumido Canyon Road and Presumido Pass Road are currently difficult to traverse due to the ruggedness of the terrain, roadway width and slope, and the location of sections of the roadways within large washes. These washes are subject to flooding during the monsoon season, making the roads impassable.

1.3 FRAMEWORK FOR ANALYSIS

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

The process for implementing NEPA is codified in 40 Code of Federal Regulations (CFR) 1500–1508, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act; Department of Homeland Security (DHS) Management Directive (MD) 023-01, Environmental Planning Program; and CBP policies and procedures. The CEQ was established under NEPA to implement and oversee Federal policy in this process. CEQ regulations specify the following when preparing an EA:

- Briefly provide evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI)
- Aid in an agency's compliance with NEPA when an EIS is unnecessary
- Facilitate preparation of an EIS when one is necessary.

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

Within the framework of environmental impact analysis under NEPA, additional authorities that might be applicable include: the Clean Air Act (CAA), Clean Water Act (CWA) (including a National Pollutant Discharge Elimination System storm water discharge permit and Section 404 permit), Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), National Historic Preservation Act (NHPA), Archaeological Resources Protection Act, Resource Conservation and Recovery Act, and various executive orders (EOs).

1.4 PUBLIC INVOLVEMENT

Agency and public involvement in the NEPA process promotes open communication between the public and the government, and enhances the decision making process. All persons or organizations having a potential interest in the proposed action are encouraged to submit input into the decision making process.

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

The public involvement process provides CBP with the opportunity to cooperate with and consider state and local views in its decision regarding implementing this Federal proposal. CBP initiated public involvement for this project by notifying relevant Federal, state, and local agencies, private property owners, and local interest groups of the proposed action in scoping letters that were distributed on September 26, 2013, and followed by a 30-day comment period. The scoping letters provided information regarding the proposed action and requested input on environmental or other concerns they might have regarding the proposed action. Scoping responses were received from two federal agencies, two state agencies, one local agency, an adjacent private landowner, and a joint response from the non-governmental agencies.

The EA was distributed to Federal, state, and local agencies, federally recognized tribes, private property owners, and local interest groups that responded to the September 26, 2013, scoping letters and requested continued coordination. The Notice of Availability (NOA) for the EA and proposed Finding of No Significant Impact (FONSI) was published in the *Arizona Daily Star* on March 28, 2014. The EA was available electronically at <http://www.cbp.gov/about/environmental-cultural-stewardship/nepa-documents/docs-review> and at the Joel D. Valdez Main Library, 101 N. Stone Avenue, Tucson, Arizona from April 1, 2014 to April 30, 2014.

The following is a list of Federal and state agencies and stakeholder groups that have been consulted during the NEPA process.

- **Federal Agencies:**
 - U.S. Environmental Protection Agency (USEPA) Region 9
 - USFWS Southwest Region
 - USACE Los Angeles District
 - Buenos Aires National Wildlife Refuge
- **Tribal Governments:**
 - Tohono O’odham Nation
 - Pascua Yaqui Tribe
 - San Carlos Apache Tribe
 - White Mountain Apache Tribe
 - Hopi Tribe
- **State Agencies:**
 - Arizona Department of Environmental Quality
 - AZGFD
 - Arizona State Land Department
 - Arizona SHPO
- **Local Agencies:**
 - Pima County
- **Non-governmental Agencies:**
 - Sky Island Alliance
 - Center for Biological Diversity
 - Sierra Club Grand Canyon Chapter
- **Private Landowners**

Comments on the EA were provided by Pima County and jointly by the Sierra Club Grand Canyon Chapter, Sky Island Alliance, and the Center for Biological Diversity. Copies of their letters are available in **Appendix D**. Comments with information relevant to this proposed action have been incorporated into the description of the affected environment and/or included in the analysis of potential environmental impacts.

The NOA for this EA and FONSI will be published in the “Arizona Daily Star.” Hard copies of the EA will be available at the Pima County Main Public Library. Throughout the NEPA process, the public may obtain information concerning the status on the proposed action and the EA by emailing BaboquivariRoadEA@cbp.dhs.gov, or by written request to Baboquivari Road Project, P.O. Box 2390, Tucson, Arizona 85702.

2. PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

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

2.2 SCREENING CRITERIA TO DEVELOP THE PROPOSED ACTION AND ALTERNATIVES

Each action alternative to the proposed action considered in the EA must be reasonable and meet CBP's purpose and need (as described in **Section 1.2**). The improvement and reconstruction of Presumido Canyon Road and Presumido Pass Road should be conducted in a way that minimizes impacts on environmental and cultural resources to the extent practical. Alternatives must also meet requirements to ensure that each is practical, environmentally sound, and economically viable and complies with applicable standards and regulations. The following screening criteria were used to develop the proposed action and evaluate potential alternatives.

- ***Protecting Persistent Impedance Requirements.*** Tactical infrastructure such as Presumido Canyon Road and Presumido Pass Road must support CBP mission needs by continuing to hinder or delay individuals on foot or in vehicles who are illegally crossing the U.S./Mexico international border in Arizona. Continuous accessibility of Presumido Canyon Road and Presumido Pass Road is imperative to the safe and rapid response capabilities of CBP agents in the remote Pozo Verde Mountains area along the U.S./Mexico international border.
- ***Minimize Potential Negative Environmental Impacts.*** Proposed improvement and reconstruction activities on Presumido Canyon Road and Presumido Pass Road would be evaluated for their potential environmental impacts, and BMPs would be planned or implemented in proportion to the risk in consultation with the appropriate regulatory and resource agencies. Particular management focus would be devoted to protecting the following sensitive environmental resources:
 - ***Threatened or Endangered Species and Critical Habitat.*** The improvement and reconstruction activities on Presumido Canyon Road and Presumido Pass Road would be conducted in a way that has minimal impacts on threatened or endangered species and their critical habitat. BMPs would be implemented so that a determination of No Effect, or a determination of May Affect, but Not Likely to Adversely Affect, would be achieved. CBP has received concurrence from the USFWS that the proposed improvement and reconstruction activities would not adversely affect threatened or endangered species and critical habitat.

- *Surface Waters, and Floodplains.* The improvement and reconstruction activities on Presumido Canyon Road and Presumido Pass Road would be conducted in a way that has minimal impacts on surface waters of the United States, and floodplain resources to the maximum extent practical. CBP will consult with the USACE and Pima County Flood Control District, as needed, to minimize floodplain impacts and identify potential avoidance, minimization, and conservation measures.
- *Cultural and Historic Resources.* The improvement and reconstruction activities on Presumido Canyon Road and Presumido Pass Road would be conducted in a way that has minimal impacts on cultural and historic resources to the maximum extent practical. CBP has received concurrence from the SHPO that the proposed action would not adversely affect historic properties (i.e., properties listed in or eligible for listing in the NRHP) with the implementation of avoidance and monitoring measures.

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

2.3 ALTERNATIVE 1: PROPOSED ACTION

The proposed action consists of improvement and reconstruction activities that would occur on Presumido Canyon Road and Presumido Pass Road. These roads are currently difficult to traverse due to the ruggedness of the terrain, roadway width and slope, and the location of sections of the roadways within large washes that are prone to periodic flooding. Several segments of these roads are classified as FC-4 two track roads. The proposed action would convert FC-4 segments to meet the classification standards of an FC-2 all-weather road (unpaved dirt or gravel), or FC-3 graded earth road (native material), depending on the segment's needs and physiological constraints. Specific definitions of the CBP's road classifications are provided in **Appendix A. Figures 1 and 2** show where each of the improvement and reconstruction activities would occur on the access roads.

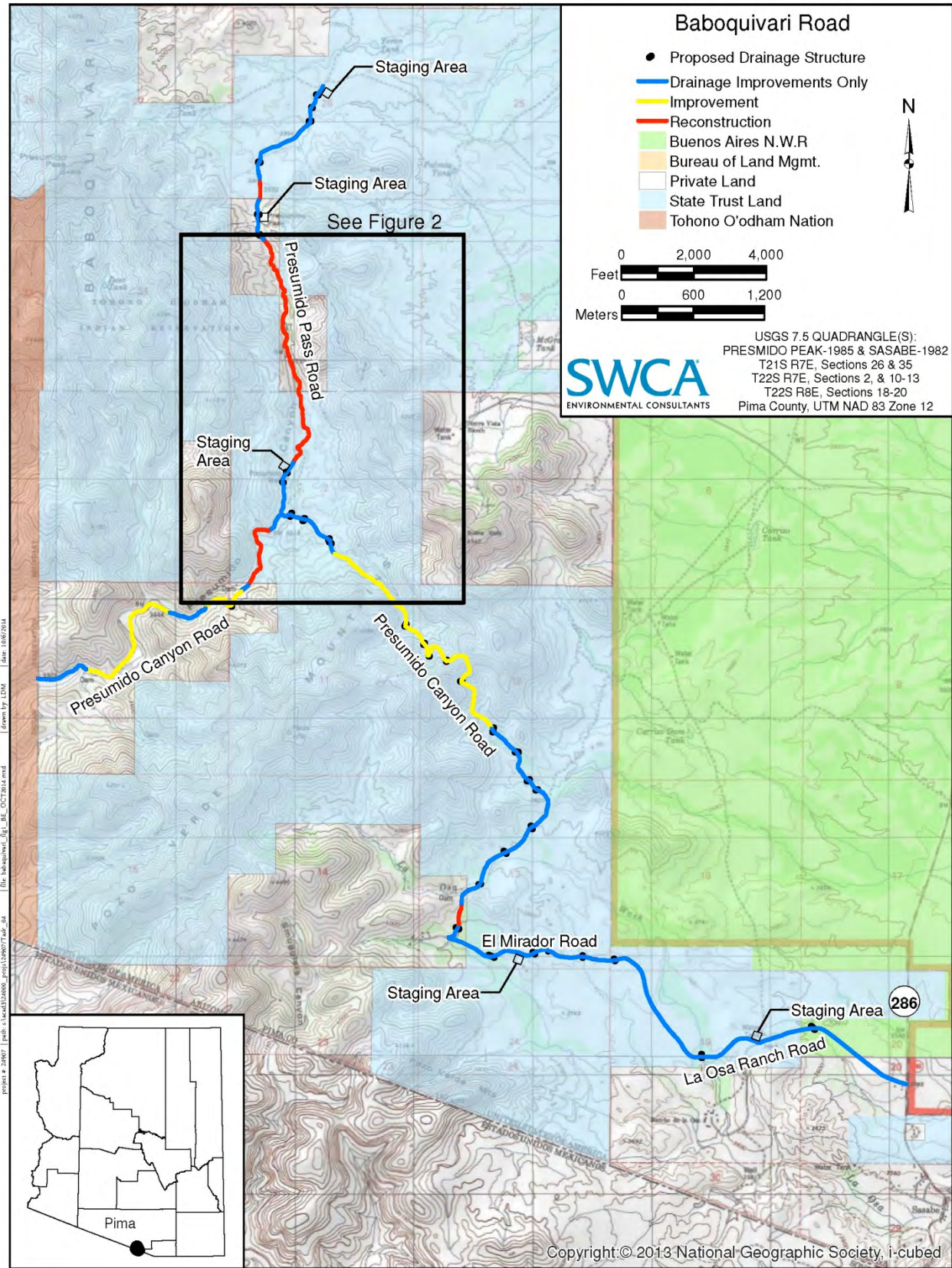


Figure 1. Project area

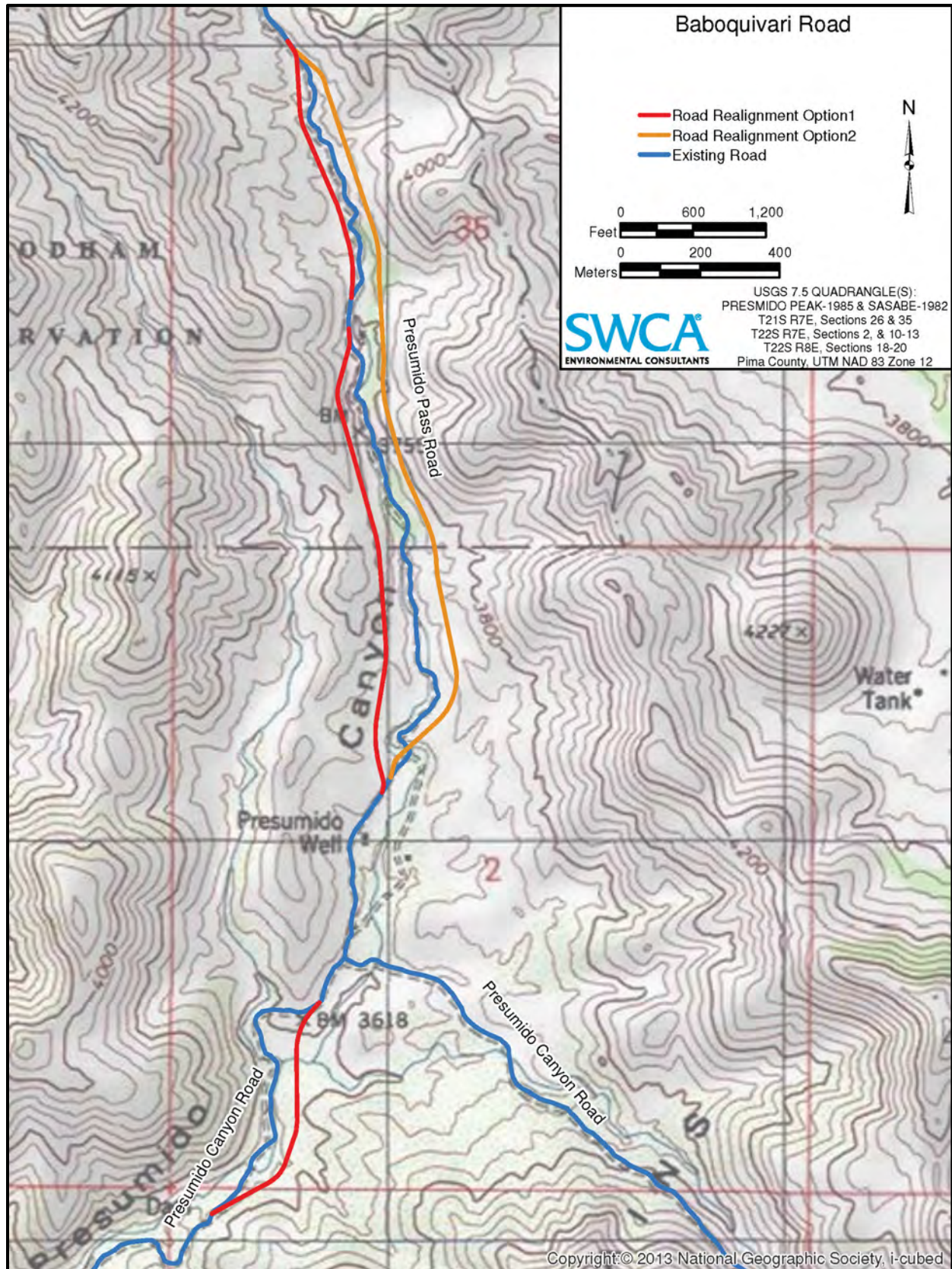


Figure 2. Presumido Canyon and Presumido Pass Roads reconstruction alignment options

Improvement Activities: Improvements to approximately 6.5 miles of Presumido Canyon Road and Presumido Pass Road would consist only of the installation of low water crossing structures at 27 wash crossings. The installation of low-flow drainage structures could disturb areas outside of the current roadway alignment. Approximately 2.5 miles of roadway (Presumido Pass and Presumido Canyon Roads) would require more substantial improvement activities, including grading to smooth the drive surface and possible widening of the roadways along the existing roadway alignment. Widening width would vary between 12 and 20 feet, depending on the location. In addition, drainage structures would be added or improved at multiple locations along this segment. The segments of roads requiring widening are currently classified as either FC-2 or FC-3 roads and would remain at these classifications after widening. Approximately 1.6 acres of land would be permanently disturbed by improvement activities.

Reconstruction Activities: Four roadway segments totaling approximately 1.9 miles would require the reconstruction of the road outside its current alignment (see **Figure 2**). With the segments combined, approximately 1.7 miles of new, less sinuous, roadway would be constructed. Reconstruction would occur where the existing road is classified as FC-4 and located in a large wash or in areas where future maintenance activities may affect sensitive resources. The reconstructed roadway would be realigned on higher ground outside and adjacent to washes. It would generally parallel the current roadway alignment. Disturbance from new road construction would generally consist of a 20-foot-wide road with 2-foot-wide shoulders, plus approximately 10 feet of temporary workspace on either side of the road. This would result in a construction right-of-way that is nominally about 45–50 feet wide, increasing or decreasing as required due to physiographic constraints. In addition, drainage structures will be added or improved at multiple locations along these segments. Roadway realignments would be located in areas that minimize impacts to biological and cultural resources. Approximately 5.5 acres of land would be permanently disturbed by reconstruction activities.

Approximately 1.5 miles of the proposed new roadway would be constructed in order to realign the road above and outside of washes. The 0.3-mile-long realignment of the FC-4 roadway segment of Presumido Canyon Road would place the new roadway to the south of the wash that the road currently traverses. The 1.2-mile-long realignment of the FC-4 roadway segment on Presumido Pass Road, by far the longest of the proposed realignments, has two realignment options. Option 1 would realign the road on the west side of the wash that the segment currently traverses. Realignment Option 2 would realign the road on the east side of the wash. These FC-4 segments are currently unmaintained two-track roads entirely within washes and do not meet CBP Tactical Infrastructure Standards. The realignments would be constructed to FC-2 or FC-3 classification standards, depending on the segment's needs and physiologic constraints. **Figure 2** identifies the segments of the existing roads that are proposed for reconstruction and the two options being considered for the realignment of the segment on Presumido Pass Road. The remaining two realignments are each about 0.1-mile long and would involve slight westward shifts in alignment.

Ancillary Activities: Construction equipment staging areas would be required to facilitate construction of the project. Five preliminary staging areas are proposed that would be located adjacent to the existing roadway alignment (see **Figure 1**). The staging areas would be located in areas that avoid or minimize impacts to biological and cultural resources. The proposed staging areas would vary in size between 1 acre and 2 acres. Further, the CBP intends to replace all gates

with cattle guards within the project area. At the end of the project, CBP will conduct restoration activities at any areas which are temporarily disturbed (e.g., staging areas), including the replacement of native vegetation.

2.4 ALTERNATIVE 2: NO ACTION ALTERNATIVE (STATUS QUO OPTION)

The no action alternative would maintain the status quo. Under the no action alternative, CBP would continue to perform the required maintenance and repairs of Presumido Canyon Road and Presumido Pass Road as part of the TIMR project. The installation of low-flow drainage crossings is not a TIMR activity and would not be conducted as maintenance and repair. In addition, no widening of roadway segments or reconstructing of roadway segments would occur. These segments would not meet CBP Tactical Infrastructure Standards; would continue to be routinely damaged by storm events, resulting in emergency maintenance; and would continue to be impassable during storm events where these segment alignments are within washes.

The no action alternative does not meet minimum CBP mission needs. The existing drainage crossings that are prone to flooding and flood-related damage and the presence of roadway segments that do not meet CBP tactical infrastructure standards or that are within washes subject to frequent flooding would continue to make it more difficult for CBP to carry out its mission to protect the southern U.S./Mexico border. In addition, it is possible that not all BMPs would be implemented during emergency maintenance scenarios after storm events. The no action alternative would also perpetuate continued unacceptable risk to agent safety. The no action alternative serves as a baseline against which an evaluation of the impacts of the Proposed Action can be made.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DETAILED ANALYSIS

2.5.1 Upgrade All Roadway Segments to meet FC-2 All-Weather Road Classification

Under this alternative, all existing unmaintained FC-4 two-track road segments and FC-3 roadway segments would be upgraded to the FC-2 (all-weather roads) classification. Adopting this alternative would be cost-prohibitive and would cause substantial environmental impacts. This alternative would greatly enhance CBP's capability to improve border security in this region, but for the aforementioned reasons, this alternative was eliminated from further detailed study in the EA.

2.5.2 No Maintenance or Repair of Presumido Canyon Road and Presumido Pass Road

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

2.6 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

CBP has identified its Preferred Alternative as Alternative 1. Implementation of Alternative 1 would best meet CBP's purpose and need as described in **Section 1.2**.

3. AFFECTED ENVIRONMENT AND CONSEQUENCES

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

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

- *Short term or long term.* These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term effects are those that would occur only with respect to a particular activity or for a finite period or only during the time required for improvement and reconstruction activities. Long-term effects are those that are more likely to be persistent and chronic.
- *Direct or indirect.* A direct effect is caused by and occurs contemporaneously at or near the location of the action. An indirect effect is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct effect would occur on soils during the installation of low-flow drainage structures at wash crossings, whereas an indirect effect would occur on soils after construction and downstream because the drainage structures would decrease erosion and downstream sedimentation.
- *Negligible, minor, moderate, or major.* These relative terms are used to characterize the magnitude or intensity of an impact. Negligible effects are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate effect is readily apparent. A major effect is one that is severely adverse or exceptionally beneficial.
- *Adverse or beneficial.* An adverse effect is one having unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment. A single act might result in adverse effects on one environmental resource and beneficial effects on another resource.
- *Significance.* Significant effects are those that, in their context and due to their intensity (severity), meet the thresholds for significance set forth in CEQ regulations (40 CFR Part 1508.27).
- *Context.* The context of an effect can be localized or more widespread (e.g., regional).
- *Intensity.* The intensity of an effect is determined through consideration of several factors, including whether an alternative might have an adverse impact on the unique characteristics of an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Effects are also considered in terms of their potential for violation of Federal, state, or local environmental law; their controversial nature; the degree of uncertainty or unknown effects, or unique or unknown risks; if there are precedent-setting effects; and their cumulative effects (see **Section 4**).

3.1 PRELIMINARY IMPACT SCOPING

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

3.1.1 Climate Change

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

Total estimated GHG emissions from improvement and reconstruction of the access roads would not exceed the reporting threshold, and the project would not be expected to contribute to an increase of traffic on the access roads. Therefore, it would not be expected to affect climate. Emissions and their impact on air quality are discussed in **Section 3.5**.

3.1.2 Floodplains

According to the Federal Emergency Management Agency Flood Insurance Rate Maps 04019C4600L and 04019C4700L, the project area is not located in or adjacent to a 100-year floodplain. Therefore, no impacts to floodplains would occur.

3.1.3 Groundwater

Improvement and reconstruction of the access roads would not be expected to have a measurable impact on groundwater quantity and quality. Whereas some activities such as vegetation removal would potentially have a negligible negative impact on groundwater recharge, other activities such as improved stormwater flow management would potentially have a negligible beneficial impact on groundwater recharge. Water required for the activities would be trucked in from approved, offsite sources. BMPs, such as spill prevention measures, erosion and sediment controls, and proper equipment maintenance, would be implemented during construction to minimize the risk of contaminating groundwater.

3.1.4 Hazardous Materials and Waste Management

Improvement and reconstruction of the access roads would require the use of petroleum products and fuels for the construction equipment. The products are stored at various CBP or contractor

maintenance shops and managed in accordance with each group's respective hazardous materials standard operating procedures. The hazardous and petroleum wastes are recycled or disposed of offsite in accordance with Federal, state, and local regulations. All regulatory requirements for handling and storage of fuels, oils, and other hazardous materials (such as the development of spill prevention plans) would be implemented. Wastes generated by the proposed action would be properly disposed of offsite. No other hazardous materials would be used at the project site, and no known existing hazardous materials concerns are present.

3.1.5 Human Health and Safety

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

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

Additionally, because of the remote location of the project, the likelihood of this project impacting the health and safety of humans other than CBP agents and contractors or CBP personnel performing the road improvements is extremely low. However, beneficial impacts on agent safety would occur from road improvement under the proposed action.

3.1.6 Land Use

No change in land use would occur, and no effects on land use plans or policies would be expected from the improvement and reconstruction of Presumido Canyon Road and Presumido Pass Road. The existing land uses of livestock grazing and CBP operations would continue to occur within and adjacent to the roads. The Proposed Action would be compatible with the existing land use categories and therefore would not result in any changes to land use plans.

3.1.7 Noise

The nearest sensitive noise receptor to the proposed action occurs at the eastern terminus of Presumido Canyon Road where it intersects with State Route (SR) 286, approximately 0.6 mile from the nearest proposed drainage improvement. Noise from improvement activities (roadway widening) and reconstruction activities (roadway realignment) would occur in remote locations far from sensitive noise receptors. Due to the absence of sensitive noise receptors in proximity to improvement and reconstruction activities, noise impacts would not be expected to occur as a result of the proposed action.

3.1.8 Prime and Unique Farmland

No prime or unique farmland, as defined by the Farmland Protection Policy Act of 1981, is located within or adjacent to the project area.

3.1.9 Socioeconomic Resources, Environmental Justice, and Protection of Children

Due to the remoteness of the project area, the proposed action would not have an impact on demographics or economic activity. No residential or commercial displacements would occur, and the project would not affect employment or household income in the general area. When completed, the proposed project would not have any new effect on socioeconomic resources. Because the proposed project would be located in a sparsely populated area with no displacement of existing developments, no disproportionate effects on populations protected under EO 12898 would occur. Similarly, the proposed project would not pose a disproportionate environmental health risk or safety risk to children, as protected by EO 13045.

3.1.10 Utilities and Infrastructure

The proposed improvement and reconstruction of tactical infrastructure along the U.S./Mexico international border in Arizona would occur in remote areas far from utilities. CBP and its contractors would not use existing utilities and infrastructure to complete project activities. Due to the remote location of the project corridor, impacts on utilities and infrastructure would not be expected. Therefore, analysis of this resource area has been omitted from further detailed analysis.

3.2 AESTHETICS AND VISUAL RESOURCES

3.2.1 Definition of the Resource

Aesthetics are essentially based on an individual's judgment as to whether or not an object or setting is pleasing, and/or would influence the quality of life. Visual resources are the various elements of the landscape that contribute to the visual character of a place. These elements can be either natural or human-made and include objects, vistas, and viewsheds.

3.2.2 Affected Environment

A major visual appeal to southern Arizona lies in its vast areas of naturally occurring landscape. The project area and surrounding lands is a predominantly undisturbed mountainous desert landscape with steep craggy cliffs and deep-set washes that are characteristic of the Pozo Verde Mountains. Foreground views from the existing roadway are dominated by vegetation that is densest in wash bottoms and sparser on the sides of the steep mountainsides. Saguaro cacti populations are densest on south facing slopes uphill from the washes. Midground and background views are dominated by the continuation of the Pozo Verde Mountains. While the region provides many vistas and supports pristine areas, illegal traffic and consequent CBP enforcement activities have degraded some areas. In particular, trash sites from illegal traffic are common within the wash bottoms. Disturbed areas that are visible from the project area include Presumido Pass Road, Presumido Canyon Road, and segments of the international border fence.

3.2.3 Environmental Consequences

Implementation of the proposed action would impact the visual character of the area by reconstructing two segments of roadway outside of the wash bottoms and uphill from the current alignment. Approximately 1.9 miles of newly reconstructed road segments would be visible from various points along Presumido Canyon Road and Presumido Pass Road. The reconstructed road segments would be void of vegetation, include cut and fill areas for grading, and would generally appear as a white linear feature low on the hillsides. These changes would be consistent with the existing visible segments of Presumido Canyon Road and Presumido Pass Road that are primarily constructed uphill from the wash bottoms. Views of the reconstructed road segments would be visible primarily in foreground and midground views from various points along the existing roads. Although the reconstructed road segments would be a new deviation from the existing natural landscape, the segments would not be visible to sensitive receivers such as residential areas or parks. Due to the proximity of the international border and dangerous illegal activities that occur in this area, recreation in the area is not common. Because these long-term adverse impacts would not affect sensitive receivers, the impacts to aesthetics and visual resources would be considered moderate.

3.3 LAND RESOURCES

3.3.1 Definition of the Resource

Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses.

3.3.2 Affected Environment

Topography. The project area is located in the Pozo Verde Mountains, which form the western edge of Altar Valley at the valley's south end, and on the alluvial piedmont east of the mountains. The elevation ranges from 3,565 feet above mean sea level on the east end of the project area to 4,240 feet above mean sea level at the pass where Presumido Canyon Road crosses over the Pozo Verde Mountains and into Presumido Canyon. Terrain along the project area includes low, rolling hills and drainages on the east end to steep, rocky slopes over the Pozo Verde Mountains and in Presumido Canyon. Presumido Canyon is located within the Pozo Verde Mountains and contains steep slopes with an ephemeral wash beginning just south of Presumido Pass on the northern terminus of Presumido Canyon; the wash flows southward to form Presumido Canyon Wash approximately 1.5 miles downstream.

Soils. The eastern portion (the alluvial piedmont east of the Pozo Verde Mountains) of the project area contains soils from the following series: the Bernardino-White House complex, Chiricahua-Lampshire complex, Lampshire-Romero-Rock outcrop complex, and White House-Caralampi complex. The Bernardino series consists of very deep, well-drained soils that formed in fan alluvium from igneous and sedimentary rock on fan terraces with slopes of 0 to 30 percent. The White House series consists of very deep, well-drained soils that formed in fan alluvium from mixed sources on fan terraces with slopes of 0 to 60 percent. The Chiricahua series consists of shallow,

well-drained soils that formed in alluvium from granitic and metamorphic rock on pediments, hills, and mountains with slopes of 1 to 75 percent. The Lampshire series consists of very shallow and shallow, well-drained soils that formed in alluvium and colluvium from igneous rocks on hills and mountains with slopes of 0 to 90 percent. The Romero series consists of very shallow or shallow, well-drained soils that formed in slope alluvium from schist or granitic rock on pediments, hills, and mountains with slopes of 5 to 70 percent. The Caralampi series consists of very deep, well-drained soils formed in fan and slope alluvium from granitic and volcanic rock on fan terraces and hills with slopes of 1 to 50 percent.

The western portion of the project area (within the Pozo Verde Mountains) contains soils from three series: the Cellar-Lampshire-Rock outcrop complex, Chiricahua-Lampshire complex, and Lampshire-Romero-Rock outcrop complex. The Cellar series consists of shallow and very shallow, somewhat excessively drained soils formed in slope alluvium from granitic rock on hills and mountains with slopes of 2 to 70 percent.

3.3.3 Environmental Consequences

3.3.3.1 Alternative 1: Proposed Action

Implementation of the proposed action would be expected to result in both long-term, minor, beneficial impacts and short-term, minor, adverse impacts on soils. The long-term, minor, beneficial impacts on soils would occur primarily from the installation of low-flow drainage structures at washes, and the reconstruction of roadway segments outside washes. These activities, once completed, would stabilize wash crossings and remove traffic outside washes, which would reduce erosion and downstream sedimentation of washes.

Short-term, minor, adverse impacts to soils would be expected during construction. Permanent ground-disturbing activities such as the installation of drainage structures, roadway widening, and reconstruction of roadway segments would disturb approximately 7.1 acres of land. Temporary ground-disturbance activities from construction staging areas and temporary workspace areas adjacent to the reconstruction and widening segments would impact approximately 14.1 acres of land. All ground-disturbing activities would temporarily increase the potential for erosion and downstream sedimentation. Once improvement and reconstruction activities have subsided and soils have once again compacted under vehicle weight, soil erosion and sedimentation into nearby washes would be much less likely to occur. A Storm Water Pollution Prevention Plan (SWPPP) would be developed and implemented both during and following site development to contain soil and runoff onsite, and would reduce potential for adverse effects associated with erosion and sedimentation and transport of sediments in runoff. The SWPPP would identify the appropriate BMPs to use during construction such as installing silt fencing and sediment traps, applying water to disturbed soil, and revegetating disturbed areas as soon as possible after disturbance, as appropriate. SWPPP measures would be included in site plans to minimize long-term erosion and sediment production at each site.

3.3.3.2 Alternative 2: No Action Alternative

Under the no action alternative, maintenance activities on Presumido Canyon Road and Presumido Pass Road would continue to occur, but improvement and reconstruction activities would not occur. There is a potential for short- and long-term, minor, direct and indirect adverse impacts on soils as a result of soil disturbance from grading and other ground-disturbing

maintenance activities. Without the installation of drainage structures at wash crossings and the realignment of roadway segments outside washes, erosion and sedimentation of downstream washes would be expected. Therefore, it is probable that greater impacts on land resources would occur under the no action alternative than the proposed action, as the potential for erosion and sedimentation would be greater.

3.4 BIOLOGICAL RESOURCES

3.4.1 Definition of the Resource

This section identifies the vegetation and wildlife resources that are found within and adjacent to the project area. Vegetation resources include all plants that are found within the region of analysis. Wildlife resources include native or naturalized terrestrial animals and the habitats in which they exist. Species addressed in this section include those that are listed as threatened or endangered by the Federal government, other sensitive wildlife species, and migratory birds. No aquatic vegetation or wildlife species are known to exist within the project area.

3.4.2 Affected Environment

Vegetation: The majority of the project area is located in the Semidesert Grassland biotic community with Madrean Evergreen Woodland biotic community, which occurs in the upper elevations of the Pozo Verde Mountains. Vegetation was not visibly different where Presumido Canyon Road crosses over the Pozo Verde Mountains. Dominant vegetation in the upland portions of the project area includes velvet mesquite (*Prosopis velutina*), catclaw acacia (*Acacia greggii*), oak (*Quercus* sp.), hopbush (*Dodonaea viscosa*), broom snakeweed (*Gutierrezia sarothrae*), prickly pear cactus (*Opuntia* spp.), snakewood (*Condalia* sp.), spiny hackberry (*Celtis ehrenbergiana*), cholla (*Cylindropuntia* spp.), barrel cactus (*Ferocactus* spp.), saguaro (*Carnegiea gigantea*), nipple cactus (*Mammillaria* spp.), Lehmann's lovegrass (*Eragrostis lehmanniana*), Arizona cottontop (*Digitaria californica*), grama grasses (*Bouteloua* spp.), threeawn grasses (*Aristida* spp.), mimosa (*Mimosa* sp.), ratany (*Krameria* sp.), ocotillo (*Fouquieria splendens*), rainbow cactus (*Echinocereus pectinatus*), common sotol (*Dasyllirion wheeleri*), Palmer's century plant (*Agave palmeri*), banana yucca (*Yucca baccata*).

Within the Semidesert Grassland and Madrean Evergreen Woodland biotic communities, two types of vegetation classifications exist: upland and xeroriparian. The upland vegetation includes those areas in between washes and along ridges and slopes, whereas the xeroriparian vegetation is associated with an ephemeral water supply along the washes in the project area. Although both areas contain similar compositions of plant species, the xeroriparian vegetation usually contains plant species at higher densities than in the upland areas. Dominant vegetation along the washes includes velvet mesquite, catclaw acacia, mimosa, and oak. Aquatic vegetation is not present in the project area.

Of the species of vegetation observed during the biological resource surveys, 15 species are protected under the Arizona Native Plant Law, as identified in **Table 1**.

Table 1. Plants Observed Within the Project Area that Are Protected Under the Arizona Plant Law

Species	Category of Protection
Banana yucca (<i>Yucca baccata</i>)	Salvage Restricted and Harvest Restricted
Beargrass (<i>Nolina microcarpa</i>)	Salvage Restricted and Harvest Restricted
Staghorn cholla (<i>Cylindropuntia versicolor</i>)	Salvage Restricted
Candy barrel cactus (<i>Ferocactus wislizeni</i>)	Salvage Restricted
Common sotol (<i>Dasyllirion wheeleri</i>)	Salvage Restricted
Emory's barrel cactus (<i>Ferocactus emoryi</i>)	Salvage Restricted
Graham's nipple cactus (<i>Mammillaria grahamii</i>)	Salvage Restricted
Macdougal's nipple cactus (<i>Mammillaria heyderi</i> var. <i>macdougalii</i>)	Salvage Restricted
Ocotillo (<i>Fouquieria splendens</i>)	Salvage Restricted
Palmer's century plant (<i>Agave palmeri</i>)	Salvage Restricted
Prickly pear (<i>Opuntia</i> spp.)	Salvage Restricted
Rainbow cactus (<i>Echinocereus pectinatus</i>)	Salvage Restricted
Saguaro (<i>Carnegiea gigantea</i>)	Salvage Restricted
Spinystar (<i>Escobaria vivipara</i>)	Salvage Restricted
Velvet mesquite (<i>Prosopis velutina</i>)	Salvage Assessed and Harvest Restricted

Salvage Assessed—These plants require a permit for removal.

Salvage Restricted—These plants require a permit for removal and/or destruction; collection is allowed only with permit.

Harvest Restricted—Permits are required to remove plant by-products (fuel wood).

The biological resource surveys also identified two invasive plant species within the project area: Lehmann lovegrass (*Eragrostis lehmanniana*) and prickly Russian thistle (*Salsola tragus*).

General Wildlife: Identification of wildlife within the project area was conducted by a combination of biological resource surveys by qualified biologists and a database search of the AZGFD Heritage Data Management System, which tracks records for federally listed species and other special status species. The federally listed species and other special status species are identified below. Species that were identified in the project area during the biological resource surveys that are not federally listed or special status species include mule deer (*Odocoileus hemionus*) and bobcat (*Lynx rufus*).

Federally Listed Species: Of the 19 species listed as threatened, endangered, or proposed threatened for Pima County by the USFWS, six species and/or critical habitat thereof are known to occur in the general project area. These species are Chiricahua leopard frog (*Lithobates chiricahuensis*), jaguar (*Panthera onca*) critical habitat, Kearney's bluestar (*Amsonia kearneyana*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*), northern Mexican gartersnake (*Thamnophis eques megalops*), and Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*). For the remaining 13 species, the project area is clearly beyond the known geographic or elevational range of these species, or it does not contain vegetation or landscape features known to support these species, or both.

According to the Arizona Heritage Geographic Information System, there are occurrence records for Chiricahua leopard frog, masked bobwhite, northern Mexican gartersnake, and Pima

pineapple cactus within 3 miles of the project area (Arizona Heritage Geographic Information System 2013). The project area is also located within designated critical habitat for jaguar and proposed critical habitat for northern Mexican gartersnake. Occurrence records for Chiricahua leopard frog are from stock tanks in Presumido Canyon from 1999 to 2002. One occurrence record for northern Mexican gartersnake from 2001 is also from Presumido Canyon, but was unable to be verified. Occurrence records for Pima pineapple cactus and masked bobwhite are likely from near the east end of the project area.

Special Status Species: Special-status species (USFWS Species of Concern, Arizona State Wildlife Species of Concern, and plants protected under the Arizona Plant Law) known to occur within 3 miles of the project area (Arizona Heritage Geographic Information System 2013) include cave myotis (*Myotis velifer*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), Underwood's bonneted bat (*Eumops underwoodi*), western red bat (*Lasiurus blossevillii*), western yellow bat (*Lasiurus xanthinus*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), giant spotted whiptail (*Aspidoscelis burti stictogrammus*), Sonoran desert tortoise (*Gopherus morafkai*), and Santa Cruz striped agave (*Agave parviflora* ssp. *parviflora*). All of the bat species may forage or roost and the cactus ferruginous pygmy-owl may forage or nest in the project area or vicinity. The giant spotted whiptail, which inhabits mountain canyons and arroyos, and Santa Cruz striped agave, which occurs in open slopes of desert grassland and oak woodland, may also occur in the project area. Sonoran desert tortoises, as well as tortoise scat, were observed in the project area during field surveys.

Migratory Bird Treaty Act: Although a survey for migratory birds was not completed for the purposes of this project, 40 bird species were observed during the biological resource surveys, 39 species of which are protected under the MBTA (16 United States Code 703–712), which provides Federal protection to migratory birds, including nest and eggs. There are likely more migratory bird species that occur in the project area that were not observed during field surveys.

3.4.3 Environmental Consequences

3.4.3.1 Alternative 1: Proposed Action

Vegetation: Reconstruction and improvement activities would be expected to permanently impact up to approximately 7.1 acres of vegetation in the Semidesert Grassland and Madrean Evergreen Woodland biotic communities by reconstructing two roadway segments outside of washes and widening three roadway segments. Approximately 14.7 acres of temporary vegetation impacts would be expected to occur from temporary workspace around the reconstruction and widening segments and from construction staging areas. Permanent ground disturbance from reconstruction and improvement activities would impact between 28 to 31 saguaros, depending on the option chosen for the reconstruction segment on Presumido Pass Road. Of the potentially impacted saguaros, approximately 11 are 8 feet tall or less and would be transplanted from the project limits to the adjacent project area; large saguaros would be avoided, where possible, to minimize impacts to saguaros. Therefore, short- and long-term, negligible to minor, direct and indirect, adverse effects on vegetation would occur from the proposed action. Staging areas and roadway realignment locations would be chosen where the fewest impacts to vegetation and other resources would occur. Vegetation surveys that were completed in October

2013 identified locations of saguaros and other vegetation that would be avoided to the furthest extent possible.

Adverse impacts on vegetation would be minimized through the use of appropriate BMPs (see **Appendix B**). Because protected native plants are present in the project area, the Notice of Intent to Clear Land form must be completed and submitted to the Arizona Department of Agriculture prior to vegetation-removal activities, in accordance with the Arizona Native Plant Law (Arizona Revised Statutes 3-904). As noted on page 2 of the Notice of Intent to Clear Land form (**Appendix C**), the amount of advance notice required for submittal of the form is dependent on the amount of land that will be cleared.

General Wildlife: Impacts to federally listed species and other special status species are identified below. In addition to these species, mule deer and bobcat were identified as occurring in the project area during biological resource surveys. The proposed project would have short-term, indirect, minor, adverse impacts on general wildlife species from the presence of humans and the operation of construction equipment in the project area. These species would be expected to avoid the construction areas while construction activities are occurring; therefore, it is unlikely that individuals would be directly impacted.

Federally Listed Species: Potential effects on the six species and/or critical habitat listed as threatened, endangered, or proposed threatened by the USFWS was analyzed in the Biological Evaluation for this project. Consultation with the USFWS regarding potential impacts to these species has taken place. On December 2, 2014, the USFWS provided the CBP with a Biological Opinion that concurred with the CBP's findings that the proposed action may affect, but would not likely adversely affect, the Chiricahua leopard frog, lesser long-nosed bat, and the northern Mexican gartersnake, as well as designated critical habitat for the jaguar and proposed critical habitat for the northern Mexican gartersnake. The USFWS Biological Opinion (December 2, 2014), and October 13, 2013, letter from the USFWS are provided in **Appendix E**.

Chiricahua Leopard Frog: Direct effects, in the form of mortality, on the Chiricahua leopard frog are not likely to occur because there are no perennial natural aquatic habitats or stock tanks and there are no recent known occurrences of the species in the project area. Indirect effects on the species could occur due to the project's potential effects on water quality in stock tanks downstream from and outside the project area (one in Presumido Canyon and another east of the Pozo Verde Mountains) from stormwater runoff or increased sedimentation. However, the effects would be considered insignificant and discountable, given the lack of perennial natural aquatic habitats or stock tanks and no recent known occurrences of this species in the project area, and with the implementation of BMPs to minimize downstream sedimentation and erosion and the conservation measure listed below. Therefore, impacts to the Chiricahua leopard frog are expected to range from none to negligible.

Jaguar: Direct and indirect effects on the jaguar would not likely occur because there have been no confirmed records of the species in the project area in more than 50 years. The project is located within the designated critical habitat for this species; however, the proposed action is not likely to adversely affect designated critical habitat for the jaguar. Therefore, impacts to the jaguar and jaguar designated critical habitat are expected to range from none to negligible.

Kearney's Bluestar: CBP performed a protocol-level survey for this species in areas of suitable habitat where disturbance is anticipated. No individuals were found during the survey; therefore no impacts to Kearney's bluestar are anticipated.

Lesser Long-nosed Bat: Direct effects on the lesser long-nosed bat would not likely occur because the construction activities would occur during the day when the species is not likely to be present or adjacent to the project area and because no roosting habitat is within or immediately adjacent to the project area. Indirect effects on the species could occur as a result of the potential loss of forage plants (i.e., saguaros and agaves) from the project limits from the proposed improvement (widening) and reconstruction (realigning) activities. However, with the limited number of saguaros and agave potentially lost, the lack of high-density stands of these forage plants within or near the project area, the prevalence of the plant species within the region, and the implementation of the conservation measures listed below, the effects on the lesser long-nosed bat would be considered insignificant and discountable. Therefore, impacts to lesser long-nosed bats are expected to range from none to negligible.

Northern Mexican Gartersnake: Direct effects on the northern Mexican gartersnake and proposed critical habitat would not likely occur because there are no verified records for this species within 3 miles of the project area and there are no perennial natural aquatic habitats or stock tanks within the project area. The only anticipated work within proposed critical habitat for this species is the installation of a drainage structure at a low water crossing on La Osa Ranch Road, direct effects to northern Mexican gartersnake proposed critical habitat from construction of the project is anticipated at only this location, and no primary constituent elements would be directly affected. Indirect effects on the species could occur due to the project's potential effects on water quality in stock tanks downstream from and outside the project area from stormwater runoff or increased sedimentation. However, the effects would be considered insignificant and discountable, given the lack of perennial natural aquatic habitats or verified records for this species within 3 miles of the project area, the implementation of BMPs to minimize downstream sedimentation and erosion, and the conservation measure identified above for the Chiricahua leopard frog. Therefore, impacts to the northern Mexican gartersnake and northern Mexican gartersnake proposed critical habitat are expected to range from none to negligible.

Pima Pineapple Cactus: CBP performed a protocol-level survey for this species in areas of suitable habitat where disturbance is anticipated. No individuals were found during the survey; therefore, no impacts to Pima pineapple cactus are anticipated.

Special Status Species: Project activities may impact individuals but are not likely to result in a trend toward federal listing or loss of viability.

Migratory Bird Treaty Act: Portions of the project area contain suitable habitat for migratory birds, specifically in large drainages on either side of the Pozo Verde Mountains and in Presumido Canyon, where multi-layered vegetation structure is present and large trees or large, multi-armed saguaros with cavities that could provide nesting opportunities are present. In order to relocate or alter any MBTA-protected nests, it will be necessary to obtain a permit from the USFWS to maintain compliance with the MBTA. However, Section 1 of the Interim Empty Nest Policy of the USFWS, Region 2, states that if the nest is completely inactive at the time of destruction or movement, a permit is not required in order to comply with the MBTA. If an active nest is observed before or during construction, measures would be taken to protect the nest from destruction and to avoid a violation of the MBTA.

3.4.3.2 Alternative 2: No Action Alternative

Vegetation: Under the no action alternative, CBP would continue current maintenance activities on Presumido Canyon Road and Presumido Pass Road. Because these maintenance activities would occur entirely within the previously disturbed roadbed, no impacts to vegetation would be anticipated as a result of the no action alternative.

General Wildlife: Impacts to federally listed species and other species of concern are identified below. In addition to these species, mule deer and bobcat were identified during biological resource surveys. Under the no action alternative, CBP would continue to use the access roads to carry out patrols and would continue to maintain and repair the access roads, as needed. Because these activities are already occurring within the project area, the no action alternative would not affect general wildlife species above existing conditions.

Federally Listed Species: No ground-disturbing activities of previously undisturbed ground or removal of vegetation would occur under the no action alternative. Maintenance activities would continue within the existing roadway and CBP would continue to use the access roads to carry out its mission. Because these activities are already occurring within the project area, the no action alternative would not affect federally listed species above existing conditions.

Special Status Species: Under the no action alternative, CBP would continue current maintenance activities on Presumido Canyon Road and Presumido Pass Road. Because these maintenance activities would occur entirely within the previously disturbed roadbed, no impacts to special status plant species would be anticipated as a result of the no action alternative. The no action alternative's impacts to special status wildlife species would be the same as those identified under the no action alternative's impacts to federally listed species above.

Migratory Bird Treaty Act: The no action alternative would not impact migratory birds because removal of vegetation and potential nests would not occur.

3.5 SURFACE WATERS AND WATERS OF THE UNITED STATES

3.5.1 Definition of the Resource

Surface water resources generally consist of wetlands, lakes, rivers, and streams. All of these surface water components contribute to the economic, ecological, recreational, and human health of a community. Waters of the United States are defined within the CWA, and jurisdiction is addressed by the USEPA and the USACE. These agencies assert jurisdiction over traditional navigable waters and their relatively permanent tributaries, along with the wetlands that are adjacent to these waters (USEPA 2010a).

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

3.5.2 Affected Environment

3.5.2.1 Surface Waters

Review of aerial photography and field reconnaissance indicates that approximately 38 ephemeral washes that currently cross and/or traverse Presumido Canyon Road and Presumido Pass Road are potentially jurisdictional Waters of the United States. No wetlands, lakes, rivers, or perennial streams exist within the project area. Two named washes are crossed by the project roads: Presumido Canyon Wash and La Osa Wash. Presumido Canyon Wash drains the west side of the Pozo Verde Mountains and the east side of the southern end of the Baboquivari Mountains. Presumido Canyon Road and Presumido Pass Road both cross Presumido Canyon Wash in multiple places and occupy the wash bottom for significant stretches. La Osa Wash drains the east side of the Pozo Verde Mountains. Presumido Canyon Road crosses La Osa Wash in two places where drainage improvements are proposed. Both Presumido Canyon Wash and La Osa Wash flow south into Mexico, rather than north into the Altar Wash drainage basin. All of the ephemeral washes are subject to flood events, most frequently during the seasonal monsoon. During flood events, crossing the washes or traversing the segments within the washes is not possible. After the flooding subsides, damage to the crossings and roadway segments within the washes frequently requires emergency repairs, such as fill material for rutted or washed out sections or the removal of debris, to make the crossings and roadway segment accessible.

3.5.3 Environmental Consequences

3.5.3.1 Alternative 1: Proposed Action

Short-term, negligible to moderate, direct, adverse and beneficial impacts would occur to surface waters and Waters of the United States from the improvement and reconstruction of the access roads, which could cause the deposition of fill materials or increased sedimentation into the washes or drainage features during construction. This impact would occur where the roads cross washes and require the installation of low-water drainage crossing structures that help maintain the integrity of the roadways during storm events. However, installation of the drainage structures would be conducted in a manner that has minimal impacts on waters to the maximum extent practical. Erosion-control BMPs would be adopted to maintain runoff onsite and would minimize the potential for adverse effects on downstream water quality. Realignment of the segments of the access roads that currently traverse the washes to outside the washes would have a long-term, beneficial impact to waters by removing the roadway segments and associated traffic from the washes. These segments would also benefit from not requiring regular maintenance activities to improve the roadway following storm events.

Pertinent Federal, state, and local permits would be obtained for any work that would occur in jurisdictional drainages within the project area. The estimated acres of Waters of the United States impacted by the proposed action is currently unknown, but CBP is consulting with the USACE Los Angeles District to minimize impacts to Waters of the United States and identify potential avoidance, minimization, and conservation measures. Improvement and reconstruction of the existing roads would be in accordance with proven design standards for roadway drainages. All of the standards CBP would adopt are developed based on comprehensive engineering analysis, proven BMPs adopted by other Federal agencies, and mitigation measures derived from extensive consultation with both regulatory and resource agencies. The project is anticipated to be authorized under a Nationwide Permit 14 for linear transportation projects.

3.5.3.2 Alternative 2: No Action Alternative

Under the no action alternative, there is a potential for short- and long-term, minor to major, direct and indirect, adverse impacts on surface waters. The no action alternative would result in greater impacts on surface waters than the proposed action because drainage structures would not be constructed and segments of roadways currently in washes would not be relocated outside washes. Therefore, downstream sedimentation at unimproved wash crossings and impacts from vehicles traveling within washes would continue. Blocked drainages would increase flood risk, and roads damaged at wash crossings during flood events would require more frequent repair. In addition, all BMPs might not be implemented during emergency improvement activities, which could result in adverse impacts on surface waters.

3.6 AIR QUALITY

3.6.1 Definition of the Resource

Since 1970, the Federal CAA and subsequent amendments have provided the authority and framework for USEPA regulation of emission sources and the establishment of requirements for the monitoring, control, and documentation of activities that will affect ambient concentrations of certain pollutants that may endanger public health or welfare. Under the CAA, each state or delegated permitting authority has the responsibility to achieve and maintain air quality that meets the national ambient air quality standards (NAAQS). USEPA regulates activities affecting air quality on Federal lands and most Indian lands. Federal lands are not subject to Arizona's state implementation plan. In addition to the Federal CAA, air quality is also regulated by the Arizona Department of Environmental Quality (ADEQ) for certain areas of the state, and by the Pima County Department of Environmental Quality within Pima County. The Pima County Department of Environmental Quality has statutory authority for air quality regulations pursuant to Arizona Revised Statute 49-402 (ARS 49-112).

The USEPA has promulgated primary and secondary NAAQS for six criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), two size categories of particulate matter (PM₁₀ and PM_{2.5}), ozone (O₃), sulfur dioxide (SO₂), and lead (Pb). The primary standards are concentration levels of pollutants in ambient air, averaged over a specific time interval, designed to protect public health with an adequate margin of safety. The secondary standards are concentration levels judged necessary to protect public welfare and other resources from known or anticipated adverse effects of air pollution. Although states may promulgate more stringent ambient standards, the State of Arizona and Pima County have adopted standards identical to the Federal levels (see Arizona Administrative Code Title 18, Chapter 2, Article 2). **Table 2** presents the NAAQS for five of the six "criteria" pollutants, including both primary standards (pertaining to human health) and secondary standards (pertaining to human welfare, such as visibility, socioeconomics, and effects on flora and fauna). Lead is not measured, as it generally has not posed a problem since the removal of lead from gasoline.

Table 2. National Ambient Air Quality Standards

Pollutant	Averaging Period	Primary ($\mu\text{g}/\text{m}^3$)	Secondary ($\mu\text{g}/\text{m}^3$)
NO ₂	Annual	100 (0.05 ppm)	100 (0.05 ppm)
SO ₂	3-hour	–	1,300
	24-hour	365 (0.14 ppm)	–
	Annual	80 (0.03 ppm)	–
CO	1-hour	40 (35 ppm)	–
	8-hour	10 (9 ppm)	–
O ₃	1-hour	240 (0.12 ppm)	240 (0.12 ppm)
	8-hour	160 (0.08 ppm)	160 (0.08 ppm)
PM _{2.5}	24-hour	65	65
	Annual	15	15
PM ₁₀	24-hour	150	150
	annual	50	50

Source: Arizona Administrative Register Vol. 11, Issue 36, September 2, 2005 (USEPA 2010d).

Notes:

$\mu\text{g}/\text{m}^3$ – micrograms per cubic meter.

ppm – parts per million.

3.6.2 Affected Environment

The Pima County Department of Environmental Quality oversees the implementation of the Federal CAA in Pima County, Arizona and the project area is within the Pima Intrastate Air Quality Control Region (40 CFR 81.269). The air quality in some areas of the Pima Intrastate Air Quality Control Region has been characterized by the USEPA as a Federal moderate nonattainment area for PM₁₀ (USEPA 2010e); however, these nonattainment areas are located far from the project area. The project area is within an unclassified/attainment area for all criteria pollutants.

3.6.3 Environmental Consequences

3.5.3.1 Alternative 1: Proposed Action

All activities under the proposed action would have temporary, minor impacts to air quality by emitting criteria pollutants from combustion engines on vehicles and equipment and particulate matter emissions as fugitive dust from ground-disturbing activities. Emissions of all criteria pollutants would result from improvement and reconstruction activities, including combustion of fuels from on-road haul trucks transporting materials and employee commuter emissions. Fugitive dust emissions would be greatest during initial site preparation activities and would vary from day to day, depending on the type of activity and prevailing weather conditions. Because the proposed project is not designed to increase traffic capacity of the existing roads, post-construction emissions from vehicles would not increase over current levels. The proposed construction activities would not be expected to exceed Federal de minimis thresholds for NAAQS and would not require a conformity determination. These minor impacts would be

temporary and mitigated by implementing BMPs and standard dust control measures as required by the following Pima County Codes:

- Pima County Code 17.16.050; Visibility limiting standard. Restricts visible fugitive dust emissions to leave property boundary lines without taking reasonable dust control measures commensurate with the size and scope of the emission source. Dust emissions shall not reach 20 percent opacity from nonpoint sources when wind speeds are less than 25 miles per hour.
- Pima County Code 17.16.060; Fugitive dust producing activities. Restricts fugitive dust emissions from land stripping, earthmoving, blasting, trenching, road construction, and other operations and activities. Areas where these operations or activities occur must employ adequate dust suppressant measures until the area becomes permanently stabilized by paving, landscaping, or otherwise. No operations or activities shall leave land in such a state that fugitive dust emissions would violate visibility standards identified in Pima County Code 17.16.050.
- Pima County Code 17.16.080; Vacant lots and open spaces. Restricts fugitive dust emissions from open areas, including driveways, parking areas, vacant lots, dry washes, and riverbeds. Good modern practices for earthmoving/excavating activities would be implemented. These include using approved dust suppressants or adhesive soil stabilizers, paving, covering, landscaping, continuous wetting, detouring maintenance and repair areas, barring access to maintenance and repair areas, or other acceptable means of reducing significant amounts of airborne dust.
- Pima County Code 17.16.090; Roads and streets. Restricts fugitive dust emissions from roadways and alleys, including the transportation of materials over those roadways or alleys. Dust and other particulates shall be kept to a minimum by employing the following techniques: temporary paving, dust suppressants, wetting down of roadways, detouring through-traffic, or by other reasonable means.
- Pima County Code 17.16.100; Particulate materials. Restricts fugitive dust emissions from nonpoint sources associated with operations such as material crushing, screening, handling, transporting, or conveying. No crushing, screening, handling, transporting or conveying of materials or other operations likely to result in significant amounts of airborne dust would occur without taking reasonable precautions (such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to cover maintenance and repair areas) to prevent excessive amounts of particulate matter from becoming airborne.
- Arizona Administrative Code R18-2-607; Storage Piles. Restricts fugitive dust emissions from material stacking, piling, or similar storage methods. Organic or inorganic dust producing material would not be stacked, piled, or otherwise stored without taking reasonable precautions to reduce excessive amounts of particulate matter from becoming airborne, such as chemical stabilization, wetting, or covering. Stacking and reclaiming machinery used near storage piles would be operated at all times to prevent excessive amounts of particulate matter from becoming airborne.

- *Pima County Code 17.12.470; Fugitive Dust Activity Permits.* No person shall conduct, cause, or allow land stripping, earthmoving, blasting, trenching, or road construction without first obtaining an activity permit from the Control Officer.

3.6.3.2 Alternative 2: No Action Alternative

Under the no action alternative, maintenance and repair activities on Presumido Canyon Road and Presumido Pass Road would continue. Short-term, negligible to minor, adverse impacts on air quality would be anticipated from emissions associated with combustion of fossil fuels, particulate matter, and fugitive dust emissions.

3.7 CULTURAL RESOURCES

3.7.1 Definition of the Resource

“Cultural resources” is an umbrella term for many heritage-related resources defined in multiple Federal laws and EOs, including the NHPA, the Archeological and Historic Preservation Act, American Indian Religious Freedom Act, Archaeological Resources Protection Act, and Native American Graves Protection and Repatriation Act. The NHPA focuses on cultural resources such as prehistoric and historic sites, buildings and structures, districts, and other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other reasons. Such resources might provide insight into the cultural practices of previous civilizations or retain cultural and religious significance to modern groups. Resources judged important under criteria established in the NHPA are considered eligible for listing in the National Register of Historic Places (NRHP). These resources are termed “historic properties” and are protected under the NHPA. Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and defines procedures governing Federal agencies’ statutory responsibilities.

Typically, cultural resources are subdivided into archaeological properties (prehistoric or historic sites containing physical evidence of human activity but no standing structures); architectural properties (buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); and properties or places of traditional, religious, or cultural significance to Native American tribes.

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

3.7.2 Affected Environment

3.7.2.1 Regional Prehistory

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

In the Southwest, the late prehistoric period is characterized by ceramic production, horticulture or agriculture, and increased sedentism. Archaeologists recognize three major and two minor cultural traditions in the Southwest at this time (Cordell 1984). Three of these traditions extend near or across the U.S./Mexico international border. The Patayan tradition (after A.D. 875) is centered on the Colorado River and extends into southeast California and southwest Arizona. It is characterized by paddle-and-anvil pottery, hunting and floodplain agriculture, and pithouse dwellings. The Hohokam tradition (ca. A.D. 400–1500) of south-central Arizona is characterized by paddle-and-anvil pottery, irrigation agriculture, single-unit rectangular dwellings, low platform mounds, ball courts, and cremations. The Mogollon tradition (250 B.C.–A.D. 1450) extends from southeastern Arizona across southern New Mexico and into the westernmost part of Texas. It is characterized by red and brown scraped-and-polished pottery, equal dependence on hunting and agriculture, round pithouses and then rectangular dwellings, large ceremonial structures formally similar to houses, and inhumation (Fagan 2005). The late prehistoric period (after ca. A.D. 900) is marked by the adoption of the bow and arrow and ceramic production. The proposed road improvements and reconstruction are located within the region that was occupied by the Hohokam, who are the ancestors to the O’odham peoples of southern Arizona and northern Sonora, Mexico. The Pozo Verde Mountains would have provided important upland resources to the Hohokam and later O’odham peoples, both of whom practiced a subsistence strategy that relied on a mix of agriculture and the procurement of wild plant and animal resources.

3.7.2.2 Regional History

The first European expedition into Arizona was led by the Spanish Franciscan Marcos de Niza in 1539. Arizona was thereafter explored during a 1540 to 1542 expedition led by Francisco Vásquez de Coronado. The goal of this famous expedition was to find the fabled Seven Golden Cities of Cibola. Spanish missions were established in southern Arizona as early as the 1690s. The first Spanish presidio (fortified town) at Tubac, however, was not established until 1752. Tucson was founded 23 years later. On September 27, 1821, Spain recognized the independence of Mexico. This new country included what is today California, Arizona, New Mexico, and Texas. The Treaty of Guadalupe Hidalgo, signed on February 2, 1848, ended the Mexican-American war and formalized the border. The treaty also ceded California and much of modern-day Arizona and New Mexico to the United States. The remaining southernmost portions of modern-day Arizona and New Mexico were ceded to the United States under the Gadsden

Purchase, which was ratified by the Senate on April 25, 1854. The modern U.S./Mexico international border was fully established at this time. Arizona became the 48th state on February 14, 1912. The Tohono O’odham Indian Reservation, which marks the western terminus of the proposed improvements to Presumido Canyon Road, was established in 1916.

3.7.2.3 Known Cultural Resources

Between 2009–2014, CBP sponsored three full-coverage, pedestrian cultural resources surveys of Presumido Canyon and Presumido Pass roads that included the entirety of area that would be affected by the improvements and reconstruction of these roads, as well as portions of these roads where no improvements or reconstruction would take place.

In 2009, CBP completed a survey of Presumido Canyon Road between SR 286 and the eastern boundary of the Tohono O’odham Nation (Cox 2011). This survey covered a corridor that was approximately 100 feet wide (more specifically, 45 feet on either side of the existing road). This survey resulted in the recordation of two newly identified sites, one previously recorded site, and six isolated artifact occurrences and two isolated features. The report also identifies the Pozo Verde Mountains as a significant feature of the Tohono O’odham cultural landscape that has been determined NRHP eligible for its association with significant events in Tohono O’odham history (Cox 2011).

In 2013, CBP completed a survey of Presumido Pass Road and several alternative alignments for the reconstruction of sections of Presumido Pass Road and Presumido Canyon Road (Hart and Barnes 2013). This survey covered a corridor extending 100 feet from either side of the existing road or proposed road options. This survey resulted in the recordation of four newly identified archaeological sites and 16 isolated artifact occurrences.

In 2014, CBP completed a survey of proposed construction staging areas and of proposed road realignments that were designed to avoid specific cultural resources identified during the prior surveys (Marshall 2014). This survey covered the entirety of the proposed construction staging areas, and a 200-foot-wide corridor centered on proposed new road segments. This survey resulted in no sites or isolated artifact occurrences.

CBP consulted with the Arizona SHPO regarding the NRHP eligibility of the cultural resources found during survey. The previously recorded archaeological site and two of the newly discovered archaeological sites were determined eligible for listing in the NRHP (i.e., they constitute “historic properties”), three of the newly discovered archaeological sites were identified as being of indeterminate NRHP eligibility (i.e., they would require additional archaeological study to make an NRHP eligibility determination), and one of the sites and all of the isolated artifact occurrences and features were determined not eligible for listing in the NRHP. The sites that are eligible for listing in the NRHP or that are currently of indeterminate NRHP eligibility include four prehistoric artifact scatters and the remains of two historic-era ranches.

Section 106 of the NHPA also requires federal agencies to consult with Native American tribes and Native Hawaiian organizations, as appropriate, on historic properties of religious or cultural significance that may be affected by the undertaking. To this end, CBP has initiated consultation with the Ak-Chin Indian Community, Gila River Indian Community, Hopi Tribe, Pascua Yaqui Tribe, San Carlos Apache Tribe, Salt River Pima-Maricopa Indian Community, Tohono

O’odham Nation, and White Mountain Apache Tribe by providing a description of the project, the results of archaeological surveys, and requesting information on properties of cultural or religious importance. The Hopi Tribe, San Carlos Apache Tribe, and the White Mountain Apache Tribe have responded that the project is unlikely to affect properties of cultural significance to their tribes. The Gila River Indian Community has requested that an archaeological monitor be present during ground-disturbing activities within the prehistoric sites and that they be notified of any discoveries. The Gila River Indian Community and the San Carlos Apache Tribe have deferred to the Tohono O’odham Nation as the lead tribe in the consultation process.

3.7.3 Environmental Consequences

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

Ground-disturbing activities associated with the implementation of the proposed action constitute the most relevant potential impact on cultural resources.

3.7.3.1 Alternative 1: Proposed Action

Ground-disturbing activities would occur as a result of improvements in the form of grading and widening 2.5 miles of the existing Presumido Canyon Road; improvements in the form of drainage structure installation only, with no other modifications to the existing roadway at 27 locations along Presumido Canyon Road and Presumido Pass Road; and reconstruction of about 1.9 miles of Presumido Canyon Road and Presumido Pass Road. The five 1- to 2-acre proposed construction staging areas listed under auxiliary activities would also be considered a ground-disturbing activity. One NRHP-eligible property and one property that is of indeterminate NRHP eligibility are currently crossed by project roads, but would be avoided as a result of the proposed reconstruction activities. This would minimize the effects to these properties from long-term use and maintenance of the roads and from indirect impacts from general road use. Ground-disturbing activities—specifically two drainage structures—are proposed within one historic-era property of indeterminate NRHP eligibility; however, the drainage structures would avoid the features of the site that might make it NRHP-eligible. Avoidance procedures, including flagging culturally sensitive areas and construction monitoring, would occur to ensure that ground-disturbing activities do not negatively impact this potentially significant historic-era property.

CBP consulted with the SHPO regarding the potential for the proposed action to affect historic properties. CBP concluded that the proposed action would result in no adverse effect to historic properties or properties of indeterminate eligibility provided an archaeologist is present and avoidance fencing is installed during drainage structure installation at the one affected property. SHPO concurred with the finding of no adverse effect on November 4, 2014 (**Appendix F**). CBP will continue to consult with the tribes through the Section 106 process regarding the project’s potential to affect properties of religious or cultural significance.

The potential exists for the unanticipated discovery of cultural resources or human remains during construction of the proposed action. If previously unidentified cultural resources are encountered during activity related to the construction of the project, the contractor shall stop work immediately at that location and shall take all reasonable steps to secure the preservation of those resources. The CBP would immediately notify the SHPO, the land management agency, and the appropriate Native American tribes regarding the finding, its NRHP eligibility, and the effects of the undertaking on the finding. The Arizona State Museum State Repatriation Coordinator would also be contacted in the event of the discovery of human remains, funerary items, or potentially sacred items.

3.7.3.2 Alternative 2: No Action Alternative

Only routine maintenance activities such as roadway grading would occur under the no action alternative. Ground-disturbing activities outside the previously disturbed roadbed would not occur except during emergency repairs of drainage crossings. CBP has analyzed the effects of road maintenance through the TIMR Environmental Assessment. Section 106 consultation with the SHPO regarding the effects of TIMR activities specifically along Presumido Canyon Road and Presumido Pass Road identified concerns about the potential impacts of road grading through several archaeological sites that may have buried resources. As a result, the Proposed Action was modified to avoid or minimize these sensitive resources in a manner such that neither TIMR activities nor the Proposed Action would result in adverse effects to historic properties. Maintenance activities would be restricted to areas outside the boundaries of known historic properties or the road surface would be stabilized with gravel to minimize potential disturbances from grading. Under the no action alternative, additional Section 106 consultation would be necessary to identify means by which to minimize or mitigate the potential adverse effects to historic properties that are not avoided by the proposed action.

3.8 ROADWAYS AND TRAFFIC

3.8.1 Definition of the Resource

The transportation resource is defined as the system of roadways and highways within or near the project area that could reasonably be affected by the proposed action. Traffic relates to changes in the number of vehicles on roadways and highways resulting from the proposed action.

3.8.2 Affected Environment

Presumido Canyon Road and Presumido Pass Road extend across mostly undeveloped land. Due to the remoteness of the region, very little public traffic is present, and USBP is the primary user of these roadways. The primary functions of these roadways is to support USBP efforts to limit illegal border intrusion and access to private lands used for cattle grazing.

Common issues with Presumido Canyon Road and Presumido Pass Road include flooding and erosion during storm events. Improper management of storm water can cause water to pond at low points and create flooding deep enough to obstruct vehicles. Improper management of storm water can also cause erosion, which leads to potholes and washouts. Over long periods, erosion can wash out entire sections of the roadways and in many instances make roads impassable.

During flooding events, roadway segments that are aligned within the washes become impassable until the flooding event has subsided.

CBP's current maintenance and repair regiment is generally designed to address issues as they occur. Obvious potholes, ruts, and washouts are repaired as issues are noticed, but preventive maintenance, such as properly crowning and grading roadways and removing debris from drainage ditches, often is not done until an issue has occurred. While such reactive maintenance keeps roadways passable, it does not address long-term maintenance requirements.

3.8.3 Environmental Consequences

Impacts on transportation are evaluated by the ability of existing roadways to accommodate changes in traffic. Adverse effects would occur if drivers experience high delays because the proposed maintenance and improvement activities altered traffic patterns beyond existing lane capacity or resulted in the closures or detours of roadways.

3.8.3.1 Alternative 1: Proposed Action

Short-term, negligible to minor, adverse effects on transportation would be expected from the proposed action due to local increases in traffic from the vehicles conducting maintenance, improvement, and reconstruction activities. Long-term, moderate to major, beneficial effects on transportation resources would be expected by preventing the roadways from falling into disrepair, improving segments of the access roads to meet tactical infrastructure design standards, and realigning road segments outside existing washes to reduce maintenance costs and improve accessibility.

Traffic impacts on SR 286 would not be anticipated as a result of the proposed action. A slight increase in traffic volume on Presumido Canyon Road and Presumido Pass Road would occur but would affect very few people due to the remoteness of the region and low existing use of the roads. Due to the limited number of vehicles anticipated to be needed for the proposed maintenance, improvement, and reconstruction activities, impacts on traffic volume would be negligible to minor.

It is possible that the proposed action would result in increased public use of access roads. However, due to the remote location of these roads and the dangerous conditions that occur in the area, it is unlikely that the proposed action would result in increased public use of the roads and access to adjacent areas. Improvements to the quality of roads used by USBP would allow for faster, safer, and more efficient responses to threats. Better quality roads would lessen the wear and tear on USBP vehicles and would minimize the potential for blown tires, damaged vehicle components, and stuck vehicles. Improvements to these roadways would not increase the amount of long-term traffic because USBP officer patrols would not increase in frequency.

3.8.3.2 Alternative 2: No Action Alternative

The no action alternative would result in the continuation of the existing CBP roadway maintenance procedures on Presumido Canyon Road and Presumido Pass Road on an as-needed basis. Improvement activities such as roadway widening and reconstruction activities such as

realigning segments outside washes would not occur. As such, repairs to these roadways would be reactive to immediate issues affecting these roadways, the roads would not meet tactical infrastructure road standards, and segments in washes would continue to be inaccessible and heavily damaged during storm events. Therefore, the no action alternative would result in long-term, negligible to major, adverse impacts on roadways and traffic.

4. CUMULATIVE AND OTHER ADVERSE IMPACTS

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 proposed, 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 activities. For foreseeable future actions relative to this EA, consideration was given to cumulative impacts of other CBP tactical infrastructure activities and known construction projects. Projects that do not occur in close proximity (i.e., within several miles) of the project area would not be expected to contribute to a cumulative impact and are generally not evaluated further.

4.1 PROJECTS IDENTIFIED WITH THE POTENTIAL FOR CUMULATIVE EFFECTS

4.1.1 Past Actions

Past actions are those CBP actions and actions of other government agencies and private entities that occurred within the geographic scope of cumulative effects prior to the development of this EA. Past actions have shaped the current environmental conditions in close proximity (i.e., within several miles) to the proposed infrastructure and are generally included in the affected environment described in Section 3. Specific past actions that are within close proximity of the proposed action include the construction of the Sasabe Pedestrian Fence project along the U.S./Mexico international border, livestock grazing, illegal border activities, and the CBP patrol activities.

The CBP Sasabe Pedestrian Fence project was completed in 2008 within 1 mile of the proposed action. The project included the construction of a 7-mile-long pedestrian fence in an identified high-border traffic area to comply with the Federal mandate of the Secure Fence Act. The Sasabe Pedestrian Fence project resulted in the removal of 51 acres of desert scrub and grassland habitat from future biological productivity. Furthermore, the fence fragmented biological communities on this segment of the U.S./Mexico international border by restricting the movement of animal species that are not capable of crossing through or over the fence. An increase in illegal border activity in more remote areas west of Sasabe, such as the Pozo Verde Mountains, could be a potential indirect effect of the pedestrian fence project. It appears the pedestrian fence has pushed illegal border activities to remote areas that are unhindered by a fence. The increase of illegal border activities has contributed to an increase of pollution from trash and other human waste in the Pozo Verde Mountains, including the project area for the proposed action. The Sasabe Pedestrian Fence project has also contributed to the decline of illegal grazing from cattle, goats, and sheep from Mexico. The reduction of illegal grazing has improved grazing conditions for legal U.S.-based grazing operations on private and state lands.

4.1.2 Current Actions

One private project currently under construction that is in proximity to the proposed action and would potentially have a cumulative impact with the proposed action is the Sierrita Pipeline

Project. This project consists of the construction and operation of a 36-inch natural gas transmission pipeline from the El Paso Natural Gas pipeline system southwest of Tucson, Arizona, to the Sasabe-Guaymas pipeline at the U.S./Mexico international border near the town of Sasabe. Construction of ancillary facilities such as meter stations and power lines would also occur. This project would cross Presumido Canyon Road (at this location, the road is also named El Mirador Road) at a location where the only road improvements proposed are low water crossing structures. The Sierrita Pipeline Project was subject to NEPA analysis, with a Final EIS issued in March 2014. The Federal Energy Regulatory Commission (FERC) was the lead Federal agency for the project.

4.1.3 Reasonably Foreseeable Future Actions

CBP documents were reviewed to identify other tactical infrastructure projects that would be in proximity to the proposed action and would potentially have a cumulative effect. Two projects fit this criteria: the ongoing TIMR along the U.S./Mexico international border in Arizona, and the proposed construction of surveillance towers on Tohono O'odham Nation lands. The ongoing TIMR project maintains and repairs existing tactical infrastructure along the U.S./Mexico international border in Arizona in the Yuma and Tucson USBP sectors. The existing tactical infrastructure includes fences and gates, roads and bridges/crossovers, drainage structures and grates, open observation zones, boat ramps, lighting and ancillary power systems, and Remote Video Surveillance System components. Presumido Canyon Road and Presumido Pass Road are tactical infrastructure covered by this project; however, TIMR activities do not include the improvements and reconstruction activities analyzed as a part of the proposed action in this EA. No further cumulative impacts analysis is required for this tactical infrastructure project. The proposed construction of surveillance towers on Tohono O'odham Nation lands west of the proposed action is considered for potential cumulative impacts. This project would construct surveillance towers with associated perimeter fence enclosures and power sources to support CBP operations. Each tower facility footprint would be approximately 100×100 feet, with an approximate 200×200 -foot temporary ground disturbance area during construction. A construction date for this project has not been determined, but it is unlikely that construction of the proposed action and the proposed surveillance towers would occur at the same time.

4.2 CUMULATIVE ANALYSIS

4.2.1 Land Resources

Soils: A major impact would occur if the action exacerbates or promotes long-term erosion. After construction of the proposed action, long-term, minor, beneficial impacts would be expected to occur to soils as a result of removal of vegetation blocking drainages, installation of low-flow drainage structures at washes, and the reconstruction of roadway segments outside washes. These activities would contribute to a long-term reduction of soil erosion and downstream sedimentation into nearby washes. Therefore, the proposed action would not contribute to a long-term negative cumulative impact on soils when combined with the CBP surveillance tower project and the Sierrita Pipeline project.

4.2.2 Biological Resources

Vegetation: The significance threshold for vegetation would include a substantial reduction in ecological processes, communities, or populations that would threaten the long-term viability of

a species or result in the substantial loss of a sensitive community that could not be offset or otherwise compensated. The removal of vegetation would occur on undisturbed desert terrain adjacent to the access road, where the pipeline has been constructed, and where the CBP surveillance towers would be constructed. To minimize impacts on vegetation, the proponent of the pipeline project will restore and revegetate disturbed areas in accordance with the project's "Reclamation Plan," "Post-Construction Vegetation Monitoring Document," and "Noxious Weed Control Plan." For the surveillance tower project, CBP would follow similar BMPs for minimizing impacts to vegetation as listed in **Appendix B**. When combined with the permanent removal of approximately 7.1 acres of vegetation by the proposed action, vegetation removal from the surveillance tower project (approximately 0.2 acre permanent disturbance and 0.7 acre temporary disturbance) and the Sierrita Pipeline project adjacent to the proposed action, the cumulative effects would not cross the significance threshold for vegetation. Therefore, cumulative impacts on vegetation would be considered negligible to minor.

General Wildlife: The significance threshold for wildlife would include a substantial reduction in ecological processes, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be offset or otherwise compensated. The removal of vegetation, and hence wildlife habitat, would occur on undisturbed desert terrain adjacent to the access road where the pipeline would be constructed and where the CBP surveillance towers would be constructed. Implementation of the Sierrita Pipeline project's "Reclamation Plan," "Post-Construction Vegetation Monitoring Document," and "Noxious Weed Control Plan" will minimize impacts on wildlife species. For the surveillance tower project, CBP would follow similar BMPs for minimizing impacts to wildlife habitat as listed in **Appendix B**. Therefore, when the Proposed Action Alternative is combined with the other CBP project and the pipeline project, negligible cumulative impacts on general wildlife would occur.

Federally Listed Species: A major impact on federally listed species would occur if any action resulted in a jeopardy opinion for any endangered, threatened, or rare species. With the project proponent's proposed mitigation measures and FERC's recommendations, the FERC determined, with USFWS concurrence, that construction and operation of the proposed pipeline project may affect, but is not likely to adversely affect the federally listed jaguar, the lesser long-nosed bat, the Chiricahua leopard frog, and the masked bobwhite quail, and is likely to adversely affect the federally listed Pima pineapple cactus. The USFWS issued a biological opinion on the pipeline project and concluded that the project would not likely jeopardize the continued existence of the Pima pineapple cactus. Because the Proposed Action is anticipated to have no effect on Pima pineapple cactus, the cumulative impacts of the Proposed Action Alternative and the pipeline project would similarly not likely jeopardize this species. For the surveillance tower project, CBP would follow similar BMPs for minimizing impacts to federally listed species as listed in **Appendix B**. The USFWS has not issued biological opinions for the tower project. Therefore, when the Proposed Action Alternative is combined with the CBP project, and the pipeline project, the level of cumulative impacts on federally listed species is also unknown.

Special Status Species: A major impact on special status species would occur if a substantial reduction in ecological processes, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be offset or otherwise compensated. Given the nature of the species occurrence and the measures that would be implemented as part of the proposed pipeline project, the FERC has determined

that the project may impact individuals, but population-level effects are unlikely and/or would not contribute to a trend toward federal listing special status species, and impacts on special status species would be adequately avoided or minimized. Therefore, when the Proposed Action Alternative is combined with the other CBP project and the pipeline project, negligible cumulative impacts on special status species would occur.

Migratory Bird Treaty Act: A major impact on species protected by the MBTA would occur if a substantial reduction in ecological processes, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be offset or otherwise compensated. The removal of vegetation, and hence migratory bird habitat, would occur on undisturbed desert terrain adjacent to the access road where the pipeline would be constructed and where the CBP surveillance towers would be constructed. The Sierrita Pipeline project implemented preconstruction surveys for nesting birds, and will be implementing the “Reclamation Plan,” “Post-Construction Vegetation Monitoring Document,” and “Noxious Weed Control Plan” to minimize impacts on migratory birds. For the surveillance tower project, CBP would follow similar BMPs for minimizing impacts to migratory birds as listed in **Appendix B**. Therefore, when the Proposed Action Alternative is combined with the other CBP project and the pipeline project, negligible cumulative impacts on migratory birds would occur.

4.2.3 Surface Waters and Waters of the United States

A major impact on surface waters and Waters of the United States would occur if erosion and downstream sedimentation are not controlled in the ephemeral washes within or adjacent to the project areas of the proposed action, the CBP surveillance tower project, and the Sierrita Pipeline project. The proposed action would avoid and/or minimize adverse impacts to surface waters by the adoption of erosion-control BMPs. Measures being implemented for the Sierrita Pipeline Project are outlined in the project’s “Upland Erosion Control, Revegetation, and Maintenance Plan” and “Wetland and Waterbody Construction and Mitigation Procedures.” Similar measures would be implemented for the CBP surveillance tower project and the proposed action. Therefore, cumulative impacts to surface waters would be considered negligible.

4.2.4 Air Quality

A major impact to air quality would occur if the proposed action would cause an exceedance of Federal ambient air quality standards. The proposed action would have short-term, minor, adverse impacts to air quality; however, these emissions would be expected to be below the de minimis threshold presented in the General Conformity Rule. The CBP surveillance tower project would be expected to have a similar short-term temporary impacts to air quality during construction of the towers. Similarly, air quality impacts from the Sierrita Pipeline project were also not anticipated to contribute to a violation of air quality standards. The use of dust control measures and BMPs, such as watering disturbed ground and dirt piles, has minimized fugitive dust for the Sierrita Pipeline project, and similar measures would be used for the proposed action. Therefore, this action, when combined with the other actions, would not be expected to contribute to exceedances of Federal ambient air quality standards.

4.2.5 Cultural Resources

With the application of avoidance measures, the Proposed Action Alternative would not adversely affect cultural resources or historic properties. Therefore, this action, when combined with other existing and proposed projects in the region, would result in a negligible cumulative impact on cultural resources or historic properties.

4.2.6 Roadways and Traffic

The construction of the Sierrita Pipeline project has resulted in increased traffic along the easternmost 1.3 miles of Presumido Canyon Road, which has served as an important access route to the pipeline corridor. Upon completion of the pipeline project, traffic patterns and usage are anticipated to return to pre-construction levels. Pipeline construction is anticipated to be completed by the end of 2014, prior to the construction of the proposed action. The CBP surveillance tower project would not be expected to impact Presumido Canyon Road or Presumido Pass Road.

The proposed action would not cause long-term closures to the roadway. If the roadway cannot remain open during maintenance activities on Presumido Canyon Road, coordination with the CBP, local law enforcement agencies, and private property owners would occur to ensure awareness of road closures and detours, if necessary. Appropriate traffic control measures to route traffic, including CBP patrols, around the construction area would occur. Because no long-term closures would be anticipated as a result of these projects, and because these projects would not take place concurrently or necessarily affect the same roads, no major cumulative impacts to roadways and traffic would be anticipated.

5. REFERENCES

- Arizona Heritage Geographic Information System. 2013. Arizona Game and Fish Department online environmental review tool. Available online <<http://www.azgfd.gov/hgis>>. Accessed November 14, 2013.
- Cox, E.S. 2011. *A Cultural Resources Survey of 9.6 Miles of Presumido Canyon Road Located Between Arizona State Route 286 and the Eastern Boundary of the Tohono O'odham Nation near the U.S.-Mexico Border, Pima County, Arizona*. Technical Report No. 10-03. Northland Research, Inc., Tempe.
- Cordell, L. 1984. *Prehistory of the Southwest*. Academic Press, Orlando.
- Department of Homeland Security (DHS). 2011. *Draft Environmental Assessment Addressing Proposed Tactical Infrastructure, Maintenance, and Repair Along the U.S./Mexico International Border in Arizona*. U.S. Customs and Border Protection, U.S. Border Patrol.
- Hart, D.R., and D.A. Barnes. 2013. *Cultural Resources Survey for the Proposed Improvements to Presumido Pass Road and Portions of Presumido Canyon Road*. Gulf South Research Corporation, Tucson.
- Marshall, J.T. 2014. Baboquivari Road Project Survey, Work Order 14. State of Arizona Survey Report Summary Form. Northland Research, Inc. Tempe.
- U.S. Customs and Border Protection (CBP). 2010. CBP Border Patrol Overview. Updated 3 September 2008. Available online <http://www.cbp.gov/xp/cgov/border_security/border_patrol/who_we_are.xml>. Accessed 25 November 2013.
- U.S. Environmental Protection Agency (USEPA). 2010a. "Clean Water Act Definitions of 'Waters of the United States.'" Available online <<http://www.epa.gov/owow/keep/wetlands/guidance/CWAwaters.html>>. Accessed 25 January 2013.
- . 2010b. "Clean Water Act." Available online <<http://www.thecre.com/fedlaw/legal14water/cwa.htm>>. Accessed 25 November 2013.
- . 2010c. "Section 10 of the Rivers and Harbors Appropriation Act of 1899." Available online <<http://water.epa.gov/lawsregs/guidance/wetlands/sect10.cfm>>. Accessed 4 January 2011.
- . 2010d. *National Ambient Air Quality Standards*. Last updated on 3 June 2010. Available online <<http://www.epa.gov/air/criteria.html>>. Accessed 25 November 2013.

- . 2010e. Part 81 – Designation of Areas for Air Quality Planning Purposes – Table of Contents, Subpart C – Section 107 Attainment Status Designations, Section 81.303, Arizona. Last updated on 16 June 2010. Available online <
<http://www.epa.gov/oar/oaqps/greenbk/a40cfr81.html>>. Accessed 25 November 2013.

6. List of Preparers

Appendix A

CBP Road Classifications



Global Security & Engineering Solutions
3750 Centerview Drive
Chantilly, VA 20151
Tel: (703) 708-1400; Fax: (703) 708-5700
www.L-3com.com

Classification Of Roads

Hugh Burt
Chief Construction Manager, Roads
L-3 Global Security and Engineering Solutions
Homeland Security - SBInet, Infrastructure and Engineering

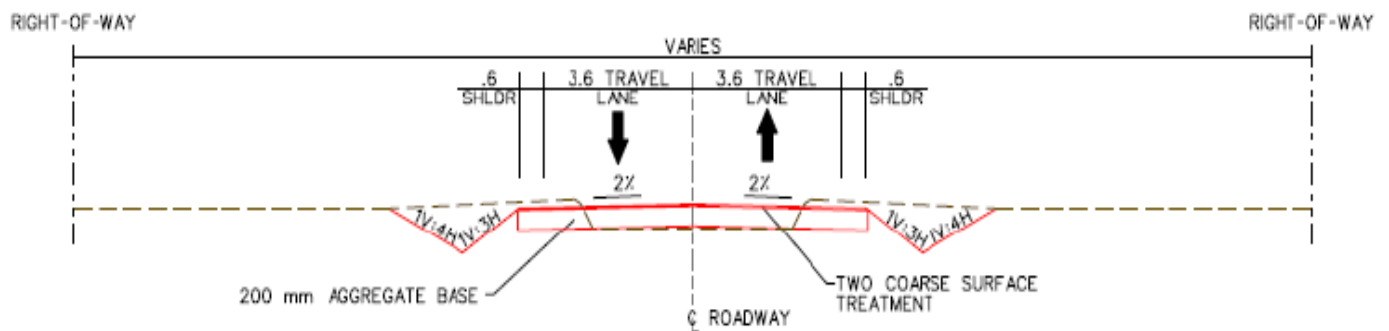
Functional Classification (FC) 1 – An FC 1 facility is any type of surface paved road. These roads may include surfaces consisting of bituminous asphalt and aggregate, hot-mix asphaltic concrete, portland cement concrete or some combination of these types of improved surface courses; generally overlaying an aggregate base course of varying depths.



6.1.1 FC 1 – Paved Roads

The proposed paved road facility consists of two (2) 3.6 m (12 ft) travel lanes with 0.6 m (2 ft) shoulders at a 2% cross slope. The proposed pavement design for this section consists of 200 mm (8 in) of compacted aggregate base with a two (2) coarse surface treatment. Parallel ditches with a 1V:3H front slope and a 1V:4H back slope are proposed to provide proper drainage. Existing FC 1 roadways may vary from proposed roadway specifications.

Figure 6.1



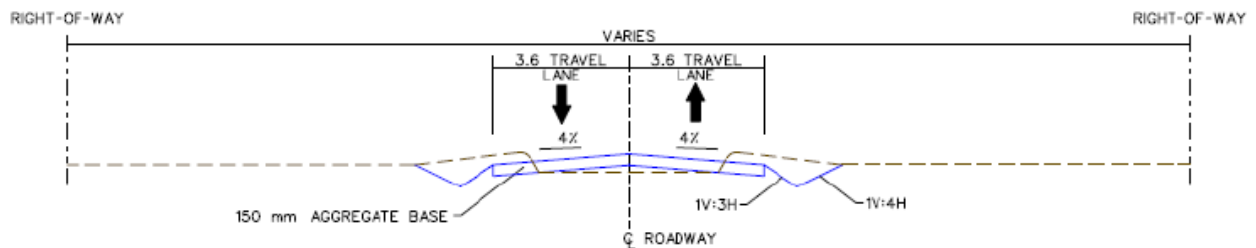
Functional Classification (FC) 2 – An FC 2 facility is an all-weather road. These roads generally consist of 6" minimum depth well-graded aggregate (may be native or imported)roadbeds, shaped with a defined crown section and including adequate parallel ditches and cross-culverts to ensure proper drainage both parallel and transverse to the road alignment. These roads should allow travel even during inclement weather, with service disruption only in the case of severe localized flooding of the road.



6.1.2 FC 2 – All-Weather Roads

The proposed all weather road facility consists of two (2) 3.6 m (12 ft) travel lanes at a 4% cross slope. The proposed section consists of 150 mm (6 in) of compacted aggregate base. Parallel ditches with a 1V:3H front slope and a 1V:4H back slope are proposed to provide proper drainage. Existing FC 2 roadways may vary from proposed roadway specifications.

Figure 6.2



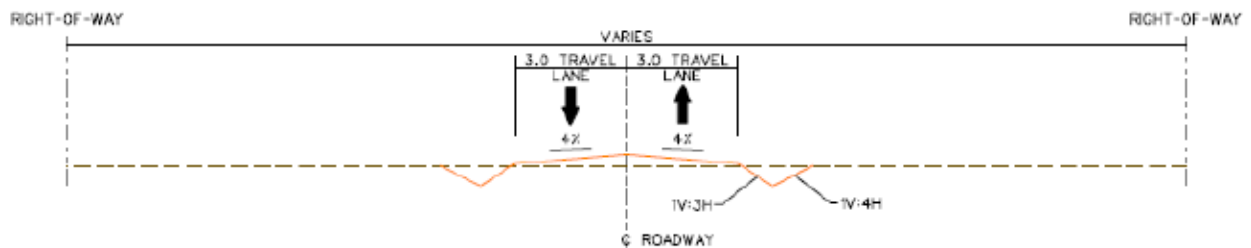
Functional Classification (FC) 3 – An FC 3 facility is a graded earth road. These roads should generally consist of a defined crown section and parallel ditches, similar to the FC 2 roads. However, the graded earth roadbed will consist of shaped and compacted in-situ materials of varying depth. These roads will be more susceptible to service disruption during storms of only moderate severity. Wet weather traction may also be compromised in areas with clayey or silky soils.



6.1.3 FC 3 – Graded Earth Roads

The proposed graded earth road facility consists of two (2) 3.0 m (10 ft) travel lanes at a 4% cross slope. The proposed section consists of natural ground. Parallel ditches with a 1V:3H front slope and a 1V:4H back slope are proposed to provide proper drainage. Existing FC 3 roadways may vary from proposed roadway specifications.

Figure 6.3



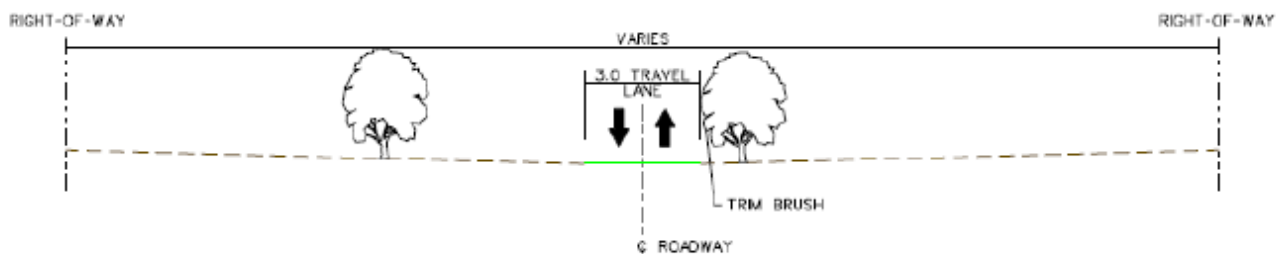
Functional Classification (FC) 4 – An FC 4 facility is a two-track road. These facilities may also be described as un-improved roads, wagon trails, or 4-wheel drive roads. The two track name implies that the road consists of two parallel tracks created by the loss of vegetation where the tires contact and compact the earth; between which may lay a strip of low-growth vegetation. These roads receive very little maintenance consisting primarily of occasional brush and boulder clearing, and possibly but much less frequently box-blading. Two-track roads have no crown, and generally do not have any improved drainage features or ditches.



6.1.4 FC 4 – Two-Track

The proposed two track road facility consists of one (1) 3.0 m (10 ft) travel lane at a 0% cross slope. The proposed section consists of natural ground. Ditches are not proposed for this facility. Existing FC 4 roadways may vary from proposed roadway specifications.

Figure 6.4



Appendix B

BMPs

APPENDIX B

Best Management Practices

The following are best management practices (BMPs) that are intended to mitigate potential impacts on natural resources, including vegetation, wildlife, migratory birds, threatened and endangered species, and water resources. It is the responsibility of all personnel performing maintenance to comply with the BMPs, unless otherwise noted. BMPs apply to all maintenance and repair activities (both waived and not waived regardless of in-house versus contracted work method) with one exception. The exception involves the waived areas where U.S. Customs and Border Protection (CBP) will not apply for Clean Water Act (CWA) Section 404 permits or submit Storm Water Pollution Prevention Plans (SWPPP) for regulatory review and approval. This provision is necessary in order to maintain the integrity of waiver authority.

Land Use

1. CBP will notify all land managers at least 5 days in advance of any scheduled maintenance, improvement, or reconstruction activities on their lands.

Geology and Soil Resources

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

Vegetation

1. If mechanical methods are used to remove invasive plants, the entire plant should be removed and placed in a disposal area. If herbicides are used, the plants will be left in place. All chemical applications on federally managed land must be used in coordination with the Federal land manager. Training to identify nonnative invasive plants will be provided for CBP personnel or contractors, as necessary.
2. Identify fill material, sandbags, hay bales, and mulch brought in from outside the project area by its source location. Use sources that are sterile or weed-free.

3. Clearly demarcate the perimeter of all new areas to be disturbed using flagging or temporary construction fencing. Do not allow any disturbance outside that perimeter.
4. If vegetation must be removed, allow natural regeneration of native plants by cutting vegetation with hand tools, mowing, trimming, or other removal methods that allow root systems to remain intact.
5. Vegetation targeted for retention would be flagged to reduce the likelihood of being treated.
6. Trees that are 6 inches in diameter at breast height (breast height defined as 4.5 feet) would be left onsite with no more than one-third of each individual tree pruned from the ground up to a maximum of 8 feet. For example, a 24-foot tree could be pruned 8 feet up from the ground.
7. To prevent the introduction of invasive species seeds, all earthmoving and hauling equipment would be washed at the contractor's storage facility prior to entering the construction site.
8. To prevent invasive species seeds from leaving the site, the contractor would inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the construction site.

Wildlife

1. Minimize animal collisions during maintenance and repair and construction activities by not exceeding speed limits of 35 miles per hour (mph) on major unpaved roads (i.e., graded with ditches on both sides) and 25 mph on all other unpaved roads. During periods of decreased visibility (e.g., night, poor weather, curves), do not exceed speeds of 25 mph.

Threatened and Endangered Species and Other Protected Species

General BMPs

1. To protect individuals of listed species within the project area, suspend work in the immediate vicinity of the individual until it moves out of harm's way on its own, or enlist a qualified specialist (individuals or agency personnel with a permit to handle the species) to relocate the animal to a nearby safe location in accordance with accepted species-handling protocols.
2. Develop and implement a training program to inform construction personnel of the listed species that occur within the project area, penalties for violation of state or Federal laws, implementation of included conservation actions/BMPS, and reporting requirements.
3. Check visible space underneath all vehicles and heavy equipment for listed species and other wildlife prior to moving vehicles and equipment at the beginning of each workday and after vehicles have idled for more than 15 minutes.

Migratory Bird BMPs

1. Initial mechanical and chemical vegetation clearing and subsequent mechanical vegetation control should be timed to avoid the migration, breeding, and nesting time frame of migratory birds (February 1 through August 31). Herbicide retreatments could occur throughout the year. When initial mechanical and chemical vegetation clearing or subsequent mechanical vegetation control must be implemented during February 1 through August 31, a survey for nesting migratory birds would be conducted immediately prior to the start of activities. If an active nest is found, a buffer zone will be established around the nest and no activities would occur within that zone until nestlings have fledged and abandoned the nest.

Species Specific BMPs

Chiricahua Leopard Frog (*Lithobates chiricahuensis*)

1. A site-specific SWPPP and a spill protection plan will be prepared and regulatory approval sought, as required by regulations, for activities that could result in sedimentation and that occur within 0.3 miles of potentially occupied habitat. This will include, but is not limited to, placing straw bale type sediment traps at the inlet of ponds or stock tanks and upstream of drainages known to be occupied by the species or within critical habitat of the species.

2. Any use or storage of chemicals, fuels or herbicides will be kept 0.3 miles away from locations where this species occurs.

Masked Bobwhite (*Colinus virginianus ridgwayi*)

1. Any vegetation removal will be conducted outside of the nesting season.

Lesser Long-nosed Bat (*Leptonycteris curasoae yerbabuenae*)

1. Removal of columnar cacti (i.e., saguaro) and agave will be limited to the minimum necessary to maintain drivable access roads and to maintain the functionality of other tactical infrastructure. CBP intends to avoid large saguaros, where possible, and transplant all saguaros 8 feet tall or less and all Palmer agaves that are non-flowering, less than 20 inches in diameter, and not growing in rocky substrate.

Water Resources

1. Prepare and implement an SWPPP prior to applicable activities (greater than 1 acre of exposed dirt or as required by property manager). Implement BMPs described in the SWPPP to reduce erosion. Consider areas with highly erodible soils when planning the activities and incorporate measures such as wattles, aggregate materials, and wetting compounds in the erosion-control BMPs.

2. All contractors and personnel will review the CBP-approved spill protection plan and implement it during project activities.

3. Cease work during heavy rains and do not resume work until conditions are suitable for the movement of equipment and materials.
4. Riprap should be placed on a layer of geotextile fabric to prevent underlying sediment from being washed out through the openings of the riprap.
5. Riprap should be keyed into the wash/streambed to ensure its stability and effectiveness.

Air Quality

1. *Arizona Administrative Code - R18-2-604 - Open Areas* - Restricts fugitive dust emissions from open areas, including, but not limited to, driveways, parking areas, vacant lots, dry washes, and riverbeds. Good modern practices for earth-moving/excavating activities would be implemented. These include using approved dust suppressants or adhesive soil stabilizers, paving, covering, landscaping, continuous wetting, or detouring maintenance and repair areas, barring access to maintenance and repair areas, or other acceptable means of reducing significant amounts of airborne dust.
2. *Pima County Code - 17.12.470 - Fugitive dust activity permits* - No person shall conduct, cause or allow land stripping, earthmoving, blasting, trenching, or road construction without first obtaining an activity permit from the Control Officer.

Cultural Resources

1. Adhere to avoidance measures agreed-upon through on-going consultation with the Arizona SHPO and Native American tribes. Avoidance measures may include slight shifts in the road alignment and/or reducing construction workspace to avoid sensitive resources, temporary fencing as a means of preventing accidental impacts to sensitive resources, and archaeological monitoring of ground-disturbing activities for unanticipated discoveries.
2. If Native American human remains are discovered during maintenance and repair of tactical infrastructure CBP would consult with culturally affiliated tribes and the Arizona SHPO regarding their management and disposition in compliance with Native American Graves Protection and Repatriation Act or Arizona State Law, as appropriate.
3. Obtain all pertinent training materials for cultural resources for the areas where maintenance and repair activities would occur. Prior to arrival on the work site, ensure key personnel are aware of the cultural resources potentially occurring in the project area and understand the proper BMPs to implement should cultural resources be encountered in the project area.

Roadways and Traffic

1. Access maintenance sites using designated, existing roads. Do not allow any off-road vehicular travel outside those areas. Ensure that all parking is in designated disturbed areas. For longer-term projects, mark designated travel corridors with easily observed removable or biodegradable markers.

Appendix C

Notice of Intent to Clear Land



Arizona Department of Agriculture (ADA)
 Licensing and Registration Section
 1688 West Adams, Phoenix, Arizona 85007
 Phone: (602) 542-6408
 Fax: (602) 542-0466

Notice of Intent to Clear Land

ARS § 3-904

Pursuant to A.R.S. § 3-904 the undersigned, as Owner of the Property described herein, gives this Notice of Intent to Clear Land of protected native plants.

1. **Owner/landowner's agent.** The owner or landowner's agent of the Property upon which protected native plants will be affected:

Owner's Name _____ Phone _____

Address _____

Agent's Name _____ Phone _____

Address _____

2. **Property.** The description and location of the Property upon which protected native plants will be affected:

County _____

Name of Property/Project _____

Address _____

Physical Location (attach map) _____

(Note: Map must also show surrounding land for 1/2 mile in each direction)

Tax Parcel ID Nos. _____

Legal Description (or attach copy) _____

Number of Acres to be Cleared _____

3. **Owner's Intent.** Landowner's intentions when clearing private land of protected native plants.

☐ Owner intends to allow salvage of the plants, and agrees to be contacted by native plant salvagers.

☐ Owner intends to transplant the plants onto the same property, or to another property he also owns.

☐ Owner has already arranged for salvage of the plants.

☐ Owner does not intend to allow salvage of the plants.

☐ Other _____

4. **Approximate starting date.** _____

(See notice period listed on reverse side)

The information contained in this application is true and accurate to the best of my knowledge. I understand that providing false information is a felony in Arizona

Signature _____ Date _____

Notice to salvagers: Consent of the landowner is required before entering any lands described in this notice.

Explanation Of This Form

1. Notice of Intent to Clear Land.

The majority of the desert plants fall into one of four groups specially protected from theft, vandalism or unnecessary destruction. They include all of the cacti, the unique plants like Ocotillo, and trees like Ironwood, Palo Verde and Mesquite. In most cases the destruction of these protected plants may be avoided if the private landowner gives prior notice to the Arizona Department of Agriculture.

2. Notice Period.

When properly completed, this form is to be sent to the Department within the time periods described below. Landowners/developers are encouraged to salvage protected native plants whenever possible.

3. Information to Interested Parties.

The information in this notice will be posted in the applicable state office of the Department and mailed to those parties (salvage operators, revegetation experts) who have an interest in these plants and may approach the landowner with the possibility of saving the plant(s) from unnecessary destruction.

Notice to Landowner:

1. The owner may not begin destruction of protected native plants until he receives confirmation from the Arizona Department of Agriculture and the time prescribed below has elapsed. The "Confirmed" stamp only verifies that the Notice has been filed.

<u>Size of area over which the Destruction of Plants will occur</u>	<u>Length of Notice Period</u>
Less than one acre	20 days, oral or written
One acre or more, but less than 40 acres	30 days, written
40 acres or more	60 days, written

2. If you are clearing land over an area of less than one acre, oral notice may be given by calling the applicable state office at the telephone number given below.
3. If the land clearing or plant salvage does not occur within one year, a new Notice is required.
4. This Notice must be sent to the applicable state office of the Department of Agriculture at the address given below:

Phoenix Office
1688 W. Adams
Phoenix, AZ 85007
(602) 364-0935

Tucson Office
400 W. Congress Ste.124
Tucson, AZ 85701
(520) 628-6317
M-F 8a.m. - 11:30a.m.

Notice to salvagers: Consent of the landowner is required before entering any lands described in this notice.

Appendix D

Public Involvement and Agency Coordination



April 30, 2014

Mr. Paul Enriquez
Environmental Branch Chief
Border Patrol Facilities and Tactical Infrastructure
Program Management Office
c/o Baboquivari Road Project
P.O. Box 2390
Tucson, Arizona 85702
Via email: BaboquivariRoadEA@cbp.dhs.gov

Subject: Baboquivari Road Draft Environmental Assessment

Dear Mr. Enriquez:

Pima County has reviewed the Baboquivari Road Draft Environmental Assessment (EA). The U.S. Customs and Border Patrol proposes the maintenance, improvement, and reconstruction of approximately 11 miles of access roads in the Pozo Verde Mountains west of Sasabe. The analysis in the draft EA indicates the implementation of the proposed action would not result in significant impacts on the natural and human environments, and a Finding of No Significant Impact has been prepared.

The following comments are for consideration and further impact analysis in the final EA. The County has several air quality and flood control regulation concerns not addressed in the EA. Additional discussion is needed on the potential impacts of recreational and illegal activities occurring in the project area as a result of improved access. Clarity is needed on several points within the document, including maintenance activities, floodplain and wash identification, and cultural resource, socioeconomic and environmental justice impacts.

The County request that the U.S. Customs and Border Patrol share environmental and cultural resources information with appropriate County Departments and Agencies as the NEPA process continues and the road project proceeds.

Sincerely,

A handwritten signature in blue ink, appearing to read "Linda Mayro". The signature is fluid and cursive, written in blue ink.

Linda Mayro, Director
Office of Sustainability and Conservation

Attachments

Pima County Comments on the Draft EA Baboquivari Road Project

1. Page ES-2 – Environmental Consequences – Physical Environment – “However, air emissions associated with these activities would not be anticipated to exceed Federal and state air quality criteria.” This should state “Federal, State, and local air quality rules and regulations.”
2. The DEA describes the proposed project area without addressing whether or not all or parts are within Pima County maintained roadways and, therefore, are within County jurisdiction and subject to County permitting. The roadway segments should be identified to determine jurisdiction. County rights of way are subject to Department of Transportation (PC-DOT) permitting. Any proposed road work within County rights of way must be done under a PC-DOT Right of Way Use Permit. The permit includes meeting County cultural resources requirements.
3. A Finding of No Significant Impact is premature if any of the CBP project is within County jurisdiction and has not been evaluated to determine if County requirements have been met, including any cultural resources requirements.
4. The discussion of alternative screening on page 7 Section 2.2 refers to consultation with USCOE to minimize floodplain impacts. Pima County is the local Floodplain Management Authority for the project and where the road is coincident with or crosses regulatory floodplains on private land permits will be required. This authority and expertise should be acknowledged in the Final EA. Furthermore, Pima County has locally appropriate guidance on erosion control and riparian habitat mitigation. Technical Policy 27 provides guidance on design of low flow crossings and is available here:

http://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Flood%20Control/Rules%20and%20Procedures/tech027.pdf
5. The discussion of the proposed action, Alternative 1, describes the intent to relocate the road where it is within watercourses. This is one of the main purposes of the project and the District supports this goal. Installation of low water crossings also is consistent with District policies by controlling erosion and providing for wildlife movement.
6. Section 2.3, Alternative 1: Proposed Action, page 7. This section provides a description of the proposed road improvements, which includes moving a section of roadway from the Presumido Canyon bottom to higher elevation on one side or the other. Section 2.3 states that no cultural resources would be impacted in this section, but there is no supporting documentation to support this assertion; for example, from the Class III survey report.
7. Section 2.3 discusses maintenance activities. Please clarify if the maintenance activities be ongoing, or occur only at the time of construction. If ongoing, will the maintenance include Improved and Reconstructed areas?
8. As identified in the discussion of the No Action Alternative roads within watercourses would continue to be used for border enforcement, legal and illegal traffic. As identified during scoping, these areas are also concurrent with Pima County Regulated Riparian Habitat. Impacts to flooding are minimal in this remote area, however impacts to habitat and public safety

remain. The District can provide habitat maps for use in the Final EA and project planning and permitting.

9. Section 3.1.1, Aesthetics and Visual Resources, page 13. The project is considered to have no significant impact, but does not account for the increased visibility of the newly constructed roadway above Presumido Canyon.
10. The discussion of impact scoping in Section 3.1.3 eliminates floodplains from consideration as the project does not intersect FEMA SFHA. Concluding that there are no floodplains is erroneous. Both the No Action Alternative, which includes installation of drainage structures and the Proposed Action, will require review and approval by the District as locally regulated floodplains are concurrent with the project location. All washes with a discharge of over 100 cfs are regulated by the District under statutory authority provided under ARS Title 45. Conversely Section 3.4.3.1 & 3.4.3.2 state that local permits would be obtained for "jurisdictional drainages". It is unclear if the DRAFT EA Alternative formulation and impact assessment is relying on identification of only "Waters of the US" or if locally identified jurisdictional waters will be considered. However the statement that "The project is anticipated to be authorized under a Nationwide Permit..." seems to support the conclusion that local authority has not been adequately considered. Pima County floodplain authority and extent should be specifically acknowledged in the Final EA for clarity and added to the resources evaluated. A map of those watercourses that the District considers to be regulatory is attached. The map is the same as that previously submitted showing Pima County Regulated Riparian Habitat. Washes from the County GIS, and which also show on the underlying USGS topographic base from the EA itself, have simply been highlighted. This data may be refined during permitting.
11. Section 3.1.10 Socioeconomic Resources, Environmental Justice, and Protection of Children: There appears to be a contradiction within the EA itself regarding this issue. Section 3.1.10 concludes that the proposed project has no environmental justice impact because of the "remoteness of the project area." Section 3.6.2.3 states that there is a federal mandate to consult with Native American tribes when historic properties of religious or cultural significance may be affected by the project, and therefore the CBP has initiated consultation with eight area tribes. Several tribes have deferred to the Tohono O'odham Nation as the lead tribe in this process, since the Nation is located closest to the proposed project. This action constitutes an admission that there may be an impact on a protected community.

The first step in an environmental justice analysis is identification of protected groups which could be affected by the proposed project. As described above, CBP has identified Native American communities as potential impacted groups. After identification of protected communities, the following steps are recommended by the EPA: engage in a public and transparent dialogue with said groups; identify the impacted geographic area; identify the environmental and health impacts; in collaboration with the protected group(s), develop environmentally preferable alternatives; and determine immediate and long term impacts on the protected communities. By its own admission, CBP has taken none of these steps.

12. Section 3.1.7 Land Use: The EA fails to analyze impacts to the County's Conservation Lands System (CLS). The proposal occurs within a mixture of Biological Core Management Areas, Important Riparian Areas, and Multiple Use Management Areas.

13. Section 3.3 Biological Resources: This project falls within two identified wildlife corridors. The Arizona Game and Fish Department has identified this area as a wildlife link between Mexico-Tumacori-Baboquivari, and the Arizona Department of Transportation has identified the area as a wildlife habitat block between the Baboquivari and San Luis Mountains.
14. Section 3.3.2 neglects to refer to Pima County Regulated Riparian Habitat classifications of vegetation type and density. The availability of this data and regulatory requirement was identified during scoping. Additionally, the project intersects with several of the County's Sonoran Desert Conservation Plan's rare landscape types, including oak grass ecotone and native grassland.
15. Section 3.3.3.1: What is happening to the 14.8 acres of temporary vegetation impacts? Will these areas be restored? Where are the ~11 transplanted saguaros to be moved to?
16. Section 3.4.2.1 states that the washes which the roads are within are unnamed. This is incorrect; the road is within Presumido Canyon Wash in the western region and crosses La Osa Wash several times in the eastern half.
17. Section 3.5 Air Quality- Section 3.5.1 Definition of the Resource – "In addition to the Federal CAA, air quality is also regulated by the Pima County Department of Environmental Quality." Should state, "...air quality is also regulated by the Arizona Department of Environmental Quality (ADEQ) for certain areas of the state, and by the Pima County Department of Environmental Quality within Pima County." Pima County has statutory authority for air quality regulations pursuant to Arizona Revised Statute 49- 402 (A.R.S. 49-112).
18. Section 3.5 Air Quality- Section 3.5.1 Definition of the Resource – Table 2 is incorrect and should not reference the Arizona Administrative Register, it should reference the Code of Federal Regulations.
19. Section 3.5 Air Quality - Section 3.5.2 Affected Environment - Only portions of Pima County have been characterized as moderate nonattainment for PM10. This section should be more specific as to which areas are nonattainment and which areas are classified as 'unclassified/attainment'.
20. Section 3.5 Air Quality - Section 3.5.2 Affected Environment – This section should also present information regarding control of fugitive emissions according to Pima County Code (PCC) Title 17. This section should incorporate opacity limitations as set forth in 17.16.050.
21. Section 3.5 Air Quality - Section 3.5.2 Affected Environment – This section should also present information regarding control of fugitive emissions according to Pima County Code (PCC) Title 17. Unpaved roads, unpaved haul/access roads, and staging areas affected by the project should be stabilized when in use, and following use, until the area becomes permanently stabilized by landscaping or otherwise in order to control fugitive dust emissions, including windblown dust, or dust caused by vehicular traffic on the area pursuant to PCC 17.16.060.
22. Section 3.5 Air Quality - Section 3.5.2 Affected Environment – This section should also present information regarding control of fugitive emissions according to Pima County Code (PCC) Title

17. PCC Title 17 requires the use of reasonable control measures to control visible emissions including but not limited to fugitive dust emissions.
23. Section 3.5 Air Quality - Section 3.5.2 Affected Environment – The Baboquivari Road Project will require a PDEQ Fugitive Dust Activity Permit for any dust producing activity that meets the permit thresholds specified in PCC Title 17.12.470.
24. Section 3.5 Air Quality - Section 3.5.2 Affected Environment – Also, the Baboquivari Road Project should maintain compliance with PCC Title 17.16.050.D for control of fugitive dust emissions. PCC Title 17.16.050.D specifies that ‘no person shall cause, suffer, allow, or permit diffusion of visible emissions, including fugitive dust, beyond the property boundary line within which the emissions become airborne, without taking reasonably necessary and feasible precautions to control generation of airborne particulate matter’. Therefore, fugitive dust emissions generated by vehicles and equipment should be controlled such that residents in the vicinity are not affected by fugitive emissions.
25. Section 3.6, Cultural Resources, page 26-27. This section is inadequate. The Regional Prehistory is too brief, poorly researched, and outdated. Only two literature citations are listed, both are inappropriate and outdated and one is a popular archaeology volume, not an academic work. This section needs to be expanded and updated to be more relevant to the project area.
26. Section 3.6.2.3 Known Cultural Resources, page 28. It is stated that a Class III survey was conducted in 2009 of Presumido Canyon Road, El Mirador and La Osa Roads between SR-286 and the Tohono O’odham Nation boundary. A 100-foot-wide corridor was surveyed, resulting in the recording of two previously unknown sites, one previously recorded site, six isolated occurrences of artifacts, and 2 isolated occurrences of features. In addition, the Pozo Verde Mountains were identified as “...a significant feature of the Tohono O’odham cultural landscape” that has been determined eligible to the National Register of Historic Places (NRHP). If the Pozo Mountains constitute an identified and Determined Eligible cultural landscape, is it classified as a Traditional Cultural Property (TCP), and if so, has Section 106 of the NHPA been followed in assessing effect to the TCP?

There is no discussion of this important step in the Section 106 process and without such consideration, it should not be possible to arrive at a Finding of No Significant Impact. A search of AzSite did not reveal either the survey area or recorded sites resulting from the 2011 survey. This is good information about the survey, but it is not supported in the DEA by any detailed discussions of the cultural resources and there are no maps or other location information provided. OSC staff understands that this is sensitive information protected by State and Federal laws, but a copy of the survey report should have been provided to the County Office of Sustainability and Conservation (OSC) to allow a meaningful review and evaluation of the resources and potential for impacts from the proposed CBP project. Pima County requests a copy of this Class III survey report for review and to assist in evaluating the potential for effect to cultural resources. OSC is well aware of the need to protect the sensitive location information contained in these reports. OSC staff includes qualified, ASM-permitted archaeologists and will not circulate the document outside the Cultural Resources and Historic Preservation Division.

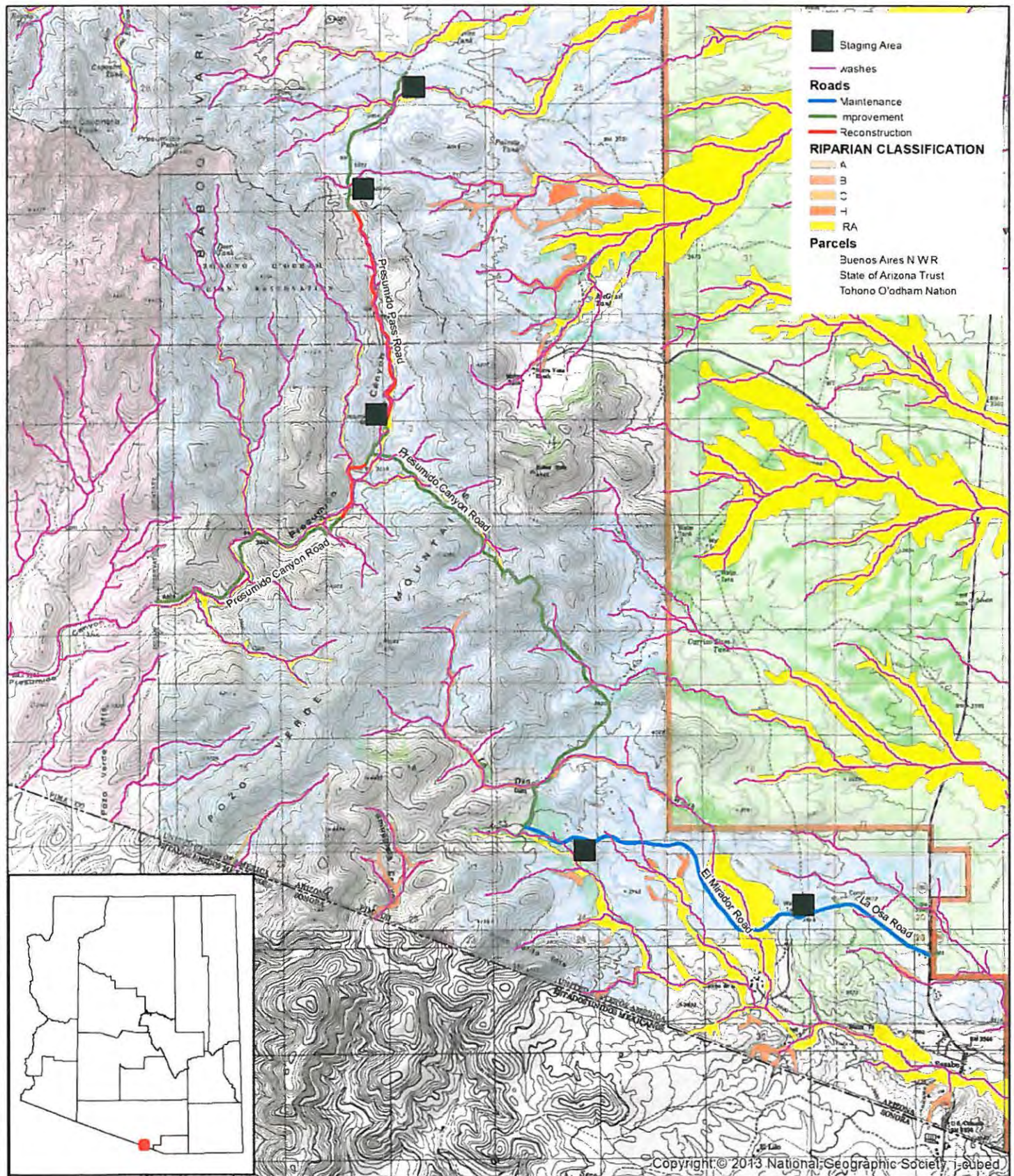
27. Section 3.6.2.3 Known Cultural Resources. On page 28, it is stated that a Class III survey was conducted in 2011 of Presumido Pass Road and alternative alignments for reconstruction of the

road. A 100-foot-wide corridor was surveyed, resulting in the recording of four previously unknown sites and 16 isolated occurrences of artifacts. A search of AzSite did not reveal either the survey area or recorded sites. Again, this is welcome information that should have been provided to OSC to allow a meaningful review and evaluation of the resources and potential for impacts from the proposed CBP project. Furthermore, the citation for this report listed in the references section is incorrect and incomplete, listing only date, authors, and title, with no publication information provided. I request a copy of this Class III survey report for review and to assist in evaluating the potential for effect to cultural resources. OSC is well aware of the need to protect the sensitive location information contained in these reports. OSC staff includes qualified, ASM-permitted archaeologists and will not circulate the documents outside the Cultural Resources and Historic Preservation Division.

28. Section 3.6.2.3 Known Cultural Resources, page 28. The Cultural Resources section states that consultation concerning the eligibility of the identified sites is underway with the State Historic Preservation Office (SHPO), resulting in the determination of three sites eligible to the NRHP. This discussion is inadequate and unclear about which sites are eligible and whether they are only newly recorded sites or if they include previously known resources, making it impossible to evaluate effects on the resources from the CBP project.
29. Section 3.6.2.3 Known Cultural Resources, pages 28-29. Tribal Consultation is reported as ongoing, and a list is provided of Tribes that have responded to date, but the Tohono O'odham are not included in the list, leaving unstated the tribal position regarding the CBP project. This ambivalence needs to be clarified with full results of Tribal Consultation. Pima County also should be consulted if it is determined the County has permitting authority on roadways within the project area.
30. Section 3.6.3.1, Environmental Consequences, Alternative 1: Proposed Action, page 29. This discussion is inadequate, stating that avoidance will be the primary mitigation of effect to cultural resources. On page 29 it states that ground-disturbing activities associated with the road work "can be designed to avoid archaeological sites or minimize impacts" and not affect the eligibility status of the resources. Avoidance by the following means is proposed for all sites that could be affected: bypass sites, restrict construction workspace, flag culturally sensitive areas, and archaeological monitoring. Consultation is ongoing with SHPO and the Tohono O'odham to reach a "no adverse effect" finding. A brief paragraph outlines how unanticipated discoveries will be handled. The discussions are too brief and should include examples of how the various avoidance methods will be used. The consultation should be reviewed, with an update on whether the Tohono O'odham have responded to CBP. The discussion of unanticipated discoveries also should be expanded, adding references to Section 106 of the NHPA and the Native American Graves Protection and Repatriation Act.
31. Section 3.7.3.1 states that it is possible that the proposed action would result in increased public use of access roads. Currently, the area is difficult to access or non-accessible. These roadway improvements will open this area to increased traffic and could increase traffic for recreational use, including hunters, hikers, birders, etc. The environmental impact of increasing access is not addressed in this EA.
32. Section 4. Cumulative and Other Adverse Impacts, page 31. The discussion considers past and future "projects" as if it is only such organized efforts that can have adverse effects. There is no

consideration of indirect adverse effects and down-the-line cumulative effects from informal, unauthorized, or illegal use of the area made possible, or facilitated by the increased access provided by the road improvements.

33. Section 4.1.1, Past Actions, page 32. Some past actions other than “projects” are mentioned, including grazing and illegal border actions, but the discussion is inadequate and these actions are not detailed, nor are they projected to potential future actions. If the Cumulative Actions section does not incorporate unauthorized and illegal actions facilitated by improved access to the area from the CPB and other projects (Sierrita Pipeline), then the section is ignoring a major component of indirect and down-the-line cumulative impacts to the resources.
34. 4.1.2.2, Private/Other Agency/Organization Projects, page 33. The Sierrita Gas Pipeline project, which will cross and interact with the CBP project, is only briefly mentioned. Sierrita Gas pipeline will cross the CBP project at Presumido Canyon Road where proposed road maintenance would occur, but there is no discussion of the nature of the disturbance or effect, other than mentioning the possibility of causing a delay in the CBP project. This completely ignores the interconnection of two improved access routes for unauthorized and illegal use, which increases the potential of threats to the resources of the larger area from increased use. There should be a more fully developed analysis and discussion of the potential cumulative effects.
35. Section 4.2.3 concludes that because similar mitigation measures to the Sierrita Pipeline would be used; surface water impacts would be insignificant. Throughout the EIS process for the pipeline, the County has submitted extensive documentation to show that the mitigation measures proposed by Sierrita are inadequate in practice.
36. Section 4.2.5, Cumulative Analysis, Cultural Resources, page 33. This section briefly states that by employing avoidance, “the Proposed Action Alternative would not adversely affect cultural resources or historic properties.” As stated, this is an unsupported assertion that requires justification to allow for unexpected actions or uses, such as informal, unauthorized, or illegal access to the improved roads in the area.
37. Appendix B – Best Management Practices – Air Quality – This section needs to provide more information on PCC Title 17 and control of fugitive emissions from the project.
38. The appendices include a list of erosion control and vegetation management BMPs. The adequacy of these measures will be determined during permitting.



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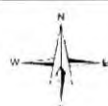


Pima County Flood Control District
 1715 Congress Road
 Tucson, Arizona 85711-1201
 (520) 724-4300 Fax: (520) 724-4921
 Web: www.pima.gov

Baboquivari Road EA

1 inch = 4,000 feet

Scale: 0 800 1,600 2,400 3,200 feet



Date: 4/17/2014

This information is provided as a service to the public. It is not intended to be used for any purpose other than that for which it was provided and is not intended to be used for any purpose other than that for which it was provided.





April 30, 2014

Baboquivari Road Project
P.O. Box 2390
Tucson, Arizona 85702
BaboquivariRoadEA@cbp.dhs.gov

To whom it may concern:

We are concerned about the inadequacy of the Environmental Assessment prepared by Customs and Border Protection's contractor, SWCA Environmental consultants, for the Baboquivari Road Project. We request that a Revised Draft Environmental Assessment be issued that addresses our concerns.

About Us:

The Sierra Club is one of the oldest grassroots environmental organizations in the country. The Sierra Club's mission is "to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments." The Grand Canyon Chapter has long been committed to protection of Arizona's lands, wildlife, water, and communities and has been significantly involved in protection of the Baboquivari Mountains and the adjacent Buenos Aires National Wildlife Refuge (BANWR). Sierra Club has 2.4 million members and supporters nationally, about 40,000 of whom are in Arizona. Our members in Arizona recreate and participate in restoration and research projects in the Baboquivari and Pozo Verde mountains, and also use many of the Bureau of Land Management (BLM) and Arizona State Trust lands within the proposed project area.

The Center for Biological Diversity is a national non-profit conservation organization headquartered in Tucson, Arizona, with more than 775,000 members and online activists, more than 10,000 of whom reside in Arizona and New Mexico. The Center is dedicated to the protection of threatened and endangered species and their habitats. Our members have a keen interest in border enforcement activities, and particularly their impacts on the species and places we work to protect, including the jaguar and its proposed critical habitat, which encompasses part of the project area in this case.

Sky Island Alliance (SIA) is a non-profit conservation organization dedicated to the protection and restoration of the rich natural heritage of native species and habitats in the Sky Island region of the southwestern United States and northwestern Mexico. We work with many partners to establish protected areas, restore healthy landscapes, and promote public appreciation of the region's unique biological diversity. A primary focus of the organization is landscape connectivity and ensuring the ability of far ranging species of the Sky Island region to maintain access to food, water and mates. The effects of habitat fragmentation caused by roads to species such as the jaguar are of particular concern.

Inadequate Consultation:

Besides our request for a deadline extension, the issues raised by our organizations during the scoping period were neither acknowledged nor addressed in the Draft Environmental Assessment (DEA). It is unclear whether our comments were even read by the contractor. Section 1.4, page 4, gives this as a summary of the comments provided by our organizations: "The joint non-governmental agency response requested further opportunities to comment on the proposed action." That sums up the third sentence of our scoping letter, but ignores the rest of the concerns that we expressed in that letter.

Even the issue of non-governmental organizations wanting to provide additional comment was not addressed in either the EA or the process that Customs and Border Protection has followed. Despite being listed within the DEA, none of our organizations were informed in a timely manner that the DEA was released for public comment. We were not told that the 30-day comment period on the DEA had begun. This is an example of inadequate effort at public outreach and engagement on the part of Customs and Border Protection (CBP) and its contractor. A public comment period that the public and previously identified stakeholders are unaware of does not provide for the possibility of meaningful input, and appears to be a means of superficially complying with National Environmental Policy Act (NEPA) on paper, but avoiding its mandate for public input in practice.

This points to the poor level of public engagement on this and other border infrastructure projects that we referred to in our scoping comments. In that document we said, "CBP should consult with local experts during the early planning stages of this and other tactical infrastructure projects, rather than late in the process or not at all. This means discussion in which land managers have an effective veto on projects that cannot be executed in a manner that does not threaten to inflict serious harm on resources, rather than being informed of such projects but given no opportunity to shape them as they move forward." The DEA does not indicate that such meaningful consultation has occurred, and if our experience is the norm it would appear that the only item from our scoping comments that was acknowledged has been mostly ignored.

Before a Final EA is issued CBP should initiate meaningful consultation with stakeholders and the general public. An extension of the public comment period would be a positive initial step. We request that CBP initiate one or more public meetings as well. Consultation is not, however, just the opportunity to write a letter to CBP that will neither be read nor responded to. True consultation should involve a process whereby stakeholders are able to shape the decision making process, and to have a concrete impact on whether or not the project goes forward and, if it does, what form it ultimately takes.

CBP should issue a Revised DEA that is based upon meaningful consultation with stakeholders and that reflects the input already provided by the public and other agencies, rather than rushing to issue a woefully inadequate Final EA that ignores stakeholder input.

Lack of Alternatives:

In our scoping letter we identified the lack of alternative options as a fundamental flaw in this proposal, and that flaw remains in the DEA. The only options considered in the DEA were “The proposed action consists of maintenance, improvement, and reconstruction activities that would occur on Presumido Canyon Road and Presumido Pass Road,” and “The no action alternative [which] would maintain the status quo.” There is no viable selection among a range of alternatives, as NEPA requires. While the proposed action is described in detail, the no action alternative is dismissed in just two brief paragraphs. It seems clear that no alternative aside from the proposed action was seriously considered or analyzed.

As we stated in our scoping comments,

“The alternatives analysis is the heart of a fully compliant NEPA document. Listing only 1) the preferred option and 2) no action alternative is insufficient. Examining only two options gives the strong impression that the document is perfunctory, and exists only to support a predetermined decision. The ‘two alternative’ approach provides the public and the agency with no real selection of alternatives, in violation of the National Environmental Policy Act (NEPA). The full spirit of NEPA begs a more collaborative approach and the full range of reasonable alternatives: CBP should analyze multiple options and means for achieving its goals if it is to craft a fully compliant document that gives decision makers sufficient information to make an informed decision.”

It appears that either CBP’s contractor did not read that far into the letter, or simply chose to ignore our concerns. Either way, the lack of consideration of viable alternatives presented in the DEA fails to comply with the demands of NEPA. Limiting the discussion and analysis to just the Proposed Action and the No Action alternatives violates NEPA and the Council for Environmental Quality (CEQ) implementing regulations. The “alternatives provision” of 42 U.S.C. § 4332(2)(E) requires an agency to give full and meaningful consideration to all reasonable alternatives.¹

A number of possible alternatives come readily to mind. Instead of rebuilding the north – south Presumido Pass Road, CBP might consider closing it to all traffic. According to section 1.2 of the DEA, “The need for the proposed action is Presumido Canyon Road and Presumido Pass Road are currently difficult to traverse due to the ruggedness of the terrain, roadway width and slope, and the location of sections of the roadways within large washes. These washes are subject to flooding during the monsoon season, making the roads impassable.” Improving the north – south road will not only make it more readily passable for CBP, it will also make it easier for those that the Border Patrol is attempting to apprehend. As we stated in our scoping comments,

¹ *Native Ecosystems Council v. U.S. Forest Service*, 428 F.3d 1233, 1245 (9th Cir. 2005); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229 (9th Cir. 1988) (“[A]ny proposed federal action involving unresolved conflicts as to the proper use of resources triggers NEPA’s consideration of alternatives requirement, whether or not an EIS is also required.”)

There is also the likelihood that the new and upgraded roads will actually increase, rather than decrease, illicit traffic in the Baboquivari Mountains. The case of the San Bernardino NWR, where CBP installed vehicle barriers and created an all weather road through what had previously been impassible terrain, is instructive. In the refuge's 2008 annual report they recount, "Within three days of the completion of the project in the San Bernardino Valley, drug smugglers began cutting portions of the Normandy barrier, which a group of men could then physically lift and move to allow vehicles loaded with marijuana to drive into the United States using the new system of all-weather roads constructed by DHS. Drive-through drug loads have subsequently increased in the San Bernardino Valley." In comparing the No Action Alternative with multiple other alternatives, the potential for improved roads to increase, rather than decrease, illicit traffic should be examined in light of this and other examples of road construction making it easier for smugglers to move through our borderlands.

The DEA makes no mention of the possibility that improved roads running north from the border through areas that are currently impassible during part of the year will facilitate illicit traffic. Having ignored this possibility, despite it having been brought up in our comments, and despite the fact that CBP surely knows about the prior example that we cite, alternatives that might address this concern and consequently have the possibility of better serving CBP were not considered. Instead, the statement that the roads will "hinder or delay individuals on foot or in vehicles" is given without any supporting evidence.

There is also no information about the number of individuals that currently utilize this area. Border Patrol apprehensions in the state of Arizona have been declining steadily for years. This basic fact, along with prior examples of CBP patrol roads facilitating, rather than hindering, illicit traffic would seem to argue in favor of the No Action Alternative. The fact that cases where new or improved roads facilitate smuggling were not analyzed makes it appear that this document is intended to justify a decision that has already been made. A Revised DEA should be issued that provides decision makers with information sufficient to allow them to come to a reasoned conclusion based upon a standard cost/benefit analysis. Such an analysis is, of course, the whole point of writing an EA.

Rather than rushing to issue a Final EA, a Revised DEA should be issued that examines in detail a wider range of alternatives. This would better comply with NEPA and potentially allow CBP to arrive at a decision that avoids the negative impacts that will accompany the sole "alternative" described in the current DEA.

Open Roads Increase Environmental Impacts

As we stated in our scoping comments:

Even if road maintenance, improvement and reconstruction activities in the Baboquivari Road Project are done with minimal direct impact to the resources of the BANWR, once finished, the renovated road could invite increased usage of off-road vehicles and associated cross-country travel. Roads and motorized uses can have serious detrimental effects on habitats and wildlife. These effects include direct, indirect, and cumulative impacts, ranging from mortality from vehicles, modification of animal behaviors, altered use of habitats, facilitation of the spread of exotic, invasive, and parasitic species, adverse genetic effects, and fragmentation of connected habitats. Currently, BANWR does not have a great deal of problems with off-road vehicles, but the Baboquivari Road Project could change that. This

aspect and the cumulative impacts to the lands must be thoroughly analyzed in any subsequent NEPA documents.

The DEA fails to address these basic issues. If the roads are improved with the express purpose of allowing for quicker motorized access, it follows that Border Patrol agents will be traveling down them at a higher rate of speed than is currently possible. It may also be that more Border Patrol vehicles will travel down them. This will likely translate into more animals being hit by patrol vehicles. This increase should be analyzed and taken into account, and various alternatives for minimizing vehicle impacts should be included in a Revised DEA.

This is particularly important due to the area in which this road construction, and subsequent changes in Border Patrol motorized activities, will occur. According to Section 3.2.2 of the DEA,

Of the 19 species listed as threatened, endangered, or proposed threatened for Pima County by the USFWS, 6 species may occur in the project area. These species are Chiricahua leopard frog (*Lithobates chiricahuensis*), jaguar (*Panthera onca*), Kearney's bluestar (*Amsonia kearneyana*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), northern Mexican gartersnake (*Thamnophis eques megalops*), and Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*).

The DEA goes on to say that "The project area is also located within designated critical habitat for jaguar and proposed critical habitat for northern Mexican gartersnake." Either animal would be vulnerable to being struck by a vehicle, whether it is driven by the Border Patrol, a recreational user on the Border Patrol's road, or a smuggler.

The DEA touches upon this in a manner that is only superficial:

The project is located within the designated critical habitat for this species; however, the proposed action is not likely to adversely affect designated critical habitat for the jaguar. Therefore, impacts to the jaguar and jaguar designated critical habitat are expected to range from none to negligible.

Why is the proposed action unlikely to adversely affect the designated critical habitat for the jaguar? There is no attempt to answer that question in even a cursory manner. A statement precedes this unfounded assertion that no jaguar has been seen within the immediate project area, but this should not be taken as evidence that no jaguars are present. In fact, between 1996 and 2008, numerous photos of jaguar were taken in the Baboquivari Mountain range and other areas near and adjacent to the project area. Jaguars are wide ranging cats, with territories recorded in this region of over 13,000 square miles, which includes the Pozo Verde-Baboquivari-Atascosa-Tumacacori ranges. This project falls within designated critical habitat, impacting important lands that function as core jaguar habitat, as well as affecting connecting routes and corridors between mountain ranges within Arizona and also across the international border. While a jaguar might not bed down daily in the project area, it might still use this or any other canyon within its designated critical habitat as a corridor, allowing it to travel throughout its range. Increased vehicle traffic, traveling at a faster speed than is currently possible, will increase the chances of a jaguar being struck.

Furthermore, section 3.3.3.1 of the DEA states that,

Potential effects on the six species listed as threatened, endangered, or proposed threatened by the USFWS will be analyzed in the Biological Evaluation for this project. Consultation with the USFWS regarding potential impacts to these species will occur following the release of the EA for public review.

The statements regarding the impacts of the project upon threatened and endangered species might have greater merit if they were made following consultation with US Fish and Wildlife Service, rather than in the absence of such consultation. The fact that this consultation has yet to occur calls into greater question the document's assertions and their bases. US Fish and Wildlife Service should be consulted immediately, and their determination should be included in a Revised DEA so as to allow stakeholders to evaluate the information that they present, and to allow their findings to inform the conclusions of decision makers.

Fundamental problems that further undermine the EA:

Figure 1, which consists of a map of the project area, contains conflicting information regarding the ownership of the land. It shows the north – south Presumido Pass road as a red line, running through areas colored white to indicate privately owned land, and blue to indicate state trust land. But near the label "Presumido Pass Road," beneath the blue coloration, the underlying map bears the label "Tohono O'Odham Indian Reservation." Figure 2, which zooms in on this portion of the project area, contains a fragment of the Tohono O'Odham label and appears to indicate that the road may be built on tribal lands. According to Google Maps, the project area intersects with Tohono O'odham land for about 1000 feet of the Presumido Pass Road slated for 'reconstruction' (north of the staging area and intersection with Presumido Canyon Road). The shaded area of the "GoogleMapsTOBoundary" image attached here and in Image A below indicates that a stretch of Tohono O'odham land intersects the project area, according to the Google Maps tool.

According to the Department of the Interior's National Atlas (GIS layer "US National Atlas Federal and Indian Lands"), the project area does indeed intersect with the Tohono O'odham Nation, as indicated in the attached "Babo_Road_Project_ALRIS_National_Atlas" attached and shown below in Image B. The DEA appears to have used the Arizona State Land Department's GIS Arizona Land Resource Information System in determining that the project area does not intersect with the Tohono O'odham Nation, which is also overlaid in Image B. Even so, this does not explain the discrepancy of the lands marked in blue as state lands being labeled as "Tohono O'odham Indian Reservation" on the same map. This should be cleared up as part of a Revised DEA.

As we pointed out in our scoping comments, CBP has a poor record when it comes to adhering to its own Best Management Practices (BMPs):

Problems with the practices of contractors hired for CBP's tactical infrastructure projects have also been reported in the San Bernardino National Wildlife Refuge (NWR). On top of accepting little meaningful input from refuge staff, contractors failed even to adhere to prior agreements. In their 2008 annual report, the refuge recounted that:

Refuge staff were repeatedly told that DHS agreed not to clear or use any staging areas on the refuge. Additionally, the Service was told that DHS already had a plan in place to remove the woody materials from the Roosevelt Easement without burning them. Ultimately, on November 10, 2008 contractors bulldozed a 100-yard by 100-yard "staging area" outside of the Roosevelt Easement on SBNWR and destroyed archaeological sites immediately adjacent to the Slaughter Ranch National Historic Landmark.


This refuge "staging area" was then used for building material storage, vehicle parking, and fabrication of Normandy-style barrier sections. Sub-contractors chipped all woody debris into small chunks which were piled within the Roosevelt Easement during the construction phase. Following completion of the road and vehicle barrier, all these wood chips were spread onto staging areas, including the refuge staging area, to a depth often exceeding two feet deep for "erosion control."

We are concerned that, given CBP's past history of allowing contractors to ignore pledges made to land managers (San Bernardino NWR is only one example of many) similar pledges made regarding the Baboquivari Road project may also be forgotten once construction begins.

As with the other issues raised in our scoping comments, this was left unaddressed in the DEA. It is difficult to evaluate the BMPs offered in the DEA when we have little faith that they will make the transition from words on paper to actions on the ground. For example, a Revised DEA should offer justification for the locations of each of the five proposed staging areas, and describe the evaluation process for choosing each staging area. Measures should be implemented to put firm limits on staging area boundaries, and specific plans for revegetation and disturbance mitigation should be provided. The Revised DEA should provide means of assurance that BMPs will be adhered to, such as sanctions that might be imposed on contractors should they decide to behave in the manner that was seen in San Bernardino. Even better would be for CBP to take action to mitigate the harm done in that and numerous other infractions that accompanied the construction of its so-called Tactical Infrastructure.

Thank you for considering our comments.

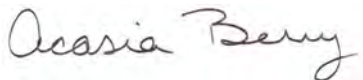
Sincerely,



Elna Otter
Chair
Sierra Club – Grand Canyon (Arizona) Chapter
202 E. McDowell Rd, Suite 277
Phoenix, AZ 85004



Randy Serraglio
Southwest Conservation Advocate
Center for Biological Diversity



Acasia Berry
Interim Executive Director
Sky Island Alliance

cc.

Chairman Ned Norris, Jr., Tohono O'odham Nation

Representative Raúl Grijalva

Senator Jeff Flake

Senator John McCain

Sally Gall, Refuge Manager, Buenos Aires National Wildlife Refuge

Richard Elías, Sharon Bronson, Ally Miller, Ray Carroll, Ramón Valadez, Pima County Board of Supervisors

Chuck Huckelberry, Pima County Administrator

Jonathan Jantzen, Attorney General, Tohono O'odham Nation

Michael Elhermann, Attorney for the Tohono O'odham Nation Legislative Council

Image A – Google Maps image of Tohono O'odham Nation boundary overlaid with Google Maps satellite imagery of part of project area:

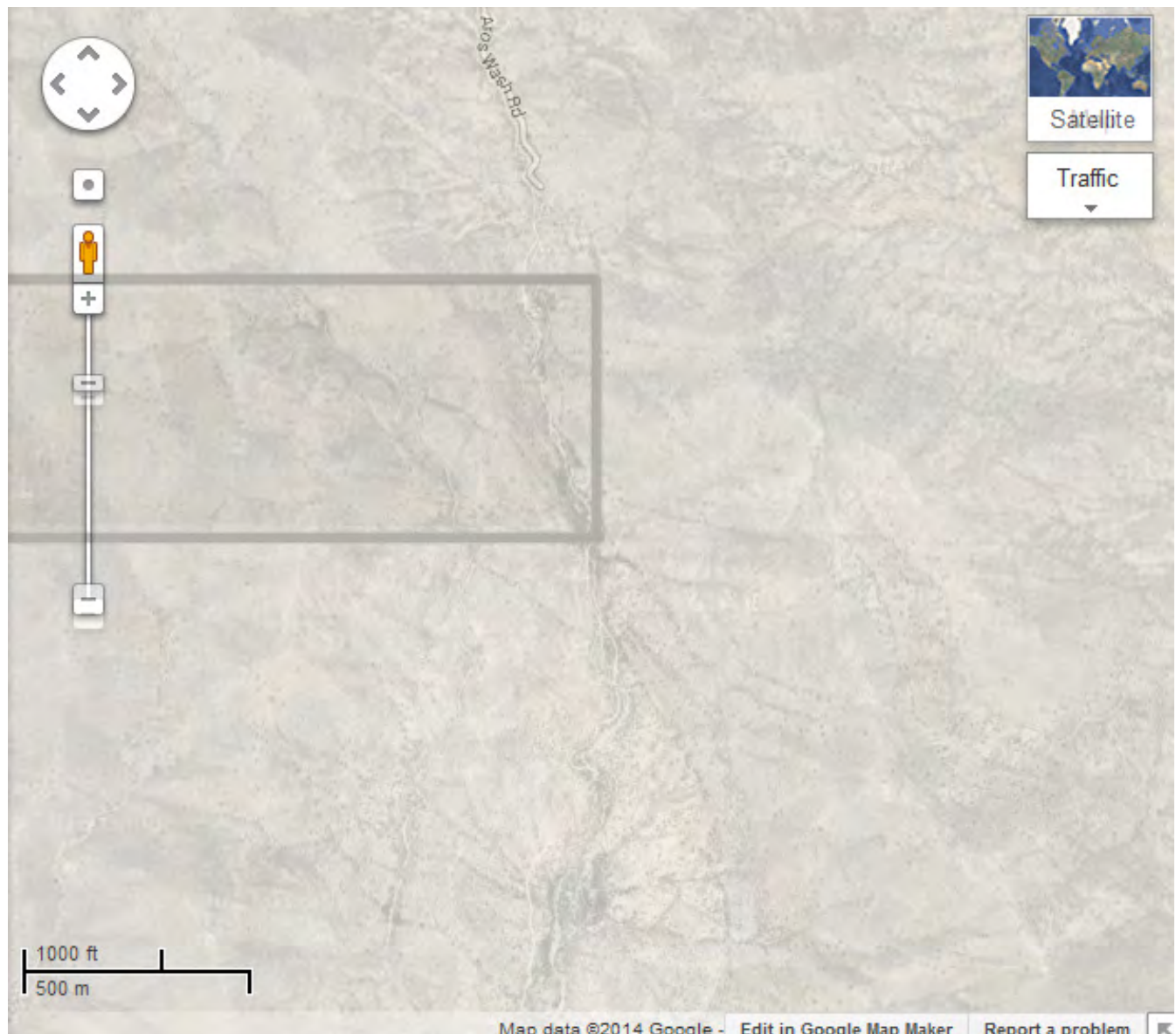
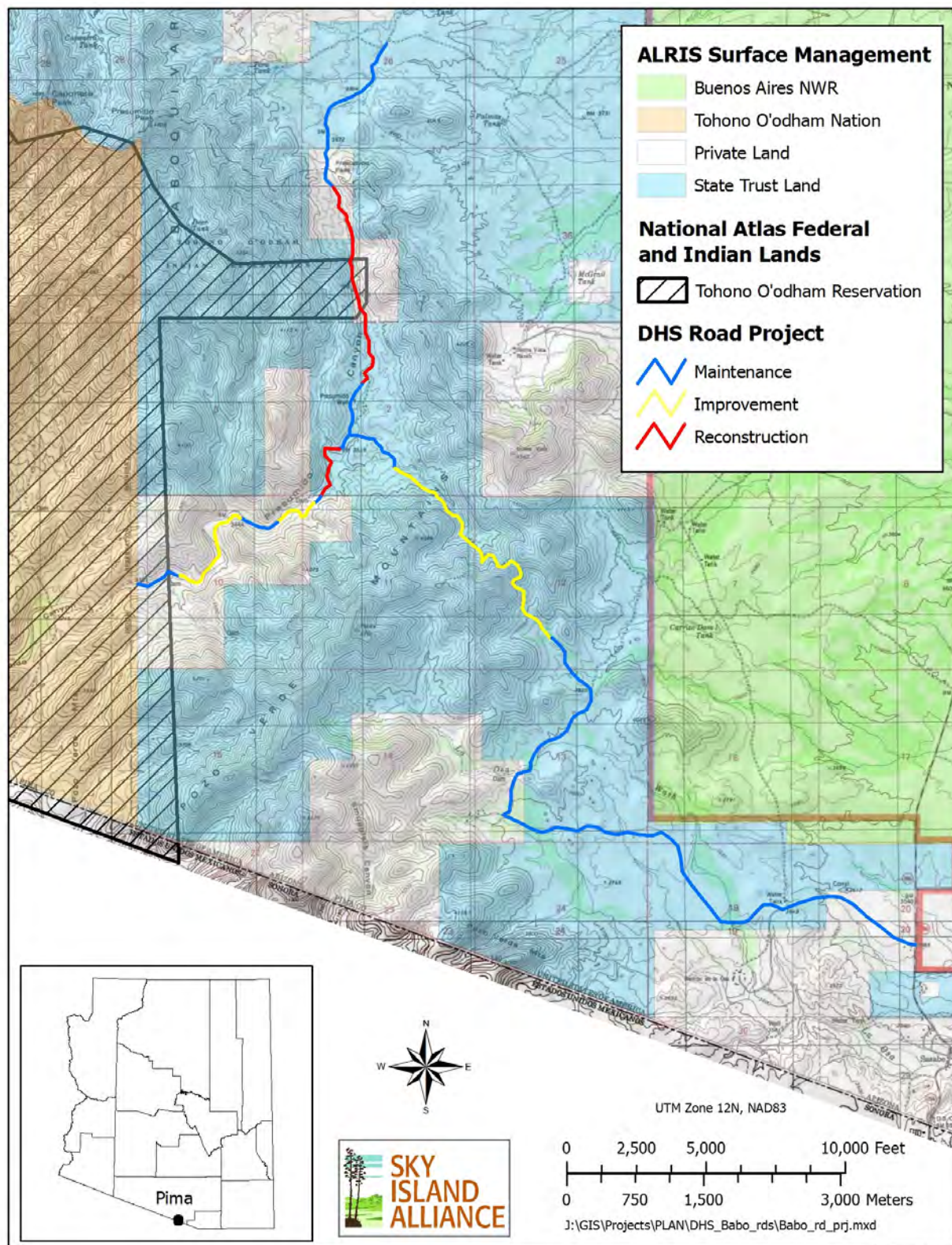


Image B: Map of project area and conflicting Tohono O'odham Nation boundaries: U.S. National Atlas Federal and Indian Lands overlaid with Arizona Surface Land Management.



Appendix E

U.S. Fish and Wildlife Service Biological Opinion



United States Department of the Interior

U.S. Fish and Wildlife Service
Arizona Ecological Services Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513



In reply refer to:
AESO/SE
02EAAZ00-2014-I-0470

December 2, 2014

Mr. Paul Enriquez
Department of Homeland Security
U.S. Customs and Border Protection
Border Patrol Facilities and Tactical Infrastructure
1300 Pennsylvania Avenue NW
Washington, DC 20229

Dear Mr. Enriquez:

Thank you for your correspondence dated July 16, 2014, received in our office on July 17, 2014. This letter documents our review of the U.S. Customs and Border Protection (CBP), Office of Border Patrol Facilities and Tactical Infrastructure's proposed improvements and reconstruction of the Baboquivari Road in Presumido Canyon and Presumido Pass in the Altar Valley, Pima County, Arizona.

We have provided previous correspondence (February 9, 2010, October 31, 2013, and September 11, 2014) indicating that we have concluded that, because of the presence of suitable habitat, existing connectivity to known populations in Mexico, and documented presence of individuals in southern Arizona over the past few years, the proposed project area is likely to be occupied by jaguars (*Panthera onca*) and ocelots (*Leopardus pardalis*). We have also provided our rationale as to why we also conclude that there may be effects to both jaguars and ocelots from the proposed action. In your letters of July 16, 2014 and October 23, 2014, you determined that there would be no effect from the proposed action on both the jaguar and the ocelot. We disagree with that determination and encourage CBP to implement measures during the improvement and reconstruction of the Baboquivari Road that will minimize effects to these species. We provided recommendations of such measures in our October 13, 2013 letter to your office. The remainder of our analysis related to your request for section 7 consultation on the proposed Baboquivari Road project on other listed species and designated or proposed critical habitat is found below.

You are requesting informal consultation on the potential effects of this proposed action pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544) (ESA), as amended. You have requested our concurrence with your determination that the proposed project may affect, but is not likely to adversely affect the threatened Chiricahua leopard frog (*Rana*

chiricahuaensis), the endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), and the threatened northern Mexican gartersnake (*Thamnophis eques megalops*), as well as that the proposed action may affect, but is not likely to adversely affect designated critical habitat for the jaguar, and proposed critical habitat for the northern Mexican gartersnake. We concur with your determinations and provide our rationale below, including a conference report on proposed critical habitat for the northern Mexican gartersnake.

DESCRIPTION OF THE PROPOSED ACTION

CBP is proposing to improve and reconstruct approximately 8 miles of Presumido Canyon, Presumido Pass, El Mirador, and La Osa Ranch roads in southern Altar Valley and the Pozo Verde Mountains at the southern end of the Baboquivari Mountain range. Collectively, these proposed actions are referred to as the Baboquivari Road project. The overall length of the project is approximately 10 miles, but approximately 2 miles of the proposed project falls within the scope and coverage of an existing consultation covering the maintenance and repair of roads when work is confined to the existing footprint (Consultation #02EAAZ00-2012-F-0170), and these sections of the proposed action are not included in this consultation (see Figure 1 and Figure 2 in SWCA's July 2014 Biological Assessment (BA) included in your July 16, 2014 correspondence).

The purpose of this project is to provide improved access within the Pozo Verde Mountains to enable CBP to execute its statutory mission to protect the southern border, and for the safety of the CBP and other law enforcement officers in carrying out their duties. These roads are currently difficult to traverse due to the ruggedness of the terrain, roadway width and slope, and the location of sections of roadways within large washes.

Improvement Activities – Approximately 6 miles of roadway would require improvement activities, including grading to smooth the driving surface and reduce steepness, and possibly widening the roadway. These activities also include the installation of articulated concrete mat at a number of locations. Some of this work would occur outside of the existing roadway footprint.

Reconstruction Activities – Approximately 2 miles of roadway would require the reconstruction of the roadway outside of its current alignment (see Figure 2 of the BA). The realigned road would be located on higher ground outside of and adjacent to existing washes, and would generally parallel the existing roadway. In addition, drainage structures will be added or improved at several locations along this realignment. Roadway realignments would be located in areas that minimize impacts to biological and cultural resources.

Ancillary Activities – Construction equipment staging areas would be required to facilitate construction of the project. Five preliminary staging areas are proposed that would be located adjacent to existing roadway alignments (see Figure 1 of the BA). The staging areas would be located in areas that minimize impacts to biological and cultural resources. The proposed staging areas vary from 1 acre in size up to 2 acres in size.

The proposed action would disturb a total of 21.3 acres of land during construction. Of this, 14.8 acres would be restored with native species following construction, with approximately 6.4 acres of permanent disturbance.

CBP has included a number of conservation measures in their proposed action that will contribute to the avoidance and minimization of potential effects on listed species. These measures include:

- Implementing best management practices that would avoid stock tanks and prevent any downstream erosion into stock tanks or livestock waters as part of Section 402 of the Clean Water Act stormwater pollution prevention plan.
- Minimizing impacts to vegetation.
- Minimizing the extent and width of roadway improvements to reduce impacts to vegetation and forage species, as well as the potential introduction of invasive vegetation species.
- Locating staging areas where vegetation disturbance will be minimized.
- Avoiding large saguaros where possible, and transplanting all saguaros 8 feet tall or less.
- Avoiding agaves to the extent possible. When agaves are unavoidable and meet certain criteria, they will be transplanted.
- Limiting construction activities during the night and reducing or eliminating any nighttime lighting.
- Implementing invasive species control and adopting best management practices for invasive species control contained in the TIMR consultation (Consultation #02EAAZ00-2012-F-0170).

A complete description of the proposed action, including conservation measures, is included in SWCA's July 2014 BA and is included herein by reference. Additional clarification of conservation measures was received via email from Mr. Steve Hodapp on July 24 and August 12, 2014.

CONCLUSION

Lesser Long-Nosed Bat

Environmental Baseline

The lesser long-nosed bat is a yellow-brown or cinnamon gray bat, with a total head and body measurement of approximately 8 cm (3 inches). The tongue measures approximately the same length as the body. This species also has a small nose leaf (FWS 2001). Lesser long-nosed bat was listed as federally endangered without critical habitat on September 30, 1988 (53 FR 38456). The species historically ranged from southern Arizona in the Picacho Mountains, the Agua Dulce Mountains, and the Chiricahua Mountains to southwestern New Mexico in the Animas and Peloncillo Mountains through much of Baja California, Mexico (FWS 1994). These bats are

seasonal (April to September) residents of southeastern Arizona, and possibly extreme western Pima County, Arizona (i.e., Cochise, Pima, Santa Cruz, Graham, Pinal and Maricopa counties, Arizona) (FWS 2001, 2007a). Habitat for the species includes mainly desert scrub habitat in the U.S. portion of its range. In Mexico, the species occurs up into high elevation pine-oak and ponderosa pine forests. Within the United States, this species forages at night on nectar, pollen from columnar cacti (such as saguaros), and agaves with branched flower clusters (FWS 2001). Considerable evidence exists for the interdependence of *Leptonycteris* bat species and certain agaves and cacti (FWS 2001).

During daylight, lesser long-nosed bats roost in caves or abandoned mines. Impacts to foraging resources have been identified as a threat to this species. Impacts to forage resources include the conversion of habitat for agricultural uses, livestock grazing, woodcutting, urbanization, and other development might contribute to the decline of long-nosed bat populations. In addition, occupancy of communal roost sites by illegal border crossers and recreational users is a potential threat. These bats are particularly vulnerable due to many individuals using only a small number of communal roosts (FWS 2001). In general, the trend in overall number of lesser long-nosed bats has been stable or increasing in both the United States and Mexico. In part, for this reason, the FWS recommended reclassifying the status of this species as threatened (FWS 2007a).

Although no known or potential lesser long-nosed bat roosts were observed within or adjacent to the project area during the survey effort, at least one roost is suspected in Brown Canyon, approximately 15 miles north of the project area. Two small roosts, possibly night roosts, are known from the western slopes of the Sierrita Mountains, approximately 32 miles north northeast of the project area. As mentioned in the BA, the Tumacacori roost is located about 30 miles east of the project area. The project area likely falls within the nightly distance known to be traveled by foraging lesser long-nosed bats (approximately 36 miles).

Effects of the Proposed Action

There are a number of potential direct and indirect effects to lesser long-nosed bats from the proposed action. These include potential direct impacts such as reduction of habitat and disturbance from noise, and potential indirect impacts such as an increased risk of wildfire associated with an increase in invasive plant species where habitat is disturbed. However, best management practices (BMPs) would be implemented to avoid and minimize these impacts.

All of the proposed action occurs within the range of foraging lesser long-nosed bats. However, none of the project area occurs in proximity to any known lesser long-nosed bat roost. New road construction and repairs to existing roads would result in a temporary increase of noise and human-related activity within the affected region. Construction-related noise effects would most likely occur during daylight hours reducing the potential for effects to foraging lesser long-nosed bats. Lighting associated with any nighttime construction activities would affect foraging behavior in proximity to that lighting by causing the bats to avoid that area. Construction activities will remove saguaros and agaves which are lesser long-nose bat forage species. Approximately 313 saguaros occur within the 100-foot roadway corridor. Large saguaros will be avoided to the extent possible, and those saguaros under 8 feet that cannot be avoided will be

transplanted. Agaves were not surveyed, but it was noted that numerous agaves were present within the roadway corridor. CBP will attempt to reduce the loss of agaves to the extent possible during design and construction activities. Where the loss of agaves is not avoidable, CBP will transplant any non-flowering agaves less than 20 inches in diameter which are not found in rocky substrate.

Wildfire can also have an adverse effect on lesser long-nosed bat habitat. The potential for wildfire to occur as a result of the proposed project would be reduced through measures to control invasive species. Managing the cleaning of equipment and clothing, minimizing the removal of native species, and the monitoring and removal of invasive species will prevent the expansion and establishment of non-native invasive plants and related habitat degradation. Therefore, these effects are anticipated to be insignificant.

Conclusion

The Service concurs with your determination that the proposed action may affect, but is not likely to adversely affect the lesser long-nosed bat, based upon the following:

- Impacts on lesser long-nosed bats from noise and light pollution and human disturbance would be minimized to insignificant levels through the use of BMPs.
- Direct and indirect impacts on lesser long-nosed bat habitat would be minimized through the use of BMPs. The habitat that would be impacted constitutes a small portion of suitable habitat for the lesser long-nosed bat and such effects will be insignificant.
- Removal of agave and saguaros will be limited to the minimum necessary and individual saguaros and agaves that cannot be avoided, and which meet the appropriate criteria, will be transplanted in the immediate vicinity of the project. Therefore, effects to LLNB forage resources are expected to be insignificant.

Chiricahua Leopard Frog

Environmental Baseline

The Chiricahua leopard frog was listed as a threatened species on June 13, 2002 (FWS 2002), without critical habitat. Included in the listing was a special rule to exempt operation and maintenance of livestock tanks on non-Federal lands from the Section 9 take prohibitions of the ESA. Subsequently, the Ramsey Canyon leopard frog (*Lithobates "subaquavocalis"*) was subsumed into *Lithobates chiricahuensis* (Crother 2008) and recognized by the USFWS as part of the listed entity (USFWS 2009). As a result, reevaluation of the species listing status was needed. A revised final rule was published on March 20, 2012 (77 FR 16324) that listed the species as threatened with critical habitat and maintained the special rule included in the original listing.

A recovery plan for Chiricahua leopard frog was completed in 2007 (FWS 2007b), and a 5-year review was completed in 2011 (FWS 2011). The project area overlaps a portion of Recovery

Area 1, and occurs in proximity to the Buenos Aires Central Tanks management area (MA) located on BANWR in the Altar Valley. Chiricahua leopard frogs are present in 4 functioning metapopulations within this recovery unit, including a metapopulation within the Buenos Aires Central Tanks MA. This metapopulation is currently considered to be the most stable metapopulation known within the range of the species (USFWS 2011, 2012). The three other metapopulations in this recovery unit are within the Pajarita Wilderness MA on adjacent portions of the Coronado National Forest. The primary land use within this recovery unit and management area in the action area is ranching; one private rancher in the Altar Valley participates in the statewide Safe Harbor Agreement for the Chiricahua Leopard Frog in Arizona administered by the Arizona Game and Fish Department (Arizona Game and Fish Department and USFWS 2006). American bullfrogs (*Rana catesbeiana*), crayfish (*Orconectes virilis* and possibly others), non-native fishes, illegal border activity and law enforcement response, and drought continue to threaten frogs in recovery unit 1 (FWS 2011). Chytridiomycosis, a fungal skin disease caused by the pathogen *Batrachochytrium dendrobatidis* (*Bd*), is present, but the frog is persisting with the disease, which appears to have little effect on population viability in recovery unit 1 (FWS 2011). A tremendous effort has been made to eliminate nonnative American bullfrogs throughout recovery unit 1 (USFWS 2011). Efforts are underway to eliminate one of the last known populations of bullfrogs in the Altar Valley on the Santa Margarita Ranch to the south of BANWR and in the vicinity of Arivaca Lake east of BANWR (USFWS 2012, USFWS files). However, bullfrogs remain a threat to the Chiricahua leopard frog in the Altar Valley, and bullfrog control continues in the area to maintain the integrity of the Buenos Aires Central Tanks metapopulation.

The Chiricahua leopard frog was historically an inhabitant of a variety of aquatic habitats, including cienegas, pools, livestock tanks, lakes, reservoirs, streams, and rivers at elevations of 3,281 to 8,890 feet (FWS 2007b). Of those sites occupied by Chiricahua leopard frogs in New Mexico from 1994 to 1999, 67% were creeks or rivers, 17% were springs or spring runs, and 12% were stock tanks (see FWS 2007b). In Arizona, slightly more than half of all known historical localities are natural free flowing aquatic systems, a little less than half are stock tanks, and the remaining locations are lakes and reservoirs. Sixty-three percent of populations extant in Arizona from 1993 to 1996 were found in stock tanks (FWS 2007b). The Chiricahua leopard frog is now restricted to springs, livestock tanks, ponds, and streams in the upper portions of watersheds where nonnative predators (e.g., sportfishes, bullfrogs, crayfish, or barred tiger salamanders [*Ambystoma mavortium mavortium*]) either have not yet invaded or been introduced, or where the numbers of nonnative predators are few and habitats are complex, which allow Chiricahua leopard frogs to coexist with these species. Adult frogs eat arthropods and other invertebrates (AGFD 2006; FWS 2007b). Larvae are herbivorous and eat algae, organic debris, plant tissue, and minute organisms in the water. Stomach analyses of other members of the leopard frog complex from the western United States show a wide variety of prey items, including many types of aquatic and terrestrial invertebrates and small vertebrates.

There are 16 stock tanks at which Chiricahua leopard frogs have occurred on the BANWR in recent years, and 5 of these stock tanks are known breeding sites (FWS files). No species-specific surveys have been conducted for Chiricahua leopard frogs for the purposes of this project; however, the action area is located within the elevational range of the species, and

Chiricahua leopard frogs are known to occur in the Altar Valley within 3 miles of the project area (AGFD 2012). CBP identified two locations in the project area which support potentially suitable habitat for the Chiricahua leopard frog, one concrete stock trough and an earthen stock tank. No frogs were observed at either of these sites during field visits by project personnel.

Effects of the Proposed Action

The project has the potential to result in direct and indirect impacts on Chiricahua leopard frogs. Direct impacts could include injury or mortality if a frog were to enter the construction site, or through habitat degradation if clearing of vegetation occurs in suitable habitat. Potential indirect impacts include the following:

- contamination of habitat from the transport of hazardous materials to the site,
- increased erosion and sedimentation into habitat,
- spread of disease, and
- increased potential for invasive species and wildfire.

BMPs will be implemented to avoid and minimize direct and indirect impacts. Additionally, the location and structure of the two sites with potentially suitable Chiricahua leopard frog habitat reduce (out of drainages and in raised tanks) the likelihood of direct or indirect impacts. As such, impacts are unlikely to occur.

Conclusion

We concur with your determination that the proposed action is not likely to adversely affect the Chiricahua leopard frog for the following reasons:

- There are no known occurrences of the Chiricahua leopard frog within the project area, although there is some potential dispersal habitat for Chiricahua leopard frogs identified in the project area. Therefore, direct effects to Chiricahua leopard frogs occupying breeding habitat are discountable. However, because some potentially suitable habitat has been identified within the project area, it is possible that Chiricahua leopard frogs may occupy the project area at some point. However, given the location and structure of these habitat areas, the potential for occupancy of these sites is discountable.
- Best management practices will be implemented by CBP to avoid impacts to stock tanks and livestock waters.
- CBP will also implement best management practices related to invasive species and invasive species control.
- The effects of the proposed action are thus insignificant and discountable in terms of individual Chiricahua leopard frogs and the species' population as a whole.

Jaguar Critical Habitat

We finalized the designation of jaguar critical habitat, effective April 4, 2014 (79 FR 12571). You have determined that the proposed action may affect, but is not likely to adversely affect designated jaguar critical habitat. We concur with your determination and provide our rationale below.

Environmental Baseline

In the United States, jaguars have been found in a variety of habitats, ranging from low-elevation desertscrub to high-elevation coniferous forests. In Arizona, most detections have occurred in Madrean evergreen-woodland and semidesert grassland (FWS 2014).

The FWS has identified the following primary constituent elements as habitat features necessary to support jaguar:

- include expansive open spaces of at least 36.8 square miles that provide connectivity to Mexico;
- contain adequate levels of native prey species;
- include surface water sources available within 12.4 miles of each other;
- contain 1 to 50 percent canopy cover with Madrean evergreen woodland or semidesert grassland vegetation communities;
- are characterized by rugged terrain;
- have minimal to no human population density;
- have no major roads;
- have no stable nighttime lighting over any 0.4-square-mile area; and
- are below 6,562 feet elevation.

The critical habitat designated by the FWS contains primary constituent elements that are considered to satisfy these requirements. The project area is located within Critical Habitat Unit 1, which consists of two subunits. Approximately 7.7 miles of the project limits are located within one of these subunits, Subunit 1b – Southern Baboquivari Subunit. This subunit is considered essential to the conservation of the jaguar due to its role in providing connectivity to Mexico and the fact that it also supports a number of the primary constituent elements of jaguar critical habitat.

Effects of the Proposed Action

The project will permanently remove 6.4 acres of vegetation within this critical habitat unit. Some effects will occur within both semidesert grassland and Madrean evergreen woodland vegetation communities. The Arizona Wildlife Linkages Workgroup (2006) and AGFD (2012b) postulate that jaguars may use the Pozo Verde Mountains as a north-south corridor between southeastern Arizona and Mexico. The project will occur in the foothills of the Pozo Verde Mountains. Several livestock tanks are located east of the foothills of the Pozo Verde Mountains.

within this critical habitat area. The project is west of the majority of these livestock tanks and east of the Pozo Verde Mountains, introducing a potential barrier to wildlife movements between habitat in the Pozo Verde Mountains and water sources. This barrier would result both from temporary disturbance caused during construction (jaguars would likely avoid the area) and habitat fragmentation. Trails and roads, livestock management, and minor residential development currently existing in this area also contribute to habitat fragmentation, in addition to ongoing illegal immigration, drug and human trafficking, and U.S. Border Patrol activities. In addition, the project would result in the removal of some vegetation, particularly riparian vegetation, which would reduce canopy cover available to jaguars to move between habitats and to hunt. The project would also reduce habitat used by prey species, thereby reducing prey availability and hunting success. However, relocating the roadway out of washes in some areas should enhance jaguar habitat by reducing disturbance and human activity within the washes at these sections of roadway. Some effects to prey species may also occur as a result of increased use of and speed on the improved roadway.

Conclusion

We have analyzed the effects of the proposed action and concur with the determination that the proposed action may affect, but is not likely to adversely affect, jaguar critical habitat for the following reasons:

- CBP has committed to restoring areas of temporary disturbance with native species. This will reduce the overall effect of this project on jaguar habitat elements. Vegetation cover densities will be maintained within a suitable range as described in our designation of critical habitat for this species. Thus, effects to jaguar critical habitat primary constituent elements related to unfragmented open space and adequate cover would mostly be temporary and limited in scope.
- Best management practices will be implemented by CBP to avoid impacts to stock tanks and livestock waters. Therefore, effects to this primary constituent element will be insignificant.
- CBP will also implement best management practices related to invasive species and invasive species control.
- CBP will limit construction during the night and reduce or eliminate any nighttime lighting associated with project activities to further reduce potential impacts on the jaguar through impacts on the primary constituent elements as identified in our designation of critical habitat.
- The effects of the proposed action are thus insignificant and discountable with regard to designated jaguar critical habitat.

Therefore, we concur with your determination that the proposed action may affect, but will not adversely affect or adversely modify jaguar critical habitat. We recommend that monitoring and adaptive management continue during CBP operations that use the Baboquivari road in these areas designated as jaguar critical habitat so that these areas will maintain the necessary primary constituent elements for jaguar critical habitat.

Northern Mexican Gartersnake

Environmental Baseline

The northern Mexican gartersnake is restricted to riparian areas, except when dispersing, and occurs at elevations usually ranging from 3,000 to 5,000 feet, but may occur at elevations ranging from 130 to 8,497 feet (AGFD 2012a; FWS 2008). An important component of northern Mexican gartersnake habitat is a stable supply of native prey, and general habitat types, including 1) source-area wetlands (ponds and cienegas); 2) large, lowland river riparian woodlands and forests; and 3) upland streamside gallery forests. The northern Mexican gartersnake historically occurred in Mexico, in New Mexico, and in every county in Arizona, and now occurs in only eight perennial or intermittent stream reaches and wetlands in Arizona. The species' most viable populations occur in fragmented areas within the middle and upper Verde River drainage (including Oak Creek and the Verde River), middle and lower Tonto Creek, the Cienega Creek drainage, and in a small number of isolated wetland habitats associated with the upper Santa Cruz basin within the San Rafael Valley in southeastern Arizona (AGFD 2012a; FWS 2006). The species is considered extant as a low-density population with the area of the BANWR, including, potentially, the action area for the proposed Sierrita Pipeline Project.

The most significant threats affecting the status of the northern Mexican gartersnake rangewide include negative ecological interactions with harmful nonnative species (crayfish, American bullfrogs, spiny-rayed warm water sportfish) and dewatering of suitable habitat (FWS 2013a). These factors, in combination with other threats that act on the species in a synergistic fashion, contribute to fragmentation of populations and threaten genetic connectivity among populations.

The effects of climate change (i.e., decreased precipitation and water resources and increased evapotranspiration) are a threat to many species (Lenart 2007), including the northern Mexican gartersnake. For example, temperatures rose in the twentieth century, and warming is predicted to continue over the twenty-first century. Although climate models are less certain about predicted trends in precipitation, the southwestern United States is expected to become warmer and drier. In addition, precipitation is expected to decrease in the southwestern United States, and many semi-arid regions will suffer a decrease in water resources from climate change as a result of less annual mean precipitation and reduced length of snow season and snow depth. Approximately half of the precipitation within the range of the northern Mexican gartersnake typically falls in the summer months; however, the impacts of climate change on summer precipitation are not well understood. Drought conditions in the southwestern United States have increased over time and have likely contributed to loss of northern Mexican gartersnake populations. Climate change trends are likely to continue, and the impacts on species will likely be complicated by interactions with other factors (e.g., interactions with nonnative species and disease).

Suitable habitat for this species exists within the general project area in the form of livestock tanks, which may also support preferred prey species. The terrestrial spaces between aquatic habitats also support this species by allowing for thermoregulation, gestation, shelter, protection

from predators, immigration, emigration, brumation, and foraging. Radio telemetry studies have observed northern Mexican gartersnakes moving several hundreds of meters away from water sources (Emmons 2014). In addition, during the summer monsoon period, there is the potential that northern Mexican gartersnakes could disperse through the project area.

The FWS has also identified riparian habitat adjacent to aquatic habitat as an important habitat element supporting this species by maintaining the integrity of the adjacent riparian area (e.g., maintain channel morphology, flood control, nutrient recharge) (FWS 2013b).

There is one unverified record of a northern Mexican gartersnake at a stock tank in Presumido Canyon, but there are no verified records of occurrence within the project area. Known occurrences of the northern Mexican gartersnake occur approximately 15 miles to the east in Arivaca Cienega. Stock tanks and riparian drainages on the adjacent Buenos Aires National Wildlife Refuge provide appropriate habitat that could facilitate the movement and dispersal of northern Mexican gartersnakes into the project area, but the likelihood of such movements is minimal.

Effects of the Proposed Action

Potential project-related direct and indirect impacts on northern Mexican gartersnakes include degradation and modification of suitable aquatic habitat (i.e., livestock tanks), if present, through increased sedimentation or erosion caused by project activities, including the removal of adjacent riparian vegetation; introduction of barriers to wildlife movement (e.g., within ephemeral washes); noise that could alter behavior and spatial and temporal distribution; and possibly injury/mortality by vehicles and heavy equipment. The generation of noise emissions and degradation of aquatic habitat could also reduce prey availability, and thus reduce hunting success. However, there is a general lack of suitable northern Mexican gartersnake habitat elements within the project area. CBP has committed to implement a conservation measure to avoid stock tanks when possible and prevent or reduce erosion and sedimentation from the project into downstream stock tanks.

Conclusion

We have analyzed the effects of the proposed action and concur with your determination that the proposed action may affect, but is not likely to adversely affect, the threatened northern Mexican gartersnake for the following reasons:

- The project area occurs outside, but adjacent to, the area considered occupied by the species as represented by a low-density population, reducing the likelihood that the species will be present during the construction phase of the project. Effects to this species are expected to be discountable.
- CBP will implement a conservation measure to avoid stock tanks and prevent any downstream erosion into stock tanks or livestock waters. Effects to northern Mexican gartersnake habitat and prey are expected to be insignificant.

- CBP will also implement best management practices related to invasive species and invasive species control such that effects to this species related to habitat loss from invasive species and associated fire will be insignificant.

Therefore, we concur that the proposed action may affect, but is not likely to adversely affect the northern Mexican gartersnake. We recommend that monitoring and adaptive management continue during CBP operations within areas that may support the northern Mexican gartersnake so that actions that may affect the northern Mexican gartersnake will be avoided or remain insignificant.

Northern Mexican Gartersnake Proposed Critical Habitat (Conference Report)

Your July 16, 2014 correspondence concluded that the proposed action may affect, but is not likely to adversely affect, proposed critical habitat for the northern Mexican gartersnake (*Thamnophis eques megalops*) (FWS 2013b). We concur with your determination and provide our rationale below. This response constitutes our Conference Report related to informal conference for the proposed designation of northern Mexican gartersnake critical habitat under the ESA.

Environmental Baseline

Based on our current knowledge of the physical and biological features and habitat characteristics required to sustain the northern Mexican gartersnake's life history processes, we determined that the primary constituent elements for northern Mexican gartersnake critical habitat are:

- Aquatic or riparian habitat that includes:
 - perennial or spatially intermittent streams of low to moderate gradient with pools or backwater habitat, and with a unregulated or modified/regulated flow regime that allows for periodic flooding and adequate river functions, such as flows capable of processing sediment loads; or
 - lentic wetlands, such as livestock tanks, springs, and cienegas;
 - shoreline habitat with adequate organic and inorganic structure complexity to support life-history functions; and
 - aquatic habitat with characteristics that support a native amphibian prey base.
- Adequate terrestrial space (600 feet lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structure characteristics to support life-history functions.
- A prey base consisting of viable populations of native amphibian and native fish species.
- An absence of nonnative fish species, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrences of these

nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes and maintenance of viable native or nonnative prey species is still occurring.

Critical habitat has been proposed in 14 different units in central to southern Arizona for this species, of which the BANWR unit is the closest to the project area. The BANWR critical habitat unit consists of 117,335 acres and includes the springs, seeps, streams, livestock tanks, and terrestrial space in between these features.

The only anticipated project-related work within proposed northern Mexican gartersnake critical habitat is the installation of one drainage structure at a low water crossing on La Osa Ranch Road. This drainage feature consists of a grassy swale and is not considered to be a jurisdictional water of the U.S. Direct effects to proposed critical habitat for this species are anticipated only at this location, and no primary constituent elements of proposed critical habitat will be directly affected.

Project-related indirect impacts include potential degradation and modification of aquatic habitat (i.e., livestock tanks) through increased sedimentation or erosion caused by project activities, including the removal of adjacent riparian vegetation and introduction of barriers to wildlife movement (e.g., within ephemeral washes and riparian corridors). However, CBP has committed to implement a conservation measure to avoid stock tanks and prevent any downstream erosion or sedimentation into stock tanks or livestock waters.

Conclusion

We have analyzed the effects of the proposed action and concur with your determination that the proposed action may affect, but is not likely to adversely affect, proposed northern Mexican gartersnake critical habitat for the following reasons:

- One low water crossing is the only action proposed to be implemented within proposed northern Mexican gartersnake critical habitat. This proposed action will not affect any of the primary constituent elements of proposed northern Mexican gartersnake critical habitat.
- CBP has committed to implement a conservation measure to avoid stock tanks and prevent any downstream erosion or sedimentation into stock tanks or livestock waters.

Therefore, we conclude that the proposed action will not destroy or adversely modify proposed northern Mexican gartersnake critical habitat. We recommend that monitoring and adaptive management continue during CBP operations within areas that may affect proposed or designated northern Mexican gartersnake critical habitat so that these areas will maintain the necessary PCEs for northern Mexican gartersnake critical habitat.

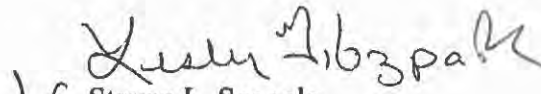
In the future, you may request, in writing, that we confirm this conference report as a concurrence under section 7 of the ESA if the proposed northern Mexican gartersnake critical

habitat is designated. If we find there have been no significant changes between the proposed and final critical habitat determinations, and the proposed action has not changed, we will confirm this conference report as a concurrence as required under section 7 of the ESA for the project.

Thank you for your continued coordination related to this consultation. No further section 7 consultation is required for this project for our concurrences at this time. Should project plans change, or if additional information on the distribution or abundance of listed species or critical habitat becomes available, this determination may need to be reconsidered. Additionally, we encourage you to coordinate the review of this project with the Arizona Fish and Game Department and the appropriate land management agencies and private landowners.

For further information please contact Scott Richardson (520) 670-6150(x242) or Jean Calhoun (520) 670-6150 (x223). Please refer to the consultation number, 02EAAZ00-2014-I-0470 in future correspondence concerning this project.

Sincerely,


Steven L. Spangle
Field Supervisor

cc: (hard copy):

Field Supervisor, Fish and Wildlife Service, Phoenix, AZ

Jean Calhoun, Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ

cc (electronic copy)

Tohono O'odham Nation, Wildlife and Vegetation Management Program, Sells, AZ

(Attn: Karen Howe)

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LITERATURE CITED

- Arizona Game and Fish Department (AGFD). 2006. *Rana chiricahuensis*. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix.
- . 2012a. *Special Status Species for the Sasabe Lateral Project*. Heritage Data Management System, Project Evaluation Program. September 10.
- Arizona Game and Fish Department and U.S. Fish and Wildlife Service. 2006. Safe Harbor Agreement for the Chiricahua Leopard Frog in Arizona. Nongame and Endangered Wildlife Program, Arizona Game and Fish Department, and Arizona Ecological Services Office, U.S. Fish and Wildlife Service, Tucson, Arizona. (AESO/SE 02-21-03-I-0083)
- Arizona Wildlife Linkages Workgroup. 2006. Arizona's wildlife linkages assessment. 210 pp.
- Crother, B.I. (ed.). 2008. Scientific and Common Names for Amphibians and Reptiles of North America North of México. Society for the Study of Amphibians and Reptiles, Herpetological Circular No. 37:1-84
- Emmons, I.D. 2014. E-mail correspondence from Iain Emmons (Northern Arizona University) (January 15, 2014; 0819 hrs).
- Johnson, T.B., W.E. Van Pelt, and J.N. Stuart. 2011. Jaguar conservation assessment for Arizona, New Mexico and Northern Mexico. Nongame and Endangered Wildlife Program, AGFD, Phoenix. 81pp.
- Lenart, M. 2007. *Global Warming in the Southwest: Projections, Observations and Impacts*. Tucson: The Climate Assessment Project for the Southwest (CLIMAS) Institute for the Study of Planet Earth, the University of Arizona.
- U.S. Fish and Wildlife Service (FWS). 1994. Lesser Long-nosed Bat Recovery Plan. Prepared by U.S. Fish and Wildlife Service, Phoenix, Arizona. May 1994.
- . 2001. "General Species Information: Lesser long-nosed bat." Available online<<http://www.fws.gov/southwest/es/arizona/Documents/Redbook/Lesser%20Long-nosed%20bat%20RB.pdf>>. Accessed 23 July 2008.
- . 2002. Endangered and threatened wildlife and plants; listing of the Chiricahua Leopard Frog (*Rana chiricahuensis*); final rule. *Federal Register* 67(114):40790–40811.
- . 2006. Mexican gartersnake (*Thamnophis eques*): General species information. Available at:<http://www.fws.gov/southwest/es/arizona/Documents/Redbook/Mexican%20Gartersna ke%20RB.pdf>. Accessed February 26, 2013.

- _____. 2007a. *Lesser Long-nosed Bat (Leptonycteris curasoae yerbabuenae), 5-Year Review: Summary and Evaluation*. Prepared by U.S. Fish and Wildlife Service, Phoenix, Arizona.
- _____. 2007b. *Chiricahua Leopard Frog (Rana chiricahuensis) Final Recovery Plan*. Albuquerque, New Mexico: U.S. Fish and Wildlife Service, Southwest Region.
- _____. 2008. Biological Opinion for the Altar Valley Fire Management Plan. AESO 22410-2005-F-0002. Arizona Ecological Services Office, Tucson, Arizona. December 15, 2008. 40pp.
- _____. 2011. Chiricahua leopard frog (*Lithobates [=Rana] chiricahuensis*) 5-Year Review: Summary and Evaluation. Arizona Ecological Services Office, Phoenix, Arizona.
- _____. 2012. Endangered and threatened wildlife and plants; Listing and designation of critical habitat for the Chiricahua Leopard Frog. *Federal Register* 77(54):16324–16424.
- _____. 2013a. Endangered and threatened wildlife and plants; threatened status for the northern Mexican gartersnake and narrow-headed gartersnake; proposed rule. *Federal Register* 78:41500-41547.
- _____. 2013b. Endangered and threatened wildlife and plants; designation of critical habitat for the northern Mexican gartersnake and narrow-headed gartersnake; proposed rule. *Federal Register* 78:41550-41608.
- _____. 2014. Endangered and threatened wildlife and plants; designation of critical habitat for the jaguar. *Federal Register* 79: 12571 – 12654.



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AESO/SE
02EAAZ00-2014-TA-0003

October 31, 2013

Mr. Paul Enriquez
Environmental Chief
U.S. Customs and Border Patrol
Border Patrol Facilities and Tactical Infrastructure
1300 Pennsylvania Avenue NW
Washington, DC 20229

Dear Mr. Enriquez:

Thank you for your correspondence of September 26, 2013, which we did not receive in our office until October 21, 2013, due to the government shutdown. This letter documents our recommendations regarding the U.S. Customs and Border Patrol's proposal to reconstruct and improve, operate, and maintain approximately 10.65 miles of the Baboquivari Road in the Pozo Verde Mountains, from Arizona State Route 286 near the Mirador Ranch to the eastern boundary of the Tohono O'odham Nation west of Sasabe, Pima County, Arizona.

The project area supports habitat for four species listed under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.)(Act). The jaguar (*Panthera onca*) and the lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*) are both listed as endangered under the Act. Habitat for these two species is most likely found in the higher elevations of the Pozo Verde Mountains. In addition, critical habitat has been proposed for the jaguar and is scheduled to be finalized later this year. The endangered masked bobwhite quail (*Colinus virginianus ridgwayi*) and the endangered Pima pineapple cactus (*Coryphantha sheeri* var. *robustispina*) are potentially found in the lower valley elevations in the eastern portions of the project area. Two additional listed species, the Kearney's blue star (*Amsonia kearneyana*) and the Chiricahua leopard frog (*Rana chiricahuaensis*), potentially occur in the project area. In addition, a candidate species under the Act, the Sonoran desert tortoise (*Gopherus morafkai*), has the potential to occur within the project areas. The cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), a species formerly listed as endangered under the Act, is known to occur in the project vicinity. A final rule to remove the pygmy-owl from the Endangered Species list

was published April 14, 2006. Therefore, the protective regulations of the Act no longer apply to the pygmy-owl. However, upon request, we continue to provide technical assistance related to the conservation of the pygmy-owl. Because impacts to these species may occur as a result of the proposed project, we urge you to consider the following information and recommendations.

Jaguar

In 1972, the jaguar (*Panthera onca*) was listed as endangered (37 FR 6476; March 30, 1972) in accordance with the Endangered Species Conservation Act of 1969 (ESCA), a precursor to the Endangered Species Act of 1973, as amended (Act; 16 U.S.C. 1531 *et seq.*). On July 22, 1997, the Service published a final rule clarifying that endangered status for the jaguar extended into the United States (62 FR 39147).

Jaguars are known from a variety of vegetation communities (Seymour 1989), including those found in the arid Southwest (Nowak 1994). In arid areas, these vegetation communities include thornscrub, desertscrub, lowland desert, mesquite grassland, Madrean oak woodland, and pine-oak woodland communities of northwestern Mexico and southwestern U.S. (Boydston and López González 2005, McCain and Childs 2008, López González and Brown 2002). Recently, several studies have helped refine general understanding of habitats that have been or might be used by jaguars in Arizona and New Mexico, including studies by the Sierra Institute Field Studies Program (2000), Hatten *et al.* (2002 and 2005), Menke and Hayes (2003), Boydston and López González (2005), Robinson *et al.* (2006), McCain and Childs (2008), and Sanderson and Fisher (2011 and 2013).

Like most large carnivores, jaguars have relatively large home ranges. According to Brown and López-González (2001), their home ranges are highly variable and depend on sex, topography, available prey, and population dynamics. However, little information is available on this subject outside tropical America, where several studies of jaguar ecology have been conducted. Several studies have shown that jaguars selectively use large areas of relatively intact habitat away from certain forms of human influence. In Mexico, Monroy-Vichis *et al.* (2007) report that jaguars occur with greater frequency in areas relatively distant from roads and human populations. Zarza *et al.* (2007) report that towns and roads had an impact on the spatial distribution of jaguars (jaguars used more frequently than expected by chance areas located more than 6.5 km from human settlements and 4.5 km from roads) in the Yucatan peninsula.

Information related to current patterns of occupancy for jaguars in the border region are limited. Recently (1996 through 2013), five individual male jaguars have been documented in the U.S. From 2001 to 2007, three jaguars were photographed (two repeatedly) using infra-red camera traps in south-central Arizona, near the Mexico border. Specifically, these three jaguars were documented in four different mountain range complexes over an area extending from the U.S./Mexico international border north 47 mi and 39 mi east to west (McCain and Childs 2008). The most recent sightings of the fifth jaguar have been from the Whetstone and Santa Rita mountains. This recent documentation is a result of an ongoing camera-trap study by the University of Arizona. Jaguars have been found using areas from rugged mountains at 1,577 m

(5,174 ft) to flat lowland desert floor at 877 m (2,877 ft.) (McCain and Childs 2008). Most jaguar detections have occurred in Madrean oak woodland communities; however, jaguars have also been documented in open mesquite grasslands and desert scrub/grasslands on the desert valley floor. McCain and Childs (2008), in the earlier study, were not able to use camera trapping techniques in open valley bottoms due the open expanses and lack of landscape features to direct or funnel wildlife movements and consequently could not determine the extent open areas are used by jaguars in Arizona. They report, however, the jaguars must at least cross the open valleys between mountain ranges, approximately 37 mi apart. Although more information on movement and distribution patterns needs to be gathered on jaguars in the borderlands region of Arizona, New Mexico, Sonora, and Chihuahua, it is believed that the males recently documented in Arizona and New Mexico likely interact with or are part of a jaguar population in northwestern Mexico. Maintaining habitat linkages to facilitate movement within this population is important.

The TON has recently received a contract to expand the ongoing camera-trap study currently being conducted by the University of Arizona to the western slopes of the Baboquivari Mountains within the TON. This study will provide additional information over the next two years regarding the occurrence of jaguars within the TON in proximity to the proposed action.

The proposed action may result in degradation of jaguar habitat and disturbance to jaguars. Improvement and maintenance of Baboquivari Road, as well as patrol activity associated with the roadway will result in removal, destruction, and degradation of vegetation that may provide cover to jaguars and their prey and may disturb jaguars, causing changes in their habitat use and movement patterns. Improvement of the roadway will impact (cause the loss and degradation) jaguar habitat through resulting ground disturbance, vegetation removal, soil compaction, erosion, and possible alteration of hydrological processes. These impacts will decrease the amount of cover available to jaguars and their prey. Further, disturbed ground will be susceptible to colonization by invasive non-native plants such as buffelgrass (*Pennisetum ciliare*). Non-native species may outcompete native species and may also carry fire better or burn hotter than native plants, which could also degrade jaguar habitat.

Improvement and maintenance activities, as well as subsequent operations associated with the proposed action may result in increased disturbance to jaguars. Human activity, elevated noise levels (from vehicles, generators, etc.), and lights associated with improvements and operations could possibly deter jaguar use of or movement through the area. Studies have shown that jaguars selectively use areas away from human influence (Monroy-Vichis *et al.* 2007, Zarza *et al.* 2007). Improvement of Baboquivari Road may lead to better public access and increased use, which could result in degradation of jaguar habitat and disturbance to jaguars. Also, increased public use will likely result in greater frequency of human-caused fires, as well as hunting and illegal off-highway vehicle use. Vehicle and foot traffic can lead to the destruction of vegetation, increased erosion, and degradation of riparian and other sensitive habitats.

Disturbance to jaguars and their habitats can result in associated behavioral changes, such as increased energetic expenditures, and altered pattern of use of habitat and movement corridors. These could lead to decreased dispersal opportunities; decreased home range size; increased inter- and intra-specific competition; increased difficulty meeting energetic needs; etc. Jaguars may attempt to avoid activities associated with the towers, which may cause them to travel longer distances. Extra travel would require jaguars to expend additional energy and increase the potential for encounters with humans, vehicles, and other stresses.

Given that the proposed project is located in proximity to the border, increased disturbance to jaguars associated with an improved roadway and increased vehicular traffic could possibly hinder jaguar movement into the U.S. from Mexico and within the project area. This is of particular concern in the project area as it is one of the few remaining areas that is not impacted by border fencing. Maintaining connectivity between Arizona and Sonora is critical to the continued persistence of jaguars in Arizona. Should all jaguar movement corridors be compromised, it is possible that the jaguar will become extirpated from Arizona, as it is believed the existence of jaguars in Arizona relies on interchange with jaguars in Sonora. Maintenance of jaguar populations in Mexico and movement corridors into Arizona from Mexico is likely essential for the continued survival of jaguars in the U.S.

We recommend the following measures be considered for inclusion in the implementation of the proposed action in order to reduce the potential impacts to jaguars: 1) minimize impacts to vegetation, especially in likely jaguar travel corridors (rugged mountainous areas and drainages); 2) minimize the extent and width of Baboquivari Road following improvement; 3) work with land owners to control access to the improved roadway; 4) locate staging areas at sites where vegetation disturbance will be minimized and outside of likely jaguar travel corridors; 5) implement maintenance and operations protocols that will minimize impacts to jaguars; and 6) eliminate or limit the use of nighttime lighting associated with the construction and operation of the proposed towers in areas of likely jaguar movements. In particular, the area of the Pozo Verde Mountains is within an area designated as a jaguar movement corridor during development of the Sasabe pedestrian fence. This proposed action will also occur within proposed jaguar critical habitat and we recommend that measures be implemented that will reduce effects to jaguar movements in this area (minimize road width, limit use of the roadway to essential actions for both CBP operations and by the general public, etc.).

Proposed Jaguar Critical Habitat

On August 20, 2012, we proposed critical habitat for the jaguar in response to a court order (77 FR 50214). Subsequently, we reopened the public comment period on proposed jaguar critical habitat on July 1, 2013 (78 FR 39237) to allow public comment on the economic analysis of proposed jaguar critical habitat, as well as slight modifications to the proposed boundaries. The attached map (Proposed Critical Habitat for Jaguar in Relation to the Baboquivari Road Project) shows that 9.1 miles of the proposed road project occur within proposed jaguar critical habitat. Six units are proposed for designation as critical habitat (in the U.S. only); these are considered occupied at the time listing and contain the components of the primary constituent elements in

the appropriate quantity and spatial arrangement sufficient to support the life-history needs of the species. Two of these units also contain subunits considered unoccupied at the time of listing, but which we deemed were essential to the survival and recovery of the jaguar. The six units proposed as critical habitat are: (1) Baboquivari Unit divided into subunits (1a) Baboquivari-Coyote Subunit, including the Northern Baboquivari, Saucito, Quinlan, and Coyote Mountains, and (1b) the Southern Baboquivari Subunit; (2) Atascosa Unit, including the Pajarito, Atascosa, and Tumacacori Mountains; (3) Patagonia Unit, including the Patagonia, Santa Rita, and Huachuca Mountains and the Canelo Hills; (4) Whetstone Unit, divided into subunits (4a) Whetstone Subunit, (4b) Whetstone-Santa Rita Subunit, and (4c) Whetstone-Huachuca Subunit; (5) Peloncillo Unit, including the Peloncillo Mountains both in Arizona and New Mexico; and (6) San Luis Unit, including the northern extent of the San Luis Mountains at the New Mexico-Mexico border.

With regard to the proposed Baboquivari Road project, the following subunit of Unit 1 may be affected by the proposed action:

Subunit 1b: Southern Baboquivari Subunit

Subunit 1b consists of 20,359 ha (50,308 ac) in the southern Baboquivari Mountains in Pima County, Arizona. This subunit is generally bounded by the Baboquivari Valley to the west, Three Peaks to the north, the Altar Valley to the east, and the U.S.-Mexico border to the south. Land ownership within the unit includes approximately 644 ha (1,591 ac) of Federal lands; 10,853 ha (26,818 ac) of Tohono O'odham Nation lands; 7,005 ha (17,310 ac) of Arizona State lands; and 1,857 ha (4,589 ac) of private lands. The Federal land is administered by the Service and Bureau of Land Management. The Southern Baboquivari Subunit provides connectivity to Mexico and was not considered occupied at the time of listing. It is essential to the conservation of the jaguar because it contributes to the species' persistence by providing connectivity to occupied areas that support individuals during dispersal movements during cyclical expansion and contraction of the nearest core area and breeding population in the Northwestern Recovery Unit.

The primary land uses within Subunit 1b include ranching, grazing, border-related activities, Federal land management activities, and recreational activities throughout the year, including, but not limited to, hiking, birding, horseback riding, and hunting. The proposed Baboquivari Road would be located inside of this unit of proposed jaguar critical habitat.

Primary Constituent Elements for Jaguar Critical Habitat

The physical or biological feature identified for proposed critical habitat for the jaguar is expansive open spaces in the southwestern United States with adequate connectivity to Mexico that contain a sufficient native prey base and available surface water, have suitable vegetative cover and rugged topography to provide sites for resting, and have minimal human impact (77 FR 50214). Because habitat in the United States is at the edge of the species' northern range, and is marginal compared to known habitat throughout the range, we have determined that all of the primary constituent elements discussed, below, must be present in each specific area to

constitute high-quality jaguar habitat in the United States, including connectivity to Mexico (but that connectivity may be provided either through a direct connection to the border in that unit or by other adjacent areas that provide the connectivity essential for the conservation of the species). Based on our current knowledge of the physical or biological feature and habitat characteristics required to sustain the jaguar's vital life-history functions in the United States, the FWS determined that the primary constituent elements specific to jaguars are: Expansive open spaces in the southwestern United States of at least 84 to 100 square km (32 to 37 square mi) in size which:

- (1) Provide connectivity to Mexico;
- (2) Contain adequate levels of native prey species, including deer and javelina, as well as medium-sized prey such as coatis, skunks, raccoons, or jackrabbits;
- (3) Include surface water sources available within 20 km (12.4 mi) of each other;
- (4) Contain 1 to 50 percent canopy cover within Madrean evergreen woodland, generally recognized by a mixture of oak, juniper, and pine trees on the landscape, or semidesert grassland vegetation communities, usually characterized by *Pleuraphis mutica* (tobosagrass) or *Bouteloua eriopoda* (black grama) along with other grasses;
- (5) Are characterized by intermediately, moderately, or highly rugged terrain;
- (6) Are characterized by minimal to no human population density, no major roads, or no stable nighttime lighting over any 1-square-km (0.4-square-mi) area.
- (7) Are below 2,000 m (6,562 feet) in elevation.

While the proposed Baboquivari Road project will directly impact some jaguar habitat elements (loss of vegetation cover due to reconstruction and improvement of the roadway), the primary effect to the PCEs of proposed jaguar critical habitat are related the likelihood that an improved roadway will result in an increase in human disturbance and presence during the construction, as well as later during operation, and maintenance of the project. This directly affects PCE #6 and indirectly affects all of the remaining PCEs by potentially reducing the opportunity for jaguars to utilize habitat elements due to ongoing human presence and disturbance. In particular, the area of the Pozo Verde Mountains was identified as within an area designated as a jaguar movement corridor during development of the Sasabe pedestrian fence. The proposed action would affect the ability of jaguars to move across the border to and from Mexico, which is crucial to the ongoing conservation of jaguars in the U.S.

We suggest that the recommendations discussed above related to minimizing effects to jaguars also be considered by CBP as recommendations related to reducing modifications to proposed jaguar critical habitat. Implementation of these recommendations will reduce the amount of human activity and disturbance in an important area of jaguar habitat and a recognized

movement corridor. We also recommend that implementation of the proposed action address the need to maintain the availability of jaguar habitat elements such as water, prey, rugged terrain, appropriate vegetation cover, and low human presence.

Lesser Long-Nosed Bat

The lesser long-nosed bat was listed (originally, as *Leptonycteris sanborni*; Sanborn's long-nosed bat) as endangered in 1988 (U.S. Fish and Wildlife Service 1988). No critical habitat has been designated for this species. A recovery plan was completed in 1997 (U.S. Fish and Wildlife Service 1997). The lesser long-nosed bat is migratory and found throughout its historical range from southern Arizona and extreme southwestern New Mexico through western Mexico and south to El Salvador. It is found in southern Arizona from the Picacho Mountains (Pinal County) southwest to the Agua Dulce Mountains (Pima County) and southeast to the Chiricahua Mountains (Cochise County), and south to the U.S./Mexico international border. Individuals have also been observed near the Pinaleño Mountains (Graham County) and as far north as Phoenix and Glendale (Maricopa County) (AGFD Heritage Data Management System [HDMS]). Occasionally, individuals have been reported outside of this range; for example, there are records of individuals from the Phoenix area and the Bill Williams River during July and August. In New Mexico, it occurs in the Animas and Peloncillo Mountains (Hidalgo County). Within the U.S., vegetation communities used by the lesser long-nosed bat include Sonoran Desert scrub, semidesert and plains grasslands, and oak and pine-oak woodlands.

Two sets of resources, suitable day roosts (including maternity roosts) and suitable concentrations of food plants, are critical for the lesser long-nosed bat. Caves and mines are used as day roosts, with documentation showing that the species will fly long distances from roost sites to forage (Dalton *et al.* 1994, U.S. Fish and Wildlife Service 1997). Factors that identify potential roost sites as being “suitable” have not yet been identified, but maternity roosts tend to be very warm and poorly ventilated (U.S. Fish and Wildlife Service 1997). Such roosts reduce the energetic requirements of adult females while they are raising their young (Arends *et al.* 1995).

Food requirements of the lesser long-nosed bat are very specific. The lesser long-nosed bat is a nectar-, pollen-, and fruit-eating bat. In Arizona, they primarily feed upon Palmer's agave (*Agave palmeri*), Parry's agave (*A. parryi*), desert agave (*A. deserti*), and possibly amole (*A. schottii*). Cacti fed upon include saguaro (*Carnegiea giganteus*) and organ pipe cactus (*Stenocereus thurberi*). Because of its very specific food requirements, the lesser long-nosed bat is considered a major pollinator and seed disperser of columnar cacti (e.g., saguaros) and paniculate agave. Adequate numbers of flowers and/or fruits are required within foraging range of day roosts and along migration routes to support large numbers of this bat. Location of good feeding sites therefore plays an important role in determining availability of potential roosting sites, and roost/food requirements must be considered jointly when discussing the habitat requirements of this bat. A suitable day roost is probably the most important habitat requirement, but potentially suitable roosts must be within reasonable foraging distances of sufficient amounts of required foods before they will be used by this bat.

The lesser long-nosed bat is known to fly long distances from roost sites to foraging sites. Night flights from maternity colonies to flowering columnar cacti have been documented in Arizona at 24 km (15 mi), and in Mexico at 40 km (25 mi) and 61 km (38 mi) (one way) (Dalton *et al.* 1994; V. Dalton, Tucson, pers. comm., 1997; Y. Petryszyn, University of Arizona, pers. comm., 1997). A substantial portion of the lesser long-nosed bats at the Pinacate Cave in northwestern Sonora (a maternity colony) fly 40 to 50 km (25-31 mi) each night to foraging areas in Organ Pipe Cactus National Monument (U.S. Fish and Wildlife Service 1997). Horner *et al.* (1990) found that lesser long-nosed bats commuted 48 to 58 km (30-36 mi) round trip between an island maternity roost and the mainland in Sonora; the authors suggested these bats regularly flew at least 75 km (47 mi) each night. Lesser long-nosed bats have been observed feeding at hummingbird feeders many miles from the closest potential roost site (Petryszyn, pers. comm., 1997).

Activities that directly or indirectly promote invasions or increased density of non-native grasses, particularly buffelgrass, Lehmann lovegrass (*Eragrostis lehmanniana*), species of *Bromus*, and Mediterranean grass (*Schismus barbatus*), may result in increased fire frequency and intensity (Minnich 1994). Sonoran Desert scrub is not adapted to fire. The lesser long-nosed bat forages over wide areas, and roosts require extensive stands of cacti or agaves for food. Therefore, destruction of food plants many miles from a roost could have a negative impact on this bat (U.S. Fish and Wildlife Service 1997).

The primary threat to lesser long-nosed bat is roost disturbance or loss. The colonial roosting behavior of this species, where high percentages of the population can congregate at a limited number of roost sites, increases the risk of significant declines or extinction due to impacts at roost sites. Lesser long-nosed bats remain vulnerable because they are so highly aggregated (Nabhan and Fleming 1993). Some of the most significant threats to known lesser long-nosed bat roost sites are impacts resulting from use and occupancy of these roost sites by individuals involved in illegal border crossings, both from individuals crossing to look for work and the trafficking of illegal substances. Mines and caves which provide roosts for lesser long-nosed bats also provide shade, protection, and sometimes water, for border crossers. The types of impacts that result from illegal border activities include disturbance from human occupancy, lighting fires, direct mortality, accumulation of trash and other harmful materials, alteration of temperature and humidity, destruction of the roost itself, and the inability to carry out conservation and research activities due to safety concerns. These effects can lead to harm, harassment, or, ultimately, roost abandonment (U.S. Fish and Wildlife Service 2003 and 2007). Other reasons for disturbance or loss of bat roosts include the use of caves and mines for recreation; the deliberate destruction, defacing or damage of caves or mines; roost deterioration (including both buildings or mines); short or long-term impacts from fire; and mine availability. Threats to lesser long-nosed bat foraging habitat include excess harvesting of agaves in Mexico; collection and destruction of cacti in the U.S.; conversion of habitat for agricultural and livestock uses; the introduction of buffelgrass and other invasive species that can carry fire in Sonoran Desert scrub; wood-cutting; drought; fires; and urban development.

Impacts also result from law enforcement and apprehension of illegal immigrants and smugglers. Of particular concern is the creation of new roads for surveillance and other tactical infrastructure used for border enforcement. Use of helicopters, off-road vehicles, lights, sensors and other enforcement equipment also have the potential to affect the lesser long-nosed bat and its habitat (U.S. Fish and Wildlife Service 2007). Loss of foraging habitat is also an important threat to lesser long-nosed bats. Causes of loss of foraging habitat in the action area include fire, livestock grazing, non-native invasive plants, and development (including the building of infrastructure on the border in the U.S.). Lesser long-nosed bats are directly affected by development, which removes forage habitat, but also indirectly as growing numbers of people increase the potential for roost disturbance. The impacts to lesser long-nosed bat habitat are of greatest concern because they tend to be permanent, long-term disturbances, as opposed to the often temporary, shorter-term impacts from fire, grazing, and agave harvesting (U.S. Fish and Wildlife Service 2007). Recent drought and apparent climate change are contributing to habitat degradation within the range of this species in the action area. For instance, the montane woodlands at the higher elevations (Santa Rita, Santa Catalina, and Huachuca mountains) have all experienced drought and associated large-scale catastrophic wildfires in recent years that have severely altered habitat and resulted in an increase in the importance of remaining lesser long-nosed bat habitat.

The lesser long-nosed bat has the potential to be impacted both directly and indirectly by the proposed roadway improvement project. Short-term, direct impacts of construction, operation, and maintenance activities on the bat or its habitats (including roosting sites, foraging areas, and areas between known roosting sites and foraging areas) include disturbance from temporary noise associated with construction equipment and helicopter operations, and disturbance from artificial lights used for nighttime construction. We are not aware of any known lesser long-nosed bat roost sites in the project area, but appropriate roost sites in the form of crevices and abandoned mines do occur in the area. Long-term direct impacts could occur if unknown roost sites are located in proximity to the improved roadway. Long-term, indirect impacts include human disturbance from increased public access facilitated by construction and maintenance of new and repaired roads, increased fire risk associated with increased public access, and an increase of non-native invasive plants associated with disturbance of native habitats. Land clearing associated with improvements to Baboquivari Road will result in loss of foraging habitat. As noted above, the lesser long-nosed bat feeds on the nectar, pollen, and fruit produced by columnar cacti (saguaro and organ pipe) and pollen of various agave species. While bats have been documented flying many miles to locate patches of blooming cacti and agaves, there is an energetic cost to such flights that must be accounted for in the density and quality of the nectar source (U.S. Fish and Wildlife Service 2007). Preferentially, significant nectar sources would be located in proximity to roosts. Since the quality of blooming may vary between days, weeks, and, over the course of years, sufficient foraging habitat must be present and accessible around both maternity and summer roosts.

Loss of suitably dense, healthy patches of cacti or agaves is a loss of foraging opportunity for the bat. The large columnar cacti and agaves that produce bat-pollinated flowers are mature survivors of past reproductive events, and while these plants are long-lived, there must be

successful recruitment of young plants to the population if it is to persist. Actions that reduce the recruitment rate have long-term effects, particularly if followed by a die-off of adult cacti and due to fire, drought, or freezing. It is not known how long it would take to restore populations of these forage species, but the estimates, assuming that conditions are right for recruitment and there is a seed base, are in terms of decades. Although agaves have a shorter life span than saguaros, each plant only produces one flower stalk once in its life, and if that stalk is destroyed before it matures to blossom, it is not available to the bats. Over time, a single agave clone can provide flowering stocks over a number of years, but if land- use practices or accidents eliminate the clone, there is no future use. Destruction of too many clones in an area may result in another long period without sufficient forage opportunities for the bats.

We recommend the following measures be considered for inclusion in the design of the proposed roadway improvement project in order to reduce the potential impacts to lesser long-nosed bats: 1) minimize impacts to vegetation. In addition to providing forage, lesser long-nosed bats may use washes and other heavily vegetated areas as movement corridors; 2) minimize the extent and width of roadway improvements to Baboquivari Road in order to reduce the likelihood of impacts to forage species and the introduction of invasive grass species; 3) work with landowners to control access to an improved Baboquivari Road; 4) locate staging areas at sites where vegetation disturbance will be minimized; 5) avoid impacts to all saguaros and agaves; 6) limit construction activities during the night, and reduce or eliminate any nighttime lighting associated with the proposed project; and 7) survey any potential lesser long-nosed bat roost habitat within 0.5 mile of the proposed roadway improvements for the presence of lesser long-nosed bats and, if found, avoid disturbance or impacts to these roosts. If roosts of other bat species are found, precautions should also be taken to avoid damage or disturbance to these roosts.

Masked Bobwhite Quail

The masked bobwhite quail was listed as endangered on March 11, 1967, but no critical habitat was designated. The Buenos Aires National Wildlife Refuge in Pima County, Arizona, was established to help promote the recovery of the masked bobwhite. Masked bobwhites are found in desert grasslands at 300 – 1,200 meters (1,000 to 4,000 feet) elevation with a high diversity of moderately dense native grasses and forbs and adequate brush cover. The masked bobwhite has been extirpated from the United States and exists only as a captive and released population on the Buenos Aires National Wildlife Refuge. In Mexico, populations have declined significantly as well. No masked bobwhites were detected during recent surveys in Mexico. Masked bobwhites are endangered due to habitat loss and degradation from grazing, invasive species, increased fire, and climate change.

Due to their rare occurrence in the project area, it is unlikely that masked bobwhite will be affected by this project. However, if masked bobwhites are present within the project area, improvements to Baboquivari Road will increase habitat fragmentation and may open up the project area, making masked bobwhite more susceptible to predation. Increased roadway traffic, traveling at higher speeds also increases the likelihood of direct mortality due to vehicle

collisions. Disturbance from construction or operations during the nesting season may affect masked bobwhite productivity. Improved access may also increase the likelihood of human-caused fire in an area dominated by invasive grass species.

We recommend that you coordinate this project with staff from the Buenos Aires National Wildlife Refuge. They will be able to tell you where the most recent locations of masked bobwhites are in relation to the project area. If masked bobwhites are known to be in proximity to the project, seasonal restrictions may be necessary to avoid the sensitive breeding season. In addition, roadway improvements should minimize the removal of important masked bobwhite cover and the potential for the introduction of invasive grass species.

Pima Pineapple Cactus

The Pima pineapple cactus was listed as endangered on September 23, 1993 without critical habitat. This cactus has very stout spines that are straw-colored, but become black with age. The plants can be single-stemmed, multi-headed, or can appear in clusters. Flowers are silky yellow in color and appear in early July with the summer rains. The Pima pineapple cactus grows in alluvial basins or on hillsides in semi-desert grasslands and Sonoran desert scrub in southern Arizona and northern Mexico. The cactus is found from 700 – 1,400 meters (2,300 – 4,500 feet) elevation in Pima and Santa Cruz counties, Arizona. It extends east from the Baboquivari Mountains to the western foothills of the Santa Rita Mountains. Threats to this species include illegal collection, habitat degradation due to recreation, grazing, and invasive species, and habitat loss due to urbanization.

The proposed project may cause direct mortality of individual Pima pineapple cacti during road improvement activities. Indirect effects may also occur as a result of changes in drainages and increases in invasive species and fire occurrence.

We recommend that the project area within appropriate elevations be surveyed for the presence of the Pima pineapple cactus. If cacti are found, these should be marked and avoided during roadway improvement actions. If cacti cannot be avoided, please contact our office prior to construction to determine the appropriate conservation strategy for this species. In addition, the extent of roadway improvements should be minimized to reduce the likelihood for direct and indirect effects to this species. Equipment used to improve the roadway should be washed prior to entering and exiting the project area to minimize the spread of invasive plant species.

Kearney's Blue Star

The Kearney's blue star was listed as endangered on January 19, 1989, but no critical habitat was designated. It is an herbaceous perennial sub-shrub with a thickened woody root and many hairy stems that rarely branch. White flowers form a terminal inflorescence in late April and May. Plants grow in stable, partially shaded, coarse alluvium at 1,097 – 1,158 meters (3,600 – 3,800 feet) elevation. It is currently found in a west-facing drainage of the Baboquivari Mountains and could potentially occur in other west-facing drainages of the Pozo Verde Mountains within the

project area. This species is vulnerable due to the extremely small number of known individual plants. Threats include flooding and livestock grazing.

This species is not known to occur within the project area, so it is unlikely to be affected by project activities. However, the project area does contain potential habitat elements, and if it does occur within the project area, it may be directly and indirectly affected by project activities.

We recommend that surveys for this species be conducted in appropriate habitat within the project area. If found, we recommend that we be notified and that project activities avoid direct and indirect effects to the population.

Chiricahua Leopard Frog

The Chiricahua leopard frog was listed as threatened on June 13, 2002, and critical habitat was designated on March 20, 2012 (77 FR 16324-16424). This frog has a distinctive pattern on the rear of the thigh consisting of small, raised, cream-colored spots or tubercles on a dark background and often has green coloration on the head and back. The Chiricahua leopard frog was historically an inhabitant of cienegas, pools, livestock tanks, lakes, reservoirs, streams, and rivers at elevations of 1,000 – 2,710 meters (3,281 – 8,890 feet) in central, east-central, and southeastern Arizona. Currently, this species is often restricted to springs, livestock tanks, and streams in the upper portions of watersheds where non-native predators have yet to invade or habitats are marginal. Historically occupied sites have decreased by 82 – 84 percent. Threats to the Chiricahua leopard frog include predation by non-native organisms, especially bullfrogs, an introduced fungal skin disease that is killing frogs and toads around the globe, and habitat loss and degradation due to loss of surface water or water quality.

Actions related to this project may directly or indirectly Chiricahua leopard frogs if there are any occupied stock tanks within the project area. While we are not aware of any occupied stock tanks in the project vicinity, recent surveys are limited and these frogs have the ability to disperse overland during the monsoon season and occupy sites that were not previously known to be occupied. There are a few stock tanks within the project vicinity. No critical habitat for the Chiricahua leopard frog is designated in the project vicinity; therefore, we do not anticipate any effects to designated critical habitat for this species.

We recommend that all stock tanks within the project area be avoided by roadway improvement activities. In addition, best management practices should be implemented that will eliminate or minimize sedimentation or contamination of any stock tanks in proximity to the project area.

Sonoran Desert Tortoise

The Sonoran desert tortoise is listed as a candidate species under the Act. A nationwide legal settlement (multi-district litigation settlement (MDL)) places a deadline to resolve the listing status of this species by Fiscal Year 2015. The Sonoran desert tortoise occupies the majority of the proposed IFT project area.

Adult Sonoran desert tortoises range in length from 8 to 15 inches (in), with a relatively high domed shell, usually brownish with a pattern and prominent growth lines. The plastron (bottom shell) is yellowish and is not hinged. The hind limbs are very stocky and elephantine; forelimbs are flattened for digging and covered with large conical scales. Males are differentiated from females by having elongated gular (throat) shields, chin glands visible on each side of the lower jaw (most evident during the breeding season), a concave plastron, and larger overall size.

Sonoran desert tortoises are most closely associated with the Arizona Upland and Lower Colorado River subdivisions of Sonoran desertscrub and Mojave desertscrub vegetation types and, to a lesser extent, other habitat types within their range and elevation parameters. They occur most commonly on rocky, steep slopes and bajadas (lower mountain slopes) often formed by the coalescing of several alluvial fans and in paloverde-mixed cacti associations. Washes and valley bottoms may be used in dispersal. Sonoran desert tortoises in Arizona occur between 904 to 4,198 feet in elevation. Threats to the Sonoran desert tortoise include nonnative plant species invasions and altered fire regimes; urban and agricultural development; barriers to dispersal and genetic exchange; off-highway vehicles; roads and highways; historical ironwood and mesquite tree harvest in Mexico; improper livestock grazing (predominantly in Mexico); undocumented human immigration and interdiction activities; illegal collection; predation from feral dogs; human depredation and vandalism; drought and climate change; and disease (upper respiratory tract disease, shell disease).

If tortoises are found within the project area, they could be subject to direct mortality from construction equipment and from patrol vehicles during operations, as well as indirect effects due to increased access into the area and introduction of invasive vegetation species.

We recommend that the attached Arizona Game and Fish Department's Tortoise Handling Guidelines be implemented during roadway improvement activities. In addition, you should coordinate with landowners to reduce access to the improved Baboquivari Road. Precautions should be taken to reduce the likelihood of introduction of invasive species.

Cactus Ferruginous Pygmy-Owl

The project area also includes habitat for the pygmy-owl. The pygmy-owl was originally listed as an endangered species in 1997. Following a series of litigation actions, a final rule to remove the pygmy-owl from the Endangered Species list was published April 14, 2006. The pygmy-owl remains a species of conservation concern for the FWS. Currently in Arizona, the pygmy-owl is found only in portions of Pima and Pinal Counties. The pygmy-owl is small, crepuscular owl species that is generally found below 1,200 meters (4,000 feet) elevation. Their diet includes a variety of birds, small mammals, lizards, and insects. They nest in cavities, primarily in large, columnar cacti. They are found in Sonoran desertscrub, woodlands within semi-desert grasslands, and other riparian woodland communities.

The pygmy-owl is non-migratory. The patchy, dispersed nature of the pygmy-owl populations in Arizona and Mexico (Flesch 2003) suggests that the overall population may function as a metapopulation. A metapopulation is a set of subpopulations within an area, where movement and exchange of individuals among population segments is possible, but not routine. A metapopulation's persistence depends on the combined dynamics of the productivity of subpopulations, the maintenance of genetic diversity, the availability of suitable habitat for maintenance and expansion of subpopulations, and the "rescue" of subpopulations that have experienced local extinctions by the subsequent recolonization of these areas by dispersal from adjacent population segments (Hanski and Gilpin 1991, 1997). The local groups of pygmy-owls within Arizona may function as subpopulations within the context of metapopulation theory. However, more information is needed regarding the population dynamics of pygmy-owls in Arizona. The species is threatened by loss and fragmentation of habitat due to urbanization, invasive species, increase fire frequency, and climate change.

The pygmy-owl has been documented in the general vicinity of the project. If pygmy-owls still occupy this area, the project will contribute to the loss and fragmentation of habitat, as well as potential disturbance of nesting and dispersing pygmy-owls.

We recommend that appropriate locations within the project area be surveyed for the presence of pygmy-owls. If pygmy-owls are located, nesting status should be determined. If nesting pygmy-owls are documented within the project area, seasonal restrictions should be considered to avoid disturbance during the nesting season. Roadway improvements should be minimized to reduce habitat loss and fragmentation. All saguaros should be avoided.

This letter is not intended to express any requirement of, or conditions necessary for compliance with, the Endangered Species Act. Our comments are provided to you as technical assistance regarding how effects of the proposed project on listed or sensitive resources can be minimized, but they do not constitute legal requirements. This project will have a Federal nexus (authorized, funded, or carried out by a Federal agency), and your agency will make a determination on the effects of the action on listed species and whether section 7 consultation, pursuant to the ESA, is required.

Should project plans change or if additional information on the distribution of listed or proposed species becomes available, we recommend that you contact our office to determine if additional concerns or issues need to be considered. We encourage your continued coordination with the Tohono O'odham Nation's Wildlife and Vegetation program and the Arizona Game and Fish Department as this project is implemented. In keeping with our trust responsibilities to American Indian Tribes, by copy of this letter, we will notify the Tohono O'odham Nation, which may be affected by the proposed action. We encourage you to invite the Bureau of Indian Affairs to participate in the review of your proposed action.

Should you require further assistance or if you have any questions, please contact Scott Richardson (520) 670-6150 (x242) or Jean Calhoun (x223). Thank you for your continued efforts to conserve endangered species.

Sincerely,

/ s / Jean Calhoun for
Steven L. Spangle
Field Supervisor

Enclosure:

Arizona Game and Fish Department Tortoise Handling Guidelines

cc (hard copy w/attachment):

Field Supervisor, Fish and Wildlife Service, Phoenix, AZ (2 copies)
Jean Calhoun, Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Tohono O'odham Nation Wildlife and Vegetation Management Program, Sells, AZ
(Attn: Karen Howe)

cc (electronic copy w/o attachment):

Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ
(Attn: John Windes)
pep@azgfd.gov, Arizona Game and Fish Department, Phoenix, AZ
DOI Border Coordinator, Washington, D.C. (Attn: Jon Andrew)
Sally Gall, Refuge Manager, Buenos Aires National Wildlife Refuge, Sasabe, AZ

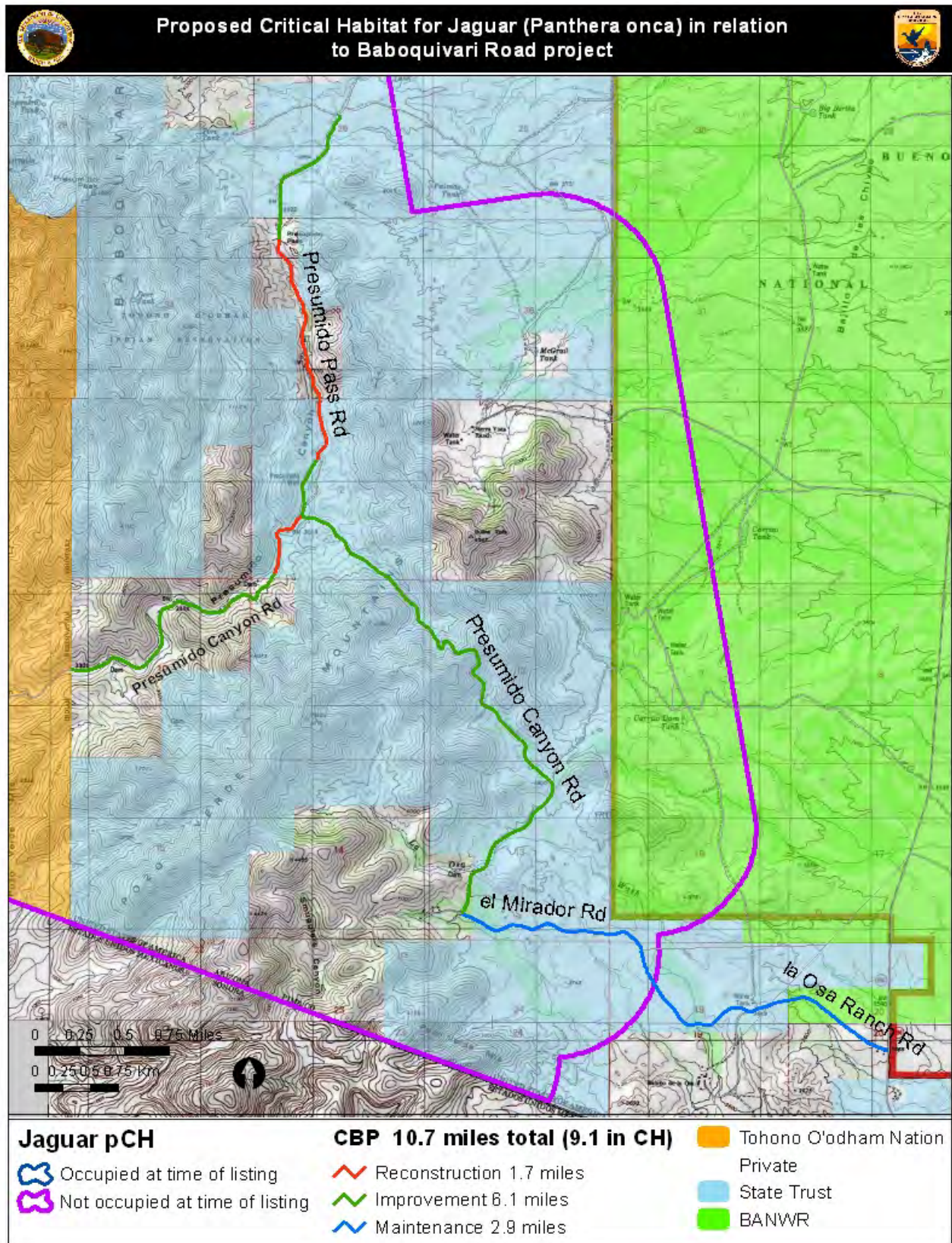
References Cited

- Arends, A., Bonaccorso, F. J. and Genoud, M. 1995. Basal rates of metabolism of nectarivorous bats (Phyllostomidae) from a semiarid thorn forest in Venezuela. *J. Mammal.* 76: 947-956.
- Boydston, E. E., and C. A. López-González. 2005. Sexual differentiation in the distribution potential of northern jaguars (*Panthera onca*). Pp. 51-56 in Gottfried, G. J., B. S. Gebow, L. G. Eskew, and C. B. Edminster, comp., *Connecting Mountain Islands and Desert Seas: Biodiversity and Management of the Madrean Archipelago II*, RMRS-P-36, Rocky Mountain Research Station, Forest Service, Fort Collins, CO.
- Brown, D. E. and C. López González. 2001. *Borderland jaguars. Tigres de la Frontera*, University of Utah Press. 170pp.
- Dalton, V. M., D. C. Dalton, and S. L. Schmidt. 1994. Roosting and foraging use of a proposed military training site by the long-nosed bat, *Leptonycteris curasoae*. Report to the Luke Air Force Natural Resources Program, Contract Nos. DACA65-94-M-0831 and DACA65-94-M-0753. 34pp.
- Flesch, A.D. 2003. Distribution, abundance, and habitat of cactus ferruginous pygmy-owls in Sonora, Mexico. M.S. Thesis. University of Arizona, Tucson, AZ. 161 pp.
- Hanski, I. and M.E. Gilpin. 1997. *Metapopulation Biology: Ecology, Genetics, and Evolution*. Academic Press, San Diego, 512 p.
- Hanski, I., and M. Gilpin. 1991. Metapopulation dynamics: brief history and conceptual domain. *Biological Journal of the Linnean Society* 42:3–16.
- Hatten, J. R., A. Averill-Murray, and W. E. Van Pelt. 2002. Characterizing and mapping potential jaguar habitat in Arizona. Technical Report 203, Nongame and Endangered Wildlife Program, AGFD (AGFD), Phoenix. 32pp.
- _____, _____, and _____. 2005. A spatial model of potential jaguar habitat in Arizona. *Journal of Wildlife Management* 69(3):1024-1033.
- Horner, M. A., T. H. Fleming, and M. D. Tuttle. 1990. Foraging and movement patterns of a nectar feeding bat: *Leptonycteris curasoae*. *Bat Research News* 31:81.
- McCain, E.B. and J.L. Childs. 2008. Evidence of resident jaguars (*Panthera onca*) in the southwestern United States and the implications for conservation. *Journal of Mammology*, 89(1):1-10.

- Menke, K. A., and C. L. Hayes. 2003. Evaluation of the relative suitability of potential jaguar habitat in New Mexico. Report to New Mexico Department of Game and Fish, Santa Fe, New Mexico. 31pp.
- Minnich, R. A. 1994. Postfire succession in desertscrub communities of southern California. Pp. 93-112 in Fletcher-Jones, A., ed., Proc. of the Desert Tortoise Council Symposium.
- Monroy-Vichis, O, C. Rodríguez-Soto, M. Zarco-González, and V. Urios. 2007. Distribución, uso de hábitat y patrones de actividad el puma y jaguar en el estado de México. Pp 59-69 in Ceballos, G, C. Chávez, R. List y H. Zarza (editores). 2007. Conservación y manejo del jaguar en México: estudios de caso y perspectivas. Conabio - Alianza WWF- Telcel – Universidad Nacional Autónoma de México. México.
- Nabhan, G.P. and T.H. Fleming. 1993. The conservation of new world mutualisms. *Conservation Biology* 7(3): 457 – 459.
- Nowak. 1994. Jaguars in the United States. *Endangered Species Technical Bulletin* 19:5.
- Robinson, M.J., C. Bradley, and J. Boyd. 2006. Potential habitat for jaguars in New Mexico. Report to AGFD (AGFD) from Center for Biological Diversity, Silver City, New Mexico.
- Sanderson, E. W., and K. Fisher. 2011. Digital mapping in support of recovery planning for the northern jaguar. Final report under agreement F11AC00036 (and modification #0001) between the U.S. Fish and Wildlife Service and the Wildlife Conservation Society. 20 pp.
- Sanderson, E. W., and K. Fisher. 2013. Jaguar Habitat Modeling and Database Update. Final report to the USFWS in response to Solicitation F12PS00200, submitted March 12, 2013. 42 pp.
- Sierra Institute Field Studies Program in Arizona. 2000. Jaguar habitat in southern Arizona and New Mexico. Unpublished report, University of California Extension, Santa Cruz.
- U.S. Fish and Wildlife Service. 1988. Endangered and threatened wildlife and plants; determination of endangered status for two long-nosed bats. *Federal Register* 53(190):38456-3860.
- _____. 1997. Lesser long-nosed bat recovery plan. Albuquerque, New Mexico. 49pp
- _____. 2003. Biological Opinion on the Proposed and Ongoing Activities by the Marine Corps Air Station-Yuma (MCAS-Yuma) in the Arizona portion of the Yuma Training Range Complex (YTRC) on the Barry M. Goldwater Range (BMGR), Yuma and Maricopa Counties.

_____. 2007. Final 5-Year Review Summary and Evaluation for the Lesser Long-Nosed Bat. Arizona Ecological Services Office, Phoenix. 43 pp.

Zarza, H., C. Chávez, and G. Ceballos. 2007. Uso de hábitat del jaguar a escala regional en un paisaje dominado por actividades humanas en el sur de la península de Yucatán. Pp 101-110 in Ceballos, G, C. Chávez, R. List y H. Zarza (editores). 2007. Conservación y manejo del jaguar en México: estudios de caso y perspectivas. Conabio - Alianza WWF-Telcel – Universidad Nacional Autónoma de México. México.



Appendix F

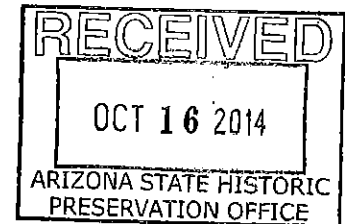
Arizona State Historic Preservation Office Concurrence

OCT 15 2014



**U.S. Customs and
Border Protection**

Mr. Jim Cogswell
Archeological Compliance Specialist
Arizona State Parks
1300 W. Washington Street
Phoenix, AZ 85007



Dear Mr. Cogswell:

Subject: Tactical Infrastructure Maintenance and Repair along the U.S./Mexico
International Border/Presumido Canyon Road and Presumido Pass Road, Pima
County/NHPA Section 106 Review (SHPO-2005-2621/SHPO-2013-0322)
Baboquivari Road Project, Pima County/NHPA Section 106 Review (SHPO-
2013-0322)

Thank you for your letter dated August 14, 2014 regarding this important border security project. U.S. Customs and Border Protection (CBP) agrees with all of the conclusions as contained in that letter. Specifically, CBP agrees with point number 3 in your letter that additional surveys were required for the staging areas and proposed road reroutes at AZ DD:6:72(ASM) and AZ DD:6:119(ASM).

Surveys for these areas have been completed and are summarized in the attached Survey Report Summary Form. Based on the results of these surveys, CBP has concluded that the proposed undertaking at the staging areas and road relocations at AZ DD:6:72(ASM) and AZ DD:6:119(ASM) will result in no effect on properties determined to be eligible for the National Register of Historic Places. Therefore, CBP is seeking your concurrence that the undertakings as described in a letter to your office dated July 16, 2014 will result in no adverse effects. CBP has no further updates on tribal consultation on this undertaking at this time.

Thank you for your on-going consultation regarding these projects. If you have any questions, do not hesitate to contact Mr. Steve Hodapp at (540) 784-8475 or myself at (949) 643-6365. Please address correspondence to:

U.S. Customs and Border Protection
Attn: Mr. Paul Enriquez, Environmental Branch Chief
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677
Email: Paul.Enriquez@cbp.dhs.gov

Mr. Jim Cogswell

Page 2

Thank you for your continued assistance.

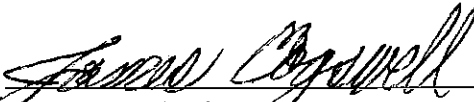
Sincerely,



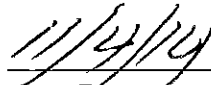
Paul Enriquez
Environmental Branch Chief
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosure: Survey Report Summary Form


CONCURRENCE WITH THE NO ADVERSE EFFECT DETERMINATION FOR
TACTICAL INFRASTRUCTURE AND MAINTENANCE AND REPAIR ACTIVITIES
ALONG PRESUMIDO CANYON ROAD AND PRESUMIDO PASS ROAD IN PIMA
COUNTY ARIZONA

San  _____
Mr. James Garrison

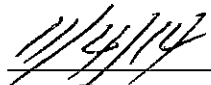
Arizona State Historic Preservation Officer
Arizona State Parks

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Date

CONCURRENCE WITH THE NO ADVERSE EFFECT DETERMINATION FOR THE
BABOQUIVARI ROAD PROJECT (IMPROVEMENTS TO AND RECONSTRUCTION OF
PRESUMIDO CANYON ROAD AND PRESUMIDO PASS ROAD) IN PIMA COUNTY
ARIZONA

San  _____
Mr. James Garrison

Arizona State Historic Preservation Officer
Arizona State Parks

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Date